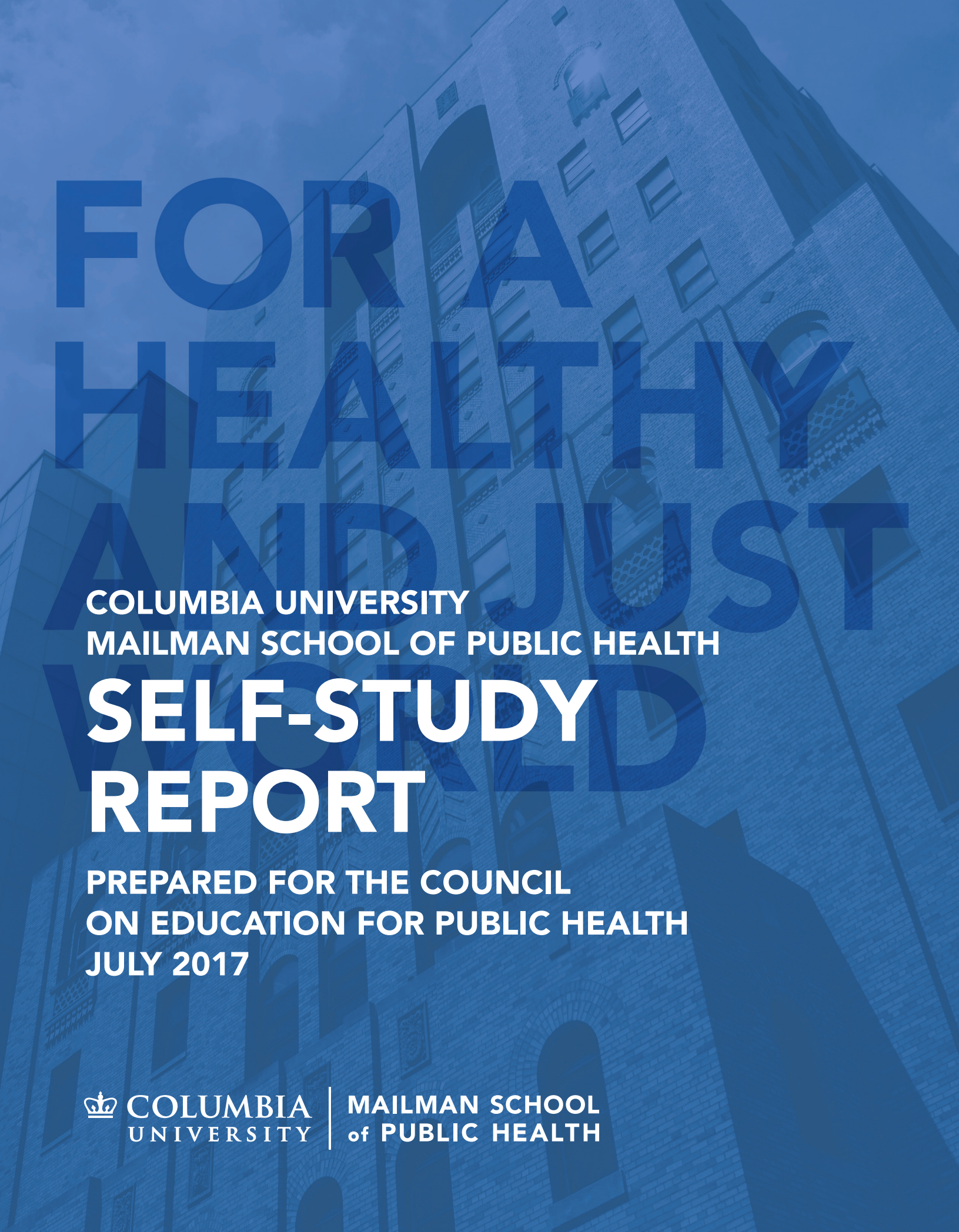

COLUMBIA UNIVERSITY
MAILMAN SCHOOL OF PUBLIC HEALTH

SELF-STUDY REPORT

PREPARED FOR THE COUNCIL
ON EDUCATION FOR PUBLIC HEALTH
JULY 2017

COLUMBIA UNIVERSITY | MAILMAN SCHOOL of PUBLIC HEALTH

THE PUBLIC HEALTH OATH

Health is a human right. The public health community exists to safeguard that right. I believe it is a defining element of a civil society. Public health represents the collective actions necessary to protect the health of all people. Through prevention science and practice we can accomplish this goal. As a public health professional, guided by these principles, I declare the following:

I will work to ensure that people have the chance to live full and productive lives, free from avoidable disease, injury, and disability and supported in their pursuit of physical, mental, and social well-being.

I will hold myself to the highest ethics, standards, values, and responsibilities as I move forward the science and practice of public health.

I will respect the rights, values, beliefs, and cultures of those individuals and communities with whom I work.

I will rely on evidence to support my decisions and actions, and translate that evidence into policies and programs that improve health for all.

I will add to the body of research and knowledge and share my discoveries freely.

I will continuously seek new information and be open to ideas that can better protect and promote the health of populations.

I will advance health literacy for all and seek equity and justice for vulnerable populations.

With this oath, I commit to the ideals and mission of public health.

Executive Summary

At the Mailman School of Public Health, we are constantly examining the challenges and opportunities facing the School, the landscape in public health education, and the complex and emerging issues of our world. Our CEPH self-study report is based on this examination and includes data and critical analyses of how the School meets CEPH standards. This period of self-reflection has provided an opportunity for the School and our internal and external stakeholders to come together, assess our progress towards achieving our mission, and determine how we can continue to transform what we can and should do to improve the health of populations in New York City, the United States, and across the globe. As we reflected on our challenges, opportunities, and future plans, some key points emerged and will guide our future path.

The Mailman School is committed to identifying and implementing the innovations needed to lead in the 21stst century. In 2012, after an extensive school-wide strategic planning initiative, we transformed our MPH degree program and built a strong central Office of Education to assess continually what schools of public health need to teach their students to lead in in public health knowledge and translation into practice, now and in the coming decades—in 2020 and in 2050. We have worked to ensure that we assess in an ongoing manner our interdisciplinary model to improve its quality and thereby student experience. We also continue to share both process and results of the evaluations of educational programs through the peer-reviewed literature.

The Mailman School offers an extraordinary range of venues for learning, service and engagement. We continue to create more opportunities, as exemplified by our leadership of the Global Consortium on Climate Change and Health, bringing together health profession schools across the world to deliver curricula on the health effects of climate change. At the same time, we are identifying ways to broaden our reach, diversifying our educational offerings beyond our well-established degree programs, and examining how to expand the School's enrollment to new audiences with new learning formats. The dual goal is to increase the opportunities for training in public health and to diversify the funding base consistent with the mission of the School.

Increasing interdisciplinarity in our research and in our approach to public health solutions represents a challenge and an opportunity. The School's current research portfolio contains both strong discipline-based and collaborative research across multiple departments, schools and centers. At the same time, to pursue large-scale interdisciplinary science projects, the School needs to enhance its capacity for investigators to respond with agility, provide key administrative supports, and implement practices and policies that reward collaborative science. Toward that end, a school-wide initiative has been launched to create and support interdisciplinary research teams that can secure large grants and conduct high-impact science. We are also transitioning our research funding base to include not only NIH and CDC, but other federal agencies. The school has also invested in a new office, Columbia Population Health Partnerships, to build partnerships with the corporate and governmental sector to further the areas of our research and translation mission.

One key goal for recruitment and for the shared experience of our faculty, students and staff—our entire community—is inclusivity. As the School launched the Office of Diversity and Inclusion in the last year and hired a dynamic new leader, we are determined to ensure that our community enriches and benefits from all its members. We recognize that this is a complex challenge. It demands providing access to diverse applicants in admissions and in faculty recruitment and retention, opening avenues for the entire community to engage fully, and in providing our faculty, students, and staff with skills and perspectives to ensure an inclusive environment where diversity is recognized, respected, and valued. The result is an agenda of curricular and co-curricular activities—our Self, Social and Global Awareness (SSGA) program for students, and an Inclusive Teaching Institute for faculty—that engage our community.

We continue to share with our colleagues in public health that the work we do is more important now than ever. As we graduated the Class of 2017, we recognize that changes, from demographic shifts like aging and challenges like the opioid crisis and climate change, call for a skilled and empowered public health workforce. The School is responding in multiple ways, by diversifying funding sources to ensure solid financial footing in an uncertain funding environment, intensifying advancement efforts to support scholarships and endowments for a diverse community, and to expanding its efforts to increase access to public health training. Our commitment to advancing our mission, to our core public health values, and to ongoing transformative innovation has never been stronger.

List of Abbreviations

Abbreviation	Name
APHA	American Public Health Association
ARS	Audience Response System
ASPPH	Association of Schools and Programs of Public Health
AY	Academic Year
BCS	Biostatistics Consulting Service
BEST	Biostatistics Epidemiology Summer Training Diversity Program
BIO	Department of Biostatistics
BPI	Bard Prison Initiative
CAC	Robert N. Butler Columbia Aging Center
CAHME	Commission on Accreditation of Healthcare Management Education
CAPRISA	Centre for the AIDS Programme of Research in South Africa
CCCEH	Columbia Children's Center for Environmental Health
CCNMTL	Columbia Center for New Media Teaching and Learning
CDC	Centers for Disease Control
CEHNM	Center for Environmental Health in Northern Manhattan
CII	Center for Infection and Immunity
COAP	Committee on Appointments and Promotions
COAP	Committee on Appointments and Promotions
CPH	Certified in Public Health
CPHP	Columbia Population Health Partnerships
CPRC	Columbia Population Research Center
CTL	Center for Teaching and Learning
CTSA	Clinical and Translational Science award
CU	Columbia University
CUBED	Columbia University Biostatistics and Epidemiology Digital education
CUIT	Columbia University Information Technology
CUMC	Columbia University Medical Center
CUMC IT	Columbia University Medical Center Information Technology
CUNY	City University New York
CV	Curriculum Vitae
DAG	Dean's Advisory Group
DAI	Development Alternatives, Inc.
DDS	Doctor of Dental Surgery
DLT	Dean's Leadership Team
DOD	Department of Defense
DrPH	Doctor of Public Health
EHS	Department of Environmental Health Sciences
EHESP	École des Hautes Études en Santé Publique
EOAA	Equal Opportunity and Affirmative Action
EPI	Department of Epidemiology

Abbreviation	Name
EPIC	Epidemiology and Population Health Summer Institute
ERF	Electronic Resource File
EXEC	Executive program format
Exec MS	Executive Master of Science in Epidemiology
FAIR	Financial Allocation of Institutional Resources
FDA	Food and Drug Administration
FTE	Full time equivalent
FY	Fiscal Year
GCD	Genetics of Complex Diseases program
GCR	Greater Community Reach
GOSO	Getting Out and Staying Out
GPH	General Public Health
GRA	Graduate research assistantship
GRAPH	Global Research Analytics for Population Health
GRS	Getting Ready for School
GSA	Graduate Student Association
HC	Head Count
HEOR	Health Economics Outcomes Research
HIPAA	Health Insurance Portability and Accountability Act
HIV	Human Immunodeficiency Virus
HPM	Department of Health Policy and Management
HPMN	Health Policy and Management course number designation
HSL	Augustus C. Long Health Sciences Library
IARC	International Agency for Research on Cancer
ICAP	International Center for AIDS Care and Treatment
ICR	Indirect Cost Recovery
IELTS	International English Language Testing System
IFPRI	International Food Policy Research Institute
IMSD	Initiative for Maximizing Student Development
INEE	Inter-Agency Network for Emergency Education
IN	Incomplete notation
IRB	Institutional Review Board
ISP	Integration of Science and Practice course
JD	Juris Doctor
LGBTQIA	Lesbian, Gay, Bisexual, Transgender, Queer, Intersex and Asexual
MA	Master of Arts
MBA	Master of Business Administration
MD	Doctor of Medicine
MHA	Master of Healthcare Administration
MIA	Master of International Affairs
MMWR	Morbidity and Mortality Weekly Report
MOOC	Massive Open Online Course

Abbreviation	Name
MPH	Master of Public Health
MS	Master of Science
MSCHE	Middle States Commission on Higher Education
MSOT	Master of Science in Occupational Therapy
MSSW	Master of Science in Social Work
MSUP	Master of Science in Urban Planning
NACCHO	National Association of County and City Health Officials
NBPHE	National Board of Public Health Examiners
NCCP	National Center for Children in Poverty
NDRI	National Development and Research Institutes, Inc
NGO	Non-governmental organization
NIAID	National Institute of Allergy and Infectious Diseases
NIDA	National Institute on Drug Abuse
NIEHS	National Institute of Environmental Health Sciences
NIH	National Institutes of Health
NIOSH	National Institute for Occupational Safety and Health
NRC	Nuclear Regulatory Commission
NYC	New York City
NYCDOHMH	New York City Department of Health and Mental Hygiene
NYPH	New York-Presbyterian Hospital
OCS	Office of Career Services
ODCI	Office of Diversity, Culture and Inclusion
ODS	Office of Disability Services
OFP	Office of Field Practice
OMH	Office of Mental Health
OMHHE	Office of Minority Health and Health Equity
OPA	United States Office of Population Affairs
OSA	Office of Student Affairs
OSHA	Occupational Safety and Health Administration
P@C	People @ Columbia
PAC	Policy Advisory Committee
PCB	Polychlorinated Biphenyl
PEPFAR	United States President's Emergency Plan for AIDS Relief
PET	Psychiatric Epidemiology Training program
PhD	Doctor of Philosophy
PHIA	Population HIV Impact Assessment
PHTC	Public Heath Training Center
POPFAM	Heilbrunn Department of Population and Family Health
PrEP	Pre-Exposure Prophylaxis
PrIMER	Program to Inspire Minority Undergraduates in Environmental Health Science Research
Q3	Fiscal Year Quarter Three

Abbreviation	Name
QFP	Quality Family Planning Services
R2	Office of Research Resources
RAISE	Reproductive Health Access, Information and Services in Emergencies
RASCAL	Research Compliance and Administration System
RSO	Radiation Safety Officer
RU	Residence Unit
SAETP	Substance Abuse Epidemiology Training Program
SFR	Student Faculty Ratio
SIS	Columbia Student Information Systems
SMS	Department of Sociomedical Sciences
SoBRO	South Bronx Overall Economic Development Corp
SOPHAS	Schools of Public Health Application Service
SOW	Scope of Work
SPA	Sponsored Projects Administration
SPHSP	Summer Public Health Scholars Program
SSGA	Self, Social and Global Awareness training
SSOL	Columbia Student Services Online
TA	Teaching Assistant
TIRI	Training in Interdisciplinary Research in Preventing Infections
TOEFL	Test of English as a Foreign Language
TRAC	Tenure Review Advisory Committee
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNI	Unique Identifier
UNICEF	United Nations Children's Fund
URM	Under-represented minorities
USDA	United States Department of Agriculture
USMLE	United States Medical Licensing Examination
UW	Unofficial Withdrawal
WHO	World Health Organization

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Criterion 1.0 - The School of Public Health

1.1. MISSION
The school shall have a clearly formulated and publicly stated mission with supporting goals, objectives, and values.

1.1.A. A clear and concise mission statement for the school as a whole.

The mission of the Columbia University Mailman School of Public Health (Mailman School), guided by the fundamental principle that health is a human right, is the following:

"Advance the health and well-being of populations around the world."

Since 1922, the Mailman School has been at the forefront of public health research, education, community collaboration, and solutions for health of populations. Addressing issues from chronic disease to HIV/AIDS to health policy, the Mailman School tackles today's pressing public health issues, translating research into action. Our faculty, staff, and students are engaged in public health activities in New York City, across the nation, and in more than 100 countries around the world.

1.1.B. A statement of values that guide the school.

The Mailman School is a community dedicated to improving the public's health and achieving health equity through the advancement of knowledge, teaching, and service. As scholars, staff, students, and alumni, we are committed to principles of social justice and to the promotion of health as a fundamental right of every human being. We aspire to alleviate human suffering and improve the health of all populations, especially the most vulnerable, through research and translation of evidence into solutions, education, service, communication, and action. We are committed to promoting interdisciplinary approaches to solving public health problems, collaborating across disciplines in the Mailman School and with schools across Columbia University, as well as domestic and global partners. The following values guide the Mailman School:

- We value academic excellence, innovation, and practical training in our educational programs for public health professionals. We respect divergent views, open inquiry, and professional integrity.
- We aim to train, support, and inspire our students, so that they become agents of positive, evidence-based change upon graduation from the Mailman School and throughout their long careers.
- We value scientifically rigorous, innovative, and ethical research that addresses core and emerging public health challenges. Central to our research agenda are the broader social, political, cultural, economic, and environmental determinants of health, both locally and globally, especially those that affect vulnerable populations, as well as the biological basis of health and disease prevention.
- We value thoughtful, evidenced-based programs in collaboration with our School's neighborhood and in our local, national, and global communities. We actively seek to improve public health through the formation of creative and equal partnerships with community-based organizations and health care, public health, and service providers.
- We recognize, value, respect, and celebrate diversity in our faculty, staff, students, and surrounding community. We actively seek to create an inclusive environment that is respectful of all members of our community. We prioritize research, teaching, and service that reflect our commitment to social justice, inclusion, and health equity, both locally and globally.

In 2008, Dean Linda Fried led a school-wide effort to develop an oath for public health that would articulate the professional commitment of our students, graduates, and faculty, and provide guiding principles and inspiration to incoming students and graduates. A truly collaborative effort involving faculty, staff, and students, the oath is recited at both orientation and graduation, thus establishing a tradition as students begin their educational experience and as they embark on their public health careers.

The Mailman School Public Health Oath
Health is a human right. The public health community exists to safeguard that right. I believe it is a defining element of a civil society. Public health represents the collective actions necessary to protect the health of all people. Through prevention science and practice we can accomplish this goal. As a public health professional, guided by these principles, I declare the following:

I will work to ensure that people have the chance to live full and productive lives, free from avoidable disease, injury, and disability and supported in their pursuit of physical, mental, and social well-being. I will hold myself to the highest ethics, standards, values, and responsibilities as I move forward the science and practice of public health.

I will respect the rights, values, beliefs, and cultures of those individuals and communities with whom I work.

I will rely on evidence to support my decisions and actions, and translate that evidence into policies and programs that improve health for all.

I will add to the body of research and knowledge and share my discoveries freely.

I will continuously seek new information and be open to ideas that can better protect and promote the health of populations.

I will advance health literacy for all and seek equity and justice for vulnerable populations.

With this oath, I commit to the ideals and mission of public health.

1.1.C. One or more goal statements for each major function through which the school intends to attain its mission, including at a minimum, instruction, research, and service.

The Mailman School has the following goals:
Education. To provide educational programs that prepare a diverse group of leaders with the knowledge and skills to promote health and well-being across all populations, strengthen health systems, and implement sustainable and effective solutions for local and global public health challenges and health promotion.

Research. To conduct research that creates, advances, and translates knowledge to influence practice, policy, and action regarding critical population health challenges and solutions worldwide.

Service. To establish and maintain partnerships with communities, organizations, and leaders to address their priority health issues, challenges, and strengths through evidence-based practice and policy.

Diversity and Inclusion. To build an inclusive and equitable community of faculty, students, and staff dedicated to the development of public health scholarship and practice that advances health and health equity.

1.1.D. A set of measurable objectives with quantifiable indicators related to each goal statement as provided in Criterion 1.1.C. In some cases, qualitative indicators may be used as appropriate.

The Mailman School has measurable objectives for tracking the School's progress in achieving its goals. The indicators, targets, and timelines for these objectives are described in Criterion 1.2.C. and the related sections of the self-study. The Mailman School's objectives are the following:

Education Goal. To provide educational programs that prepare a diverse group of leaders with the knowledge and skills to promote health and well-being across all populations, strengthen health systems, and implement sustainable and effective solutions for local and global public health challenges and health promotion.

Objectives

A. Recruit and retain outstanding and committed graduate students with strong academic credentials from a range of cultures and backgrounds.
B. Recruit and retain outstanding, diverse faculty in the range of disciplines and specialties consistent with the School's educational mission, and with a commitment to interdisciplinary knowledge creation and education.
C. Engage in ongoing educational innovation and development of effective curricula that support interdisciplinary collaboration and leadership.
D. Support educator development, encourage pedagogical innovation, and require and recognize outstanding teaching.
E. Enrich students' educational experiences by maximizing opportunities for them to participate in research, service, and practice, both locally and globally.
F. Ensure that our graduates are prepared to contribute to the public health/healthcare workforce, to collaborate with all sectors of society, and to become part of a thriving alumni community after graduation.

Research Goal. To conduct research that creates, advances, and translates knowledge to influence practice, policy, and action regarding critical population health challenges and solutions worldwide.

Objectives

A. Increase school-wide interdisciplinary and intersectional research.
B. Ensure development of infrastructure that supports innovation and collaboration and fosters the capacity to conduct interdisciplinary science.
C. Ensure research translation and dissemination to advance science and inform policy and practice.

Service Goal. To establish and maintain partnerships with communities, organizations, and leaders to address their priority health issues, challenges, and strengths through evidence-based practice.

Objectives

A. Collaborate with local community organizations, leaders, and public health/health care and service providers in New York City, with a concentration in the Washington Heights/Inwood and Harlem areas of Northern Manhattan.
B. Broaden service-based learning activities available to students school-wide.
C. Ensure linkages between service programs and the research and educational activities of the Mailman School and University.
D. Maintain external funding for service activities.

Diversity and Inclusion Goal. To build a diverse, inclusive and equitable community of faculty, students, and staff dedicated to the development of public health scholarship and practice that advances health equity.

Objectives

A. Train all faculty, students, and staff through co-curricular and tailored activities to create an inclusive environment.
B. Develop and strengthen existing curricula for faculty and students to cultivate and enhance their understanding of the impact of inequality on health.
C. Recognize outstanding teaching and mentoring that reflects the School's commitment to diversity, equity, and inclusion.
D. Expand funding and support for research and service that focuses explicitly on the relation between structural inequality and health inequity and the resolution of health disparities.

1.1.E. Description of the manner through which the mission, values, goals, and objectives were developed, including a description of how various specific stakeholders were involved in their development.

In 2016, the Mailman School undertook a review of its mission, values, goals, and objectives to ensure alignment with the School's strategic direction and initiatives. The process officially began in February 2016 with the arrival of a new Vice Dean for Education and emanated from the School's leadership team, including the Dean and the Vice Deans for Finance and Administration, Faculty Affairs and Research, and Education, department chairs, and school-wide center directors. The process adopted a participatory approach that involved a broad range of stakeholders including faculty, staff, students, alumni, school leadership, Mailman School's Board of Overseers, and community stakeholders.

Guiding the process was the responsibility of the CEPH Working Group, which was established by the Vice Dean for Education (refer to Electronic Resource File 1.1.E. for list of members). The working group created a timeline, identified key stakeholders, and assigned tasks to its members. The overall goals of the CEPH Working Group were to:

- Conduct a thorough review of pertinent materials
- Establish clear and consistent communication with stakeholders (including school leadership)
- Obtain and incorporate feedback from diverse stakeholders throughout the process
- Reformulate or ratify the mission, values, goals, and objectives

Accordingly, the CEPH Working Group began the process by reviewing school materials (including prior CEPH report) as well as the statements, goals, and objectives from other schools of public health, representing a mix of private and public institutions. Materials and drafts were shared, revised, and refined, via email communications, conference calls, and subcommittee meetings, over the course of several months. The drafts were shared at academic department meetings and comments were forwarded to the CEPH Working Group. Refer to Electronic Resource File 1.1.E. for meeting minutes.

In June 2016, the Dean's Advisory Group held a retreat focused on the mission and values. Following this retreat, in fall 2016, the CEPH Working Group prepared drafts of the mission, values, goals, and objectives, which were presented to the CEPH Accreditation Steering Committee and then to the School's leadership via the Dean's Advisory Group (refer to Electronic Resource File 1.1.E. for list of CEPH Accreditation Steering Committee members and Electronic Resource File 1.5.A, for list of Dean's Advisory Group members). During Winter 2017, the CEPH Accreditation Steering Committee received and reviewed the draft goals and objectives and by April 2017 the approved version was posted online. In May 2017, final versions were approved by the CEPH Reaccreditation Steering Committee, the Dean's

Advisory Group, and the Dean. The revised objectives, goals, and statements were posted on a public website in June 2017. The webpage provides opportunities for the Mailman School community and the general public to comment.

1.1.F. Description of how the mission, goals, and objectives are made available to the school's constituent groups, including the general public, and how they are routinely reviewed and revised to ensure relevance.

The Mailman School's mission, values, goals, and objectives are communicated to students at orientation and are included in the student handbook. The documents are provided to new staff and faculty during new hire orientation. The mission, values, goals, and objectives are posted on the School's website where they can be viewed by the School's community and the general public.

A formal review of the Mailman School's mission, values, goals, and objectives occurs every six to seven years as the School prepares for reaccreditation. However, the mission and values statements are considered to be living documents, are articulated through our Public Health Oath administered after new student orientation and commencement, and are re-visited when major initiatives or changes in the environment occur. The revisions ensure that our programs in education, research, and service are aligned with changing internal and external environments. Furthermore, goals and objectives are reviewed, if needed, during the semiannual leadership team retreats (Dean's Advisory Group retreats) as we evaluate priorities and allocate resources to respond to changing environments. For example, when the School underwent a strategic curriculum renewal process to develop and integrate the MPH Core curriculum and meet the changing needs of public health education, the goals and objectives relating to education were modified and curriculum was designed to implement these. Additionally, when the School decided to create the Office of Diversity, Culture and Inclusion and hired a Director (June 2016), new goals and objectives were drafted to support and guide the development, organization, and implementation of our diversity initiatives. With input from key stakeholders, the goals and objectives were modified to ensure that the Mailman School's commitment to diversity in the academic, workplace, and practice spheres was clearly articulated.

1.1.G. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses, and plans relating to this criterion.

This criterion is met.

Strengths

- The School's mission statement, values statement, and goals have been developed through a collaborative and inclusive process that involved internal and external stakeholders.
- This mission unifies the School and serves as a guiding principle that organizes our collective efforts in research, education, and service.

Challenges

- With such a global community of stakeholders and a diverse constituency of faculty, students, and staff, it is always a challenge to ensure that all critical voices are included and integrated in the development of school-wide goals and objectives.

Plans

- The Vice Dean for Education will work to ensure that annual leadership retreats and ongoing Dean's Advisory Group meetings include planned time to review and monitor progress towards School goals and objectives. The Vice Dean for Education will oversee this process in collaboration with the Dean, the Vice Dean for Finance and Administration and the Vice Dean for Faculty Affairs and Research.

Criterion 1.0 - The School of Public Health

1.2. EVALUATION
The school shall have an explicit process for monitoring and evaluating its overall efforts against its mission, goals, and objectives; for assessing the school's effectiveness in serving its various constituencies; and for using evaluation results in ongoing planning and decision making to achieve its mission. As part of the evaluation process, the school must conduct an analytical self-study that analyzes performance against the accreditation criteria defined in this document.

1.2.A. Description of the evaluation processes used to monitor progress against objectives defined in Criterion 1.1.D., including identification of the data systems and responsible parties associate with each objective and with the evaluation process as a whole. If these are common across all objectives, they need be described only once. If systems and responsible parties vary by objective or topic area, sufficient information must be provided to identify the systems and responsible party of each.

In 2008-2009, shortly after the appointment of Dean Fried, the Mailman School conducted a school-wide strategic planning process that resulted in a ten-year strategic plan. The strategic plan created the roadmap for the School by defining a strategic vision to build on its strengths and position itself to lead on the public health challenges of the 21st century. The strategic plan, and monitoring of progress, are linked to the core enterprises of the School (education, research, and service) and to the CEPH accreditation criteria.

Strategic planning and the process to monitor progress towards achievement of objectives is overseen by the Dean and the Dean's Leadership Team (formed by the Dean, Vice Deans, Chief of Staff, Chief Communications Officer, Executive Director of the Columbia Population Health Partnership, and Associate Dean for Institutional Advancement). The Dean's Leadership Team meets weekly for ongoing planning and decision making in guiding the School in achieving its mission, discussing changes in the environments (internal and external), reviewing progress towards achievement of objectives, and identifying challenges that need correction or attention. Further monitoring and review of progress is an agenda item of the semiannual retreat for leadership of the school. The Dean's Leadership Team presents recommendations to the Dean's Advisory Group, which in addition to the leadership team members, includes the six department chairs and the three school-wide center directors (described in Section 1.5.A.). The Dean's Advisory Group is advisory to the Dean and provides feedback regarding revisions to school-wide goals and objectives; the Dean's Leadership Team makes final decisions. Faculty and staff are engaged in deliberations through departmental and center monthly meetings and at the monthly School Assembly for faculty and staff.

The Vice Deans are responsible for the specific objectives associated with their respective enterprises - education, research, and service (refer to Table 1.2.A.1. for description). With the support of appropriate University systems, the Vice Deans ensure that data are collected, analyzed, and distributed according to specific timelines; they implement standards and supportive systems; track progress; take corrective action as required; and modify the data indicators and collection methods to meet new needs and programs. For objectives related to diversity, these are monitored by the Director of the Office of Diversity and Culture who reports jointly to the Dean and the Vice Dean for Education. Objectives and data related to objectives are distributed to department chairs and school-wide center directors for discussion at Dean's Advisory Group meetings.

Data systems used for decision making include Columbia University Medical Center (CUMC) and Mailman School data systems and Columbia University Office of Information Technology. The CUMC Information Technology Office is responsible for CUMC data, Mailman School data systems are

managed by Mailman School's Office of Information Technology (overseen by the Associate Dean for Information Technology who reports to the Vice Dean for Finance and Administration), and Columbia University Office of Information Technology manages University Data System. Critical systems that collect data relevant for evaluation are described in Table 1.2.A.1., while the description of each system can be found in Electronic Resource File 1.2.A.

Table 1.2.A.1. Data Systems and Responsible Parties

Objectives	Data Systems	Responsible Parties
Education		
Recruit and retain outstanding and committed graduate students with strong academic credentials from a range of cultures and backgrounds	SOPHAS Application System, SLATE	Vice Dean for Education, Director of Admissions and Financial Aid
	Columbia Student Information Systems (SIS)	Associate Dean of Education and Student Affairs
Recruit and retain outstanding, diverse faculty in the range of disciplines and specialties consistent with the School's educational mission, and with a commitment to interdisciplinary knowledge creation and education	People@Columbia (P@C)	Dean Mailman School, Department Chairs, Vice Dean for Faculty Affairs and Research
	Courseworks	Vice Dean for Education
	Office of Educational Programs Data	Vice Dean for Education
	Courseworks	Vice Dean for Education
	Office of Educational Programs Data	Vice Dean for Education
Engage in ongoing educational innovation and development of effective curricula that support interdisciplinary collaboration and leadership	Office of Educational Programs Data	Vice Dean for Education
Support educator development, encourage pedagogical innovation, and require and recognize outstanding teaching	Office of Educational Programs Data	Vice Dean for Education
	Faculty awards database	Vice Dean for Education
Enrich students' educational experiences by maximizing opportunities for them to participate in research, service, and practice, both locally and globally	InfoEd	Vice Dean for Education
	Faculty service database	Vice Dean for Education
	Mailman Practicum Tracker	Vice Dean for Education
Ensure that our graduates are prepared to contribute their skills to the public health/healthcare workforce, to collaborate with all sectors of society, and to become part of a thriving alumni community after graduation.	Office of Educational Programs Data	Vice Dean for Education
	Advance/Athena Donor Database	Associate Dean for Development and Alumni Relations
Research		
Increase school-wide interdisciplinary and intersectional research	InfoEd, Sponsored Projects Administration	Dean Mailman School, Department Chairs, Vice Dean for Faculty Affairs and Research
Ensure development of infrastructure that supports innovation and collaboration, and fosters the capacity to conduct interdisciplinary science	InfoEd, Sponsored Projects Administration	Dean Mailman School, Vice Dean for Faculty Affairs and Research
	Research resource (R^2) training activities tracking	Associate Dean for Faculty Affairs and Research

Objectives	Data Systems	Responsible Parties
Ensure research translation and dissemination to advance science and inform policy and practice.	InfoEd, Communications Office	Dean Mailman School, Vice Dean for Faculty Affairs and Research, Chief Communications Officer
	Faculty media appearance records	Chief Communications Officer
Service		
Collaborate with local community organizations, leaders, and public health/health care and service providers in New York City, with a concentration in the Washington Heights/Inwood and Harlem areas of Northern Manhattan	Faculty service database	Dean Mailman School, Department Chairs
	Mailman Practicum Tracker, OrgSync	Vice Dean for Education, Associate Dean for Field Practice
Broaden service-based learning activities available to students school-wide	Faculty service database	Vice Dean for Education
	Courseworks	Vice Dean for Education
Ensure linkages between service programs and the research and educational activities of the Mailman School and University	Faculty service database, OrgSync	Vice Dean for Education, Associate Dean for Field Practice
	InfoEd	Vice Dean for Faculty Affairs and Research
Maintain external funding for service activities	Faculty service database	Dean Mailman School, Department Chairs
	InfoEd, Sponsored Projects Administration	Vice Dean for Faculty Affairs and Research
Diversity and Inclusion		
Train all faculty, students, and staff through co-curricular and tailored activities to create an inclusive environment	Office of Diversity records	Vice Dean for Education, Director of Office of Diversity, Culture and Inclusion
	Office of Educational Programs Data	Vice Dean for Education
Develop and strengthen existing curricula for faculty and students to cultivate and enhance their understanding of the impact of inequality on health	Courseworks	Vice Dean for Education, Director of Office of Diversity, Culture and Inclusion
Recognize outstanding teaching and mentoring that reflects the School's commitment to diversity, equity, and inclusion	Office of Educational Programs Data	Dean Mailman School, Vice Dean for Education, Department Chairs
Expand funding and support for research and service that focuses explicitly on the relation between structural inequality and health inequity and the resolution of health disparities	InfoEd	Dean Mailman School, Vice Dean for Faculty Affairs and Research, Director of Office of Diversity, Culture and Inclusion

1.2.B. Description of how the results of the evaluation process described in Criterion 1.2.A. are monitored, analyzed, communicated and regularly used by managers responsible for enhancing the quality of programs and activities.

Progress towards achievement of strategic goals and objectives is reviewed, analyzed, and communicated to diverse stakeholders at a frequency determined by the school's calendar, the strategic plan, and as needed. The Dean's Leadership Team meets weekly and the Dean's Advisory Group meets bi-weekly and

hold semiannual leadership retreats to review progress and discuss new challenges and opportunities. Discussions of strategic goals and objectives, new initiatives, and changes in the environments are discussed at the Dean's monthly meetings with Vice Deans and department chairs, monthly School Assembly, department faculty meetings, standing meetings between Vice Dean and their respective teams and direct reports, school-wide committee meetings, and annual reviews of the Dean's Advisory Group members by the Dean. Other venues for discussion, analyses, and dissemination include the Faculty Senate meeting, triannual Board of Observers meeting, the annual State of the School address, the Office of Diversity and Culture Task Force meetings, and regular Alumni Board meetings. Recommendations from the stakeholder groups are reviewed by the Dean's Leadership Team and the Dean. If approved, the department, academic unit, or responsible committee incorporate the changes according to the recommendations and monitor implementation and progress by tracking data through the Mailman School, CUMC, and University systems summarized in Table 1.2.A.1. and in Electronic Resource File 1.2.A. The following examples illustrate the processes for enhancing the quality of programs and activities.

Example 1—Education. The Mailman School's MPH Curriculum Renewal to re-design the MPH Core Curriculum (MPH Core) was launched in 2010. After two years of planning involving the entire faculty, implementation began in 2012. In the first year of implementation, extensive student input was used to guide implementation and improvement. During the first semester, randomly selected students were sampled every two weeks about experiences in MPH Core classes, level of intellectual challenge, adequacy of academic support, and ability to keep up with demands of the new curriculum ("Begg et al 2015", Electronic Resource File 1.2.B.). One month after the completion of the MPH Core, students were asked to evaluate all 18 modules in terms of content, experience, and ability to integrate the core areas of public health content. In addition, students completed the course evaluations at the end of each course. Finally, at the time of graduation, graduates from the first class of the MPH Core were asked to take an exit survey. Throughout the first two years of implementation, data were analyzed and shared in regular meetings with MPH Core leadership, at the full School Assembly, and at the annual retreat (January 2013) with all MPH Core faculty. Working groups of faculty and staff identified opportunities for improvements (for example, modifying the structure of the Integration and Science Practice course). These were coupled with long-term adjustments, such as reorganization of some of the MPH Core studios (thematic course groupings). The School continually works to assess this interdisciplinary model to improve the MPH Core's quality and student experience, and to ensure that ongoing evaluations of our own education are shared through the peer reviewed literature. Peer-reviewed articles regarding curricular innovation, including the MPH Core curriculum and related co-curricular activities, are available in Electronic Resource File 1.2.B. ("Begg et al 2015", "Cushman et al 2015", "Fried et al 2015", "Galea et al 2015"). As the MPH Core has matured, efforts to enhance quality have been institutionalized and several of the evaluation processes have become standard practice. Students still evaluate each of the MPH Core modules at the completion of the MPH Core each year, and this January survey has become standard (End of MPH Core Survey). The MPH Core Faculty Retreat is an annual event that happens in early spring to analyze and discuss data and to discuss recommendations to continuously improve the content, instruction, and overall experience of the MPH Core (refer to Electronic Resource File 1.2.B. for an example of MPH Core Retreat Agenda and Minutes). In 2017, the working groups established in the early years were replaced with two standing committees: the MPH Core Curriculum Committee and the MPH Core Evaluation Advisory Committee (refer to Electronic Resource File 1.5.A. for list of current committee members). These two committees were established at the recommendation of MPH Core faculty after the 2016 annual retreat and are tasked with implementing and monitoring recommendations.

Example 2—Diversity. In support of the Mailman School's goal to create a diverse and inclusive community, there has been a dedicated multi-year effort to build an environment and infrastructure that support diversity recruitment, mentoring, and culture change to foster inclusiveness, accountability, and opportunity at all levels of the organization.

Beginning in 2012, the Dean launched an ongoing series of Diversity Retreats with the school's senior leadership. The retreats, led by the Dean, included department chairs, center directors, and vice deans to ensure that the leadership had central responsibility for setting and accomplishing goals, and to ensure that the issue remained relevant. Other activities to foster diversity and inclusion included the Dean's appointment of former Vice Dean Roger Vaughan and Associate Dean for Community and Minority Affairs Robert Fullilove to launch the school-wide Diversity Committee, develop short and long-term goals, and draft the School's Roadmap for Diversity. Diversity Reports are provided to the Provost's office (Electronic Resource File 1.8.A.). The Diversity Committee, which includes representation from faculty, staff, and students, developed specific recommendations by soliciting input from key constituents through town hall and department meetings, and analyzing data from the Office of Student Affairs and Office of Faculty Affairs and Human Resources. The recommendations were disseminated through different venues, including School Assembly.

The recommendations, data analysis, and changes in the local and national environments led the Dean to create the Office of Diversity, Culture, and Inclusion (ODCI), in 2016, and conduct a national search for a Director. The diversity goals and measurable objectives included in Criterion 1.2.C. reflect the discussion and input from the faculty, staff, and students that created the ODCI and that have been incorporated into ODCI's mission and vision statement and strategic planning process. Vision, goals, programs, and continuous monitoring for quality improvement is the responsibility of the newly hired Director of ODCI. In 2016, the director of ODCI launched the Diversity, Culture, and Inclusion Taskforce. Members of the task force include students, faculty, and staff who are tasked with providing recommendations to inform policy and program initiatives. As new recommendations and initiatives emerge they will be reviewed, and approved if pertinent, by the Dean's Leadership Team.

1.2.C. Data regarding the school's performance on each measurable objective described in Criterion 1.1.D. must be provided for each of the last three years. To the extent that these data duplicate those required under other criteria (e.g., 1.6, 1.7, 1.8, 2.7, 3.1, 3.2, 3.3, 4.1, and 4.3), the school should parenthetically identify the criteria where the data also appear. See CEPH Outcomes Measures Template.

Table 1.2.C.1. Objectives and Measures Related to Education Goal

Outcome Measure	Target	2014-15	2015-16	2016-17	See Also
Objective: Recruit and retain outstanding and committed graduate students with strong academic credentials from a range of cultures and backgrounds					
Percent of applicants accepted	50.0%	60.0%	58.0%	54.0%	Table 4.3.D.1
Percent of accepted students matriculated	50.0%	40.0%	38.0%	41.0%	Table 4.3.D.1
Average GRE percentile among matriculating students – Verbal Reasoning	80th	73rd	74th	75th	Table 4.3.F.1
Average GRE percentile among matriculating students – Quantitative Reasoning	80th	70th	67th	73rd	Table 4.3.F.1
Average GRE percentile among matriculating students – Analytical Writing	80th	61st	65th	69th	Table 4.3.F.1
Average undergraduate GPA among matriculating students	3.5	3.4	3.5	3.5	Table 4.3.F.1
Average GPA of enrolled Mailman School students	3.8	3.7	3.7	3.8	Table 2.7.B.1 Table 4.3.F.1
Percent of matriculating students who are first generation college students	20.0%	12.8%	13.2%	12.9%	Table 1.8.E.1
Percent of matriculating students who are veterans	2.0%	0.6%	0.7%	0.8%	Table 1.8.E.1
Percent of enrolled students who are Hispanic	10.0%	9.4%	8.6%	6.9%	Table 1.8.E.1
Percent of enrolled students who are Black	10.0%	6.3%	6.8%	7.3%	Table 1.8.E.1
Percent of enrolled students who are male	30.0%	24.2%	24.1%	24.2%	Table 1.8.E.1
Percent of students who are not U.S. citizens	20.0%	18.0%	20.0%	18.0%	NA
Overall graduation rate	100%	90.2%	94.0%	94.9%	Table 2.7.B.1 Table 4.3.F.1
Objective: Recruit and retain outstanding, diverse faculty in the range of disciplines and specialties consistent with the School's educational mission, and with a commitment to interdisciplinary knowledge creation and education					
Percent of primary faculty who are Hispanic	9.0%	7.2%	6.6%	4.6%	Table 1.8.E.1
Percent of primary faculty who are Black	9.0%	7.2%	6.6%	6.6%	Table 1.8.E.1
Percent of primary faculty who are female	55.0%	53.6%	56.3%	56.5%	Table 1.8.E.1
Percent of primary faculty participating in mentoring program (as mentors or mentees)[a]	70.0%	65.0%	63.0%	Pending	NA
Percent of primary faculty with doctoral degree or other terminal degree	99.0%	99.4%	99.4%	99.4%	Table 4.1.D.1
Percent of primary faculty with joint appointments	25.0%	20.9%	25.8%	26.3%	Table 4.1.D.1
Average course evaluation score – overall course rating (5-pt scale)[a]	4.5	4.0	4.0	Pending	Table 4.1.D.1
Average course evaluation score – instructor effectiveness (5-pt scale)[a]	4.5	4.2	4.2	Pending	Table 4.1.D.1
Average graduate satisfaction survey score – quality of teaching (4-pt scale)[a]	3.8	3.3	3.4	Pending	Table 4.1.D.1

Outcome Measure	Target	2014-15	2015-16	2016-17	See Also
Objective: Engage in ongoing educational innovation and development of effective curricula that support interdisciplinary collaboration and leadership					
Number of Mailman faculty receiving the Provost's Award for Hybrid Course Redesign & Online Learning or Massive Online Open Course	2	3	2	1	NA
Number of articles published on education and pedagogy[a]	2	5	2	Pending	NA
Number of new courses launched	25	30	15	29	NA
Percentage of primary faculty collaborating with Mailman Office of Teaching & Learning for curriculum development	30.0%	20.0%	20.0%	22.0%	NA
Average MPH core curriculum evaluation score – overall satisfaction (4-pt scale)	3.5	3.2	3.2	3.1/4	NA
Average course evaluation score – instructor effectiveness (5-pt scale)[a]	4.5	4.2	4.2	Pending	Table 4.1.D.1
Average graduate satisfaction survey score – quality of courses (4-pt scale)[a]	3.5	3.1	3.2	Pending	NA
Average graduate satisfaction survey score – integration of course content across disciplines (4-pt scale)[a]	3.0	2.8	2.8	Pending	NA
Objective: Support educator development, encourage pedagogical innovation, and require and recognize outstanding teaching					
Percent of teaching faculty participating in educator development workshops and consultations[b]	90.0%	NA	NA	NA	NA
Number of faculty awards offered by the school for excellence in teaching and innovation	4	2	2	4	NA
Number of faculty awarded the university Presidential Teaching Award	1	1	1	1	NA
Objective: Enrich students' educational experiences by maximizing opportunities for them to participate in research, service, and practice, both locally and globally					
Percent of research projects with student involvement[c]	75.0%	64.3%	62.4%	63.5%	NA
Percent of service projects with student involvement[d]	60.0%	54.5%	58.4%	55.7%	NA
Number of school-sponsored practicum sites	25	14	17	20	NA
Percent of practicum experiences completed in New York City[a]	60.0%	63.0%	60.0%	Pending	Table 3.2.D.1
Percent of practicum experiences completed internationally[a]	25.0%	24.0%	26.0%	Pending	NA
Number of service activities conducted by student organizations in NYC[a]	45	NA	40	Pending	Table 3.2.D.1
Objective: Ensure that our graduates are prepared to contribute their skills to the public health/healthcare workforce and to become part of a thriving alumni community after graduation.					
Graduate employment rate[e]	100%	96.0%	97.0%	Pending	Table 2.7.B.1 Table 4.3.F.1
Percent of Mailman School alumni who report being prepared for their current position[f]	100%	NA	NA	92.4%	NA
Student satisfaction with career counseling and job search assistance (4-pt scale)[g]	3.5	2.9	3.1	Pending	NA
Alumni donor participation rate[h]	15.0%	7.4%	7.1%	Pending	NA
Number of alumni that attend the annual Alumni Summit	200	228	319	185	NA

[a] Data pending completion of 2016-2017 academic year; will be available for the final self-study, fall 2017.
[b] Data will be collected collaboratively with Center for Teaching and Learning and tracked moving forward
[c] Data obtained via principle investigator self-report, 337 research projects surveyed
[d] Data obtained via principle investigator self-report, 105 service projects surveyed
[e] Graduate employment rate defined as within six months after graduation; data available for 2016-17 graduating class will be available December 2017
[f] New survey conducted by Office of Career Service in 2016-17; data not available for previous years
[g] Data gathered from the Graduate Satisfaction Survey; 2016-2017 data will be available fall 2017
[h] Data collected per fiscal year; years represented include FY2015, 2016, and 2017; data for FY2017 will be updated in final self-study submitted in fall 2017

Table 1.2.C.2. Objectives and Measures Related to Research Goal

Outcome Measure	Target	2014-15	2015-16	2016-17	See Also
Objective: Increase school-wide interdisciplinary and intersectional research					
Number of grant proposals submitted annually by primary faculty[a]	200	258	218	203	Table 1.6.D.1 Table 3.1.D.1
Proposal success rate for all sponsored projects[a]	35.0%	34.0%	37.0%	37.0%	Table 1.6.D.1 Table 3.1.D.1
Objective: Ensure development of infrastructure that supports innovation and collaboration and fosters the capacity to conduct interdisciplinary science					
Number of training workshops on writing grant proposals offered	12	9	11	10	NA
Number of faculty attending training workshops on writing grant proposals	150	107	135	86	NA
Annual support for Dean's Pilot Awards to increase likelihood of successful NIH funding[b]	$100,000	NA	$125,000	$275,000	Table 3.1.D.1
Objective: Ensure research translation and dissemination to advance science and inform policy and practice					
Number of articles published by primary faculty in peer reviewed journals annually[c]	750	721	726	Pending	Table 3.1.D.1 Table 4.1.D.1
Number of faculty and student research-related appearances on television, in newspapers, and other media[d]	375	433	358	394	Table 3.1.D.1

[a] Data as of FY2017 Q3; data for full fiscal year will be provided in fall 2017
[b] Dean's Pilot Awards began in 2015-16
[c] Data collected via SCOPUS by calendar year and reflects 2015, 2016, and is pending for 2017
[d] Number of appearances from 2014-15 includes 86 Ebola-related media appearances

Table 1.2.C.3. Objectives and Measures Related to Service Goal

Outcome Measure	Target	2014-15	2015-16	2016-17	See Also
Objective: Collaborate with local community organizations, leaders, and public health/health care and service providers in New York City, with a concentration in the Washington Heights/Inwood and Harlem areas of Northern Manhattan					
Number of service activities conducted by student organizations in NYC [a]	45	NA	40	Pending	Table 3.2.D.1

Outcome Measure	Target	2014-15	2015-16	2016-17	See Also
Percent of practicum experiences completed in New York City[b]	60%	63%	60%	Pending	Table 3.2.D.1
Objective: Broaden service-based learning activities available to students school-wide					
Number of service-based learning courses	6	3	3	3	Table 3.2.D.1
Objective: Ensure linkages between service programs and the research and educational activities of the Mailman School and University					
Percent of primary faculty engaged in service based activities/projects[c]	65%	44%	53%	55%	Table 3.2.D.1
Objective: Maintain external funding for service activities					
Total funding for grant-funded service projects[d]	$150,000,000	$146,075,078	$208,197,893	Pending	Table 3.2.D.1

[a] Data collected via Orgsync by the Office of Student Affairs starting in 2015-16; data currently being collected and will be available for the final self-study in fall 2017
[b] Data pending completion of 2016-2017 academic calendar year; will be available in fall 2017
[c] Data is based on responses from 96 primary faculty to a fall 2016 survey and is likely an undercount
[d] Data collected per fiscal year; years represented include FY2015, 2016, and 2017; data for FY2017 was collected fall 2016 and will be updated to include entire FY2017 in final self-study submitted in fall 2017

Table 1.2.C.4. Objectives and Measures Related to Diversity and Inclusion Goal

Outcome Measure	Target	2014-15	2015-16	2016-17	See Also
Objective: Train all faculty, students, and staff through co-curricular and tailored activities to create an inclusive environment					
Number of co-curricular activities focusing on inclusivity	12	3	3	9	NA
Percent of incoming students completing Self, Social and Global Awareness (SSGA)	100%	83.0%	82.7%	85.0%	NA
Number of faculty and staff completing SSGA facilitator training	35	20	17	33	NA
Percent of core curriculum faculty completing Inclusive Teaching Institute[a]	100%	NA	NA	100%	NA
Objective: Develop and strengthen existing curricula for faculty and students to cultivate and enhance their understanding of the impact of inequality on health					
Number of courses primarily addressing the impacts of inequality on health	25	17	19	20	NA
Objective: Recognize outstanding teaching and mentoring that reflects the School's commitment to diversity, equity, and inclusion					
Offer an award in recognition of outstanding teaching and mentoring that reflects the School's commitment to diversity, equity, and inclusion	Launch annual award in 2017-18	NA	NA	NA	NA
Objective: Expand funding and support for research and service that focuses explicitly on the relation between structural inequality and health inequity and the resolution of health disparities					
Number of funded centers with a health disparities research focus	5	3	3	3	NA

[a] New programming as of 2016-17

1.2.D. Description of the manner in which the self-study document was developed, including effective opportunities for input from important school constituents, including institutional officers, administrative staff, faculty, students, alumni, and representatives of the public health community.

The self-study process began in February 2016 with the arrival of a new Vice Dean for Education. The Dean's Leadership Team assigned the planning and development of the self-study report to two groups (refer to Electronic Resource File Table 1.1.E. for membership lists):

- CEPH Working Group formed by faculty, staff, and a student, and chaired by the Vice Dean for Education Julie Kornfeld and Dana March, Assistant Professor of Epidemiology at CUMC and alumna.
- CEPH Steering Committee comprising key school stakeholders (e.g., institutional officers, administrative staff, and faculty, students, school alumni, and members of the Board of Overseers). The CEPH Steering Committee was chaired by the Vice Dean for Education.

The CEPH Working Group began weekly meetings in March 2016 and took the lead in preparing self-study drafts with input and data from school offices, centers, and departments. The CEPH Working Group convened quarterly meetings with the CEPH Reaccreditation Steering Committee to review drafts, address questions, and provide clarifications. In spring 2017, the CEPH Reaccreditation Steering Committee was divided into working groups charged with specific sections for review and feedback. The Dean also reviewed each section of the self-study report. Substantial feedback from the CEPH Reaccreditation Steering Committee and the Dean was received and reviewed by the CEPH Working Group and was used to produce the version of the self-study that was sent to CEPH for preliminary review in July 2017. After submission to CEPH, a complete draft of the self-study will be posted on the Mailman School Reaccreditation website. Email notifications will be sent to relevant school constituencies including faculty, students, staff, alumni, and board members with a link to the Reaccreditation website and forms to capture any additional feedback.

The key dates of the development of the self-study and the involvement of key stakeholders are outlined in Table 1.2.D.1. below.

Table 1.2.D.1. Self-Study Timeline

Date	Action
February 2016	Established CEPH Working Group and CEPH Reaccreditation Steering Committee
March-June 2016	Stakeholder sessions throughout school
August 2016	Dean's Advisory Group (DAG) Retreat
September 2016	Stakeholder sessions
September 13, 2016	CEPH Accreditation Steering Committee Meeting
November 16, 2016	CEPH Accreditation Steering Committee Meeting
January-March 2017	Presentation of revised mission, values, goals and objectives at School Department Meetings; CEPH progress update
March 2017	Presentation of revised mission, values, goals and objectives at School Assembly; CEPH progress update
April 2017	Posted mission, values, goals and objectives on Mailman website for public comment
March-May 2017	CEPH Reaccreditation Steering Committee review of self-study report; Dean review
May-June 2017	CEPH Working Group incorporates feedback and produces final self-study draft
July 2017	Submission of self-study materials to CEPH
July 2017	Self-study draft posted online for public review and comment

1.2.E. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- Evaluation is conducted at the school, department, center, and unit levels and policies and procedures are in place to assure consistent review and dissemination of results.
- The Mailman School has multiple sources of quantitative and qualitative data as well as school and university based data systems to measure progress towards strategic goals and objectives. Data systems are managed by professional IT staff and provide high quality data that are used for assessment and evaluation.

Challenges

- It is critical to ensure that staff is cross-trained across systems so that the ability to manage and retrieve data is maintained despite staffing changes.
- As data systems become more complex, it is important to ensure that policies and procedures are in place for quality control and that they are reviewed and updated regularly.

Plans

- The Mailman School will continue to focus on dissemination of information on progress towards strategic goals and objectives utilizing both in person opportunities (School Assembly) and digital communications (e.g., the School website) to provide regular updates and assure transparency.

Criterion 1.0 - The School of Public Health

1.3. INSTITUTIONAL ENVIRONMENT

The school shall be an integral part of an accredited institution of higher education and shall have the same level of independence and status according to professional schools in that institution.

1.3.A. A brief description of the institution in which the school is located, and the names of accrediting bodies (other than CEPH) to which the institution responds.

Columbia University, the oldest institution of higher learning in the state of New York and the fifth oldest in the United States, was founded in 1754 by royal charter of King George II of England as King's College. An independent, privately supported, non-sectarian institution of higher education based in New York City, it is one of the world's leading research universities. The University includes three undergraduate schools, thirteen graduate and professional schools, and a school of continuing education. With an enrollment of more than 30,000 students, the University has two principal campuses: the historic, neoclassical campus in the Morningside Heights neighborhood of Manhattan and the modern medical center further uptown, in Washington Heights. The Columbia University Medical Center (CUMC) campus is home to the Mailman School of Public Health, as well as the College of Physicians and Surgeons, the College of Dental Medicine, and the School of Nursing. The CUMC campus is home to New York-Presbyterian Hospital and the New York State Psychiatric Institute.

The University is accredited by the Middle States Association of Colleges and Schools Commission on Higher Education. The University was reaccredited in spring 2016. The specialized accrediting bodies for the other schools of the University are found in Table 1.3.A.1. It is important to note that some schools do not have a specialized accreditation and therefore are not included in Table 1.3.A.1.

In addition to the Mailman School's CEPH accreditation, the Executive MPH degree, the Executive MHA degree, and the MHA degree in the Department of Health Policy and Management are accredited by the Commission on Accreditation of Healthcare Management Education (CAHME). These degree programs were accredited by CAHME in fall 2014 and the next re-accreditation will take place in fall 2021.

Table 1.3.A.1. Columbia University Institutional and Specialized Accreditations

School	Accreditation
Institutional Accreditation	
Columbia University	Middle States Commission on Higher Education (MSCHE)
Specialized Accreditation	
Graduate School of Architecture, Planning and Preservation	National Architecture Accrediting Board (NAAB)
Graduate School of Business	The Association to Advance Collegiate Schools of Business/ International Association for Management Education (AACSB)
College of Dental Medicine	American Dental Association (ADA), Commission on Dental Accreditation (CODA)
Fu Foundation School of Engineering and Applied Science	The Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET)
School of International and Public Affairs	National Association of Schools of Public Affairs (NASPAA)
Graduate School of Journalism	Accrediting Council on Education in Journalism and Mass Communications (ACEJMC)

School	Accreditation
School of Law	American Bar Association (ABA), Council of the Section of Legal Education and Admissions to the Bar
School of Nursing	Collegiate Commission of Nursing Education (CCNE) and the New York State Education Department (all programs); American College of Nurse Midwives (ACNM) (Midwifery); Council on Accreditation of Nurse Anesthesia Educational Programs (AANA) (Anesthesia)
College of Physicians and Surgeons	Liaison Committee on Medical Education (LCME); Accreditation Council for Graduate Medical Education (ACGME); Council for Continuing Medical Education (AACME); American Occupational Therapy Association (AOTA), Accreditation Council for Occupational Therapy Education (ACOTE); American Physical Therapy Association (APTA), Commission on Accreditation in Physical Therapy Education (CAPTE)
School of Social Work	Council on Social Work Education (CSWE)

1.3.B. One or more organizational charts of the university indicating the school's relationship to the other components of the institution, including reporting lines.

Organizational charts depicting the relationship of the Mailman School to other components of Columbia University and Columbia University Medical Center (CUMC) are provided in the Electronic Resource File 1.3.B. As can be seen in the organizational chart for the Office of the President of Columbia University, the Chief Executive of CUMC reports directly to the President of the University. While the reporting lines for CUMC do not go through the Provost's Office, the four Deans of CUMC Schools participate in the Provost's Council of Deans. The Dean of the Mailman School meets on a regular basis with both the Provost and the Chief Executive of CUMC.

The organizational chart for CUMC shows that the Chief Executive of CUMC is also the Executive Vice President and Dean of the Faculties of Health Sciences and Medicine. The Dean of the Mailman School of Public Health, also Senior Vice President of CUMC, reports directly to the Executive Vice President of CUMC as do the Deans of the College of Dental Medicine and the School of Nursing. The Chief Executive of CUMC is also the Dean of the College of Physicians and Surgeons. The Executive Vice President of CUMC has an MD and an MPH degree and holds a secondary faculty appointment in the Department of Epidemiology.

1.3.C. Description of the school's level of autonomy and authority regarding the following:
- budgetary authority and decisions relating to resource allocation
- lines of accountability, including access to higher-level university officials
- personnel recruitment, selection and advancement, including faculty and staff
- academic standards and policies, including establishment and oversight curricula

The Mailman School has the same degree of independence afforded to other professional graduate schools at Columbia University. The School is not part of a School of Medicine. The Dean has independent academic and budgetary authority and responsibility, and reports to the President of the University, the Provost, and the Executive Vice President of CUMC for different aspects of her responsibilities.

Budgetary Authority and Resource Allocation. The Mailman School is a financially independent entity. Revenue generated via tuition, research activities, gifts, and endowment is under the School's

jurisdiction. The School shares in the cost of running CUMC and Columbia University through a taxation system referred to as Financial Allocation of Institutional Resources (FAIR) common costs (described in Criterion 1.6.). The Dean of the Mailman School negotiates budget matters with the Executive Vice President of Health and Biomedical Sciences and senior leadership of CUMC.

Lines of Accountability. As discussed in Criterion 1.3.B., the Dean of the Mailman School reports to the Executive Vice President of Health and Biomedical Sciences and the Executive Vice President reports to the President of the University. The Deans of the Mailman School, College of Dental Medicine and School of Nursing also hold the positions of Senior Vice Presidents of Columbia University Medical Center (CUMC). The Deans of the four schools at the Medical Center meet monthly. The Dean of the Mailman School participates in the monthly Council of Deans meetings run by the Provost and that include the Deans of all the schools. The Dean of the Mailman School has ample opportunities to meet one-on-one with the Provost and other senior administrators at the University and, as needed, to meet with the President of the University.

Personnel Recruitment, Selection, and Advancement

Faculty. The Mailman School has the same degree of independence over its appointments and promotions as do all CUMC Schools and all graduate school across the University. The School's Committee on Appointments and Promotions (COAP), which is comprised of tenured full professors and one ex-officio representative of the Dean, reviews faculty appointments and promotions. For tenured faculty, the School follows Columbia University's policies and procedures. As such, appointments with tenure receive two additional reviews, by the Faculty of Health Sciences COAP, and by the standing Tenure Review Advisory Committee at Columbia University. For non-tenured faculty, the School follows CUMC guidelines for promotion and provides the final review on appointments at associate and full professor levels and on all promotions. The additional review of tenured appointments by the Faculty of Health Sciences COAP is common to the four Faculties of the Health Sciences. The Faculty Handbook contains a summary of policies and procedures.

Staff. A central University Office of Human Resources (HR) is responsible for developing policies and procedures for staff. Each school, including the Mailman School, maintains its own HR office charged with managing the process for staff recruitment, selection, and advancement for the school. These decisions are made on a decentralized basis at the School and department level. Recruitment is managed centrally through jobs.columbia.edu, which is coordinated by Columbia University's Office of Human Resources.

Academic Standards and Policies. The Mailman School is responsible for the development and oversight of its academic programs. New and substantially revised programs are further reviewed by the Vice Provost for Academic Programs at Columbia University who reviews programing changes on behalf of the Provost and ensures that appropriate University approvals are secured to comply with guidelines set by Columbia University and the State of New York. The Vice Provost for Academic Programs also requests reviews of new degree and certificate programs by University Deans to ensure collaboration with other academic programs or initiatives and to avoid duplication or significant overlap. The Mailman School works with the Provost's office regarding new programs to seek University Senate approval, evaluating changes that require New York State Department Education approval, and to ensure compliance with regulatory policies and reporting requirements for the Middle States Commission on Higher Education (MSCHE) and the federal government.

1.3.D. Identification of any of the above processes that are different for the school of public health than for other professional schools, with an explanation.

As noted in Criterion 1.3.C., the Mailman School has the same degree of independence as other schools at Columbia University.

1.3.E. If a collaborative school, descriptions of all participating institutions and delineation of their relationships to the school.

Not applicable.

1.3.F. If a collaborative school, a copy of the formal written agreement that establishes the rights and obligations of the participating universities in regard to the school's operations.

Not applicable.

1.3.G. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- The Mailman School is a vital and engaged member of Columbia University, has well-established relationships with the University's governance structure, and abides by the policies and standards of the University.
- The School enjoys the same autonomy as all other professional schools at the University. The dean has regular access and engagement with leadership at CUMC and the University and participates in University activities in the same manner as all other school deans.

Challenges

- None.

Plans

- There are no plans to change the current organizational or reporting structure of the School within CUMC or Columbia University.

Criterion 1.0 - The School of Public Health

1.4. ORGANIZATION AND ADMINISTRATION

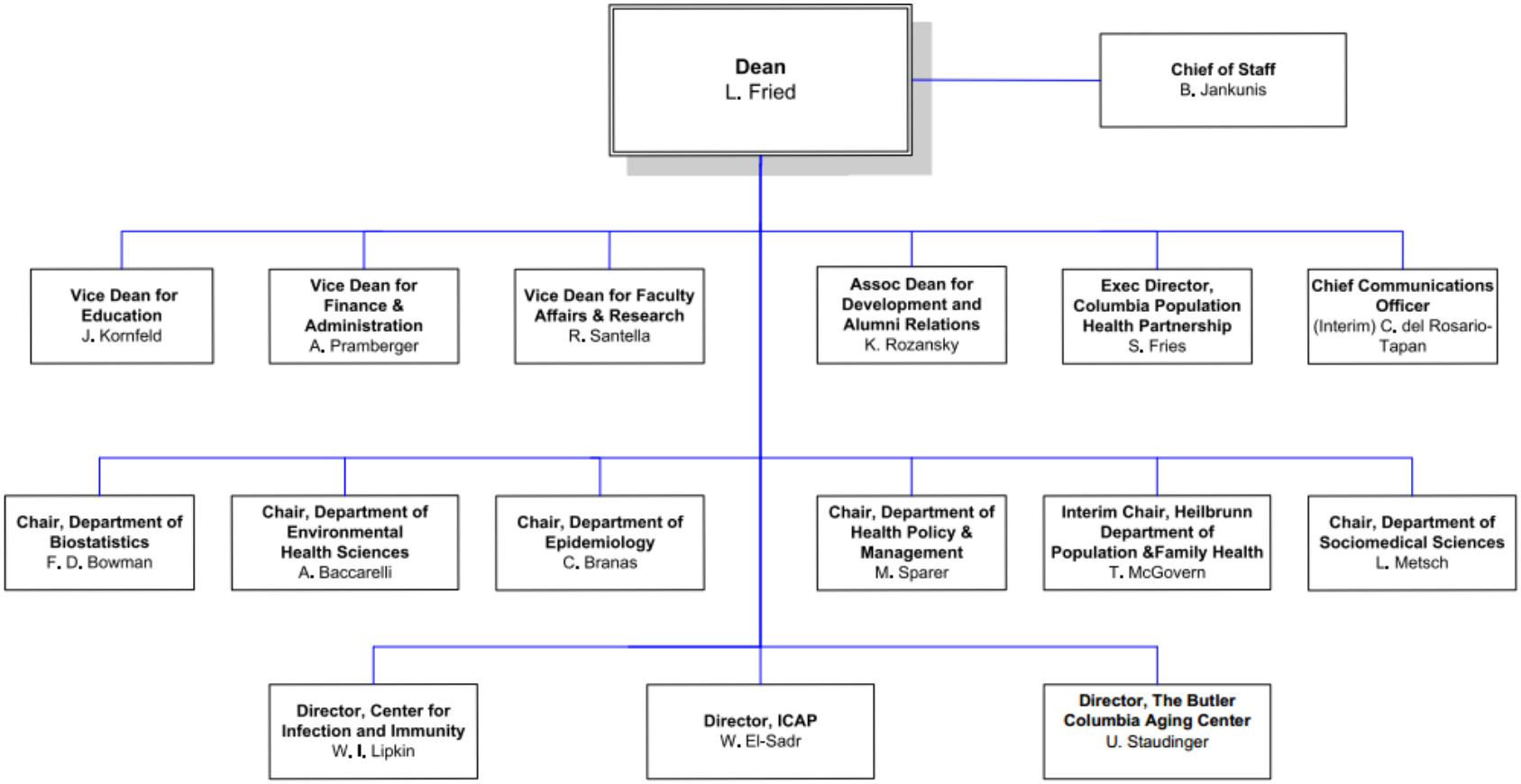
The school shall provide an organizational setting conducive to public health learning, research, and service. The organizational setting shall facilitate interdisciplinary communication, cooperation, and collaboration that contribute to achieving the school's public health mission. The organizational structure shall effectively support the work of the school's constituent

1.4.A. One or more organizational charts showing the administrative organization of the school, indicating relationships among its component offices, departments, divisions, or other administrative units.

The organizational structure of the Mailman School is depicted in Figure 1.4.A.1. As can be seen in the chart, the School's academic units include six departments (Biostatistics, Environmental Health Sciences, Epidemiology, Health Policy and Management, Population and Family Health, and Sociomedical Sciences) and three school-wide centers (Center for Infection and Immunity; ICAP - International Center for AIDS Care and Treatment; and Robert N. Butler Columbia Aging Center). Faculty in the three school-wide centers have appointments in Mailman School departments. Center leaders and department chairs report directly to the Dean of the Mailman School. Also, directly reporting to the Dean are the Chief of Staff; Associate Dean for Development and Alumni Relations; Chief Communications Officer; Vice Deans for Finance and Administration, Education, Faculty Affairs and Research; and the Executive Director of Columbia Population Health Partnerships. The direct reports to the Vice Dean for Finance and Administration and the Vice Dean for Education are shown in Electronic Resource File 1.4.A.

In addition to the three school-wide centers there are 13 department-based centers and 12 department-based programs (Electronic Resource File 1.4.A.). The leadership of department-based centers and programs report to their department chairs.

Figure 1.4.A.1. Mailman School of Public Health, Dean's Office



1.4.B. Description of the roles and responsibilities of major units in the organizational chart.

The Mailman School's leadership comprises faculty and staff. The Dean and the Vice Dean for Education are full time positions while the Vice Dean for Faculty Affairs and Research is a part-time appointment. All have faculty appointments and the Vice Deans devote effort to teaching/advising and research. The Vice Dean for Finance and Administration, Associate Dean for Development and Alumni Relations, Chief of Staff, Chief Communications Officer, and Executive Director for Columbia Population Health Partnership are full-time staff positions.

Dean of the Mailman School is responsible for the academic and financial vision and success of the School, all activities and operations of the school, and is the lead representative of the school in its interactions with other parts of the university and with external constituencies. The Dean is responsible for shaping the vision of the school, leadership, implementation of the School's goals and strategic plan, and budgeting and resource allocation. The Dean leads the School's education, research, service, and diversity missions.

Vice Dean for Education serves as the senior education officer of the Mailman School and advises the Dean on all academic matters including new educational programs and initiatives. The Vice Dean for Education oversees the academic functions of the School, including the Office of Educational Programs, Office of Field Practice, Office of Student Affairs, and Office of Career Services. Working with the School's senior leadership and academic departments, the Vice Dean provides leadership for all aspects of the development, delivery, assessment and strategic growth of the School's educational programs.

Vice Dean for Faculty Affairs and Research is the academic officer of the School with responsibilities for promoting research, managing faculty appointments, promotions, and tenure, and supporting faculty success. The Vice Dean for Faculty Affairs and Research is responsible for identifying, facilitating, and spearheading the development of interdisciplinary research programs at the Mailman School. The Vice Dean works with colleagues in public health and across the medical center to remove barriers and implement new incentives for interdisciplinary collaboration, and foster opportunities for novel partnerships between departments and schools that enhance the School's leadership and accomplishments in health research.

Vice Dean for Finance and Administration is responsible for leading and managing the Mailman School's finance and administration, including facilities planning and management, financial and business planning, budgeting and forecasting, financial management and reporting, financial analysis, financial and administrative information systems, grants and contracts administration, human resources administration, and internal controls and compliance.

Chief of Staff provides strategic advice to the Dean, manages and tracks the implementation of key school-wide projects and initiatives, and helps coordinate the efforts of departments across the School. The Chief of Staff is responsible for the administrative operations of the Office of the Dean and supervising the Office of the Dean's staff.

Associate Dean for Development and Alumni Relations advises the Dean on developing the Mailman School's Board of Overseers and fundraising for the school. The Associate Dean leads the Offices of Development and Alumni Affairs and is responsible for developing and managing a comprehensive fundraising program to engage the support of alumni, foundations, and other potential philanthropic supporters of the school's ongoing operations and major new initiatives. The Associate Dean works with the Dean to secure resources to support the school's vision and strategic plan by identifying and communicating with key donors and external stakeholders, and maintaining relationships.

Executive Director of Columbia Population Health Partnerships (CPHP). To further its impact and better address the complex public health challenges of the 21st century, the Mailman School builds multi-sector partnerships. The Executive Director works closely with the Dean, senior faculty, and administrators and is responsible for the development of corporate and governmental partnerships and execution of strategy, identification of potential partners, cultivation of new relationships, negotiation of contracts, and working with faculty to ensure the timely delivery of results.

Chief Communications Officer coordinates with the Dean and Columbia University Medical Center's Chief Communications Officer and Columbia University's Office of Communications. The School's Chief Communications Officer is responsible for an integrated strategic communications strategy in collaboration with school leadership, creation of a central narrative and strategic communications platforms, and the development and management of multiple communications channels to reach diverse audiences, both external and internal, for communications, branding, and marketing goals. The Chief Communications Officer manages the public positioning of Mailman School expertise to shape public opinion and public policy.

Department Chairs and School-wide Center Directors. The Mailman School is organized in six academic departments and three school-wide centers. Department chairs and center directors report directly to the Dean and lead in developing and implementing strategies for carrying out the research, education, and service missions of their units. They are all highly engaged in faculty recruitment, retention, and mentoring, and responsible for diversity and inclusion in their units and jointly across the School. They are responsible for the allocation of resources, for a balanced budget, and are accountable for all the activities of their units.

1.4.C. Description of the manner in which interdisciplinary coordination, cooperation, and collaboration occur and support public health learning, research, and service.

The Mailman School has a rich history of interdisciplinary work and the strategic plan, goals, and objectives emphasize the centrality of this approach. The School has a robust infrastructure that offers a rich and growing set of resources benefitting interdisciplinary public health learning, research, and service. The School supports and encourages interdisciplinary activities through several mechanisms, including joint faculty appointments, course development, cross-school programming, dual degree programs, and team collaboration and pilot grants for research and service.

Faculty. The School has recruited an interdisciplinary faculty: 26% of the primary faculty have joint appointments. Many of these joint appointments are with clinical departments in the College of Physicians and Surgeons (particularly Psychiatry, Medicine, Neurology, and Pediatrics), but also include a broad range of other schools and departments such as History, Law, Microbiology, Statistics, Urban Planning, International and Public Affairs, and Social Work. In addition, School faculty have appointments in Columbia University institutes and centers.

Departments, centers, and schools at the University often work together in joint recruitment of faculty. In addition, the Mailman School has a total of 261 affiliated faculty members. These affiliated faculties include 86 adjunct professors who bring insights and perspectives from their leadership positions in health departments, health care organizations, governmental and nongovernmental health-related agencies and organizations.

School-wide Centers. At the Mailman School, interdisciplinary school-wide centers are engines for research, education, service, and public health practice. ICAP, the Center for Infection and Immunity, and

the Columbia Aging Center provide robust infrastructures for interdisciplinary coordination, cooperation, and collaboration. ICAP brings together an array of faculty, staff, and students to engage in global activities that span research, education, and service aimed at reducing the burden of HIV, tuberculosis, and other infectious diseases with a focus on the hardest hit and most disadvantaged countries. The Center for Infection and Immunity likewise brings basic science, epidemiology, and biostatistics and bioinformatics to bear on the discovery of novel infections, the prevention and cure of chronic diseases with infectious causes, and approaches to population level disease surveillance and control across the globe. The Columbia Aging Center is a crucible for a wide range of activities related to an aging population domestically and globally, which demands the intellectual and scientific contributions of psychologists, epidemiologists, demographers, economists, political scientists and policy analysts, journalists, and basic scientists among others. The Columbia Aging Center analyzes global and domestic trends in aging, the optimal societal, familial, and individual conditions for aging, educates journalists and others to address aging in the media against an evidence based backdrop, offers courses in dimensions of aging, and engages in service to amplify the positive aspects of aging and redress inequalities associated with aging. In addition, department-based centers at the Mailman School provide a structure for interdisciplinary collaboration and cooperation to support public health learning, research, and service.

Mailman School-wide Initiatives
A number of school-wide initiatives signify interdisciplinary work at the Mailman School and support public health learning, research, and service. Two examples are highlighted below:

A significant initiative of the School that is currently underway is titled, "**Fostering Interdisciplinary Research at the Mailman School of Public Health**", and is co-led by two department chairs, DuBois Bowman (Biostatistics) and Andrea Baccarelli (Environmental Health Sciences). This interdisciplinary initiative is charged with maximizing opportunities for interdisciplinary research, with dedicated institutional support, to deepen the scientific impact of the Mailman School's research programs. This strategic effort to increase interdisciplinary research will build teams to tackle the most challenging public health issues (e.g., obesity, mass incarceration, health inequalities, and gun violence), position the School to compete for large NIH interdisciplinary funding opportunities, and in turn help to enhance the School's impact as a world leader in providing major public health solutions. This effort will engage all disciplines, involve faculty in all departments and centers, and support collaboration with centers and faculty across the University. Within five years, it is planned that this new initiative will lead to a significant increase in new center grants or large program project grants in the School and at least 50% of Mailman faculty will be engaged in interdisciplinary, cross-departmental research.

The **Urban+Health Initiative** leverages the interdisciplinary knowledge and skills of all Mailman School departments and the broader Columbia University community (e.g., School of Engineering and Applied Sciences, School of International and Public Affairs, Graduate School of Architecture, Preservation, and Planning, Columbia Population Research Center, and Columbia Global Centers) to help support health for people living in global cities throughout the world. The Urban+Health Initiative uses a collaborative approach to realize fully its core commitment to protecting the health of vulnerable populations including those at each end of the age spectrum as well as groups that are socially or economically marginalized in global cities. Activities include: summer practicum experiences for MPH students and undergraduates with New York City partners (NYC Department of Design and Construction. NYC Housing Authority) and a New York City-based architecture firm (KPF); urban design challenges to expand the range of options considered in a given context, using the fresh perspectives at the Mailman School, across Columbia University, and at partner organizations in selected global cities; evaluation of return on investment to identify top priorities; summaries of evidence on conditions to maximize benefits of interventions; systematic observations across urban spaces (such as Rio das Pedras, Brazil) at baseline and over time; dynamic urban health maps to inform spatially targeted action; and evaluation, refinement, and adaptation of problem solving to urban settings.

Columbia University Initiatives
As a hub for interdisciplinary collaboration, the University supports diverse initiatives where the Mailman School is a significant contributor. The Data Science Institute and the Columbia Population Research Center are two initiatives that bring Mailman School faculty together with scholars from across Columbia University to address issues requiring interdisciplinary cooperation and collaboration.

The **Data Science Institute**, which is a University-wide translational research center, focuses, for example, on the foundations of data science; cybersecurity; the role of data in the media and society; financial, business, and health analytics; the sensing, collection, and movement of data; and the design and implementation of smart cities. Several Mailman School faculty including Dr. DuBois Bowman, Chair of Biostatistics, have appointments in the Institute and collaborate with faculty from eleven schools to conduct research, train students, and engage with industry to address urgent problems facing society.

The **Columbia Population Research Center (CPRC)** is a multidisciplinary community of scholars unified by a commitment to research that addresses the health and well-being of vulnerable populations in the context of local and global inequalities and that informs policies affecting those populations. CPRC promotes research in four primary areas: children, youth, and families; gender, sexuality, health and HIV; immigration/migration; and urbanism. The Sexual Health Initiative to Foster Transformation (SHIFT), a comprehensive research project to examine sexual health and sexual violence among undergraduates is a groundbreaking university-wide interdisciplinary CPRC study. Co-led by Jenifer Hirsch, a faculty member at the Mailman School, and a faculty member from the Department of Psychiatry, the project gathered an interdisciplinary team from across the campus, with expertise in anthropology, psychiatry, sociology, adolescent medicine, social work, psychology, and biostatistics—and designed three major studies conducted in 2016-2017. This research lays the groundwork for innovative evidence-based strategies to prevent sexual assault and to promote sexual health on university campuses.

Clinical and Translational Science Award (CTSA). Columbia University was one of the first 12 institutions in the country (October 2006) to receive a CTSA. The goal of the CTSA is to establish a national consortium of academic medical centers that will accelerate the pace of research and benefit to the public's health via enhanced opportunities for translational and interdisciplinary research and training, as well as expanded involvement with community partners. Faculty from the Mailman School play a major role in the CTSA: the co-director and co-principal investigator of CTSA is Dr. Melissa Begg (Biostatistics). Our faculty also hold major leadership roles in the Irving Institute for Clinical and Translational Research, which is funded by the CTSA and private philanthropic efforts.

The Columbia Global Centers comprise a network of hubs for interdisciplinary intellectual and scientific education, research, and service in cities across the globe (Beijing, Mumbai, Amman, Nairobi, Istanbul, Paris, Rio de Janeiro, and Santiago). They provide an infrastructure for collaborative and cooperative activities in those cities and countries, thereby facilitating partnerships with governments, educational and research institutions, and non-governmental organizations. Mailman School faculty are engaged in several activities in the global centers focusing on research, education, and service. For example, the Columbia Global Center in Paris housed the activities of the collaborative educational and research partnership between Mailman and France's École des Hautes Études en Santé Publique (EHESP). Additionally, the President's Global Innovation Fund provides support for faculty to develop projects and research collaborations within and across the University's eight Columbia Global Centers. Since its inception in 2013, over 15 Mailman faculty have been funded to collaborate across schools and centers on projects based in the eight global centers.

Columbia World Projects. Launched in April 2017, Columbia World Projects seeks to foster connections between Columbia University, the broader academic community and the world at-large, where laws and policies are made, actions taken, and norms and attitudes shaped. Mailman School faculty including the Dean have participated in the design and theory of Columbia World Projects, which will not only be a collection or portfolio of projects to be managed, but a flourishing center of intellectual life.

Academic Programs and Degrees

The Mailman School emphasizes interdisciplinary approaches in its formal degree offerings, curricula, and individual courses. As described in Criteria 2.13.A. and 2.13.B., our dual degree programs offer a formal programmatic opportunity for students to combine education and credentials across disciplines. The School offers joint MPH degrees with 10 other schools at Columbia University and PhD degrees as part of an MD/PhD program with the Columbia University College of Physicians and Surgeons (refer to Instructional Matrix, Table 2.1.A.1.). In addition, the PhD degree in Sociomedical Sciences is inherently interdisciplinary: it is offered in conjunction with one of five departments (anthropology, history, political science, psychology, or sociology) within Columbia University's Graduate School of Arts and Sciences.

The Mailman School's MPH Core curriculum and the certificate program are a result of the Mailman School's focus on interdisciplinary approaches to public health education. The MPH Core curriculum comprises 18 interlocking courses, known as "modules", that are grouped together in six broad course groupings, known as "studios": Foundations of Public Health, Research Methods and Applications, Determinants of Health, Public Health Interventions, Health Systems, and Global and Developmental Perspectives. Faculty from across the six departments of the School teach in the MPH Core and collaborate to teach the modules and work to continually incorporate their disciplinary perspectives to the course content and assessments. Certificates, required as part of the MPH degree at the Mailman School, offer additional interdisciplinary opportunities for study. For example, students enrolled in an MPH in environmental health sciences may elect a certificate in social determinants of health, which comprises courses in epidemiology and sociomedical sciences. The MPH Course Requirement Database details course requirements for certificates and departments and course descriptions are available online.

Pre-and post-doctoral training programs at the Mailman School reflect an interdisciplinary approach to education. For example, the Psychiatric Epidemiology Training program blends epidemiology, psychiatry, psychology, and sociology in a training program that has been funded continuously since 1972; the Environmental Life Course Epidemiology training program blends environmental health sciences and epidemiology; and the Substance Abuse Epidemiology training program blends psychiatry, epidemiology, and sociomedical sciences. Other interdisciplinary training programs in which Mailman School doctoral students may take part include the Training in Interdisciplinary Research to Prevent Infections program in the School of Nursing, which trains people from a variety of fields to conduct interdisciplinary research with a focus on infection prevention in clinical, institutional, and community settings. In addition, individual courses such as "Building Interdisciplinary Research Models" (P9260), offered jointly by faculty from the Mailman School and the School of Nursing, provide overt interdisciplinary approaches to education.

Finally, Mailman School faculty teach undergraduate-level courses to students at Columbia College, Barnard, and the School of Engineering and Applied Sciences. These courses are approved by the University as liberal arts courses that enable Columbia and Barnard students to understand the role of public health in a successful civil society and current and future public health challenges. The courses include, for example: Introduction to Public Health; Fundamentals of Global Health; the Social History of American Public Health; Your Longer Life: Biology, Person, Society; and Food, Public Health and Public Policy. These courses bring together the humanities, liberal arts, and population health science to educate a global citizenry of undergraduate students at Columbia. As degrees are offered through the respective undergraduate institutions, this program is not part of our school's accreditation or this self-study.

1.4.D. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- The administrative organization of the Mailman School is streamlined and supports the execution of the mission of the School.
- The departments and centers of the School represent a strong mix of discipline-specific science as well as an historical track record of integrative work that supports excellence in discovering and translating core public health science.
- The School is part of a university community that fosters and values interdisciplinary collaboration as part of its mission. A significant number of formal and informal structures exist that facilitate interdisciplinary education, research, and service and the School is deeply involved in these efforts.

Challenges

- As a successful research institution responding to the need for more interdisciplinary research, the School has identified the need to provide administrative coordination and support to facilitate our ability to respond to large interdisciplinary science initiatives.

Plans

- The School is undertaking a large initiative to enhance capacity to conduct large interdisciplinary research initiatives that integrate domains of expertise and translate scientific discoveries into important public health solutions. The focus is to remove obstacles to the creation and sustainability of interdisciplinary teams, make it easier for investigators to pursue resources to support research, and to address the administrative challenges by which academic credit is often awarded largely to individual investigators.
- The School will continue to recognize the importance of interdisciplinary projects and activities and will provide administrative support and coordination to address emerging areas of promise and to capitalize on new opportunities as they arise.

Criterion 1.0 - The School of Public Health

1.5. GOVERNANCE
The school administration and faculty shall have clearly defined rights and responsibilities concerning school governance and academic policies. Students shall, where appropriate, have participatory roles in the conduct of school and program evaluation procedures, policy setting, and decision making.

1.5.A. A list of school standing and important ad hoc committees, with a statement of charge, composition and current membership for each.

All Mailman School standing committees are governed by their respective charges in the School by-laws which have been approved by senior leadership of the school and voted on by the faculty at School Assembly. *Ad hoc* committees may be formed by the Dean, department chairs or faculty as needed. The standing and important *ad hoc* committees of the Mailman School are described below. Refer to Electronic Resource File 1.5.A. for list of current membership of each committee.

Dean's Leadership Team (*ad hoc*) consists of the Dean, Vice Deans, Chief of Staff, Chief Communications Officer, Associate Dean for Development and Alumni Relations, and the Executive Director of Columbia Population Health Partnership (CPHP). The Dean's Leadership Team monitors and evaluates effectiveness in achieving progress towards school goals and objectives; assesses changes and responsiveness to changing environments; provides recommendations to discontinue, adapt, and/or launch new programs and initiatives; and brings strategic plan recommendations to the Dean's Advisory Group. The Dean's Leadership Team makes the final decisions for revisions to the school-wide goals and objectives relating to education, research, service and diversity.

Dean's Advisory Group (*ad hoc*) consists of the Dean, the Dean's Chief of Staff, department chairs, school-wide center directors, School's Vice Deans, Chief Communications Officer, and Executive Director of CPHP. The Dean's Advisory Group is an *ad hoc* committee charged with providing advisory assistance to the Dean on all important decisions affecting the School, including matters regarding strategic and financial direction.

Policy Advisory Committee (standing committee) consists of the Dean, Dean's Chief of Staff, department chairs, school-wide center directors, co-chairs of the Faculty Steering Committee, School's Vice Deans, Chief Communications Officer, Associate Dean for Development and Alumni Relations, Associate Dean for Student Affairs, Associate Dean for Research Resources, Associate Dean for Community and Minority Affairs, Executive Director of CPHP, Director of the Office of Diversity, Culture, and Inclusion, leadership of the Faculty Steering Committee, and one student representative. The Policy Advisory Committee is charged with advising the Dean on matters of policy and regulations that govern the administration of the School and communicates concerns of different constituents. The committee provides a forum for information sharing between departments.

Faculty Steering Committee (standing committee) consists of faculty representatives from each academic department of the Mailman School, two *ex officio* faculty representatives appointed by the Dean's office, and one student member. The Faculty Steering Committee is charged with identifying topics of major importance to the School and fostering faculty discussion and investigation of these issues, and working with School leadership on behalf of faculty.

Admissions Committee (standing committee) consists of faculty and staff representatives from each academic department within the Mailman School, representatives of the Office of Student Affairs, and a student representative for policy discussion but not admissions review. The Admissions Committee is

charged with reviewing and acting on all applications for admissions to the master's level programs of the School and reviewing and developing admissions' policies.

Doctoral Policy and Planning Committee (standing committee) consists of the doctoral program faculty director from each academic department that has a doctoral program, two *ex officio* members (the Dean or a member of the administration appointed by the Dean and the director of financial aid and admissions), a PhD degree candidate, and a DrPH candidate. The Committee is charged with setting policies that affect all school-wide aspects of doctoral student education. Additionally, the committee is charged with overseeing the admissions process and approving admission decisions for applicants to the School's DrPH programs. For the PhD program, the admissions process is oversee by the Graduate School of Arts and Sciences.

Curriculum Committee (standing committee) consists of staff representatives from the Office of Education and the Office of Student Affairs, faculty representatives from all academic departments, and one student representative. The Committee is charged with ensuring and maintaining the quality, coherence, and effectiveness of the Mailman School's public health curriculum, including dual master's degree programs and public health components of the PhD programs.

Core Curriculum Committee (standing committee) consists of faculty members with a MPH Core representative to serve as a liaison between the Core Curriculum Committee and the school-wide Curriculum Committee. The Committee is charged, in tandem with the school-wide Curriculum Committee, with providing MPH Core-specific review of courses and course groupings to ensure the development, implementation, and ongoing review of the Mailman School's curricula.

Core Evaluation and Advisory Committee (standing committee) consists of five MPH Core studio leads, MPH Core Director, and members of the Office of Education. The Committee is charged with ensuring ongoing evaluation of the MPH Core educational program. Formed in spring 2017, the committee is charged with implementing an evaluation plan to establish metrics tracking progress and identifying areas for program improvement and innovation.

Committee on Appointments and Promotions (standing committee) consists of seven senior faculty members from all departments with a representative balance of tenured and non-tenured faculty and one *ex officio* member representing the Dean. The Committee is charged with voting on all appointments and promotions above the level of assistant professor.

Academic Standards Committee (standing committee) consists of the Director of Student Affairs, Director of Educational programs, two to three faculty members, one student, and the Associate Dean for Student Affairs (*ex officio)*. The Committee is charged with establishing the standards of acceptable academic performance. The Committee is empowered, after proscribed due process, to initiate disciplinary measures for unacceptable performance.

1.5.B. Description of the school's governance and committee structure's roles and responsibilities relating to the following:
- general school policy development
- planning and evaluation
- budget and resource allocation
- student recruitment, admission and award of degrees
- faculty recruitment, retention, promotion and tenure
- academic standards and policies, including curriculum development; research and service expectations and policies.

General Policy Development. General school policy development takes place in the standing committees, academic departments, Faculty Senate, School Assembly, the Dean's Advisory Group, and the Dean's Leadership Team, and the Policy Advisory Committee. In those settings, discussion and assessment of needs related to the core functions of the Mailman School often generate suggestions for revisions to existing policy or development of new policies. Suggestions are brought to the Policy Advisory Committee for discussion among a broad representation of the School's stakeholders, and recommendations to the Dean. If a policy revision or new policy is deemed necessary, it is drafted and discussed by the appropriate committee (e.g., admissions committee for admissions related policy change) and then forwarded to the Dean for a decision. Major policy decisions are announced by the Dean at School Assembly as mandated by the School's by-laws and disseminated via memos to department chairs or when appropriate, to all faculty, staff, and/or students.

Planning and Evaluation occurs at multiple levels throughout the Mailman School as described above and in Criteria 1.2.A. and 1.2.B. Other committees charged with planning and evaluation include the Dean's Leadership Team, Dean's Advisory Group, Policy Advisory Committee, and at monthly meetings of the Dean, Vice Deans, and Department Chairs. Planning and evaluation are on the agenda at the Dean's Leadership Retreats. New opportunities that arise from department meetings and standing committee are brought to the Dean's Leadership Team for discussion of potential impact on fiscal and institutional resources. If initiatives are specific to departments and are within department budgets, discussions remains at the department level. Final decisions related to the allocation of school resources are the purview of the Dean with advisement and input from the Dean's Leadership Team.

Budget and Resource Allocation is the Dean's responsibility in consultation with the Vice Dean for Finance and Administration and the members of the Dean's Leadership Team. The Mailman School's overall budget is subject to approval by the Executive Vice President of Health and Medical Sciences at Columbia University Medical Center. Within the School, department chairs and school-wide center directors are responsible for their respective budgets and funds allocation decisions, subject to approval of the Dean in consultation with the Vice Dean for Finance and Administration.

Student Recruitment, Admission, and Award of Degrees. Student recruitment and admissions are collaborations between the six academic departments and the Mailman School's Office of Admissions, situated within the Office of Education. The Vice Dean for Education has primary responsibility for student recruitment and admissions and oversees a team of professionals in the Office of Admissions and Financial Aid. With assistance from the Office of Communications, the Office of Admissions and Financial Aid oversees and coordinates all promotional and recruitment activities for the School's academic programs, and receives and processes all student applications. The Admissions Committee has representation from all departments and approves admissions to the MPH and MS degree programs, taking into consideration the admissions recommendations of the relevant department. The Doctoral Policy and Planning Committee, with representation from all departments offering doctoral programs, approves admission to the DrPH degree programs. Admission to the PhD degree programs is managed

through the Graduate School of Arts and Sciences. The sponsoring department in the Mailman School and the sponsoring department of the Graduate School must each accept a candidate to the PhD degree program.

Award of MPH, MS, MHA, and DrPH degrees is based on the recommendation by the department and clearance by the Office of Student Affairs. Award of PhD degrees is approved by the Graduate School of Arts and Sciences, upon recommendation by the sponsoring department and Graduate School subcommittee.

Faculty Recruitment, Retention, Promotion, and Tenure are discussed in detail under Criterion 4.2. Briefly, departments conduct faculty recruitment: appointments and promotions are first reviewed by the relevant department's Committee on Appointments and Promotions (COAP) and then by the Mailman School COAP. COAP's recommendations are then forwarded to the Dean for approval. Tenured appointments are further reviewed by the Faculty of Health Sciences COAP and a University *ad hoc* committee. Retention of faculty is overseen by the School's leadership, including department chairs and center directors, the Vice Dean for Faculty Affairs and Research Resources, and the Dean.

Academic Standards and Policies, Including Curriculum Development. Responsibility for curriculum development falls under the purview of the Curriculum Committee. The Committee reviews proposed syllabi and certificate and degree proposals, assesses the intellectual demand and academic rigor of the proposed content, as well as the fit within the overall curriculum, alignment (or possible duplication) with existing curricula, and proposed credits, and workload. The Office of Student Affairs, following a set of criteria for acceptable academic performance developed by the Academic Standards Committee, monitors compliance with standards. Further information about academic standards is provided in Criterion 2.7.A.

Research and Service Expectations and Policies. Research and service are prominent components of the Mailman School's mission and are important considerations in the faculty appointment and promotion process. These expectations are contained in the Faculty Handbook and in the letters of offer upon hire of new faculty. Annual reviews of performance include assessment of a faculty member's contributions to research and service. Reviews are conducted by department chairs and are included in the tenure process.

1.5.C. A copy of the school's by-laws and other policy documents that determine the rights and obligations of administrators, faculty and students in governance of the school.

The Mailman School By-laws and the Mailman School Faculty Rights & Responsibilities document are found in Electronic Resource File 1.5.C. In addition, Mailman School student handbooks are found online and in Electronic Resource File 1.5.C. The Mailman School handbook provides information, guidelines, and policies for all School students, with information on all degree programs. Each department has one or more handbooks for students, by degree program and/or year of matriculation. Finally, the Mailman School is under the human resources umbrella of Columbia University and Columbia University Medical Center. Information on policies, benefits, professional development, and work/life balance for administrators and staff can be found online.

1.5.D. Identification of school faculty who hold membership on university committees, through which faculty contribute to the activities of the university.

There are 49 committees in which Mailman School faculty members are involved and some School faculty serve on more than one Columbia University or Columbia University Medical Center committee. A list of committees in which Mailman School faculty are members is found in Electronic Resource File 1.5.D.

1.5.E. Description of student roles in governance, including any formal student organizations.

All standing committees referred to in Criterion 1.5.A. have student representation, with the exception of the Dean's Leadership Team and the Dean's Advisory Group. Student members are selected or appointed by the Student Government and are recommended to the Dean for one-year renewable terms. The Mailman School has a student government body, the Graduate Student Association (GSA). The purpose of GSA is to represent the collective student voices at the School, develop and support civic and community engagement programming, support Office of Student Affairs (OSA) sponsored events in association with other constituencies, and to assist OSA with funding allocations to student led initiatives and group collaborations at the School. Additionally, GSA has the following responsibilities: to host at least one town hall meeting per semester; to promote and provide community engagement and civic participation opportunities at School and across Columbia University; to meet with the Assistant Director of Student Affairs at least monthly regarding GSA programming and OSA/student-led initiatives; and to advocate for Mailman School students and formal student organizations (Table 1.5.E.1. below).

Table 1.5.E.1. Formal Student Organizations

Advocates for Asian American Health	International Students Organization
Association for Justice and Health	Mental Awareness Integration Forum
Bloom Girls Mentoring	One Health Initiative
Black and Latino Student Caucus	Platform for the Homeless
Career China Club	Perspectives on Aging
Columbia Mailman Consulting Club	Queer Health Task Force
Complex System Approaches to Population and Health	Sexual and Reproductive Health Action Group
Food Policy and Obesity Prevention	Society for African Health Initiatives
Future Healthcare Leaders	Students for Environmental Action
Graduate Student Association	Students for a National Health Plan
Greater Community Outreach	Students for the Promotion of Alternative and Integrative Medicine
Humanitarian Organization for Migration and Emergencies	

1.5.F. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- The Mailman School has a strong governance structure, is guided by well-established by-laws, and includes a diverse range of committees that include faculty and student participation.
- Through the work of multiple committees, responsibility and authority is shared widely and delegated among constituencies at the School, including faculty, staff, and students.
- Faculty participation on Columbia University committees is broad and comprehensive.
- The Mailman School student organizations are active; they sponsor educational programs, service activities, and social events that build a sense of community and bring faculty and students together throughout the academic year. The required service component of the student organizations also connects students to the Washington Heights neighborhood that surrounds the school building an important bridge between the School and the underserved community.

Challenges

- Student participation in the Mailman School Graduate Student Association (GSA) has fluctuated in recent years. In some years there had been great interest and in others it was a challenge to elect students. In addition, not all departments had student representation in the GSA.

Plans

- The Office of Student Affairs has re-evaluated the structure and purpose of a GSA as a representative body of graduate students at the School. The plan is to recruit students into leadership roles much earlier than in the past and to have their terms extend throughout the entirety of their program (i.e., two years). This would see a GSA with overlapping, executive leadership representing incoming and continuing students. Additionally, we will supplement elected leadership with appointed student representation from the departments.
- Recent student feedback has indicated concern that their roles and responsibilities on School Standing Committees were unclear. As a result, each standing committee chair has created specific job responsibilities for students that will be used to advertise to incoming and current students in fall 2017.

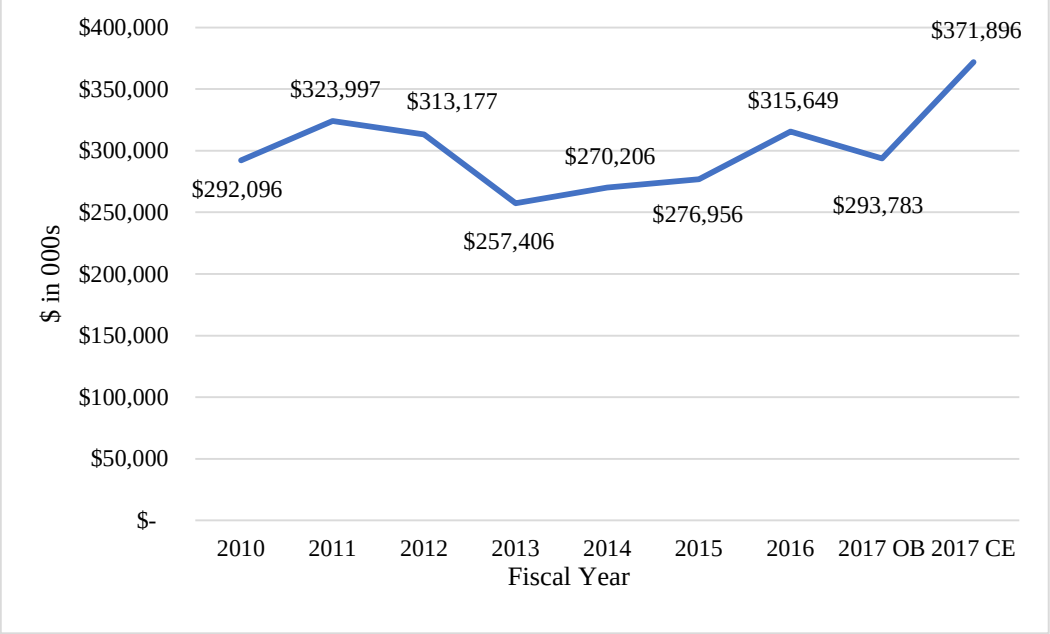
Criterion 1.0 - The School of Public Health

1.6. FISCAL RESOURCES
The school shall have financial resources adequate to fulfill its stated mission and goals, and its instructional, research and service objectives

1.6.A. Description of the budgetary and allocation processes, including all sources of funding supportive of the instruction, research and service activities. This description should include, as appropriate, discussion about legislative appropriations, formula for funds distribution, tuition generation and retention, gifts, grants and contracts, indirect cost recovery, taxes or levies imposed by the university or other entity within the university, and other polices that impact the fiscal resources available to the school.

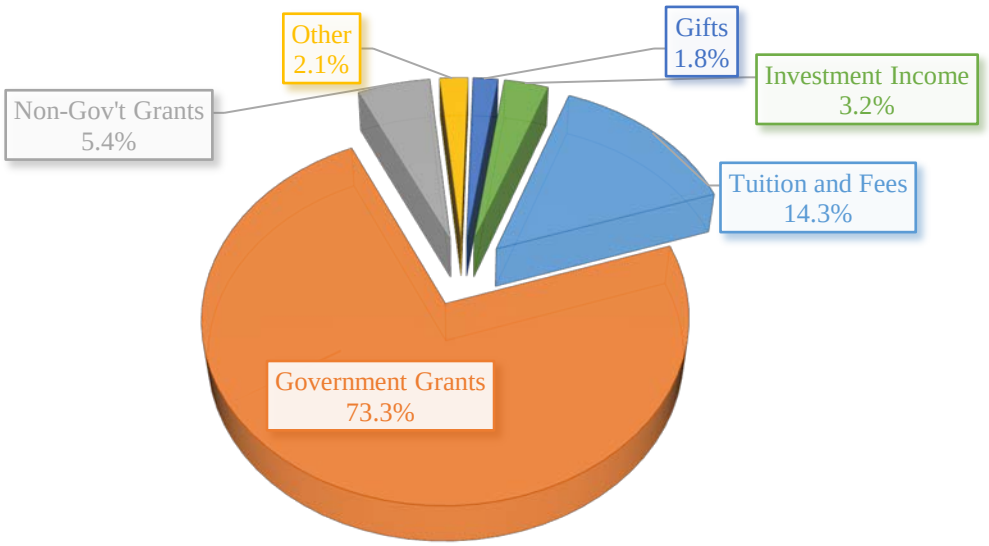
Sources of Funding. Overall, the Mailman School's annual revenue since FY2013 has increased, and is projected to be at the highest level in FY2017, as of the third quarter (Q3), which ended March 31, 2017. In FY2013, the decline in revenue was attributable to the conclusion of a $608M multi-year award to ICAP. In FY2010, 2011, and 2012 approximately $100M of annual revenue was attributable to this award in ICAP. In FY2016, revenue totaling $315M was the second highest of the seven periods covered in this self-study (Figure 1.6.A.1.).

Figure 1.6.A.1. Annual Revenue FY2010 to FY2017 Q3 ($ in 000s)



The revenue to support the Mailman School's instruction, research, and service activities comes from a variety of sources, including grants, tuition and fees, investment income, and gifts. As shown in Figure 1.6.A.2., the largest single source of funding is government grants (73.3%) followed by tuition and fees (14.3%).

Figure 1.6.A.2. Sources of Funds FY2016 (Total Sources: $315,649,000)



Investment income in FY2016 of $10.3M represented an increase of $3.5M as compared to FY2010. The endowment market value as of June 2016 was $180.3M as compared to $81.4M at the beginning of FY2009, an increase of $98.9M or 121%. Endowment provides support for professorships, scholarships, fellowships, department and center support, and administration and Awards.

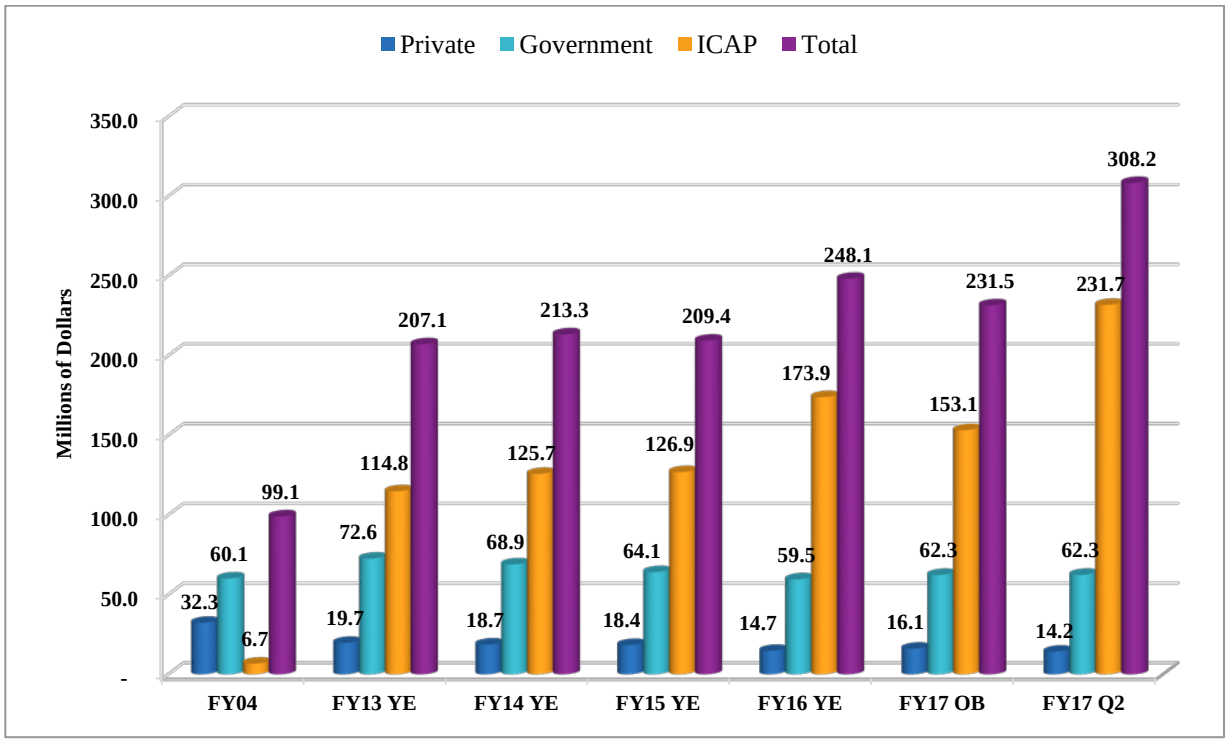
Endowment and Gifts. The Mailman School's Endowment at FY2016 year end had a market value of $177.3M—a growth from $81.4M at FY2009 year end, when Dean Fried began at the Mailman School. This represents substantial growth over this period. The projected endowment income for FY2017 is $10.4M. The endowment growth during this accreditation period is attributable to increases to existing endowments and new endowments, and successful investment strategies by the University. The Mailman School's endowments provide unrestricted support, professorship and fellowship support, financial aid and scholarships, and department/center support.

Grants and Contracts. Sponsored program funding, including government and non-government sources, are projected at $308.2M for Q3 of FY2017 (Electronic Resource File 1.6.A., "Total Sponsored Project Funding"). This represents an increase of $60.1M or 24% from FY2016 due almost entirely to the increase in government research funding (ICAP). Figure 1.6.A.3. below shows research grant funding from all sources.

Of significance is the Mailman School's continued success in securing external sponsored project sources of funds (Figure 1.6.A.2.). In the most recently completed year (FY2016), sponsored project revenue
(government grants, non-government grants, and indirect cost recovery) was $248M or 79% of the Mailman School's revenue. This is compared to $256M or 87% of the school's revenue in FY2010. From FY2013 Sponsored Research has grown by 20% or $41M to the FY2016 level of $248M. The Mailman School currently is the sixth largest recipient of NIH sponsored project support for all schools of public health, and the second largest recipient of NIH sponsored project support for all schools at Columbia University.

Government grants direct revenue, excluding indirect recoveries, increased from $183.0 million in FY2010 to $190.5M in FY2016, while non-government grants have declined from $31.4M in FY2010 to $14.9M in FY2016. Although private grant funding decreased by $16.5M or 53%, the private indirect cost recovery remained at about the same level. This is due to the higher effective rate of the current portfolio (14%) as compared to FY2010 (7%).

Figure 1.6.A.3. Research Grant Revenue by Source



1.6.E. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- The Mailman School has substantial operating and non-operating reserve balances with which to support current operations, commitments and future investments.
- Through continuous monitoring and planning the school strategically allocates financial resources to fulfill its instructional, research and service objectives.

Challenges

- The uncertainty in the federal research landscape could present challenges. While the School has sufficient reserves and endowments have grown, a substantial reduction of available research funding would have profound implications and result in a contraction of resources available to the School.
- Given the increasing number of graduate programs and schools of public health nationally and regionally, the School's high tuition and cost of living in New York City are barriers for many students.

Plans

- The school is identifying potential opportunities to diversity the funding base in ways that are consistent with the overall mission.
- The School is working with the Board of Overseers and the Office of Institutional Advancement to increase private funding for scholarships.

Criterion 1.0 - The School of Public Health

1.7. FACULTY AND OTHER RESOURCES

The school shall have personnel and other resources adequate to fulfill its stated mission and goals, and its instructional, research and service objectives.

1.7.A. A concise statement or chart defining the number (headcount) of primary faculty in each of the five core public health knowledge areas employed by the school for each of the last three years. If the school is a collaborative one, sponsored by two or more institutions, the statement or chart must include the number of faculty from each of the participating institutions. See CEPH Data Template 1.7.1.

Mailman School primary faculty in each of the five core public health knowledge areas are distributed across the six departments. Table 1.7.A.1. contains headcounts of primary faculty who are full-time university faculty with primary appointments at the Mailman School. All primary faculty support the Mailman School's education programs through teaching and/or mentoring Mailman School students. As noted in Section 1.4.A., faculty in each of the three School-wide Centers have primary appointments in one of the six Mailman School departments.

Table 1.7.A.1. (CEPH Data Template 1.7.1) Primary Faculty by Department from 2015-2017

Department	2015-2016	2016-2017	Fall 2017[a]
Biostatistics	24	26	Pending
Environmental Health Sciences	14	15	Pending
Epidemiology	44	44	Pending
Health Policy and Management	17	18	Pending
Population and Family Health	22	20	Pending
Sociomedical Sciences	30	29	Pending

[a]Data will be provided for December 2017 site visit and final self-study

The designation of primary faculty is defined as a 100% appointment at the Mailman School and are appointed according to Columbia University Medical Center (CUMC) guidelines. There are two academic tracks at CUMC into which full-time faculty may be appointed**:** the tenure track, which requires a research-intensive focus, or the non-tenured faculty track ("at CUMC" non-tenure track). The "at CUMC" title is used for faculty whose responsibilities are a mixture of activities in education, applied health sciences (clinical and/or public health interventions) and investigation.

1.7.B. A table delineating the number of faculty, students and SFRs, organized by department or specialty area, or other organizational unit as appropriate to the schools, for each of the last three years (calendar years or academic years) prior to the site visit. Data must be presented in a table format and include at least the following information: a) headcount of primary faculty (primary faculty are those with prior appointment in the school of public health), b) FTE conversion of faculty based on % tie appointment to the school, c) headcount of other faculty (adjunct, part-time, secondary appointments, etc.), d) FTE conversion of other faculty base on estimate of % time commitment, e) total headcount of primary faculty plus other (non-primary) faculty, f) total FTE of primary and other (non-primary) faculty, g) headcount of students by department or program area, h) FTE conversion of students, based on definition of full-time as nine or more credits per semester, i) student FTE divided by primary FTE, j) student FTE divided by total faculty FTE, including other faculty, All schools must provide data for a), b), and i) and may provide data for c), d) and j) depending on whether the school intends to include the contributions of other faculty in its FTE calculation.

The table below shows the primary faculty and other faculty student headcounts, and total student to faculty ratios during the past three years.

Table 1.7.B.1. (CEPH Data Template 1.7.2.) Faculty, Students, and Student/Faculty Ratios by Department and Centers

	Head Count Primary Faculty	FTE [4] Primary Faculty	Head Count Other Faculty	FTE [4] Other Faculty	Head Count Total Faculty	FTE [4] Total Faculty	Head Count Students	FTE [4] Students	Student-Faculty Ratio by Primary Faculty FTE	Student-Faculty Ratio by Total Faculty FTE
2015-2016										
BIO	24	23.9	14	1.0	38	24.9	153	121	5.1	4.9
EHS	14	13.9	19	1.1	33	15.0	68	54.5	3.9	3.6
EPI	44	43.6	100	5.4	144	49.0	397	306	7.0	6.2
HPM	17	17.0	23	1.4	40	18.4	184	167.4	9.8	9.1
PFH	22	21.8	40	2.2	62	24.0	145	131.1	6.0	5.5
SMS	30	29.8	28	1.6	58	31.4	261	214.7	7.2	6.8
GPH[1]							28	25.9		
MHA[2]							187	171.2		
CAC[3]			1	0.1	1	0.3				
CII[3]			0	0.0	0	0.0				
ICAP[3]			0	0.0	0	0.0				
2016-2017										
BIO	26	25.9	15	1.1	41	26.9	182	133.1	5.1	4.9
EHS	15	14.9	23	1.3	38	16.2	74	59.2	4.0	3.7
EPI	44	43.5	110	5.9	154	49.5	387	304.8	7.0	6.2
HPM	18	18.0	29	1.7	47	19.7	148	143.5	7.8	7.3
PFH	20	19.8	47	2.6	67	22.4	127	113.9	5.8	5.1
SMS	29	28.8	35	1.9	64	30.7	244	201	7.0	6.5
GPH[1]							31	31		
MHA[2]							199	173.2		
CAC[3]			2	0.3	2	0.3				
CII[3]			0	0.0	0	0.0				
ICAP[3]			0	0.0	0	0.0				
Fall 2017										
BIO	*To be completed in fall 2017*									
EHS										
EPI										
HPM										
PFH										
SMS										
GPH[1]										
MHA[2]										
HPM Exec[2]										
CAC[3]										
CII[3]										
ICAP[3]										

[1] The General Public Health program does not include faculty, students take courses throughout the School.

[2] Health Policy & Management's MHA program includes a core group of faculty with field expertise, some holding full-time positions at Columbia University and others as senior executives within the healthcare system. This group meets all the faculty requirements outlined by their CAHME accreditation.

[3] The Columbia Aging Center (CAC), Center for Infection and Immunity (CII), and International Center for AIDS Care and Treatment (ICAP) are programs that do not enroll or teach students.

[4] Faculty full-time equivalent (FTE) is calculated as per the instructions outlined by ASPPH for their annual data collection here.

1.7.C. A concise statement or chart defining the headcount and FTE of non-faculty, non-student personnel (administration ad staff).

Table 1.7.C.1. Full Time Equivalent of Full Time Staff

	2015-2016		2016-2017		Fall 2017[a]	
Department or School-wide Center	**HC**	**FTE**	**HC**	**FTE**	**HC**	**FTE**
Central Administration (Dean's office)	89	87.1	100	94.3	Pending	Pending
Biostatistics	29	24.3	28	24.2	Pending	Pending
Environmental Health Sciences	56	50.3	69	57.6	Pending	Pending
Epidemiology	71	61.5	58	52.3	Pending	Pending
Health Policy and Management	21	15.9	19	18.6	Pending	Pending
Population and Family Health	87	76.1	91	83.2	Pending	Pending
Sociomedical Sciences	50	43.7	55	46.0	Pending	Pending
Columbia Aging Center	5	4.1	7	7.0	Pending	Pending
Center for Infection and Immunity	40	39.1	42	41.1	Pending	Pending
ICAP	100	97.2	128	124.9	Pending	Pending

[a]Data will be provided for December 2017 site visit and final self-study

1.7.D. Description of the space available to the school for various purposes (offices, classrooms, common space for student use, etc.), by location.

The home of the Mailman School is 722 West 168 Street, New York, NY, where the School has been located since 2000. In 2006, the building was named after Dean Allan Rosenfield to recognize his contributions to the Mailman School, the field of public health, and Columbia University. The school has renovated much of the 19-story building, aiming to consolidate most of the School in one building. The Allan Rosenfield Building has approximately 104,732 net assignable square feet of space, of which the Mailman School occupies 87,202 square feet. The building occupancy includes six departments (Biostatistics, Epidemiology, Health Policy and Management, Environmental Health Sciences, Population and Family Health, and Sociomedical Sciences) and three School-wide centers (the Columbia Aging Center, ICAP, and the Center for Infection and Immunity). The building houses approximately 650 faculty and staff. Population and Family Health occupy space at 60 Haven Avenue. ICAP and Mailman Central Administration offices occupy space at 600 West 168 Street (Table 1.7.D.1. below).

Renovations. Since the last CEPH reaccreditation report, the Mailman School renovated the 4th floor of the Allan Rosenfield Building, which now houses the Department of Health Policy and Management and the Robert N. Butler Columbia Aging Center. When renovating the building, the goal was to create an environment conducive to learning and supportive of faculty and student needs. Among the building features are the Office of Student Services and Career Services located on the main floor. The lobby includes three LCD screens that display student events, faculty accomplishments, and upcoming lectures and presentations. The Hess Commons, the focal point of the Mailman School's community life, is located right off the lobby and considered by most to be the nicest social space at the Medical Center with views of the Hudson River and George Washington Bridge. The Hess Commons is a natural meeting area for fostering collaboration and group study and has food and beverage service available. A lounge has been added off the lobby on the main floor which is used for study and a breakout room for the students.

Classroom/Teaching Spaces. In May 2009, the Mailman School completed a renovation of the 8th floor auditorium, which now has a capacity of 126 people. This space boasts state of the art audio visual services that include wireless internet services, video conferencing, live/real time internet transmission of lectures, recordable and downloadable Podcasts of lectures, high resolution projection and other smart

technology for improved teaching and learning. Each seat contains a tray for a laptop computer and an electrical outlet. The auditorium is used as classroom space and additional educational spaces include a biostatistics computer laboratory with 20 seats on the 6th floor, two 35-person seminar rooms on the 5th floor, a 35-person classroom on the 11th floor, 10 conference rooms throughout the building with capacities ranging from 8 to 30 people, and a 75-person mixed-use space used for teaching in the 10th floor. Many of these conference rooms offer audiovisual services that include video conferencing, conference call capability, and Internet connectivity. For available rooms at CUMC, refer to Electronic Resource File Table 1.7.D.

Table 1.7.D.1. Lab, Office, and Classroom Space of the Mailman School of Public Health

Site	Use	Size (NASF)
Allan Rosenfield Building - 722 West 168 Street	Lab, Office, Classroom	87,202
Bard Haven Towers - 60 Haven Avenue	Office	19,266
Bard Haven Towers - 100 Haven Avenue	Office	1,517
600 West 168 Street	Office	11,443
College of Physicians and Surgeons - 622 West 168 Street, 16th Floor	Lab, Office	2,992
Black Building - 630 West 168 Street, 16th Floor	Lab, Office	7,436
Subtotal - on campus		**129,856**
215 West 125th Street	Lab, Office	14,798
Subtotal - off campus		**14,798**
Total		**144,654**

1.7.E. A concise description of the laboratory space and description of the kind, quantity, and special features or special equipment.

The Allan Rosenfield Building is the home of the Center for Infection and Immunity, a school-wide center residing on the 17th, 18th, and 19th floors. The center has an *in vitro* Bio-safety Level 3 (BSL-3) laboratory, one of a small number located in academic institutions nationwide. This state of the art laboratory, located on the 19th floor, focuses on emerging infectious diseases in the developing world and creates a vast network to track and identify viral pathogens. It is built to the United States Department of Agriculture (USDA) standard, a more exacting standard than that required by the Centers for Disease Control and Prevention (CDC). When combined with basic wet labs on the 18th floor, the center has approximately 8,000 square feet of laboratory space at 722 West 168 Street. The center also renovated the 17th floor for office space in 2010.

The Department of Environmental Health Sciences requires laboratory space for basic and clinical research. The department currently occupies 2,992 net assignable square feet of laboratory space in the College of Physicians and Surgeons. The School built a 1517 square foot freezer farm to house freezers for the department at 100 Haven Avenue. The School also occupies 11,200 square feet of laboratory space on the 16th floors of the Black Building and the College of Physicians and Surgeons.

1.7.F. A concise description concerning the amount, location, and types of computer facilities and resources for students, faculty, and administration and staff.

Columbia University Information Infrastructure

Columbia University Information Technology (CUIT) and Columbia University Medical Center IT (CUMC IT) partner to provide Columbia University and all of its affiliates with central computing and communications services such as e-mail, Internet access, telephone service, web publishing, computer

labs and electronic classrooms, all office and administrative applications and management of the high-speed university network. Both groups manage a large array of computer labs, terminal clusters, ColumbiaNet stations, multimedia classrooms, and a variety of technology-related support services.

CUMC Computing and Information Infrastructure
Columbia University Medical Center Information Technology (CUMC IT) serves the CUMC community by providing a seamless, reliable, and transparent infrastructure and ensuring that technology is fully embraced. The CUMC campus and Columbia University have numerous public computer labs as well as high-speed wired and wireless 802.11b network access points available in student housing, classrooms, labs, and public spaces.

CUMC has made significant investments in upgrading and standardizing the classroom IT in close to 50 classrooms and Alumni Auditorium, to make the audio/visual equipment both state-of-the-art and user-friendly. A central element of the classroom IT is the ePodium, which provides a touch panel for audio/video recording and playback and a Windows computer configured with most current software. The ePodium makes it easy for faculty and students to present DVD, VCR, or audio-CD material, as well as PowerPoint presentations, web pages, and audio/video streaming media using either the built-in computer or the faculty member's laptop. CUMC IT ePodium has an Extron control system to manage and monitor the equipment in or out of the classroom. In addition, CUMC has introduced a new audience response system (ARS) into its classrooms. This ARS feature in Turning Point software provides real-time polling of large groups of students and brings a new level of interactivity to the classroom.

CUMC provides the option for large lectures to be available via podcast and vodcast immediately following each class. Thee vodcasts consist of synchronized audio and slide presentations with any annotations made by the instructor during the class. In addition to CUMC's information technology group, the Columbia Center for New Media Teaching and Learning (CCNMTL). CCNMTL has a branch on the CUMC campus with several full-time staff available to assist faculty, staff, and students.

Mailman School Computing and Information Infrastructure
The School's faculty and staff primarily use a mix of Dell and Apple computing systems, with standard configurations. The School's Central IT group provides faculty and staff with licensed productivity and antivirus software, while Columbia University's Information Technology unit ensures that licensed software and up-to-date antivirus software are available to students

The School has its own information technology support center, reporting to the Vice Dean for Finance and Administration, with a team of desktop support technicians available via phone and an online ticketing system. The School's Office of Information Technology and Online Resources has 14 full-time staff positions. The group provides a range of computing services to faculty and staff at the Mailman School, including desktop troubleshooting, Web consulting and application development, audio visual design and support services for classrooms and events spaces, student and faculty access to one of the world's fastest HPC cluster for research computing, and support of the online admissions system. The group provides access to space on a secure file server for faculty and staff file sharing as well as a SharePoint site for real-time collaboration. The team serves as a liaison between CUIT resources and the Mailman School community and consults on computer, peripheral, and software purchases for educational use.

In 2016, the School's Office of Information Technology and Online Resources created an Audiovisual (A/V) Services Unit. A primary goal of this new office was to employee experts who would improve the quality, performance, and usability of our classroom technology and to add classrooms equipped with state-of-the-art A/V technology. The A/V team provides academic departments and administration with:

- Dedicated A/V technical support and training to students, faculty and staff.

- Management and maintenance of classroom technology.
- Coordination and technical preparation with administration and vendors to support high-profile events/symposia.
- Event recording/live-streaming of events via BlackMagic Design encoders for broadcast to LiveStream and YouTube.
- A/V post-production services using Adobe Creative Cloud Suite.
- Room technology inspection, upkeep, and upgrades.
- Vendor bid review, negotiation, and approval for room technology upgrades.

High Performance Computing (HPC).
HPC, the computer cluster at Center for Computational Biology and Bioinformatics (C2B2), is a Linux-based (CentOS 6.5) compute cluster consisting of 528 HP blade systems, 2 large (1TB) memory servers, two head nodes and a virtualized pool of login (submit) nodes controlled by Sun Grid Engine (SGE). Each node has 12 cores (two hex-core processors), and either 32GB (480 nodes) or 96GB (48 nodes) of memory. The cluster provides 6,336 compute cores and 73,728 CUDA-cores (GPU) with 20 TB of total RAM (memory). Each node has a 10 Gbps Ethernet connection to the cluster network, and each of 32 of nodes are linked with 40 Gbps QDR InfiniBand. The HPC clusters are housed in two data centers totaling more than 3,000 sq. ft. of floor space. The facility maintains two high-memory systems with 1 TB of system memory each, and a pool of computational servers for compilation, debugging, and job control with storage areas that can meet varying storage objectives for data integrity, performance, and capacity.

C2B2 has designed a variety of best-practices data storage protocols to ensure that all data remains secure, this includes Columbia University Information Technology (CUIT) and HIPAA compliant security measures as well as regular data snapshots, replication, and offsite backup.

Among the wide range of scientific and computational software available are the latest GNU and Intel compilers for C and Fortran, Perl interpreters, Java SDKs, Matlab, BLAST, EMBOSS, HMMER, MUMmer, clustalW, PAML, PHYLIP, BioConductor, Phred and Phrap, GeneHunter, Fastlink, Merlin, PDT, TRANSMIT, Pseudomarker, Analyze, Autosacan, GOLD, plus many other utilities and programs.

1.7.G. A concise description of library/information resources available for school use, including a description of library capacity to provide digital (electronic) content, access mechanisms, training opportunities, and document-delivery services.

The Augustus C. Long Health Sciences Library (HSL) serves the Mailman School community and the other professional schools at the Columbia University Medical Center. The HSL is the library for all other health care, instructional and research programs, institutes and centers at CUMC and New York-Presbyterian Hospital. In addition to a vast collection of online and printed materials, the library offers a wide range of educational programs and services.

Following a recent renovation, the library now has more than 300 seats for students and researchers. The Knowledge Center space includes a variety of seating arrangements to meet student preferences, including round tables, banquette seating, and standing-height counters. Many of the seating options have built-in power available. The Knowledge Center maintains four MediaScape tables, facilitating collaborative work by allowing screen sharing between members of a group. In addition, the library administers collaborative study rooms for student use only. The Health Sciences Library hosts 24 Windows PCs and 13 Macintosh computers for student use and CUMC IT provides multifunctional printers with scanning capability. All library spaces are available 24/7.

The library's collection of journals and books in public health disciplines serves faculty, students, and

staff. The majority of the journals is available electronically and accessible on and off the campus network to members of the Columbia community with a university identifier. Overall, the library subscribes to 87% of the most influential public health journals, as well as 18 of the top 20, according to Thompson Reuters' Journal Citation Reports. Monographs not owned by the library can be ordered through interlibrary loan at no charge to the requestor, frequently with the next business day delivery. Furthermore, the library has reciprocal agreements with major university libraries and items can be borrowed directly using Borrow Direct service.

1.7.H. A concise statement of any other resources not mentioned above, if applicable.

Supported by CUMC IT, three pieces of instructional technology are available to students and faculty: Audience Response System (ARS), Echo 360 Lecture Recording, and ExamSoft. ARS allows instructors to poll or quiz students during lectures as a form of student engagement and learning assessment, Echo 360 provides students with streamable recordings of course lectures (at the instructor's discretion), and ExamSoft is a secure, computer-based exam environment for use on- or off-site.

1.7.I. Identification of measurable objectives through which the school assesses the adequacy of its resources, along with data regarding the school's performance against those measures for each of the last three years. See CEPH Outcome Measures Template.

Table 1.7.I.1. Outcome Measures for Adequacy of Resources

Outcome Measure	Target	2014-15	2015-16	2016-17
School-wide student-faculty ratio	5.0	5.1	5.2	4.9
Percent of courses offered with appropriate classroom space	100%	100%	100%	100%
Accessible lounge space for student, faculty, and staff	✓	✓	✓	✓
Number of Mailman-based A/V staff for classroom support	3 new FTEs	0 new FTE	0.5 new FTE	1 new FTE

1.7.J. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- The Mailman School has a large and diverse faculty that represents the core areas of public health and includes world leaders in critical and emerging public health areas.
- The low student-to-faculty ratio supports the School's education mission and enhances the educational experiences of students.
- The School is co-located with the three other professional schools of the Columbia University Medical Center (Nursing, Dentistry and Medicine) as well as several other major hospitals. This shared campus enhances interdisciplinary collaboration for students and faculty.
- The School, CUMC, and the University have an excellent infrastructure to support the mission and operations of the School. This includes dedicated building, classroom space, libraries and computing infrastructure available to faculty and students.
- The audiovisual and classroom support group at Mailman is growing. New expertise and additional staff have enabled the team to provide HD lecture capture for all Mailman classrooms and event spaces, as well as a livestream service that faculty can use to reach students in real-time beyond the classroom.
- Computer support and purchasing for faculty and staff was recently centralized. Users now have access to a larger pool of technicians, which is speeding troubleshooting, providing broader range of tech expertise, and reducing costs.

Challenges

- The School is unable to co-locate all departments and centers in the Allen Rosenfeld Building.
- A portion of classroom space is shared with CUMC and requires significant planning and coordination with the other professional schools.
- The School's position as a member of the CUMC campus means that it is considered part of our HIPAA Covered Entity. As a result, computing is more highly regulated and new data projects can take longer to be approved.

Plans

- The School has increased investment in promising new faculty recruits with a primary focus in Biostatistics, Environmental Health, and Epidemiology. Two new department chairs in Environmental Health Sciences and Epidemiology were recruited in 2016; they are recruiting actively for promising faculty to strengthen their departments and the School.
- The School continually evaluates how to best configure available space to meet growing and changing needs. Renovations are ongoing to ensure that spaces for faculty, students and staff reflect changes in technology, advances in educational practice and support collaboration.
- IT is planning to roll out an IT hotline this fall, to provide quick turnarounds for computer issues that do not require hands-on support, such as password resets.
- Our high performance computing service is being made available to students, so that they can use the computer cluster to enhance learning.

Criterion 1.0 - The School of Public Health

1.8. DIVERSITY
The school shall demonstrate a commitment to diversity and shall evidence an ongoing practice of cultural competence in learning, research, and service practices.

1.8.A. A written plan and/or policies demonstrating systematic incorporation of diversity within the school. Required elements include the following:

i. Description of the school's under-represented populations, including a rationale for the designation.
ii. A list of goals for achieving diversity and cultural competence within the school, and a description of how diversity-related goals are consistent with the university's mission, strategic plan, and other initiatives on diversity, as applicable.
iii. Policies that support a climate free of harassment and discrimination and that value the contributions of all forms of diversity; the school should also document its commitment to maintaining/using these policies.
iv. Policies that support a climate for working and learning in a diverse setting.
v. Policies and plans to develop, review, and maintain curricula and other opportunities including service learning that address and build competency in diversity and cultural considerations.
vi. Policies and plans to recruit, develop, promote, and retain a diverse faculty.
vii. Policies and plans to recruit, develop, retain, and retain a diverse staff.
viii. Policies and plans to recruit, admit, retain, and graduate a diverse student body.
ix. Regular evaluation of the effectiveness of the above-listed measures.

1.8.A.i. Under-represented populations and rationale for designation.
The Mailman School designates under-represented student populations as Blacks, Hispanics/Latinos, first-generation college graduates, and veterans. The designation is data driven and follows priorities established by the School and University, and reflects the NIH list of populations underrepresented in the biomedical, clinical, behavioral, and social sciences. We believe that these populations are important to increasing diversity in our educational programs and to providing important perspectives in designing future public health interventions.

- Black and Hispanic students are under-represented in our education programs and in the fields of public health and medicine.
- First generation college students are under-represented in graduate school, are more likely to be students of color and to come from low income families, and face significant financial, academic, and social barriers to entering and completing graduate school.
- The focus on veterans as an under-represented population is of particular interest for two reasons: 1) Columbia University's School of General Studies has the highest number of veterans of any Ivy League institution and provides unique pipeline opportunities to increase veterans engaged in public health work; and 2) the increasing opportunities and needs of veterans require a focus on their health and well-being as well as the health systems that support them.

In addition, we are striving to monitor other dimensions of diversity in the student body, including gender. For fall 2016, our degree programs had a similar gender distribution: master's degree programs were 76% female (917 students) and doctoral degree programs were 74% female (139 students). The School is working to achieve greater gender balance in our student body by increasing the percentage of male students.

Regarding faculty and staff, the School will continue to focus its recruitment and retention efforts on increasing the number of Blacks, Hispanics, and females. The rationale for our focus on these populations

is supported by faculty and staff data showing low percentages of these groups (see Table 1.8.E.1. in Criterion 1.8.E., below). This focus is aligned with the strategic goals and objectives of the Mailman School, reflects the School's commitment to ensure a diverse and inclusive environment, and addresses the ongoing need for research-based institutions to increase representation of underrepresented minorities. In this effort, the School collaborates closely with The Office of the Vice Provost for Faculty Diversity and Inclusion at Columbia whose mission is to collaborate with Columbia University's academic and administrative units to attract, advance, and retain a diverse faculty. The office facilitates faculty development, diversity, and planning initiatives and has played a pivotal role in the Mailman School's recruitment and retention efforts.

1.8.A.ii. A list of goals for achieving diversity and cultural competence and description of how diversity-related goals are consistent with the university's mission, strategic plan, and other initiatives on diversity.

As outlined in Criterion 1.1.C., the Mailman School has identified several goals and objectives that support our vision that the Mailman School is a school of public health where diversity is recognized, respected, valued, and celebrated. The specific goals and objectives pertaining to diversity and cultural competence are the following:

Education Goal. To provide educational programs that prepare a diverse group of leaders with the knowledge and skills to promote health and well-being across all populations, strengthen health systems, and implement sustainable and effective solutions for local and global public health challenges and health promotion.

Objectives

A. Recruit and retain outstanding and committed graduate students with strong academic credentials from a range of cultures and backgrounds.
B. Recruit and retain outstanding, diverse faculty in the range of disciplines and specialties consistent with the School's educational mission, and with a commitment to interdisciplinary knowledge creation and education.

Diversity and Inclusion Goal. To build a diverse, inclusive, and equitable community of faculty, students, and staff dedicated to the development of public health scholarship and practice that advances health equity.

Objectives

A. Train all faculty, students, and staff through co-curricular and tailored activities to create an inclusive environment.
B. Develop and strengthen existing curricula for faculty and students to cultivate and enhance their understanding of the impact of inequality on health.
C. Recognize outstanding teaching and mentoring that reflects the School's commitment to diversity, equity, and inclusion.
D. Expand funding and support for research and service that focuses explicitly on the relation between structural inequality and health inequity and the resolution of health disparities.

The goals and objectives for achieving diversity and cultural competence are consistent with the mission and values of the Mailman School. Our commitment has guided the creation of the School's Office of Diversity, Culture and Inclusion (ODCI). The School's goals and plans align with the University's commitment to advancing diversity in its workforce, student body, and educational programs. The University's commitment to diversity is outlined in the University President's Diversity Mission statement, the Office of the Vice Provost for Faculty Diversity and Inclusion, and in the Office of Equal Opportunity and Affirmative Action. Both Columbia University and the Mailman School are committed to building a diverse community and to working together to realize our core values of inclusion and excellence.

1.8.A.iii. Policies that support a climate free of harassment and discrimination and that value the contributions of all forms of diversity and documentation of the commitment to maintaining/using these policies.

The Mailman School follows Columbia University policies to provide a working, learning, and living environment free from discrimination and harassment and to foster a nurturing and vibrant community founded upon the fundamental dignity and worth of all its members. The University's Office of Equal Opportunity and Affirmative Action has overall responsibility for the management of the University's Employee Policies and Procedures on Discrimination, Harassment, Sexual Assault, Domestic Violence, Dating Violence and Stalking; coordinates compliance activities under these policies and the applicable federal, state and local laws; and is designated as the University's Compliance Office for Title IX, Section 504 of the Rehabilitation Act, and other equal opportunity, nondiscrimination and affirmative action laws. Specific University policies include the following:

Columbia University Non-Discrimination Statement and Policy. The University prohibits any form of discrimination against any person on the basis of race, color, religion, sex, gender, pregnancy, age, national origin, disability, sexual orientation, marital status, status as a victim of domestic violence, citizenship or immigration status, creed, genetic predisposition or carrier status, unemployment status, partnership status, military status, or any other applicable legally protected status in the administration of its educational policies, admissions policies, employment, scholarship and loan programs, and athletic and other University-administered programs and functions**.** See the CU Non-Discrimination Policy, which is considered an essential policy of Columbia University.

Discrimination, Harassment and Gender-Based Misconduct Policy. Columbia University is committed to providing an environment free from discrimination, harassment, and gender-based misconduct. Policy and procedures on discrimination and harassment, including discrimination, discriminatory harassment, gender-based harassment, sexual harassment, and sexual assault are available online. The University's multifaceted approach to eliminate gender-based misconduct includes educational programs; services and resources for those affected by gender-based misconduct; accessible, prompt, and fair methods of investigation and resolution of reports of misconduct; and protections designed to prevent against recurrence. The use of the term "gender-based misconduct" under these policies and procedures includes sexual assault, sexual harassment, gender-based harassment, stalking, and intimate partner violence. Complaints against students for gender-based misconduct are processed in accord with the Gender–Based Misconduct Policies for Students. Policies and procedures on discrimination, harassment, sexual assault, domestic violence, dating violence, and stalking for employees are also available online.

Accommodation of Disabled Persons. The Mailman School provides reasonable and appropriate accommodations to students and employees with disabilities. The University's Office of Disability Services partners with academic programs to reasonably accommodate students with disabilities and has established a network of Disability Services Liaisons to facilitate equal access to all University programs for students with disabilities. The Mailman School's Office of Student Affairs has an identified disability services liaison who works closely with the Office of Disabilities to coordinate reasonable accommodations and to serve as the central point of contact. Faculty and staff with disabilities or with permanent or temporary medical conditions can have questions and concerns related to any accommodations addressed by Human Resources Disability Services. Refer to CU Office of Disability Services and Mailman's Office of Disability Services.

Compliance. The University's Office of Equal Opportunity and Affirmative Action is responsible for the investigation and resolution of discrimination complaints received from faculty, staff and students. At the Mailman School, the Dean is responsible for ensuring compliance with University policies and procedures. The School's Human Resources Director, the School's Dean of Students, and the Director of

the Office of Diversity and Inclusion (ODCI) monitor compliance with policies and procedures related to affirmative action and equal opportunity and provide updates to the Vice Dean for Faculty Affairs and Research, the Vice Dean for Finance and Administration, and the Vice Dean for Education. Additionally, the School submits an annual report on diversity to the Provost's office, which includes monitoring of the status of under represented minority faculty, staff, and students. Annual meetings with the Dean, Vice Dean for Education, ODCI Director, University Provost, and the Vice Provost for Faculty Diversity and Inclusion are held to review the report, discuss relevant issues and challenges, and identify opportunities to collaborate on programs designed to educate the Mailman School community about the importance of diversity, and equal opportunity as well as to develop strategies to improve recruitment and retention of faculty.

1.8.A.iv. Policies that support a climate for working and learning in a diverse setting.
Columbia University is committed to the principles of equity and excellence. It actively pursues both, adhering to the belief that equity is the partner of excellence. The University's goal is to recruit and retain a workforce and student body reflecting the diversity and talents of New York City and the nation. To achieve this goal, the University has implemented policies and programs, which seek to ensure that its employment and educational decisions are based on individual merit and not on bias or stereotypes. The University policies on Non-Discrimination and affirmative action govern the Mailman School in its efforts to foster an inclusive campus climate *"committed to providing a learning, living, and working environment free from unlawful discrimination and harassment and to fostering and nurturing a vibrant community founded upon the fundamental dignity and worth of all of its members."* The University policy promoting diversity in student community life helps to ensure diversity in learning settings.

In 2006, the University's Vice Provost for Diversity Initiatives Working Group issued a report that concluded that without certain vital career supports in place the University could not effectively recruit or retain a diverse group of faculty and staff. In order to address these issues, the Office of Work/Life was established in 2007. The Office of Work/Life promotes the University's commitment to a working and learning environment supportive of its faculty, researchers, administrators, staff, and students in their pursuit of productive and fulfilling professional and personal lives. In support of this mission, the Office of Work/Life has launched programs and services that lay the foundation for a university culture supportive of both work and life. The Office of Work/Life assists members of the Columbia community when they are facing typical life events and transitions, from birth to death. The Office of Work/Life works to address the needs of all types of family structures, careers, and issues unique to the University community. This is accomplished through policy work, work/life programs and services, workshops, and the dissemination of available resources.

In 2017, ODCI established a Diversity, Culture, and Inclusion Taskforce. The taskforce includes representation from a wide range of Mailman School stakeholders—including students, faculty, and staff—and works to provide recommendations that will inform future policy and program initiatives around diversity, culture, and inclusion.

Additionally, the ODCI Director has partnered with the Associate Dean of Student Affairs and Dean of Students, and the Office of Student Conduct and Community Standards to review existing policy and create additional policy, when necessary, to ensure the maintenance of an inclusive learning and working environment free of harassment and discrimination

1.8.A.v. Policies and plans to develop, review, and maintain curricula and other opportunities including service learning that address and build competency in diversity and cultural considerations.
The Mailman School implements a variety of policies and plans to maintain, review, and develop learning opportunities, both school-wide and at the departmental level, for students, faculty, and staff. The shared

goal of these endeavors is to build cultural competency in our school community as well as to expand service learning for students. In 2010, for example, the School-wide Curriculum Renewal Team utilized student and alumni surveys, feedback from practicum supervisors and employers, and guidance from leaders in the field to identify explicit cultural competency as a learning gap in our MPH curriculum. As such, a working group formed to develop our groundbreaking Self, Social, and Global Awareness (SSGA) curriculum to build competency in recognizing the role of structural inequality and privilege play in producing health disparities and addressing the needs of diverse communities. The program, in existence for five years, is completed by all incoming MPH students. Students complete the first module during orientation and the second module by the end of their first fall semester.

In 2016, with the creation of the Office for Diversity, Culture, and Inclusion (ODCI), the SSGA program has expanded to include trainings and workshops for teaching assistants and faculty. Consistent with the vision of ODCI to ensure that Mailman is a school of public health where diversity is recognized, respected, valued, and celebrated and where education, research, and practice reflect an explicit commitment to understanding and eliminating social inequalities and attendant disparities in population health, these activities are now conducted throughout the year. The result is an agenda of curricular and co-curricular activities that engage the multiple and intersecting dimensions of our social and cultural identities and promote the recognition and understanding of historical and current social inequalities. Members of the Mailman School community learn to develop and implement action steps in our institution, community, and the broader field of public health necessary for the promotion of health equity. These curricular and co-curricular activities include:

- **Self, Social, and Global Awareness (SSGA).** The SSGA curriculum supports students' personal capacity-building around structural competency and cultural humility necessary for equitable public health practice. All entering students complete required modules during their first year.
- **Teaching Assistant (TA) Training.** All new TAs attend a workshop on creating inclusive classrooms. During the session, TAs discuss strategies for identifying, avoiding, and responding to microaggressions, creating a supportive learning environment, and communicating effectively to encourage student participation and across differences.
- **Faculty Inclusive Teaching Institute.** Mailman faculty participate in an inclusive classroom institute on how to create learning environments conducive to the development of structural competency and cultural humility. In a daylong institute, faculty members consider issues of power, privilege, and identity with a focus on the intersecting identities that they bring into their classroom practice. Participants also consider the intersection between student identity and academic performance, exploring multiple topics including stereotype threat and implicit bias. As of March 2017, all faculty teaching the first year core curriculum have completed the institute. In 2017-2018, the Inclusive Teaching Institute will be offered to all faculty at the School. Moreover, ODCI is working with the Office of Human Resources to create a similar workshop for all staff at the School aimed at supporting an inclusive workplace.

Sample materials, including training agendas for the above mentioned activities, are provided in Electronic Resource File 1.8.A.

Departmental policies regarding curriculum review are similar to those undertaken at the school-wide level and include review processes conducted by each department to address gaps in learning and identify opportunities for curricular innovation with respect to department specific courses. This review is informed by student course evaluations, interviews with employers and leaders in the field, surveys of alumni, and discussions with faculty; typically, departments then begin new course development aimed to enhance students' cultural capacity, increase opportunities for service learning, or both. For instance, in the Department of Population and Family Health, faculty identified lack of training in cultural considerations as a key component of continued failures in the field of humanitarian assistance. In consultation with the Academic Affairs committee in that department, faculty developed a case study-

based course to explore patterns of ineffective humanitarian response in which lack of cultural competence was a factor. In partnership with Mailman's Office of Teaching and Learning, ODCI will now work to further support department faculty with the opportunity to present course syllabi for review with respect to diversity and cultural considerations.

Students have the opportunity to develop cultural awareness and humility via practica in sites sponsored by the Office of Field Practice (OFP). Students obtain exposure to diverse communities, priorities and health-related practices, goals, and needs. Cultural exchange and collaborative personal and professional relationships are prioritized, allowing students to move further along the life-long learning continuum for cultural competency. This is implemented in a number of ways during the practicum experience. Students accepted to most OFP sites receive a formal, pre-departure orientation that covers key aspects of the country's culture(s), health system(s), and socio-political of context. They are encouraged to learn the basics of the language, even if the projects do not require it, and OFP assists in this endeavor (e.g., coordination of Spanish language classes with CUMC professor and loans of Rosetta Stone language courses).

OFP coordinates with the in-country supervisor or project lead to create a local orientation and cultural immersion program offered to participating students upon arrival. Specific in-country orientation agendas and activities vary across sites, but are well developed particularly in the Dominican Republic, Uganda, Native American sites, France, and India. Other smaller sites arranged through OFP often include a less formal but nonetheless important orientation - often one on one with site supervisors.

For a list of currently offered courses related to enhancing student competency in diversity and cultural considerations, as well as courses with service learning components and a list of OFP-sponsored practicum sites with a particular emphasis on cultural awareness, see Electronic Resource File 1.8.B.

1.8.A.vi. Policies and plans to recruit, develop, promote, and retain a diverse faculty.
Columbia University has implemented policies and procedures that seek to ensure that its employment and educational decisions are based on individual merit and not on biases or stereotypes. Policies apply to personnel decisions, including recruitment, hiring, and promotion of University employees, including faculty. Columbia University Medical Center also has specific guidance that aligns with the University's policy on equal opportunity.

Columbia University is committed to developing a workforce of faculty and staff reflective of the diversity and talent of New York City and the nation. To prepare students for citizenship in a pluralistic world and keep Columbia at the forefront of knowledge production, the University seeks to recognize and draw upon the talents of a diverse range of outstanding faculty, research officers, staff, and students and to foster the free exploration and expression of differing ideas, beliefs, and perspectives through scholarly inquiry and civil discourse.

Columbia's Equal Employment Opportunity and Nondiscrimination Policy and diversity mission are supported by its affirmative action obligations. As a recipient of federal government grants and contracts, the University is subject to Executive Order 11246. This order, along with its implementing regulations and the Uniform Guidelines on Employee Selection Procedures, requires that the race, ethnicity, and gender of each applicant be identified and maintained and that all personnel activity be monitored to ascertain any statistically significant differences in the selection rates of protected group members considered. In accordance with its affirmative action obligations, Columbia University has developed search policies and procedures for full-time officers of instruction and research at the Medical Center and Harlem Hospital. These policies and procedures have been established to comply with federal law, and reflect the University's commitment to equal opportunity and nondiscrimination and its recognition that its educational mission is enhanced by policies promoting diversity, fairness, and respect for all persons.

In 2004, Lee Bollinger, President of Columbia University, made a significant commitment to enhancing diversity when he established the Office of the Vice Provost for Diversity Initiatives. The office is now led by the University's Vice Provost for Faculty Diversity and Inclusion, Dr. Dennis Mitchell. The mission of the office is to increase diversity in University faculty as a mean for enhancing academic excellence. The office sponsors or supports a wide range of initiatives to improve diversity and enhance the university's climate of inclusiveness, and provides a number of resources on its website. The website gives guidance on best practices in faculty search and hiring, emphasizing both inclusion and excellence. The University has established a Provost's Advisory Council for the enhancement of Faculty Diversity. The Council is comprised of faculty leaders from all schools, is chaired by Dr. Mitchell, and meets regularly with the Provost. Two Mailman faculty member represents the School on the Advisory Council.

Continuing a program launched in 2005, the University announced in spring 2015 it committed an additional $33 million to sustain and expand faculty diversity efforts. These funds provide ongoing support for the recruitment of outstanding faculty from under-represented groups, pilot grants to junior faculty who contribute to the diversity goals of the university, and funding for PhD pipeline efforts. New initiatives, including faculty recruitments in the area of LGBTQ scholarship and seminal conferences on issues of race, gender, and sexuality, are also supported. The University's diversity initiative moved to a university-wide model in 2012. Since that time, the initiative has supported the recruitment of 50 new underrepresented minority and women faculty members, including 14 with appointments at CUMC (two of those at Mailman). A total of 92 pilot awards have been granted, including 36 to junior faculty members with appointments at CUMC (seven of those at Mailman).

Since 2014, Mailman School leaders and departmental hiring committees have worked with the Vice Provost for Faculty Diversity to devise strategies for recruiting and retaining diverse faculty that more accurately reflect the national pool of candidates. The Office of the Vice Provost for Faculty Diversity and Inclusion offers resources for best practices in inclusive faculty searches, development, and mentoring. At the School, junior faculty, with a special focus on underrepresented minority junior faculty, are paired with a senior faculty member in a mentoring program to help guide them through career choices toward success, successful promotion, and/or successful promotion with tenure. Furthermore, the Office of the Vice Provost for Faculty Diversity hosts a junior faculty career development series aimed at helping faculty navigate facets of a career in academia. Topics include preparing for the tenure process, managing difficult conversations in the classroom, and mentoring. Additionally, the office has created a program for the support of faculty recruitment from underrepresented groups. The program is designed to support the School's diversity plans and assist the University in meeting placement goals established in its affirmative action programs. The office manages two competitive request for proposal processes aimed at supporting the recruitment and retention of under-represented minority faculty:

Provost's Grants Program for Junior Faculty Who Contribute to the Diversity Goals of the University. This small-grants program is designed to support Schools' diversity plans and to assist the University in meeting placement goals established in its affirmative action programs. The Provost's Grants Program aims to assist with advancing the career success of outstanding junior faculty in disciplines where the availability of qualified minorities and women exceeds their representation on our faculty. Requests for proposals occur twice a year (fall/spring) and the maximum award is $25,000. The following Mailman School faculty members have received the Provost's Grant Program Award:

- 2015—Diana Hernandez, PhD, Assistant Professor of Sociomedical Sciences; Shakira Suglia, PhD, Assistant Professor of Epidemiology; Magdelena Cerda, ScD, Assistant Professor of Epidemiology; and Sara Abiola, JD, PhD, Assistant Professor of Health Policy and Management
- 2016—Jasmine McDonald, PhD., Assistant Professor of Epidemiology; and Merlin Chowkwanyun, PhD, Assistant Professor of Sociomedical Sciences
- 2017—Pia Mauro, PhD, Assistant Professor of Epidemiology; Rachel Shelton, PhD, Assistant Professor of Sociomedical Sciences

Faculty Recruitment from Underrepresented Groups. This program is designed to support the Schools' diversity plans, and to assist the University in meeting placement goals established in its affirmative action programs, by advancing the recruitment of outstanding minority and female scholars in disciplines where the availability of qualified minorities and women exceeds their representation on our faculty. The program has two elements, Standard Search Recruitments and Target-of-Opportunity Recruitments. In 2015, the Mailman School received two Target-of-Opportunity awards to support recruitment:

- DuBois Bowman, PhD, Chair, Department of Biostatistics
- Gina Wingood, ScD, MPH, Professor, Department of Sociomedical Sciences.

1.8.A.vii. Policies and plans to recruit, admit, retain a diverse staff.
The University's Office of Equal Opportunity and Affirmative Action (EOAA) has overall responsibility for the management of the University's Employee Policies and Procedures on Discrimination, Harassment, Sexual Assault, Domestic Violence, Dating Violence, and Stalking; coordinates compliance activities under these policies and the applicable federal, state, and local laws; and is designated as the University's Compliance Office for Title IX, Section 504 of the Rehabilitation Act, and other equal opportunity, nondiscrimination, and affirmative action laws.

1.8.A.viii. Policies and plans to recruit, admit, retain, and graduate a diverse student body.
Columbia University does not discriminate against any person in the administration of its educational policies, admissions policies, scholarship and loan programs, and athletic and other University-administered programs. Furthermore, the University does not permit harassment of any student or applicant on the basis of race, color, sex, gender (including gender identity and expression), pregnancy, religion, creed, marital status, partnership status, age, sexual orientation, national origin, disability, military status or any other legally protected status.

The Mailman School rigorously pursues a policy of non-discrimination with respect to all qualified applicants, regardless of their age, race, gender, disability, religion, sexual orientation, or national origin. In keeping with the affirmative action policy of Columbia University, the School actively seeks qualified minority applicants through its recruitment events and admissions policy and procedures. Additionally, in its continued effort to promote diversity, the Vice Dean for Education assisted by the Associate Dean for Student Affairs, the Director of Admissions, and the Admissions Recruiter, are responsible for designing and implementing a recruitment strategy that will further enhance the diversity and intellectual strength of the student applicant pool. To that end, the admissions team participates in events that focus on potential applicants of color. In the last admissions cycle, over 40% of recruiting events had a specific diversity focus. These included on campus events at University pipeline programs as well as national events such as the Morehouse College Public Health Institutes Graduate Career Fair and the SACNAS National Diversity in STEM Conference.

The School currently offers four endowed scholarships that are awarded to underrepresented minority students: The Harriet and Robert H. Heilbrunn Scholars program for under-represented minority students who plan to work in city, state, or federal public health agencies or public health oriented non-profits and foreign students who plan to work in the public sector in their country of origin; The Allan Rosenfield Scholar's Fund which supports under-represented minority doctoral students or students conducting post-doctoral research, the W.E.B. DuBois Scholarship for African American students who pledge to work for at least three years in the field of public health, and the Fiori fellowship for minority preferred MPH students looking to pursue a career in global health. In 2016-2017, 34 students received one of these four awards.

Additionally, Columbia University and the Mailman School offer several pipeline programs that aim to move the needle to expose and recruit a higher proportion of qualified under-represented minority students need to the STEM fields and to public health. These programs are described below:

Biostatistics Epidemiology Summer Training Diversity Program (BEST) was established to expand and diversify the behavioral and biomedical sciences' workforce by introducing undergraduates from underrepresented populations to biostatistics and cardiovascular and pulmonary disease research. Students join the Department of Biostatistics at the Mailman School for eight weeks of research, training, academic and career planning, and social activities around New York City. Participants undertake an individualized research project with a Columbia University faculty mentor, including a project symposium at the program's conclusion. Other components of the program include:

- Course work in Introductory Biostatistics and Statistical Computing with SAS software
- A seminar series presented by Mailman School faculty and administrators
- Graduate school admissions counseling
- Training in research conduct and ethics
- Training in skills essential for graduate school success
- Social activities

All participants receive a $2,800 stipend and funds to offset costs of food and travel to and from New York City. Students living outside the New York City area have the option of free housing.

Program to Inspire Minority Undergraduates in Environmental Health Science Research (PrIMER) is a 10-week summer research program for full-time undergraduate minority students who are typically underrepresented in STEM fields. It is funded by the National Institute for Environmental Health Science and provides minority students from City College of New York, Hunter College, and John Jay College the opportunity to gain valuable research experiences in environmental health sciences. PrIMER students commit to a two-year program beginning the summer before their junior year up to May of their senior year. Students are paired with a Columbia University faculty member who serves as a research and academic mentor throughout the program.

As a part of this program, students conduct laboratory research in environmental health sciences, attend weekly professional development workshops, and interact closely with Columbia University faculty. The summer program culminates with a final oral presentation at the PrIMER Symposium, where students present their research projects in an academic setting. Students have the option to continue research with their mentor during the academic year.

Participants receive compensation ($15/hour) throughout the program. The summer portion requires 35 hours/week for 10 weeks and research during the academic year requires 5 hours per week. Professional GRE prep classes are provided to students during their senior year.

Summer Public Health Scholars Program (SPHSP) is designed for undergraduate students to increase interest in and knowledge of public health and biomedical science careers. SPHSP is a partnership of Columbia University's College of Physicians and Surgeons, College of Dental Medicine, School of Nursing, and the Mailman School of Public Health. SPHSP grant funding was awarded by the Centers for Disease Control and Prevention, Office of Minority Health, and Health Equity.

The program is designed for undergraduates going into their junior or senior year and recent baccalaureate degree students who are undecided about their career goals. This is a rigorous program that includes public health course work at Columbia University Medical Center (CUMC) and at the Mailman School, hands-on field experience and immersion in a diverse urban environment, seminars and lectures with public health leaders and Mailman School faculty, and mentoring by University and School faculty

members, ensuring students' exposure to the breadth and importance of public health as a career option. The program provides a stipend, housing, and round-trip travel expenses.

The Initiative for Maximizing Student Development (IMSD). This program, funded by the NIH/National Institute for General Medical Sciences, seeks to increase the number of historically underrepresented students who receive doctoral training, mentoring, support, and funding in public health, with the goal of developing a diverse research and scientific workforce in the biomedical and behavioral sciences. The program is available to students who are U.S. citizens or permanent residents and serves approximately eight underrepresented minority doctoral students a year. The program has sponsored a total of 46 underrepresented minority graduate students at the Mailman School. The School's first IMSD program, funded from 2002-2006, aimed to increase the number of under-represented minority masters students enrolling in the Departments of Sociomedical Sciences and Epidemiology, and subsequently entering doctoral programs. It funded 22 students and was highly successful. The program achieved a 100% graduation rate, and all of its graduates subsequently entered doctoral programs, medical or law school, or research positions in public health. In 2008, the School was funded to support the current program which is focused on doctoral students, and it has been recently renewed through 2020.

1.8.A.ix. The above steps are evaluated regularly for their effectiveness.
The diversity of the Mailman School's faculty, staff and students is evaluated annually. The Office of Education in collaboration with the Director of Admissions and the Dean of Students monitors the diversity of applicants as well as accepted and enrolled students at the end of each admissions cycle. This informs recruitment strategies for the next admissions cycle and is reviewed with individual departments and their academic program leaders to determine if individual strategies are needed by program. The effectiveness of the diversity pipeline programs is monitored with regard to the number of participants who apply to the School and are admitted. This determines if there are additional measures to be taken to increase applications and/or to enhance applications and acceptances from these groups of underrepresented students.

Student, faculty, and staff diversity is also monitored annually by the Dean's office and reviewed with the Provost and Vice Provost for Diversity and Inclusion. The School submits an annual Institute and Culture Provost Update to the Provost with detailed updates on strategies to increase diversity among faculty, students and staff at the School. The report, which also includes detailed data reports on the diversity of faculty, students, and staff, is reviewed at an annual meeting with the Provost and Vice Provost as well as the Vice Dean for Education and the Director of the Office of Diversity, Culture, and Inclusion. Examples of recent annual reports are available in Electronic Resource File 1.8.A. (2011, 2013, and 2015 Diversity Reports to Provost). The Dean presented student and faculty diversity data at the annual State of the School address and discussed data and recruitment and retention strategies are discussed as appropriate at Dean's Advisory Group meetings, annual school leadership retreats, and with individual department chairs and School leaders.

The launch of ODCI has established another mechanism by which the School will focus evaluating, and monitoring the multiple facets of diversity within the School, including recruitment, curricula, and the achievement of diversity and cultural competence.

1.8.B. Evidence that shows the plan or policies are being implemented. Examples may include mission/goals/objectives that reference diversity or cultural competence, syllabi, and other course materials, lists of student experiences demonstrating diverse settings, records and statistics on faculty, staff and student recruitment, admission, and retention.

The Mailman School has expressly stated a diversity goal and set of measurable objectives, and has included a diversity component in our vision statement (Criterion 1.1.). Additionally, diversity priorities are interwoven throughout education, research, and service goals at the School. Refer to Table 1.8.E.1. (see Criterion 1.8.E. below) for diversity data on students, faculty, and staff.

The School's commitment to diversity has resulted in the creation of the Office of Diversity, Culture, and Inclusion (ODCI) in 2016. ODCI offers programming and initiatives to promote an inclusive and equitable campus community, such as fora on inclusion, teaching institutes, and other activities. Programming includes:

- Faculty Inclusive Teaching Institute: In partnership with the Columbia Center for Teaching and Learning and the Mailman School's Office for Teaching and Learning, the Institute for Faculty centered on the development of tools and strategies for creating inclusive classrooms. As of spring 2017, the daylong institute has been attended by all faculty who will teach in the MPH Core in fall 2017.
- Teacher Assistant Training: All new teaching assistants (TAs) attend a workshop on creating inclusive classrooms. During the session, TAs discuss strategies for identifying, avoiding, and responding to microaggressions, creating a supportive learning environment, and communicating effectively to encourage student participation.
- "Equiteas": "Equiteas" are gatherings that provide a space for students, faculty, and staff to discuss issues and topics related to power, privilege, diversity, and equity as they manifest at the Mailman School and the broader community. Past "Equiteas" include a conversation about the MPH Core's ability to prepare students to seek equity and justice for vulnerable populations, a panel on measuring racism, and a panel on Islamophobia and mental health.
- Equity Grant: The Equity Grant supports student groups at the School in their effort to create projects and programming that advance and the understanding of the relationship between determinants of health and systemic inequality. The grant is available to students through a short application and proposal process.
- Community Walk: During the Community Walk, over 100 Mailman School students explore how fundamental causes of disease are inscribed in the city streets. Students start the day with a lecture, walk the neighborhood from the Columbia University Medical Center to the Bronx, identify points of disinvestment, and discuss the structural processes and forces that create them. At the end of the day, students meet and talk with neighborhood activists. The Community Walk takes place once a year, during the fall semester.

Curricular offerings demonstrate the School's commitment to diversity. The MPH Core curriculum includes a Social Determinants of Health module and several courses address issues of diversity and cultural considerations (refer to Electronic Resource File 1.8.B., "Courses Enhancing Student Competency and Cultural Considerations by Department"). Students can participate in service learning courses that integrate diversity and cultural considerations in the community (refer to Electronic Resource File 1.8.B., "Courses with Service Learning Components by Department"). Moreover, the School requires all faculty and incoming students to complete Self, Social and Global Awareness training (refer to Electronic Resource File 1.8.B. for SSGA guides and supporting materials). Students' field practice sites and experiences further highlight the integration of diversity at the Mailman School (refer to Electronic Resource File 1.8.B., "OFP-Sponsored Practicum Sites with an Emphasis on Cultural Awareness").

1.8.C. Description of how the diversity plan or policies were developed, including an explanation of the constituent groups involved.

As described briefly in Criterion 1.2.C., the current diversity plan and policies at the Mailman School, reflected in the creation of the Office of Diversity, Culture, and Inclusion, resulted from a multi-stage process involving faculty, students, and staff for evaluating the School's needs and determining overarching goals and directions for creating a more diverse, inclusive, and culturally competent environment. In 2012, the Dean launched an ongoing series of Diversity Retreats with the School's senior leadership. The retreats included department chairs, center directors, and vice deans to ensure that the leadership had central responsibility for setting and accomplishing goals, and to ensure that the issue remained relevant. The Dean appointed former Vice Dean Roger Vaughan and Associate Dean for Community and Minority Affairs Robert Fullilove to launch a school-wide Diversity Committee, to develop short and long-term goals, and to draft the School's Roadmap for Diversity. The Diversity Committee, which included representation from faculty, staff, and students, developed specific recommendations by soliciting input from key constituents through town hall and department meetings, and analyzing data from the Office of Student Affairs and Office of Faculty Affairs and Human Resources. The recommendations, data analysis, and changes in the local and national environments led the Dean to create the Office of Diversity, Culture, and Inclusion (ODCI) in 2016 and the current plans and policies.

The director of ODCI has launched the Diversity, Culture, and Inclusion Taskforce with representation that includes students, faculty, and staff who are tasked with providing recommendations to inform policy and program initiatives. The Director collaborates closely with the Dean and all members of the School's leadership teams.

1.8.D. Description of how the plan or policies are monitored, how the plan is used by the school and how often the plan is reviewed.

The Mailman School's diversity, culture, and inclusion plans and policies are monitored and reviewed annually. Since 2011, per Criterion 1.8.A.ix., the plans and policies have been assessed with the submission of the annual Provost report on diversity and inclusion. Recommendations for new strategies and changes are based on feedback and collaboration with the Dean and the Office of the Vice Provost for Diversity and Inclusion. With the creation of ODCI in 2016, the process for evaluating the diversity, culture, and inclusion plan and policies will continue to involve faculty, students, and staff. ODCI is charged with collecting, analyzing, and presenting data in an ongoing fashion so that plans and policies pertaining to diversity can be monitored. Review will continue to be annual.

1.8.E. Identification of measurable objectives by which the school may evaluate is success in achieving a diverse complement of faculty, staff, and students, along with data regarding the performance of the program against those measures for each of the last three years. See CEPH Data Template 1.8.1. At minimum, the school must include four objectives, at least two of which relate to race/ethnicity. For non-US-based institutions of higher education, matters regarding the feasibility of race/ethnicity reporting will be handled on a case-by-case basis. Measurable objectives must align with the school's definition of under-represented populations in Criterion 1.8.A.

Table 1.8.E.1. (CEPH Data Template 1.8.1.) Outcome Measures/Summary Data for Student, Faculty and Staff Diversity, 2014-15 to 2016-17

Category/ Definition	Method of Collection	Data Source	Target	2014-15	2015-16	2016-17	Peer Average[a]
Students							
Incoming Students-Veterans	Self-reported	SOPHAS	2.0%	0.6%	0.7%	0.8%	1.1%
Incoming Students-First Generation College	Self-reported	SOPHAS	20.0%	12.8%	13.2%	12.9%	20.3%
Enrolled Students-Hispanic	Self-reported	SIS	10.0%	9.4%	8.6%	6.9%	9.4%
Enrolled Students-Black	Self-reported	SIS	10.0%	6.3%	6.8%	7.3%	10.1%
Enrolled Students-Male	Self-reported	SIS	30.0%	24.2%	24.1%	24.2%	28.7%
Enrolled Students-Disability	Office of Disability Services (ODS) Registration	ODS	60	50	46	56	NA
Faculty							
Primary Faculty-Hispanic	Self-reported	PeopleSoft	9.0%	7.2%	6.6%	4.6%	9.1%
Primary Faculty-Black	Self-reported	PeopleSoft	9.0%	7.2%	6.6%	6.6%	5.3%
Primary Faculty-Female	Self-reported	PeopleSoft	55.0%	53.6%	56.3%	56.5%	51.6%
Tenured Faculty-Hispanic	Self-reported	PeopleSoft	9.0%	4.3%	4.4%	2.0%	14.5%
Tenured Faculty-Black	Self-reported	PeopleSoft	9.0%	6.4%	8.9%	8.2%	3.2%
Tenured Faculty-Female	Self-reported	PeopleSoft	55.0%	40.4%	42.2%	44.9%	43.0%
Staff							
Staff- Hispanic	Self-reported	PeopleSoft	30.0%	27.9%	27.2%	26.1%	NA
Staff- Black	Self-reported	PeopleSoft	18.0%	13.8%	13.3%	13.9%	NA
Staff- Female	Self-reported	PeopleSoft	70.0%	74.9%	75.8%	74.1%	NA

[a] Peer averages for enrolled students taken from the ASPPH Data Center for the 2015 reporting year. Peer averages for incoming students provided by SOPHAS for the 2014-16 application cycles. Peer averages for faculty taken from the ASPPH Data Center for the 2015 reporting year

1.8.F. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- The Mailman School established the Office of Diversity, Culture, and Inclusion, and conducted a national search for a new Director, who joined the School in spring 2017. It serves to organize multiple forms of diversity- and inclusion-related activities at the School, building on prior work and introducing new forms of programming for faculty, students and staff, toward goals of a diverse, inclusive, and successful community.
- The Dean has issued a requirement for all faculty to complete mandatory capacity-building experiences in the creation of a diverse and inclusive School.

Challenges

- The School continues to work to meet targets for diversity.

Plans

- ODCI continues to collaborate with the Dean and the Provost's office in the development of strategies to recruit and retain a faculty that more accurately represents the New York City population and that of the United States more generally. Programs such as the Provost's Grant and mentoring opportunities at the University and School levels will be augmented by increased innovation led by the Director of the Office of Diversity.
- ODCI plans to increase resources available to students, faculty and staff including the creation of a bias reporting system to report bias related incidents on campus.
- ODCI is collaborating with the Office of Teaching and Learning to develop a rubric for faculty to assess the effectiveness of diversity and cultural competencies covered in their courses. This will include the review of curricula for content related to competencies and the monitoring of successful implementation of new, relevant contents.
- The School will maintain and update data related to minority recruitment of faculty and students and make available on the ODCI website.

Criterion 2.0 - Instructional Programs

2.1. DEGREE OFFERINGS
The school shall offer instructional programs reflecting its stated mission and goals, leading to the Master of Public Health (MPH) or equivalent professional master's degree in at least the five areas of knowledge basic to public health. The school may offer other degrees, professional and academic, and other areas of specialization, if consistent with its mission and resources.

2.1.A. An instructional matrix presenting all of the school's degree programs and areas of specialization. If multiple areas of specialization are available within departments or academic units shown on the matrix, these should be included. The matrix should distinguish between public health professional degrees, other professional degrees and academic degrees at the graduate level, and should distinguish baccalaureate public health degrees from other baccalaureate degrees. The matrix must identify any programs that are offered in distance learning or other formats. Non-degree programs, such as certificates or continuing education, should not be included in the matrix. See CEPH Template 2.1.1.

Five degrees are awarded by the Mailman School: the Master of Public Health (MPH), Masters of Science (MS), Masters of Healthcare Administration (MHA), Doctor of Public Health (DrPH), and Doctor of Philosophy (PhD). These degrees are summarized briefly, and Table 2.1.A.1., below, provides the instructional matrix of the master's, doctoral and dual degree programs offered at the School. The degrees offered by the School are organized within academic departments and programs of instruction. Areas of specialization, known as certificates at the School, exist only for the MPH. The School's 23 certificates constitute a recognized credential with the New York State Department of Education and Columbia University.

PUBLIC HEALTH PROFESSIONAL DEGREES
Public health professional degrees at the School include the MPH, MHA, and DrPH. In addition to coursework, professional degree students are required to complete a mentored practice experience and a culminating experience that represents a synthesis of knowledge and skills gained from their academic coursework and practice experience.

Masters of Public Health (MPH). The MPH program is the cornerstone of the Mailman School's professional educational offerings. Following the 2010 CEPH self-study, the School responded to national and global public health trends, as well as the shifting needs of academia, professional organizations, employers, and society, and launched a comprehensive renewal of our MPH program and curriculum. These changes were submitted to CEPH in May 2012 in a substantive change notice (Electronic Resource File 2.1.A.). The MPH program includes:

- A revised, integrated MPH Core curriculum focusing on foundational knowledge in the field of public health. All MPH students begin the program with a required semester-long introduction to core knowledge in public health, spanning the historical, ethical, biological, social, health systems, environmental, and research methodological foundations of population health. The 15-credit core curriculum, which in a traditional offering spread across multiple semesters in the MPH program, is now a strategically integrated, 6-course, 18-module (educational unit) experience.
- The addition of two novel school-wide courses that focus on integrating classroom knowledge with practical application through case-based learning (Integration of Science and Practice course) and leadership and professional skill-building (Leadership course). Through these additional 4.5 credits of "shared" coursework, the new curriculum creates a platform to augment the core curriculum, adding depth and strength to our ability to fulfill Criterion 2.3., public health core knowledge.

- The centralization and augmentation of support to the student practice experience. By adding an infrastructure to support practice experience, the School offers a wider array of opportunities to students, and has an enhanced ability to monitor and evaluate the quality and effectiveness of practice experience placements. This infrastructure further strengthens compliance with CEPH Criterion 2.4.A. to require a planned, supervised, and evaluated practice experience for each student.
- The introduction of an entirely new credential of specialization: the certificate. Certificates are cross-departmental, and replace tracks, which historically were imbedded largely in departments. Students may now gain a credential in addition to the MPH in a specialized area of knowledge important to the future of the public's health (e.g., climate and health, healthy aging, public health informatics), and further add an interdisciplinary dimension to their professional public health education. The 23 available certificate programs have been developed in consultation with public health employers and other key stakeholders and reflect today's most sought-after knowledge and skills. MPH certificate offerings by department are available in Electronic Resource File 2.1.A.

All MPH students must earn a minimum of 42 credit hours, completed by most over the course of two years. The certificate programs form an integral part of the two-year Columbia MPH experience. In order to graduate, students enrolled in the two-year Columbia MPH must fulfill the course requirements of 52 credits comprising the Core, their certificate program, as well as their department.

A one-year Accelerated MPH program is available to select candidates who have five years of health related experience or an advanced degree in a public health related field. The competencies and program requirements for these students, including participating in the Core curriculum, the practicum and culminating experience, are the same. These students do not complete a certificate or area of specialization due to time constraints as well as recognition of their advanced standing in the program given their additional credential required for admission to this program of study.

Executive Programs in Healthcare Management (MPH and MHA). The executive programs in healthcare management are designed for experienced healthcare professionals with more than five years of healthcare related experience. The 24-month executive healthcare masters programs meet for one long weekend each month, and cohorts comprise 25-30 students respectively from various dimensions of the healthcare system.

Doctor of Public Health (DrPH). The DrPH is offered in five departments (biostatistics, epidemiology, environmental health sciences, population and family health, and sociomedical sciences), and is designed for professionals who have at least two years of full-time health-related work experience and typically hold an advanced degree.

Other Professional Degrees. The School offers the Master of Health Administration (MHA) degree discussed in more detail in Criterion 2.8.

Dual Degrees. The School offers the MPH as a dual degree in conjunction with nine Columbia University schools, and administers a PhD in epidemiology as a dual degree with the MD from the Columbia University College of Physicians and Surgeons, in conjunction with the Columbia University Graduate School of Arts and Sciences.

PUBLIC HEALTH ACADEMIC DEGREES

Department-based Master of Science (MS) and Doctor of Philosophy (PhD) degrees focus on the development of in-depth knowledge and research skills within a specific field of study. These degrees are designed for individuals interested in creating new and innovative knowledge, with research and/or

teaching as their career goal. The academic degrees culminate with a scholarly master's thesis (MS) or a doctoral dissertation (PhD).

Table 2.1.A.1. (CEPH Template 2.1.1.) Instructional Matrix—Degrees & Specializations

	Academic		Professional	
	Masters	Doctoral	Masters	Doctoral
DEPARTMENTAL DEGREE PROGRAMS				
Biostatistics	MS	PhD	MPH[a,b]	DrPH
Accelerated Pre-Doctoral Training	MS			
Clinical Research Methods	MS			
Patient-Oriented Research	MS			
Pharmaceutical Statistics	MS			
Statistical Genetics	MS			
Theory and Methods	MS			
Environmental Health Sciences	MS	PhD	MPH	DrPH
Radiology Sciences	MS			
Toxicology	MS			
Climate and Health		PhD		
Environmental Epigenetics and Molecular Mechanisms		PhD		
Environmental Protection and Mitigation		PhD		
Exposure Science and Environmental Epidemiology		PhD		
Epidemiology	MS	PhD	MPH[b]	DrPH
Executive Program in Epidemiology	MS			
Health Policy and Management			MPH[b], MHA	
Healthcare Management Executive Program			MPH, MHA	
Healthcare Management Full-Time			MPH, MHA	
Healthcare Management Part-Time			MPH, MHA	
Population and Family Health			MPH[b]	DrPH
Sociomedical Sciences	MS	PhD	MPH[b]	DrPH
OTHER DEGREE PROGRAMS				
General Public Health			Accelerated MPH	
Digital Biostatistics and Epidemiology	MS[c]			
DUAL DEGREE PROGRAMS				
College of Physicians and Surgeons (MD)		PhD[d]	Accelerated MPH	
College of Dental Medicine (DDS)			MPH	
Division of Occupational Therapy (MSOT)			MPH	
Graduate School of Architecture, Planning, and Preservation (MSUP)			MPH	
School of Business (MBA)			MPH	
School of International and Public Affairs (MIA, MPA)			MPH	
School of Law (JD)			MPH	
School of Nursing (MS)			MPH	
School of Social Work (MSSW)			MPH	

	Academic		Professional	
	Masters	Doctoral	Masters	Doctoral
SPECIALIZATIONS (CERTIFICATES)				
Advanced Epidemiology			MPH	
Applied Biostatistics			MPH	
Child, Youth and Family Health			MPH	
Climate and Health			MPH	
Comparative Effectiveness Outcomes Research			MPH	
Demography[e]			MPH	
Environmental Health Policy			MPH	
Epidemiology of Chronic Disease			MPH	
Global Health			MPH	
Health and Human Rights			MPH	
Health Communication			MPH	
Health Management[e]			MPH	
Health of an Aging Society			MPH	
Health Policy Analysis			MPH	
Health Policy and Practice			MPH	
Health Promotion Research and Practice			MPH	
History, Ethics and Law			MPH	
Infectious Disease Epidemiology			MPH	
Injury Prevention and Control			MPH	
Molecular Epidemiology			MPH	
Public Health and Humanitarian Assistance			MPH	
Public Health Informatics			MPH	
Public Health Research Methods			MPH	
Sexuality, Sexual and Reproductive Health			MPH	
Social Determinants of Health			MPH	
Toxicology			MPH	

[a] Two-year MPH in Biostatistics offered in fall 2017
[b] Denotes additional accelerated offering
[c] Approved, but not advertised nor enrolling students; plans to enroll first cohort in fall 2018
[d] Only offered to students in the Epidemiology Department
[e] Not currently enrolling student

2.1.B. The school bulletin or other official publication, which describes all degree programs identified in the instructional matrix, including a list of required courses and their course descriptions. The school bulletin or other official publication may be online, with appropriate links noted.

Information about the Mailman School's degree programs and requirements can be found online on the Student Handbooks page. This site contains Mailman School handbooks for master's students and doctoral students, and there are department-specific handbooks for all masters and doctoral degrees listed in the instructional matrix. A searchable course directory also contains course descriptions. In addition, all School course syllabi are found in Electronic Resource File 2.1.B. Information about MPH certificates can be accessed through the certificates database, which is an online database that can be searched by enrollment year, department, and certificate.

2.1.C. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- The School offers a range of professional and academic programs that meet student needs and continually innovate to meet the changing needs of the workforce.
- In 2012, the School launched a comprehensive renewal of its MPH curriculum in response to national and global trends, and the shifting needs of academia, professional organizations, and employers. Initial evaluations of the interdisciplinary model has been published in peer reviewed journals and has served as a model for national and international schools and programs in public health.
- The Mailman School offers MPH degrees in several formats, such as accelerated and executive options, for candidates who wish to pursue public health practice. The School also offers MS degrees for students interested in academic careers. All degrees provide coursework to ensure a solid foundation in the core areas of public health.
- The School has PhD programs in four departments and DrPH degrees in five departments.
- The School has continued to innovate in both degree program offerings and curriculum formats, introducing a new DrPH option in Population and Family Health and developing new distance-based programs in Biostatistics or Epidemiology.
- Dual degree program with prestigious programs at Columbia University provide opportunities for students to combine public health training with other professional fields of import.
- The Department of Health Policy and Management launched an MHA degree in full-time, part-time, and executive formats that integrates coursework in organizational leadership and management, health policy, and public health and health systems. The program is also accredited by the Council on Accreditation of Healthcare Management Education (CAHME).

Challenges

- While several degree programs are offered in varying formats (full or part-time), the on-line offerings are currently limited and need to expand to maximize our ability to meet the needs of public health professionals.

Plans

- The School is examining opportunities to expand its capacity to offer innovative online and distance education academic and professional degree offerings. Plans include the development of an advisory committee of faculty interested in this format, collaboration with the University's Center for Teaching and Learning to provide training in best practices in online and digital technologies to enhance teaching and learning, and engagement of alumni and employers in determining prioritization of offerings.
- The School has an approved digital format of the MS degree in biostatistics and epidemiology, for which we plan to enroll the first cohort in fall 2018.
- The School is working closely with Columbia College to expand undergraduate public health course offerings, with plans to pursue BA/MPH degree opportunities for Columbia and Barnard students.
- The School is also planning to review its dual degree programs to ensure their continued alignment with student and workforce needs; increased promotion of these programs is also planned to increase enrollment.

Criterion 2.0 - Instructional Programs

2.2. PROGRAM LENGTH
An MPH degree program or equivalence professional public health master's degree must be at least 42 semester-credit units in length.

2.2.A. Definition of a credit with regard to classroom/contact hours.

Columbia University and the Mailman School abide by the same standard for relating credits to the number of classroom/contact hours and out of class hours. It is the expectation that each hour of classroom instruction be coupled with two hours of learning outside of class. Per New York State regulations, a credit hour is defined as twice the number of in-class, contact hours for out of class workload; one credit corresponds to 14 hours of classroom contact hours and 28 hours of work outside of class. Academic credits are offered by semester, with select credits available in summer courses.

Table 2.2.A.1. Minimum Number of Learning Hours per Credit

Credits	Classroom/Contact	Out of class
1	14	28
1.5	21	42
2	28	56
3	42	84

2.2.B. Information about the minimum degree requirements for all professional public health master's degree curricula shown in the instructional matrix. If the school or university uses a unit of academic credit or an academic term different from the standard semester or quarter, this difference should be explained and an equivalency presented in a table or narrative.

Graduates of all School's professional masters programs must complete a minimum of 42 academic credits. Table 2.2.B.1. provides the specific professional master's degree credit requirements. In addition to minimum academic credit requirements, each public health professional master's degree requires a practice experience and a culminating experience, described further in Criteria 2.4 and 2.5.

Table 2.2.B.1. Minimum Credit Requirements for Professional Public Health Master's Degree Programs

Degree/Program	Minimum Credit Requirement
Master of Public Health (MPH)[a]	52
Accelerated MPH	42
Master of Healthcare Administration (MHA)[b]	55.5
Executive MPH and MHA	45.5
Dual Degree MPH[c]	42
General Public Health MPH	42

[a] Includes MPH degrees in all six departments and certificate programs.
[b] Includes full-time and part-time programs
[c] Includes all dual degree programs: MD/MPH, DDS/MPH, MSOT/MPH, MSUP/MPH, MBA/MPH, MIA/MPH, JD/MPH, MS/MPH, and MSSW/MPH degrees

2.2.C. Information about the number of professional public health master's degrees awarded for fewer than 42 semester credit units, or equivalent, over each of the last three years. A summary of the reasons should be included.

There were no professional public health master's degrees with fewer than 42 semester credit units awarded during the past three academic years.

2.2.D. Assessment of the extent to which this criterion is met and an analysis of the program's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- All professional degrees meet or exceed the minimum number of credit hours regardless of curriculum format.

Challenges

- None at this time.

Plans

- As the School plans to expand its professional degree offerings into online formats, courses and credit hours will need to adhere to minimum standards for credit units.

Criterion 2.0 - Instructional Programs

2.3. PUBLIC HEALTH CORE KNOWLEDGE

All graduate professional degree public health students must complete sufficient coursework to attain depth and breadth in the five core areas of public health knowledge.

2.3.A. Identification of the means by which the school assures that all graduate professional degree students have fundamental competence in the areas of knowledge basic to public health. If this means is common across the school, it need be described once. If it varies by degree or program area, sufficient information must be provided to assess compliance by each program. See CEPH Template 2.3.1.

Students enrolled in a professional degree program (MPH, MHA, Executive MPH and MHA, and DrPH) gain fundamental competence in the basic knowledge areas of public health. Tables 2.3.A.2-7. contain the required courses addressing public health core knowledge areas for the specific professional degrees. Syllabi for these courses can be found in Electronic Resource File 2.1.B.

MPH Degree

In the fall of 2012, the Mailman School launched a comprehensive renewal of its MPH curriculum, which included a revision of the core curriculum. The foundation of this work was to strengthen the focus on essential public health core knowledge. Prior to the new core curriculum, students completed a 15-credit set of core public health courses spread across multiple semesters. The current core curriculum is now a strategically integrated, 6-course, 18-module experience in which all MPH students are engaged during their first fall semester. The core curriculum begins with a semester-long introduction to core knowledge in public health, spanning the historical, ethical, biological, social, health systems, environmental, and quantitative and qualitative foundations of population health. The core curriculum comprises six courses, known as studios, addressing the five areas of public health core knowledge. Table 2.3.A.1. presents the courses/studios and the 17 modules, or sub-units, within each course/studio.

Table 2.3.A.1. MPH Core Courses/Studios and Modules/Sub-Units

Core Courses/Studios	Modules/Sub-Units
Foundations in Public Health (P6020)	History of Public Health
	Ethics of Public Health
	Human Rights
Determinants of Health (P6040)	Biological Determinants of Health
	Environmental Determinants of Health
	Social Determinants of Health
Health Systems (P6060)	U.S. Public Health and Healthcare
	Comparative Health Systems
	Health Economics
Research Methods and Applications (P6031)	Quantitative Foundations
	Qualitative Foundations
Global and Developmental Perspectives (P6052)	Globalization and Global Health
	Maternal, Reproductive, and Sexual Health
	Life Course
Public Health Interventions (P6051)	Applied Theory and Interventions
	Program Planning and Evaluation
	Systems Thinking

The MPH Core curriculum marks a significant departure from the previous curriculum, which introduced the five core disciplines of public health in a traditional, silo approach of distinct courses in various Departments. The revised MPH Core curriculum brings together expertise and perspectives from a broad array of disciplines (with many modules co-developed and co-taught by faculty from multiple departments), so that students can appreciate the dynamic, multi-faceted challenges of public health while still demonstrating competencies in the core disciplines of public health. Additionally, the MPH Core includes two novel school-wide courses that focus on integrating classroom knowledge with practical application through case-based learning (Integration of Science and Practice course, 3 credits) and leadership and professional skill-building (Leadership course, 1.5 credits). Through the additional 4.5 credits of "shared" coursework, the MPH Core curriculum creates a platform to augment the 15 credits of core, while adding depth and strength to our ability to fulfill Criterion 2.3., public health core knowledge.

Table 2.3.A.2. (CEPH Template 2.3.1.) Required Courses Addressing Public Health Core Knowledge Areas—MPH Degree

Core Knowledge Area	Course Number and Title	Credits
Biostatistics	Research Methods and Applications (P6031)	4.5
	Integration of Science and Practice I (P6070)	1.5
	Integration of Science and Practice II (P6071)	1.5
Epidemiology	Research Methods and Applications (P6031)	4.5
	Foundations of Public Health (P6020)	1.5
	Integration of Science and Practice I (P6070)	1.5
	Integration of Science and Practice II (P6071)	1.5
Environmental Health Sciences	Determinants of Health (P6040)	3
	Health Systems (P6060)	3
	Integration of Science and Practice I (P6070)	1.5
	Integration of Science and Practice II (P6071)	1.5
Social and Behavioral Sciences	Determinants of Health (P6040)	3
	Foundations of Public Health (P6020)	1.5
	Integration of Science and Practice I (P6070)	1.5
	Integration of Science and Practice II (P6071)	1.5
	Public Health Interventions (P6051)	3
Health Services Administration	Health Systems (P6060)	3
	Determinants of Health (P6040)	3
	Integration of Science and Practice I (P6070)	1.5
	Integration of Science and Practice II (P6071)	1.5

The Executive Programs in Healthcare Management (MPH and MHA)
Executive MPH and MHA Healthcare Management degree students complete a traditional, differentiated core curriculum that provides coursework in all five areas of public health. The Executive MPH provides a unique interdisciplinary education across three areas of expertise: organizational leadership and management, health policy and public health, and health systems. The executive programs are designed for healthcare professionals who come from a range of career fields including government agencies, hospitals, consulting companies, pharmaceutical corporations, insurance companies, finance, foundations, and other healthcare enterprises. Courses addressing the public health core knowledge area for the Executive MPH and MHA degree are included in Tables 2.3.A.3. and 2.3.A.4., below.

Table 2.3.A.3. (CEPH Template 2.3.1.) Required Courses Addressing Public Health Core Knowledge Areas—Executive MPH

Core Knowledge Area	Course Number and Title	Credits
Biostatistics	Analytics and Managerial Decision-Making I (EXEC P6545)	3
Epidemiology	Epidemiology (EXEC P6400)	3
Environmental Health Sciences	Environmental Challenges for Healthcare Managers (EXEC P6520)	1.5
Social & Behavioral Sciences	Social and Behavioral Science (EXEC P6700)	1.5
Health Services Administration	Transformation in Economic Models of Healthcare (EXEC P8563)	1.5
	Healthcare Accounting and Budgeting (EXEC P6529)	3
	Healthcare Finance (EXEC P8533)	3

Table 2.3.A.4. (CEPH Template 2.3.1.) Required Courses Addressing Public Health Core Knowledge Areas—Executive MHA Degree

Core Knowledge Area	Course Number and Title	Credits
Biostatistics	Analytics and Managerial Decision-Making I (EXEC P6545)	3
Epidemiology	Public Health Concepts for Managers (EXEC 8555)	3
Environmental Health Sciences	Public Health Concepts for Managers (EXEC 8555)	1.5
Social & Behavioral Sciences	Public Health Concepts for Managers (EXEC 8555)	1.5
Health Services Administration	Transformation in Economic Models of Healthcare (EXEC P8563)	1.5
	Healthcare Accounting and Budgeting (EXEC P6529)	3
	Healthcare Finance (EXEC P8533)	3

Master of Healthcare Administration (MHA)

MHA students at the School complete a differentiated curriculum tailored to their prior experience and professional goals. The School MHA meets the reclassification requirements of CEPH for the degree as "other professional degrees" in schools of public health. To achieve competence in the five core areas of public health, all MHA candidates must complete Public Health Concepts for Managers (HPMN P8555), a three-credit course which introduces students to concepts in the core public health knowledge areas and broad public health goals. This course develops students' understanding of basic principles and applications of epidemiological concepts, social and behavioral science and prevention theories, and environmental health and hazards. This MHA curriculum provides the knowledge and skills to help managers navigate the healthcare field to meet broad public health goals. The curriculum is also supplemented by numerous School and Health Policy and Management departmental seminars, lectures, and workshops in which MHA students are exposed to broad public health issues and goals.

Table 2.3.A.5. (CEPH Template 2.3.1.) Required Courses Addressing Public Health Core Knowledge Areas—MHA Degree

Core Knowledge Area	Course Number and Title	Credits
Biostatistics	Public Health Concepts for Managers (P8555)	3
	Analytics and Managerial Decision-Making I (P6545)	3
Epidemiology	Public Health Concepts for Managers (P8555)	3
Environmental Health Sciences	Public Health Concepts for Managers (P8555)	1.5
Social & Behavioral Sciences	Public Health Concepts for Managers (P8555)	1.5
Health Services Administration	Public Health Concepts for Managers (P8555)	1.5
	Issues and Approaches in Health Policy & Management (P6530)	3

Doctor of Public Health (DrPH)

To enroll in the DrPH program, applicants are expected to have completed a prior MPH degree or similar pubic health-related coursework at the master's level. To augment the prior core public health coursework for DrPH students who have earned the MPH degree, the School requires doctoral candidates to complete two additional curricular experiences: Integration of Science and Practice (ISP, P6070) and Leadership (P6081). These two courses, adapted for doctoral students from the renewed MPH Core curriculum, focus on integrating core public health knowledge with practical application through case-based learning. For the doctoral students, the cases and discussions are developed to focus on more advanced level core competencies recommended for doctoral level education in public health by ASPPH. These include the following domains: Advocacy, Communication, Community/Cultural Orientation, Critical Analysis, Leadership, Management, Professionalism, and Ethics.

Table 2.3.A.6. (CEPH Template 2.3.1.) Required Mailman School Courses Augmenting Public Health Core Knowledge Areas—DrPH Degree[a]

Core Knowledge Area	Course Number and Title	Credits
Biostatistics	Integration of Science and Practice (P6070)	1.5
Epidemiology	Integration of Science and Practice (P6070)	1.5
Environmental Health Sciences	Integration of Science and Practice (P6070)	1.5
Social & Behavioral Sciences	Integration of Science and Practice (P6070)	1.5
Health Services Administration	Leadership Development (P6081)	1.5

[a] The required coursework assumes the prior attainment of a MPH from a CEPH-accredited institution.

In select cases, an applicant may be admitted without having earned the MPH degree. In such cases, departmental admissions committees audit the transcripts of individual students to assign required coursework to ensure that all applicants obtain or possess the same core public health knowledge. Students without the MPH degree who have not acquired the necessary core public health knowledge for professional public health students must take specific assigned courses to complete the core public health knowledge requirements. These courses are listed in Table 2.3.A.7., below. Alternatively, students without the MPH degree may be placed in a studio (MPH Core Curriculum, listed in Table 2.3.A.2., above).

Table 2.3.A.7. (CEPH Template 2.3.1.) Required Mailman School Courses Addressing Public Health Core Knowledge Areas—DrPH Degree for Students without an MPH[a]

Core Knowledge Area	Course Number & Title	Credits
Biostatistics	Introduction to Biostatistical Methods (P6104)	3
Epidemiology	Principles of Epidemiology (P6400)	3
Environmental Health Sciences	Analysis of Environmental Health Data (P6360)	3
Social & Behavioral Sciences	Health Promotion (P6728)	3
Health Services Administration	Introduction to Health Economics (P6503) **OR** Health Policy and the Political System (P6508)	3 3

[a] For students not matriculating with a pre-earned MPH from a CEPH-accredited program or school of public health; coursework is assigned by departments' admissions committees based upon thorough audit of student's transcript.

2.3.B. Assessment of the extent to which this criterion is met and an analysis of the program's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- For all professional degree offerings, students achieve sufficient depth and breadth in all core areas of public health.
- The MPH program provides foundational training in all core areas of public health through its flagship Core curriculum, a comprehensive set of courses that integrate the five core areas of public health, in an interdisciplinary and rigorous manner that reflects current public health practice.
  MHA students at the Mailman School acquire knowledge in core public health areas in addition to complementary coursework tailored to address the specific needs of future healthcare managers and leaders.

Challenges

- Students in the School's DrPH degree programs would benefit from additional, doctoral-level coursework to strengthen students' capacity to integrate their previous experience and training in the public health core knowledge areas.

Plans

- The School's Curriculum and Doctoral Committees have adapted an established course in the MPH program, the Integration of Science and Practice, so that DrPH students can build and synthesize content from the five core areas to analyze challenges in population health, propose solutions, and work collaboratively to build expertise in knowledge and application of core public health principles and methods. The course will be launched in fall 2017 and will be required for entering DrPH students.
- The School will continue to monitor trends in public health training and contribute to national efforts to innovate curricula in public health professional degree programs.

Criterion 2.0 - Instructional Programs

2.4. PRACTICAL SKILLS

All graduate professional public health degree students must develop skills in basic public health concepts and demonstrate the application of these concepts through a practice experience that is relevant to students' areas of specialization.

2.4.A. Description of the school's policies and procedures regarding practice experiences, including the following:

- selection of sites
- methods for approving preceptors
- opportunities for orientation and support for preceptors
- approaches for faculty supervision of students
- means of evaluating student performance
- means of evaluating practice placement sites and preceptor qualifications
- criteria for waiving, altering or reducing the experience, if applicable

The practice experience, to which the Mailman School refers as a practicum, is a degree requirement for all professional degree programs. The practicum provides a structured opportunity for students to apply skills and theory from their coursework to a public health program in an applied or field setting. Students' work must result in a planned and approved deliverable to the host agency or organization. The practice experience provides students with the opportunity to apply classroom learning to a real world project, and provides the host organization with valuable services, data collection, analyses, or materials development that relates to the mission and ongoing activities of the organization. Specific requirements to complete the practicum differ by degree program and by department within the degree programs. School requirements for the degree programs are provided below, followed by a description of the policies and procedures regarding practice experiences. A description of the Office of Field Practice is included given that it the central office providing support for student practice experiences.

MPH Practicum

Students must fulfill departmental requirements and competencies, as well as selected CEPH competencies, during the practicum. See Electronic Resource File 2.4.A.1. for practicum competencies by department. Each department has specific hourly requirements and competencies to be addressed. More information on the details of departmental requirements can be found in the student handbook (page 6) and in Table 2.4.A.1. below.

In 2012, with the introduction of the revised Core Curriculum, all MPH students, across all departments and including those enrolled in the Global Health Certificate, are required to complete a standardized Scope of Work form (SOW). The form clearly identifies the mission of the agency or organization where the practicum will take place; the goals and primary activities of the student project; the on-site supervisor and his/her role in the organization; planned methods and IRB submission if relevant; timeline; anticipated challenges the student may face; and the departmental and CEPH competencies to be addressed. All SOWs are contained in a database maintained by the Office of Field Practice (OFP), and must be approved by the student's academic advisor as well as their department coordinator prior commencing field work. The SOW form and guidelines can be found in the Electronic Resource Files 2.4.A.2. and 2.4.A.3.

Table 2.4.A.1. Requirements for MPH Practicum by Department

Department or Concentration	Requirements
Biostatistics	Capstone consulting project for accelerated MPH; Pending for new 2 year program
Environmental Health Sciences	150-300 hours
Epidemiology	280 hours for 2 year Columbia MPH; 140 hours for accelerated MPH
Health Policy and Management	Full-time summer practicum for 10 weeks; approximately 350 hours
Population and Family Health	140 hours for domestic; minimum 8 weeks for international but 10-12 weeks recommended
Sociomedical Sciences	280 hours
General Public Health	140 hours
Global Health Certificate	6-month international practicum in a low or middle income country
Public Health and Humanitarian Assistance Certificate	International humanitarian and/or public health crisis setting, 8-10 weeks, with 10-12 highly recommended

Accelerated MPH Students. Accelerated MPH (one-year) students, of which the majority is enrolled in the General Public Health (GPH) program without a departmental concentration, have extensive health-related work experience as required for acceptance to the program. These students must complete a practicum, with specific requirements. The practicum typically takes place during the second and final full semester at the School. First, because of their prior experience in the health field, all accelerated students have fewer required hours. Second, accelerated students in GPH do not have departmental competencies and focus exclusively on CEPH competencies when planning and executing their practice experience.

Global Health Certificate MPH. Students enrolled in the Global Health Certificate are required to complete a six-month overseas practicum in a public health organization based in a low- or middle-income country. During the practicum, the student is supervised by an on-site supervisor with the host organization and is supported remotely by their assigned Mailman School faculty advisor. The specific guidelines and requirements for the practicum experience are included in the Global Health Practicum handbook (Electronic Resource File 2.4.A.4.). Additional documents, including a pre-practicum checklist and guidelines for host organizations for global health students can be found in Electronic Resource Files 2.4.A.5. and 2.4.A.6.

Employed Students. Students who are working in a public health setting may use their current worksite as a practice site, contingent on establishing a unique set of activities and deliverables that differ from regular work functions, as confirmed by the worksite preceptor. For students enrolled in the Executive MPH degree program, who are full-time, mid-career professionals, the practice experience may also be related to their function at their workplace but must involve additional activities, responsibilities, and deliverable(s). These students must follow the same practicum documentation requirements as all other students.

MHA Practicum. All MHA students must fulfill a practicum requirement. Full-time students complete this requirement during the summer between their first and second years of coursework. Part-time and executive students fulfill their practicum requirement by integrating their current position in healthcare with a project required in P8558 Strategic Management. All practicum placements are designed to be full-

time, 10-week substantive experiences. See Criterion 2.8. for a description of the MHA and practicum requirements.

DrPH Practicum. In the 2010 CEPH self-study, the DrPH was treated as an academic degree rather than a professional degree. In recent years, each of the four departments offering the DrPH has transitioned their DrPH requirements to align with that of a professional degree, including the inclusion of a required field practicum. As of fall 2017, all DrPH programs at the School mandate the practicum in addition to doctoral research requirement. This includes the DrPH in Population and Family Health, which was newly launched in 2012 and required a practicum from its inception. For more information refer to Substantive Change Notice for DrPH in Population and Family Health, Electronic Resource File 2.4.A.7.

DrPH students work with their advisors and departmental DrPH coordinators to identify practicum sites. The practicum and any resulting deliverables must be approved by the student's academic advisor and the DrPH academic director. Students without a prior MPH degree must complete a practicum that meets ASPPH competencies. This involves supervised public health engagement of at least 180 hours. DrPH students complete the SOW form to ensure that all parties understand and agree on practicum location, supervisor, objectives, activities deliverables, and credits if applicable. Starting in fall 2017, the SOW form for doctoral practica will be incorporated into the database maintained by the OFP, thus enabling the generation of summary reports across departments. Prior to fall 2017, doctoral SOW forms were approved by departmental advisors and program coordinators, and placed in program files.

There are specific departmental activities and requirements for the DrPH practice experience. For example, the practicum for a DrPH in Biostatistics is a consulting experience designed to enable students to demonstrate their ability to integrate their academic studies with the role of biostatistical consultant/collaborator, which will comprise a major portion of their future professional practice. The practicum for the DrPH in Epidemiology is linked to the planned career trajectory of each candidate and leads to the development of a product that is not a research publication or research proposal, though the product should make use of epidemiologic research evidence. Practica can include (but are not limited to) interpretation/presentation of research findings for the general public or for a specific target audience; creation of practice guidelines for a professional organization; completion of a policy statement; design for a community program; developing a plan for a training component in their discipline such as creating a workshop particularly in epidemiologic methods for clinicians or developing a teaching case illustrating epidemiology methods. The DrPH practicum in Epidemiology must be completed before undertaking the qualifying exams. The department requirements for the DrPH practice experience are in the student handbooks of the respective departments.

The Office of Field Practice

When the MPH curriculum was redesigned, the School identified the need to centralize support for the student practice experience and established the Office of Field Practice (OFP) in 2014. The establishment of OFP served to strengthen a planned, supervised, and evaluated practice experience for each student. Planning for the creation of OFP was extensive, including discussions with MPH core curriculum leaders, examination of departmental needs and processes, negotiation with departmental practicum directors, literature review of best practices, and an exploration of the organizational models utilized at peer schools of public health. OFP emerged as the office responsible for School-wide, practice-related policies and procedures. The office also serves as the institutional leader for the establishment of interdisciplinary practice sites appropriate for students across the School, and in collaboration with other schools at the Columbia University Medical Center and Columbia University. OFP works closely with departments, which have retained within their purview a number of functions specific to their students including the selection of departmental-specific sites, practicum-related seminars, and faculty supervision of students ("Office of Field Practice Fact Sheet", Electronic Resource File 2.4.A.8.). Moreover, in fall 2017, OFP will assume a larger role in supporting practica

for DrPH students, including site development, SOW processing, and other functions listed below.

Development of School-wide Practice Sites. OFP sites are those that accept students from across the School, and stress interdisciplinary projects that often include students from multiple departments and other Columbia University Schools, at the same site. Currently, OFP has expanded or developed six international sites and more than twenty domestic sites. OFP sites are characterized by:

- In-person visits by OFP to learn about site mission, goals, and activities.
- Identification of an on-site Director to administer the Mailman practicum program.
- Active, collaborative development of projects between OFP and site personnel.
- On-site meetings with practicum supervisors to discuss best practices in mentoring.
- On-going, collegial relationships between OFP staff supervisors and directors.
- OFP presence at student final presentations at the conclusion of the practicum.
- OFP logistical support for students (housing, transportation).

Client-Based Model. OFP has developed a client-based practicum model available to students interested in working in groups of 3-4 students. The model offers increased opportunities for students to develop competencies needed for interdisciplinary teamwork in community health and educational settings. Each team is assigned to address a complex client need that requires a team with a range of complementary skills including, for example, program planning and evaluation, biostatistics, and epidemiology. Student teams are carefully matched to international and national clients, and students must identify their preliminary role on the team as well as their individual hours. Final project deliverables are presented to clients in a formal professional setting. Past client-based practicum sites have included Sesame Street Workshop, UNICEF, Global Development, Columbia Medical Center Community Pediatrics and Young Men's Health Clinic. This practicum option is particularly relevant to accelerated and General Public Health Students with greater limitations on time available to complete the practicum requirement. It is offered during the spring and summer semesters.

The Scope of Work Database. This database contains the information from each student's SOW form. This online form is completed by students in collaboration with their academic advisors and, whenever possible, their field site supervisors. It is submitted first to the faculty advisor for approval, and then to the Department Coordinator before being submitted for inclusion in the OFP database.

The Practicum Stipend. The School's commitment to the practice experience for professional public health degrees is reflected in the provision of a stipend for each MPH student, processed through the OFP and Office of Financial Aid. Students conducting an international practicum receive a stipend of $1,000; those whose practicum is in a distant U.S. or Canadian location receive $500; and students conducting their work locally receive $250. Students who participate in the global health certificate receive $2,000 because of the six-month practicum length.

The IRB "Pre-Screen" Process. OFP worked with the CUMC Institutional Review Board (IRB) to establish the IRB Guidelines for Student Researchers document (see Electronic Resource File 2.4.A.9.) and the internal screening process to determine whether or not a practicum project requires the submission of an IRB protocol. This pre-screen process was developed due to the number of proposed student projects define a gray area between true human subjects research and other, non-generalizable data collection or analysis to be used internally by a practicum site. When the student and academic advisor are unsure whether an IRB approval is needed, the SOW form can be submitted to OFP where it is independently reviewed by two faculty researchers. If the reviewers agree on a course of action, the student is advised. If the reviewers disagree, the case moves to the Associate Deans for Practice and for Research for a final determination. The IRB pre-screening form used by reviewers can be found in Electronic Resource File 2.4.A.10.

The Practicum Seminar for Accelerated and International Students. This seminar, created and implemented collaboratively by the OFP and Office of Career Services, is designed to provide an in-depth professional development experience concurrent with students' public health practica or internships. By exploring common themes encountered in a field or work setting, the seminar provides a supportive framework that enhances students' leadership capacity. This optional 1.5 credit course was approved by the Curriculum Committee and meets bi-weekly over a semester. It addresses the public health core competencies of leadership, communications, and professionalism and explores translating and communicating messages to different audiences, understanding the role of cultural humility, and strategies for building partnerships and community engagement. Students gain insights into successful leadership styles and skills through the design and implementation of an in-depth interview. Enrollment in the seminar allows international students to continue their practicum work or engage in an additional field experience. Such experiences are not allowed for international students unless completed in conjunction with a degree requirement (e.g., practicum), or a course (e.g., this seminar).

MAILMAN SCHOOL POLICIES AND PROCEDURES

2.4.A.1. Selection of Sites. Students are responsible for securing their own field placement position with assistance at the School and department level. All field placements sites are subject to approval by the faculty advisor and Department Coordinator. Students can select practicum sites from an almost limitless number of agencies, institutions, and organizations that include health departments, hospitals, group practices, community health centers, health insurance organizations, community-based organizations, foundations, private health consulting agencies, pharmaceutical companies, research organizations, and voluntary non-profit health organizations. These agencies are local, national, and international in location and scope. Students completing international practica are required to complete safety and security pre-practicum assignments (Electronic Resource File 2.4.A.11.).

Following are the descriptions of the Mailman resources that help students investigate and identify practicum sites both at the Department and School levels:

- **The Office of Field Practice (OFP).** The OFP Courseworks page, workshops, and open houses advertise the numerous school-wide sites described above. These listings include project descriptions, requirements (e.g., language capacity), and application instructions.
- **Department Faculty Advisors and Coordinators.** Each department has a large number of agencies, organizations, and other contacts that have accepted their students as interns for many years, and often reflect long standing collegial associations between departmental faculty and agency personnel.
- **Faculty Members and Alumni.** Faculty throughout the School are engaged in cutting edge research and program activities that often can provide opportunities for student practica. In 2016 OFP placed approximately a dozen students with alumni-run organizations while many others conducted their practica on a project associated with a faculty member. Opportunities include ICAP, Center for Aging, National Center for Children in Poverty, Head Start, the Young Men's Clinic, and many other Mailman centers for domestic and international field practice.
- **Office of Career Services (OCS).** The annual career fair sponsored by OCS brings more than 100 agencies and organizations to Mailman, some of whom are looking for interns for specific projects that lend themselves to practica addressing departmental and CEPH competencies as well as departmental substantive areas.

2.4.A.2. Methods for Approving Preceptors. On-site practicum supervisors must have advanced knowledge of the project area and extensive experience in the relevant field in order to be approved as a preceptor or supervisor. For school-wide sites, OFP gathers credentials from the site Director and the individual project supervisors with an agency or organization. Additionally, site visits and meetings with supervisory staff occur for every school-wide site. For practica secured via departments, alumni or other sources, a review of the proposed supervisor's title and credentials is conducted by the academic advisor

as part of the scope of work review. The name and professional title of all supervisors are listed on the SOW form, thus allowing not only the faculty advisor, but also and departmental supervisors the opportunity to review and approve.

2.4.A.3. Opportunities for Orientation and Support for Preceptors. The School views the role of practicum preceptors as critically important and has a number of resources to assist sites and individuals in this regard. First, the template "Practicum Guidelines for Supervisors" (Electronic Resource File 2.4.A.12.) outlines supervisor activities in detail, from understanding (and possibly co-conceptualizing) the student project, to understanding the targeted competencies and monitoring activities and progress. In addition, faculty often meet or speak with site supervisors directly; for new school-wide sites, meetings between OFP staff and supervisors are mandatory. Preceptors of students thus have guidelines to clarify their role and, often, a personal relationship with someone they can contact with questions or concerns. Finally, OFP works with preceptors to outline "best practices" in student supervision. A draft of a Spanish language document, "Supervision of Practicum Students in the Dominican Republic", created at an all day workshop on-site in the Dominican Republic, is shown in Electronic Resource File 2.4.A.13. The workshop was attended by site supervisors representing eight NGO's in and around Santo Domingo who have hosted Mailman students for numerous years. The Associate Dean and Director for Field Practice were in attendance and were privileged to have a rich exchange of experiences and ideas regarding student supervision in the field.

2.4.A.4. Approaches for Faculty Supervision of Students. All professional degree students at the School are assigned an academic advisor, who helps oversee and guide the completion of their formal coursework and provides support in all aspects of the practicum experience. Individual advisors are not necessarily linked to particular practicum sites but rather are guided in their practicum advisory role by the student's needs and goals. Prior to field practice, students and their faculty advisors meet at least once, and usually multiple times, to discuss the scope and educational objectives of the practice experience. The project agreement, in the SOW, between the student and the site preceptor is developed based on a standard form utilized by the entire School. Faculty advisors are often involved in these discussions and must approve of the final version of the SOW form that will be submitted to OFP, which generates the student practicum stipend. Often, particularly when the practicum is international, communication between supervising faculty and students is limited to email, and occur only if questions or concerns arise during the course of the project. In other instances, communications are more frequent, particularly if challenges or changes arise, and/or if technical assistance is needed.

OFP has two important roles regarding supervision of students during a practicum. First, among School-wide sites that are hosting students, OFP staff maintains direct contact with the site Coordinator throughout the practicum period, usually in the form of weekly or bi-weekly phone calls supplemented by email as needed. Second, OFP monitors an office email account that is available 24/7 for practicum-related students' questions or concerns. This account is monitored daily throughout the summer months when the practica are in progress and individual faculty advisors may be on vacation or engaged in work-related travel. Thus, students have access to supervision and assistance, either from OFP directly (e.g., Associate Dean for Practice or faculty lead for practice) or—if more appropriate—from a Departmental faculty member who can be contacted by OFP and connected to the student.

2.4.A.5. Means of Evaluating Student Performance. Evaluation of student practicum performance consists of centralized, School-wide procedures and differentiated, department-based methods. A formal, final presentation of the practicum takes place at the departmental level during a Practicum Day or event hosted by the department, for those departments that host such events. Students prepare a conference-ready poster presentation, and engage with faculty in various formats (e.g., in small groups, individually, as part of a formal talk). Examples from the Department of Epidemiology and Global Health Certificate are displayed in Electronic Resource Files 2.4.A.14. and 2.4.A.15.

At the conclusion of their practicum, many students are asked to provide a formal, on-site presentation of their work. At OFP sponsored sites this is required, and one or more faculty members (the Associate Dean for Practice; Director for Practice, the Dean of Students, Vice Dean for Education, other individual faculty) attend the student presentations on-site. This allows direct observation and evaluation of student work and strengthens collaborative relationships between the School and various agencies and organizations in the U.S. and abroad. The faculty observer then sends the students' Departmental Chair a summary of student performance.

Each department requests formal evaluations on student performance from site supervisors. All departments use an online survey questionnaire developed by OFP using Qualtrics software (Electronic Resource File 2.4.A.16.). The survey links are sent by departmental academic coordinators to supervisors, including several reminder emails. Some departments use additional methods for gathering data regarding student performance. For example, the Department of Sociomedical Sciences evaluates student practice experiences by requiring the practicum summary report and submission of copies of all products produced as part of the practicum experience.

2.4.A.6. Means of Evaluating Practice Placement Sites and Preceptor Qualifications. Historically, placement sites and preceptors were evaluated at the departmental level. In 2014, OFP initiated a Qualtrics-based system in order to collect student feedback and the forms were sent and monitored by departments. However, starting in 2016 and to foster student participation, OFP centralized the collection of this data via the "Student Practicum Completion and Evaluation Form" (Electronic Resource File 2.4.A.17.), which is maintained on the SOW Database. After concluding their practicum, students now must complete this form which includes questions regarding time per week spent with their supervisor; perceptions regarding the quality of that time; opportunities they had to work on chosen competencies; levels of satisfaction with the site, project, and supervisor overall, and also suggestions for site/supervisor improvement. The form contains questions regarding the level of support students received from OFP, Mailman advisors, and the site. Completion of the form is now a graduation requirement for MPH students (see form completion instructions for students and departments in Electronic Resource File 2.4.A.18. and 2.4.A.19.). Those students who went to School-wide sites have an additional, in-person, debriefing with the Director of Field Practice, who subsequently talks with site directors regarding student experiences and any changes that might be needed. Some departments continue to collect additional feedback regarding sites and site supervisors. For instance, in addition to the School-wide Student Practicum Completion and Evaluation Form, the Department of Health Policy and Management monitors the efficacy of the practicum sites and preceptors through the use of student practicum reports as well as student feedback during summer progress meetings.

2.4.A.7. Criteria for Waiving, Altering or Reducing the Experience, if Applicable. All Master of Public Health (MPH) degree students are required to complete a practice experience; no waivers are granted.

2.4.B. Identification of agencies and preceptors used for practice experiences for students, by program area, for the last two academic years.

Electronic Resource File 2.4.B. provides a list of 2015-2016 practicum agencies and preceptors for Mailman students in which a practicum is required.

2.4.C. Data on the number of students receiving a waiver of the practice experience for each of the last three years.

There have been no waivers granted for the practice experience in the last three years. The School does not allow professional degree students to waive out of the practice experience.

2.4.D. Data on the number of preventive medicine, occupational medicine, aerospace medicine and general preventive medicine and public health residents completing the academic program for each of the last three years, along with information on their practicum rotations.

Not applicable.

2.4.E. Assessment of the extent to which this criterion is met and an analysis of the program's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- All professional degree programs, regardless of curriculum format (accelerated, executive or traditional) or area of specialization, complete a practice experience.
- The establishment of a centralized Office of Field Practice provides an extensive support structure and an enhanced ability to monitor and evaluate the quality and effectiveness of practice experience placements for MPH students. OFP works closely with departments to facilitate and support department-specific activities such as practicum-related seminars and faculty supervision of students
- The School's robust network of established practicum partners as well as department and faculty contacts provide high quality practicum opportunities in local, national and international settings.
- The School's commitment to the practice experience is reflected in the provision of a stipend for each MPH student.

Challenges

- DrPH students complete practice experiences more closely related to their applied research and career interests, such as the Consulting Seminar in Biostatistics, resulting in a varied approach to the implementation and monitoring of the practicum experience.

Plans

- Beginning in fall 2017, OFP will assume a larger role in supporting practica for DrPH students, including site development, SOW processing, and other functions. This will support the standardization of the practice experience across DrPH programs and enhance the ability to monitor and evaluate the experience.
- The Office of Education and OFP will work closely with the Office of Institutional Advancement to secure funding for practice experiences.
- OFP piloted an all day orientation workshop for preceptors in the School-side site in the Dominican Republic; over the next two years OFP plans to expand this workshop to include preceptors for all school-wide sites as means to establish best practices for School preceptors.

Criterion 2.0 - Instructional Programs

2.5. CULMINATING EXPERIENCE
All graduate professional degree programs, both professional public health and other professional degree programs, identified in the instructional matrix shall assure that each student demonstrates skills and integration of knowledge through a culminating experience.

2.5.A. Identification of the culminating experience required for each professional public health and other professional degree program. If this is common across the school's professional degree programs, it need be described only once. If it varies by degree or program area, sufficient information must be provided to assess compliance by each.

A culminating experience is required for all Mailman School professional degree candidates. Students are required to demonstrate their ability to synthesize and integrate knowledge acquired in coursework and from other learning experiences and to show that they can apply those principles, concepts, and skills to their chosen area of public health practice. While there are variation in forms of culminating experience, the Office of Education, departments, and programs of instruction work closely to ensure that the essential components of a professional student's educational experience are carried out in a rigorous and appropriately consistent, integrative manner. Table 2.5.A.1. summarizes the unique features regarding the degree culminating experience in each program and by department.

Table 2.5.A.1. Summary of Culminating Experiences for Professional Degrees

Degree	Thesis/ paper	Dissertation	Seminar or course	Event or activity	Oral exam	Written exam	Assessed by individual	Assessed by committee
Department of Biostatistics								
MPH	✓		✓				✓	
DrPH		✓	✓	Consulting Service	✓	✓		✓
Department of Environmental Health Sciences								
MPH			✓				✓	
DrPH		✓			✓	✓		✓
Department of Epidemiology								
MPH	✓		✓					
DrPH		✓				✓		✓
Department of Health Policy and Management								
MPH (Exec)				Health Square				✓
MHA				Health Square				✓
Department of Sociomedical Sciences								
MPH	✓						✓	
DrPH		✓			✓			✓
Department of Population and Family Health								
MPH	✓							✓
DrPH		✓				✓		✓
General Public Health								
MPH	✓						✓	

Notes

1. *Where referenced, thesis applies to master's candidates, while dissertation applies to doctoral candidates.*

2. *MPH candidates in the Global Environmental Health Sciences certificate do not enroll in the capstone course but complete their culminating experience in the six-month global practicum; please see Environmental Health Sciences section below.*
3. *More information about the events and activities referenced (Consulting Service and HealthSquare) is available in the Biostatistics and Health Policy and Management sections below.*

MPH Program. Departments determine the specific requirements of the culminating experience and these are outlined in the departmental student handbooks and links provided in Table 2.5.A.2.

Table 2.5.A.2. Links to Department-specific Culminating Experience Requirements for the MPH

Biostatistics (page 8)	Health Policy and Management
Environmental Health Sciences (page 9)	Population and Family Health (page 16)
Epidemiology (page 14)	Sociomedical Sciences (page 23)

The MPH culminating experience includes one or more of the following components:

- Expanded practicum experience requiring participation in a practicum seminar and either an additional integrative paper or presentation.
- Supervised consultative experience in conjunction with a capstone seminar.
- Capstone course.
- Master's essay or research project.

Accelerated MPH students typically complete a differentiated culminating experience as designed by their department of study, as described below and included in the table above.

DrPH Program. Departments have been transitioning from an academic degree to a professional degree and the culminating experience reflects the transition. Departments are increasingly linking their culminating experience requirements to applied work in the field, such as consulting seminars and methods exams. Additionally, to differentiate the professional DrPH degree from the academic PhD degree, DrPH candidates are required to complete a practice experience (Criterion 2.4.) that many DrPH candidates may build upon for their dissertation or other culminating experience.

Given that the requirements of culminating experience varies by degree and program, additional information is provided below by department and degree.

DEPARTMENT OF BIOSTATISTICS (BIO). The Department has offered an accelerated MPH degree program since fall 2012. Students in this program meet the culminating experience requirement through the successful completion of a capstone consulting experience that is designed to enable students to demonstrate their ability to integrate their academic studies. Student complete a capstone paper that details his/her role, how data was managed, the specific statistical methods and key types of measures used on the study, and any outcomes of the project. In fall 2017, the department will enroll its first students in a traditional two year MPH program. The culminating experience for these students will consist of enrollment in the Capstone Consulting Seminar. The seminar is designed to enable students to demonstrate their ability to integrate their academic studies with the role of a biostatistical consultant/collaborator, which will comprise a major portion of their future professional practice.

DrPH students complete qualifying exams, oral exams, and dissertation creation and defense as the culmination of their education. Between the oral exam and the dissertation defense, DrPH students are required to present their work in two public settings. The first is the Doctoral Research Seminar, usually held in the spring, where doctoral students at various stages of their research present to faculty and peers a brief outline of their work. The second setting is the preparation and presentation of a paper (or poster) at one or more of a number of professional societies (Biostatistics Handbook page 30-34).

DEPARTMENT OF ENVIRONMENTAL HEALTH SCIENCES (EHS). All EHS MPH students are required to take P9300: Capstone Course: Critical Thinking & Analysis in Environmental Health Sciences. This course, taken in students' final semester, is a culminating experience for EHS students in which they synthesize the knowledge and experiences they have gained in their MPH core, department specialization, and certificate coursework. In this course, students critically approach the science underlying public health issues by examining existing published work and identifying the limits of existing methodological approaches and study designs. At the end of this course, students are required to craft a NIEHS-style grant proposal and present this proposal in both written and oral forms. The course syllabus is available in Electronic Resource File 2.1.B.

In addition to the required capstone course, MPH students have the option of completing a thesis project. Students must register for the thesis course P9361 Research Master's Thesis I in EHS and P9362 Research Master's Thesis II in EHS and receive approval from the faculty director of the thesis program prior to beginning their thesis project. Guidelines for the written thesis are included in the EHS Masters student handbook (EHS Handbook, page 11). EHS students enrolled in the Global Health Certificate complete the Global Research Master's Thesis I and II (P9350 & P9351) to fulfill their culminating experience requirements.

EHS DrPH candidates complete a qualifying exams and a thesis project; after completing the qualifying exam, the candidate's focus is conduct the thesis project. Thesis projects should be hypothesis-driven and must comprise original research. Therefore candidates are obligated to perform studies that test their hypothesis, collect data, and complete appropriate analysis of said data.

DEPARTMENT OF EPIDEMIOLOGY (EPI). The EPI Department requires a master's thesis for MPH candidates as the culmination of their educational experience. The thesis is a mentored research and writing project where students work one-on-one with a faculty member of their choice analyzing epidemiology data and writing a paper in the form of a peer-review journal article. The thesis is begun in the fall of the second year and completed by mid-April of the spring semester prior to graduation. Accelerated MPH students are required to complete an abstract and prepare a poster, which is displayed at EPI Master's Student Day.

DrPH students must complete a dissertation demonstrating the candidate's competence in the use of epidemiologic methods and concepts. Most dissertations in the department involve tests of hypotheses about risk factors and outcomes. A few focus on problems or innovations in epidemiologic methods, and a small but growing number are interdisciplinary or transdisciplinary in nature. Such dissertations are acceptable if they include a significant focus on epidemiologic hypothesis testing via epidemiologic methods.

DEPARTMENT OF HEALTH POLICY AND MANAGEMENT (HPM). The HPM department utilizes an expanded practice experience to evaluate whether MPH students can integrate knowledge from coursework and apply it to professional practice. Students must participate in a practicum seminar (0-1 credit) following their practicum placement; this seminar is designed to help the student conceptually integrate classroom and real-world experiences. As part of the practicum seminar, students must prepare an integrative report that includes a description of the host organization, student's responsibilities, essential curriculum connections, and personal and professional development. Accelerated MPH students who are not in residence at the School during the practicum seminar are required to complete an integrative practicum paper as part of their degree requirements.

The culminating experience for all Mailman School MHA programs is HealthSquare, an intense two-day hospital simulation that requires students to work in teams and draw on the knowledge and skills they have gained over the course of their HPM studies. The objective of the HealthSquare Simulation is to

provide participants with an opportunity to experience the challenges of executive leadership and strategic decision-making in a realistic exercise that effectively emulates or simulates the full breadth and complexity of a competitive multi-hospital marketplace. This exercise, which utilizes proprietary simulation software, creates an environment where teams of approximately five students run a community hospital over a six-year period. Students' performance in HealthSquare is assessed by a Simulation Review Committee.

The executive MPH in Management is also offered through the HPM Department. As with the MHA program, the culminating experience for all the executive MPH in Management candidates is the HealthSquare simulation, which is assessed by a Simulation Review Committee. In addition, these students complete a case paper and analysis as part of their coursework in Strategic Management.

DEPARTMENT OF POPULATION AND FAMILY HEALTH (POPFAM). MPH students in the POPFAM must complete a capstone paper that requires them to demonstrate their abilities to think and communicate clearly, reflect on their new knowledge and training, and make professional contributions to their main fields of interest, with guidance from faculty capstone readers. It serves as the final piece of evidence that the student is prepared to practice as a public health professional. Students can choose from one of four options to meet their capstone paper requirement:

1. Manuscript of publishable quality (e.g., a research article, a review article in journal format or a book chapter).
2. Proposal narrative, including an executive summary, for a major service-based research or evaluation project aimed at a specific funding agency or foundation.
3. Rigorous reflective paper about the practice of public health service delivery (based upon one's practicum).
4. Paper presenting the theory-based development of innovative educational curriculum, which is part of the addenda to the capstone paper.

DrPH candidates in the department complete qualifying exams and a dissertation creation and defense. Both the exams and the completion of the dissertation require students to synthesize their coursework and practicum experiences into a culminating project that integrates knowledge. Work on the dissertation is conducted under the guidance of a faculty advisor within the department after the successful completion of the qualifying exam.

DEPARTMENT OF SOCIOMEDICAL SCIENCES (SMS). The master's thesis is the culminating experience, or capstone requirement, of MPH students in the SMS department. The thesis is intended to integrate the training received in the department and demonstrate the student's ability to design, implement, and present professional work relevant to his or her fields of interest. As part of their thesis, students are required to register for a three-credit, two-semester course sequence: P8707 SMS Thesis Proposal in the fall semester (1 credit) and P8708 SMS Master's Thesis in the spring semester (2 credits). Students write a thesis in one of six possible formats: literature review, research report, research proposal, intervention proposal, needs assessment proposal, and evaluation proposal. These represent several genres of scholarly and professional writing that SMS graduates may undertake in their careers after graduation. Specific guidelines for each of these formats, as well as the assessment and grading of the thesis, are outlined in the SMS Masters Student Handbook (page 23).

DrPH candidates in SMS must complete a dissertation as the culmination of their educational experience. Before submitting a dissertation proposal, students must demonstrate readiness to undertake independent research by showing evidence of mastery of key substantive and theoretical areas of interest and research methods. Such evidence has two parts: the theme essay and the methods essays. The theme essay presents a scholarly overview of the state of knowledge and of the major approaches to research within the student's chosen research area. The methods essay comprises a shared question and an individual

question. The shared question crosses the disciplines comprising sociomedical sciences; it requires students to articulate key elements of a methodologically diverse research approach and demonstrate understanding with some of the methodological challenges of research in their major area of expertise. The individual questions are developed under the guidance of a faculty member and draw on readings and topics of scholarly relevance to the student's professional goals. See SMS Doctoral Student Handbook (page 59).

GENERAL PUBLIC HEALTH DEGREE PROGRAM (GPH). This accelerated program creates a link between the student's practicum work and the culminating experience. To fulfill the culminating experience requirement, students must prepare a conceptual paper in which they synthesize and integrate learning from the practicum and coursework. This paper is graded on a pass/fail basis and must be submitted at least two months prior to a student's planned graduation date. The practicum paper is graded according to a rubric (Electronic Resource File 2.5.A.). In addition, students complete a Practicum Portfolio, which serves as the culminating piece documenting the practicum experience. The Practicum Portfolio provides both evidence and self-assessment of learning that has occurred throughout the fieldwork placement. Students are encouraged to be creative and consider the portfolio a visual document that includes iterations and highlights of work produced in the practicum that best illustrate the learning process. Additionally, students are asked to complete exercises for the portfolio that require self-reflection and evaluation of learning.

2.5.B. Assessment of the extent to which this criterion is met and an analysis of the program's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- All professional degree programs at both the master's and doctoral levels must complete a culminating experience that requires them to apply and synthesize their learning from coursework and practice.
- The departmental guidelines allow students to complete culminating experiences that are tailored to the specific needs of the program of study and department in which the program is offered. This allows students to acquire skills and competences that are relevant to their professional goals and reflect their fields of intended practice.

Challenges

- The diversity of experiences across departments makes it challenging to ensure valuable experiences for all students.
- In some departments the DrPH culminating experience is similar to the culminating experience or dissertation in the PhD program and requires review.

Plans

- The Doctoral Committee in collaboration with the Office of Education has been reviewing requirements of all departmental culminating experiences to align with the competencies and skills required of DrPH students. Recommended changes will be implemented in academic year 2017-2018.

Criterion 2.0 - Instructional Programs

2.6. REQUIRED COMPETENCIES
For each degree program and area of specialization within each program identified in the instructional matrix, there shall be clearly stated competencies that guide the development of degree programs. The school must identify competencies for graduate professional public health, other professional and academic degree programs and specializations at all levels (bachelor's, master's and doctoral)

2.6.A. Identification of a set of competencies that all graduate professional public health degree students and baccalaureate public health degree students, regardless of concentration, major or specialty area, must attain. There should be one set for each graduate professional public health degree and baccalaureate public health degree offered by the school (e.g., one set each for BSPH, MPH and DrPH).

The Mailman School utilizes competencies as an organizing principal to guide curriculum development and to define learning outcomes for all degree programs as well as for specializations within degree programs. The Mailman School's professional public health degree programs (MPH and DrPH) have degree-wide competencies to ensure a broad knowledge and skills base that lay the foundation for achieving the School's mission in educating the next generation of public health leaders.

MPH COMPETENCIES
The competencies for the **MPH program** that all students must attain are the following:

1. Apply statistical methods of estimation and hypothesis testing and explain the applications of probability and inference, descriptive and inferential methodologies, and correlation and regression for the purpose of analyzing public health research data

2. Analyze how environmental contaminants (chemical, physical and other exposures) interact with biological systems and their effect on human populations for the purpose of evaluating risk reduction strategies

3. Apply epidemiologic methods to the measurement of disease rates, prevention of infectious diseases, and the development and evaluation of health programs and policies

4. Assess the impact on health policy options of social, political, technological, economic and cultural forces, and apply organizational management techniques to address organizational challenges to providing healthcare

5. Examine public health issues and responses from a social and behavioral sciences perspective and explain social, cultural, political, economic, and behavioral determinants of disparities in health status among populations

6. Explain the linkages between public health problems and other societal issues (public policy, environmental contexts, health disparities, reproductive health, population shifts, etc.)

7. Analyze public health research studies in order to critique analytic methods, evaluation reports, policy papers and other professional documents to identify strengths, weaknesses and potential impact on public health challenges

8. Apply the basic concepts of human biology (immune system, DNA, the neurological system, etc.) to inform understanding of various impacts of illness, the environment and genetics on human health.

9. Explore different perspectives on what constitutes scientific inquiry, the norms of science, and the roles of paradigms in shaping the evolution of science in order to apply questions to the limits of validity and interpretability of information and data and explaining sources of uncertainty in scientific results.

10. Apply a systems approach to identifying and implementing appropriate policy and interventions to addressing the complex molecular, biological, and social system interactions causing disease and other public health problems.

11. Explain and analyze the linkages between social, historical, cultural, economic and political changes associated with globalization and the key health problems of the early 21st century, including globalization as a key determinant of health and the varied burden of disease across nations.

12. Describe the essential role that program planning, design and evaluation plays with improving public health decision-making and practice.

13. Interact effectively and collaboratively with both diverse individuals and communities to produce or impact an intended public health outcome.

14. Effectively lead and communicate a shared vision of the future by championing solutions to organizational and community challenges

15. Demonstrate ethical choices, values and professional practices implicit in public health decisions

16. Communicate effectively (in oral and written formats) about public health policy, research, findings, and their implications to a variety of audiences

17. Demonstrate a breadth and depth of professional knowledge and skills for effective practice in their selected field of study

DOCTOR OF PUBLIC HEALTH (DrPH)

Degree-wide competency articulation and alignment for the DrPH program have been a critical component of the transition of the DrPH from an academic degree program to a professional degree program. In 2016, the Senior Director of Educational Initiatives worked with members of the Doctoral Committee to establish degree-wide competencies for the DrPH reflective of program goals in advanced training for doctoral level public health professional students. The Senior Director reviewed established national competencies (ASPPH DrPH Core Competencies), those of several peer institutions, and the current department-specific competencies of the five Mailman departments who currently offer DrPH program (SMS, EPI, BIO, EHS and POPFAM). The Senior Director reviewed the alignment of these competencies with current coursework and course learning objectives, assessments and learning experiences and provided recommendations for a degree-wide set of competencies for the Mailman DrPH. These competencies were reviewed by the Doctoral Committee and input from faculty, students and school leadership was solicited. The adapted competencies were then approved by the Doctoral Committee in 2017.

The development of these degree-wide competencies and a review of the alignment of course learning objectives and learning experiences revealed a gap in the current DrPH coursework. To resolve this, the Doctoral Committee recommended that a version of the successful MPH course, Integration of Science and Practice (ISP) and Leadership course be adapted to suit the needs of our DrPH students and ensure attainment of the degree-wide competencies. With approval from the school-wide curriculum committee, the revised courses will be launched in fall 2017. The competencies for the DrPH program that all students must attain are the following:

Competency 1 – Critical Thinking and Analysis
Students will be able to demonstrate in-depth understanding of the core areas of public health practice, research, and theory.

- Analyze and critique public health as a system, including specific functions and roles of government and governmental public health agencies and other partners, assessing the system's ability to respond to public health problems and its limitations, and identifying ways to improve it
- Integrate and apply multidisciplinary theories and research findings to solve a public health problem(s)
- Demonstrate an understanding of the ecological model and how it guides the assessment of, and solutions to, public health issues

Competency 2 – Research and Evaluation
Students will be able to analyze issues and problems in public health using critical evaluation, applied research methodology, and statistical methods.

- Obtain, interpret and apply appropriate quantitative, qualitative and economic measures to address public health problems
- Demonstrate in-depth understanding through use of an applied research methodology of interest (quantitative, qualitative or economic research methods) of a public health problem or issue

Competency 3 – Public Health Practice and Application
Students will be able to access and synthesize information from a variety of sources to assess significance, identify relationships and develop strategies for addressing public health problems/issues in an area of interest or specialization in public health practice.

- Identify and apply foundation theories in area of specialization to explain and predict public health problems and solutions
- Apply measures of population health and illness, including risk factors, in the development of community health improvement initiatives, taking into account appropriate cultural, social, behavioral, and biological factors
- Develop and apply a logic model, or other systems applications, demonstrating interrelationships among risk and protective factors, as well as between process and outcome objectives, and targets/standards for population health
- Apply research, evaluation and strategic planning designs to address a public health issue in an area of specialization

Competency 4 – Management and Policy
Students will be able to demonstrate leadership in designing and implementing interventions aimed at a public health problem/issue.

- Demonstrate an understanding of the political, cultural, social and economic factors influencing the development of, and changes in, public health programs, agencies, or interventions or policies as well as strategies to positively affect those factors
- Access and synthesize information from a variety of sources to make evidenced-based program decisions

Competency 5 – Communication
Students will be able to demonstrate the ability to communicate effectively orally and in writing.
- Organize and present qualitative, quantitative or economic data cogently and persuasively at scientific sessions and to lay audiences
- Design oral and written communications for varied audiences (community and business leaders, the public, policy makers, public health professionals, the media, and other stakeholders)

Competency 6 – Leadership
Students will be able to demonstrate a vision and philosophy for professional leadership in public health.
- Demonstrate an understanding of the legal and ethical foundations of public health
- Apply principles of effective leadership in order to create a shared vision within a public health organization and foster partnerships that maximize achievement of public health goals

Competency 7 – Education
Students will be able to teach academic and professional audiences.
- Teach broad overview courses in public health, as well as specialized courses in areas of expertise, in an academic institution

MASTER OF HEALTHCARE ADMINISTRATION (MHA)
The competencies for the MHA which is accredited by Commission on Accreditation of Healthcare Management Education (CAHME) are the following;

Competency 1 – Analytical Thinking
- Break down problems
- Understand and access basic relationships
- Recognize and analyze complex relationships
- Develop, communicate, and execute complex plans or analyses

Competency 2 – Community Orientation
- Understand the needs and values of the community and the importance of gathering data for this understanding
- Recognize the importance of clear communication with stakeholders
- Learn to work with other organizations and constituencies who have the same goals

Competency 3 – Financial Skills
- Ability to read and generate a balance sheet, income statement, and cash flow statement as well as to analyze and interpret statements of public companies at a basic level
- Understand basic costing concepts such as depreciation and techniques of cost allocation
- Develop models for financial analysis, budgeting and financial forecasting
- Understand the critical questions and analyses for the financial analysis of a healthcare provider

Competency 4 – Innovative Thinking
- Know and apply fundamental/basic rules and concepts
- Recognize, explain, and predict patterns
- Apply standard practices
- Clarify and differentiate complex/unique situations or ideas

Competency 5 – Strategic Orientation
- Analyze and assess environmental context
- Develop vision and formulate strategy to achieve vision in environmental context
- Align organizations, processes and people to achieve strategy

- Influence and set standards for discipline/field

Competency 6 – Accountability
- Set high performance standards for oneself and others
- Monitor adherence to standards of performance and addresses associated problems

Competency 7 – Collaboration
- Cooperate with others in pursuit of shared objectives/tasks
- Express support and confidence in expectations of team or team members
- Seek and apply input and counsel
- Encourage and recognize performance of others
- Commit to and work to develop team commitment

Competency 8 – Communication
- Understand and use generally accepted terminology and grammar
- Prepare effective, clear, organized written reports and presentations
- Make organized, complete, persuasive oral presentations
- Conduct effective meetings and facilitate group/team discussions

Competency 9 – Organizational Awareness
- Understand and work within formal/official structure
- Recognize and work with informal structure
- Recognize and differentiate patterns/variations in organizational climate/culture
- Recognize/respect/work with multiple constituencies
- Identify/analyze/assess/act on underlying issues

Competency 10 – Performance Measurement
- Use evidence based approaches
- Understand and use statistical and financial methods/metrics to monitor financial and basic operational performance and to monitor a scorecard of quantitative and qualitative measures

Competency 11 – Project Management Learning Objective
- Prepare and execute a team project including managing obstacles
- Understand role of team leader and hold team members accountable
- Report project outcomes Course

Competency 12 – Professionalism Learning Objective
- Value and act openly and honestly
- Promote and sustain organizational and personal integrity
- Define, accept, and maintain accountability for persona/group performance
- Sustain and advance values and personal responsibility

Competency 13 – Relationship Building
- Participate in formal and informal relationships with others who have the potential to become future colleagues
- Understand the importance of building relationships with people in their field, community, and other constituencies

Competency 14 – Team Leadership
- Manage team/group relationships/responsibilities
- Keep members of the team informed

- Define, pursue, and promote team effectiveness
- Secure and apply individual/team resources effectively

Competency 15 – Resource Management and Allocation
- Use financial information in decision making
- Understand use of the balanced scorecard
- Understand techniques for performance improvement

Competency 16 – Population Health
- Define, assess, and understand the health status of populations and factors influencing the use of health services
- Apply managerial methods to health problems on the population level
- Examine social, cultural, political, economic, and behavioral determinants of disparities in health status among populations

Competency 17 – Health Policy
- Understand the history and structure of the U.S. healthcare system and specify how social, political, legal, technological, economic, and cultural forces have shaped it
- Analyze the main options and methods for financing health services
- Explain the concerns of quality, access, and cost of healthcare
- Explain the workings of such policy mechanisms as insurance systems, quality monitoring, provider payment methods

2.6.B. Identification of a set of competencies for each concentration, major or specialization (depending on the terminology used by the school) identified in the instructional matrix. The school must identify competencies for all degrees, including graduate public health professional degrees, graduate academic degrees, graduate other professional degrees, as well as baccalaureate public health degrees and other bachelor's degrees.

Building upon the degree-wide MPH and DrPH competencies in Criterion 2.6.A., each department has specific competencies for their programs. For example, a MPH or DrPH student admitted to the Epidemiology department has a set of competencies for their required coursework or specialization in Epidemiology. For the MPH program only, there are certificate-specific competencies identified for each of the 23 certificates. These are listed in Electronic Resource File 2.6.B. The competencies for the MHA are presented separately in Electronic Resource File 2.6.B. The competencies for the professional degrees and the academic degrees are organized by department and track, where applicable, and are described in Electronic Resource File 2.6.B.

2.6.C. A matrix that identifies the learning experiences (e.g., specific course or activity within a course, practicum, culminating experience or other degree requirement) by which the competencies defined in Criteria 2.6.A. and 2.6.B. are met. If these are common across the school, a single matrix for each degree will suffice. If they vary, sufficient information must be provided to assess compliance by each degree and concentration. See CEPH Data Template 2.6.1.

The learning experiences for each degree's competencies, provided individually per department and certificate/track, are found in the Electronic Resource File 2.6.C. Tables are organized by competency and the courses and learning experiences are aligned with the corresponding competencies. Learning experiences include courses, seminars, practice-based experiences, and culminating experiences (capstone, thesis, dissertation, etc.). While each degree has common or core learning experiences, degree requirements vary across department, programs, and certificates.

2.6.D. An analysis of the completed matrix included in Criterion 2.6.C. If changes have been made in the curricula as a result of the observations and analysis, such changes should be described.

The matrices included in Criterion 2.6.C. reflect the evolving work of the School to provide outstanding and effective learning experiences for students as well as the evolving needs and priorities of public health as a field. The School recognizes that change and growth at the course, degree and program level is needed to ensure that our students are prepared to enter the public health workforce. The School engages in analyses of competencies, courses, degree requirements, and assessment practices on an ongoing basis. Planning retreats, school-wide and department committee meetings, reviews of student surveys, and town hall meetings are used to inform the process of determining necessary changes. As a result, the School and departments develop new courses, re-design existing courses or competencies, and launch new programs to resolve gaps in curricula and ensure alignment of learning experiences to desired outcomes. Specific examples of this work include the following:

- In the fall of 2015, the Department of Environmental Health Sciences received approval from the NY State Department of Education to offer the MS degree with concentrations in Toxicology and Radiological Sciences and began accepting students for the fall 2016 semester. Both programs were developed after consultation with potential employers in government, academia, and industry that identified a growing need for Mailman graduates with strong, focused scientific education and practical training in toxicology and radiological sciences.
- The Department of Epidemiology conducted a comprehensive reevaluation of its PhD program department-specific competencies, learning objectives, and curricular sequencing for doctoral students. Through an 18-month process of student focus groups, faculty surveys, literature reviews, consultations with experts in both pedagogy and health sciences education, and feedback from employers and alumni, the department created a curriculum better aligned with new findings from the field, best practices in academic training and preparation, and ambitious student learning goals.
- Building on internationally recognized expertise in global health systems and issues affecting refugees and other humanitarian crisis situations, the Department of Population and Family Health launched a DrPH program in Leadership in Global Health and Humanitarian Systems in 2012. The DrPH leadership program was tailored to the professional development needs of seasoned practitioners after consultation with government, the United Nations and international NGO colleagues with MPH or other master degree level training in 13 countries, and four additional fragile states and conflict affected countries. The program has since conducted annual candidate evaluations, which have informed assessment and dissertation processes and requirements as well as course recommendations and revisions. These recommendations have recently been presented to the Department's academic affairs committee for review.
- The MPH shifted to a New York State credentialed certificate program to enable a more in depth exposure to specialized area of knowledge (e.g., climate and health, healthy aging, social determinants of health), and to further the interdisciplinary dimension of the MPH professional public health education. To ensure that the certificate programs keep pace with the internal and external environment, annual qualitative and quantitate evaluations of each certificate program are conducted and reviewed by the certificate lead faculty. This evaluation uses a variety of methods, such as focus group discussions with students and employers, quantitative and qualitative surveys conducted by individual certificate leads, course evaluations, and items on the Graduating Students exit survey. Annually, students are asked to assess the overall quality of their certificate experience, the extent to which the certificate provided them with the knowledge and skills expected, and how well their certificate program improved their ability to integrate knowledge and skills across disciplines to address public health problems. Information from this survey is collated and provided to the certificate leads so that can make changes, as needed, to their programs.

- In 2016, the Department of Sociomedical Sciences launched a new health communications certificate to respond to the growth of health communication as an important field of theory, research, and practice for public health professionals. The development of the coursework and competencies were guided by an advisory committee and was also informed by annual data collected from public health employers who identified health communications as one of the top needed certificates for public health graduates. Three new courses were developed to ensure that the certificate would prepare students to pursue careers in the multitude of nonprofit organizations, marketing agencies, communication firms, government agencies, hospitals, foundations, research institutions, and communication firms that require these skills and competencies.
- The most significant project that highlights the School's efforts to re-evaluate and re-envision public health education has been the comprehensive renewal of the MPH curriculum. The two year planning effort (2010-2012) involved a process of self-examination, investigation and school-wide active engagement and was the direct outcome of our school-wide strategic planning initiative, a three year self-study process that preceded our October 2010 CEPH accreditation, and the arrival of Dean Linda P. Fried, who called upon the school to re-envision public health education. Over 170 faculty, staff, and students were actively engaged in this process. Since the new curriculum' launch in 2012, annual reviews of Core course evaluations and exit surveys among graduating MPH students are reviewed by all faculty engaged in teaching in the Core as well as the Core Program Director and the Vice Dean for Education. A half-day Core Retreat is held in the spring each year to identify and prioritize strengths and weaknesses of the current curriculum and to build consensus around revisions, improvements and new developments. In spring 2017, two standing committees were formed, the Core Curriculum Committee and the Core Evaluation and Advisory Committee. These committees will ensure the development, implementation, and ongoing review of a high-quality Core curriculum. See Electronic Resource File 1.5.A. for members and descriptions of both committees, described in Criterion 1.5.A.

2.6.E. Description of the manner in which competencies are developed, used and made available to students.

Competencies are developed through a school-wide process that involves the Curriculum Committee, Vice Dean for Education, Senior Director of Educational Initiatives, departmental curriculum committees, academic directors, and academic liaisons. The competencies are used to determine curricular requirements for programs, and to develop new courses and learning objectives.

The School uses collaborative and individualized approaches that departments and programs of instruction use to develop and refine competencies. At the School level, the Vice Dean for Education and the Senior Director of Educational Initiatives monitor the overall quality and application of competencies. The Senior Director of Educational Initiatives serves in a consultative manner and often works one-on-one with individual faculty members as they develop courses and learning objectives that link to the program competencies, particularly in the new program, certificate, or course development phase. The School-wide Curriculum Committee plays an essential role in the monitoring of course learning objectives and the manner in which they link to educational program competencies. All new courses submitted to the School-wide curriculum committee must include a form that clearly specifies the educational program competencies and the linkages to the course learning objectives. The "Course Proposal Form" has been used for the last seven years (Electronic Resource File 2.6.E.). New courses approved by the School-wide Curriculum Committee must have learning objectives clearly stated on the syllabus. The school-wide Curriculum Committee reviews new degree program, certificate, course proposals, and syllabi and offers feedback regarding overall course design, assessment methods, and learning objectives. Optional tools for the development of syllabi are in Electronic Resource File 2.6.E.

Departmental curriculum committees, department academic directors, and department academic liaisons discuss and debate course syllabi, course offerings, and curricular requirements through the lens of educational program competencies. The process of writing, refining, and updating the competencies for a particular educational program is often assigned to faculty members or a small *ad-hoc* group of faculty who teach key courses in the educational program. Their extensive knowledge of the courses, curriculum, and educational history of the department are an invaluable resource for developing initial drafts of the competencies. Consensus regarding competencies is initially gained within the department's curriculum committee, and then the competencies are given final approval in consultation with the department chair, department academic director, and/or department steering committee. The educational program competencies are used as a framework for faculty who are developing new courses and faculty who are improving the course(s) that they are already teaching.

School-wide and educational program specific competencies are made available to prospective and current students via the School's website. In addition, competencies are listed in online student handbooks. Course-specific learning objectives are made available to students through course syllabi, introductory lecture sessions, weekly assignments, and assessment rubrics. The Office of Education offers one-on-one support and workshops to faculty in syllabus and course design. Central to the approach in these sessions is competency-based education and the application of learning objectives at the course level.

2.6.F. Description of the manner in which the school periodically assesses changing practice or research needs and uses this information to establish the competencies for its educational programs

The School reviews changing practice and research needs to establish and/or assess competencies as follows:

- Reviews by the School's Policy Advisory Committee
- Discussion and reviews in school-wide and departmental committees which meet bimonthly and monthly, in addition to convening periodic retreats
- Solicitation and analysis of feedback from students, alumni, public health leaders in affiliated and collaborating organizations, and public health employers. These feedback mechanisms include student course evaluations, completed at the end of each course; focus groups, which are convened on an *ad hoc* basis; and, formal and informal communication with employers at annual and semiannual job fairs.

During the last three years, courses have been reviewed and approved by the School's Curriculum Committee and new and revised course offerings are frequently developed to respond to changing needs for public health practice. The introduction of Mailman School certificates provides an opportunity for robust programmatic responses to the evolving field of public health and workforce needs, ensuring interdisciplinary learning opportunities for students to gain expertise in emerging and evolving areas. The role of the Curriculum Committee in overseeing and advising in the process of refining competencies can be found in the School's by-laws (Electronic Resource File 1.5.C.).

The changing needs of public health practice are addressed periodically by the Mailman School's Policy Advisory Committee. In addition, each department undertakes periodic reviews of its programs and courses in relation to the needs of the field, usually in departmental curriculum committee meetings and department-wide planning sessions and retreats. The School monitors the work of professional association committees, and in some cases plays a leadership role, related to professional competencies, outcomes, and certification exams. For example, Mailman School faculty members play major leadership roles and/or serve on committees related to the Association of Schools and Programs of Public Health (ASPPH) Core Competencies Development Project in the following areas: MPH degree, DrPH degree,

Global Health curriculum, and Undergraduate Public Health curriculum. The ASPPH MPH core and cross-cutting competencies have served as a valuable guide to the School and its educational programs as competencies have been developed and refined.

Students, recent graduates, and alumni play an important role in periodic assessments of changing needs. Students and many of our alumni work in a wide range of leading public health practice organizations in New York City, nationally, and globally. They bring well-informed perspectives about their educational needs to our deliberations and process (See Criterion 2.7.F.).

The Mailman School's wide and dynamic range of affiliations and collaborations with local, national, and international organizations provides another important vehicle for assessing the current issues facing public health practitioners. Of particular importance are the School's close and long-term partnerships with the New York City and New York State Departments of Health. Ongoing engagement with these partners permits a continuous, if informal tracking of needs.

Finally, employers play a key role in assessing the changing needs of public health practice and their implications for public health education. The Career Development Committee of the Alumni Executive Board meets regularly with staff of the Office of Career Services. Committee members represent a wide array of employers and routinely provide career advice and employer referrals to students, as well as important information regarding industry trends, employer hiring, and employer contacts to the Office of Career Services. To obtain information from the employers of our students, the Office of Career Services distributes a survey each fall and spring to gather feedback from Career Day employers regarding their satisfaction with the School's students, and their perceived knowledge and skills needed from future graduates. Criterion 2.7.E. offers a summary of the survey results.

2.6.G. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- All degree programs have well-defined competencies that have been developed through a rigorous process of collaboration and review involving faculty, students, employers, alumni, and leaders in the field, with guidance from the education literature.
- The School dedicates resources in the form of a school-based Office of Teaching and Learning with a full-time staff member to support faculty and departments in a competency-based model of curriculum development and assessment.
- Competencies are communicated to students, who have opportunities to evaluate—through the completion of course evaluations, focus groups, and informal feedback sessions with faculty and School leadership—the extent to which the curriculum and instruction support the achievement of related learning objectives in individual courses.
- The School places high priority on constantly reviewing the needs of the field and the needs of students, and incorporating into its educational programs new courses and tracks of study appropriate to these changing needs.

Challenges

- The School needs to develop school-wide core competencies for DrPH students that transcend discipline specific competencies and align with School goals to train public health leaders with strong practice oriented skills and knowledge.

Plans

- The Doctoral Committee has developed a school wide set of competencies for the DrPH program. Continuing efforts to refresh the DrPH program and ensure that all components of the program reflect the core competencies of a practice based leadership program including the following: 1) launch an adapted Integration of Science and Practice (ISP) course for DrPH students; 2) review all practicum and culminating experience guidelines by department; and 3) collaborate with the Office of Field Practice and Office of Career Services to strengthen practice links with partners and alumni.
- Looking forward to the 2016 CEPH criteria, work with all faculty to map specific learning experiences within individual courses onto course learning objectives and competencies.

Criterion 2.0 - Instructional Programs

2.7. ASSESSMENT PROCEDURES
There shall be procedures for assessing and documenting the extent to which each professional public health, other professional and academic degree student has demonstrated achievement of the competencies defined for his or her degree program and area of concentration.

2.7.A. Description of the procedures used for monitoring and evaluating student progress in achieving the expected competencies, including procedures for identifying competency attainment in practice or research, as applicable, and in culminating experiences.

The attainment of competencies as students move toward graduation is monitored and evaluated in the context of the various educational components of each degree program. In addition to the successful completion of coursework, evaluating student progress toward attainment of competencies takes place through educational components such as the advising process, the practice experience, and the culminating experience. The monitoring and evaluating of student progress is carried out through coordinated efforts at the department and School levels. School-wide monitoring and evaluation bodies and efforts include:

- Faculty committees, such as the School-wide Curriculum Committee, ensure that course learning objectives, content, assessment measure, and instructional activities align with degree competencies.
- The Office of Student Affairs monitors student course grades and academic performance to identify students in need of additional support or interventions. The office coordinates with departmental administration, such as academic directors and coordinators, and student academic advisors to track the completion of required coursework, enrollment in appropriate credit loads, and timely completion of the practicum planning process.
- Academic advisors meet regularly with students to discuss degree requirements, goals for student learning, curricular opportunities, and how to enhance students' educational experience.
- Certificate leads are available to students to discuss certificate requirements, goals for student learning, identify curricular opportunities, and enhance students' educational experience.
- Student course evaluations and feedback are collected and reviewed at the completion of each course. Course evaluation data are analyzed and reviewed thoroughly by the Director of Strategic Analysis and Evaluation, who prepares comprehensive data reports that are presented to School and department leadership. These reports are used to identify courses that students feel mastery of the content needs improvement, learning objectives are unclear or instructional activities or assessment measures do not align with the stated goals for student learning. The Vice Dean of Education works with departmental leadership and faculty to address areas that require improvement or remediation.

In addition to the school-wide monitoring and evaluation bodies and efforts, the School monitors and evaluates student progress through the course design process, student performance, academic advising, and the monitoring of practice and culminating experiences.

COURSE DESIGN. Educational activities of courses (e.g., assignments, papers, projects, and data collection, etc.) and the associated assessment procedures are tied to the learning objectives of each course. Students' grades on individual activities and their final course grades reflect the extent to which they have mastered the course's learning objectives and, in turn, degree competencies. The School's course evaluation has three questions that address attainment of competencies and serve as feedback mechanisms for refining course design. These questions focus on course specific competencies as well as the competencies related to linking subject matter to broader public health context and solving public

health problems (Electronic Resource File 2.7.A.). MPH Core curriculum courses have a customized evaluation template (Electronic Resource File 2.7.A.). Coursework is a stepping-stone for attaining the majority of degree competencies.

STUDENT ACADEMIC PERFORMANCE IN COURSES. The Office of Student Affairs monitors key indicators in the process of evaluating student achievement in individual courses and as part of their overall academic progress. These key academic performance indicators include grades below B-, grades of I (incomplete), UW (unofficial withdrawal) in any course. Additional scrutiny is paid to combinations of these indicators (for example, more than one grade below B- or two or more incompletes, grades of F, or poor grades [below B-] in a core course). As a result of the School's academic review, and depending on the number and combination of such indicators, a student may be sent a "grade warning letter" or notification that they must obtain department approval to register or that they are on a Dean's Hold, which bars registration in further courses. Student progress towards completion of degree requirements is used as an indicator of performance and/or need for assistance.

The School has established guiding principles based on the experience of our faculty and student affairs professionals along with ongoing review of the data. The School believes that the number of incompletes is often a better indicator of academic difficulty than poor grades. Only the Office of Student Affairs (OSA) may authorize Incomplete Notations (INs) on students' transcripts. INs may only be used for students who have met the attendance requirements of a course but certain assignments have not been completed for reasons satisfactory to the course instructor. Students must submit an Incomplete Request Form prior to the conclusion of the term to be eligible for INs. Students who do not submit this form may have a letter grade assigned based on the work completed at the time faculty must submit grades. Students must complete work necessary to resolve INs by the deadlines published in the academic calendar. Faculty have the discretion to shorten the deadline. Requests for extensions must be submitted via email to the Office of Student Affairs prior to the deadline and are reviewed on a case-by-case basis.

The School's monitoring system highlights the number of INs, permitting the academic advisor and Office of Student Affairs to intervene prior to the accumulation of poor or failing grades. Students are monitored by faculty advisors for meeting core course and departmental requirements, and for the successful completion of coursework. In addition, master's degree students' work in individual courses, and in the program as a whole, is reviewed systematically every semester by the Office of Student Affairs, per the School's Academic Standards Committee.

The interventions for any of the warning indicators noted above are as follows:

Grade Warning Letter. A warning letter is issued to students who receive a single grade below B-, an Incomplete Grade, or Unofficial Withdrawal. A copy of the warning letter and student transcript is sent to the student's advisor, who has discretion to restrict future registration if the student's progress in remedying the situation is perceived to be inadequate.

Departmental Approval to Register. A letter is sent to students carrying two or more of any of the following: incomplete grades, a grade of UW, grades below B- in any combination of courses. The approach is stricter with respect to student performance in the core courses. For example, if a student receives even one grade below a B- in these courses, this process is triggered. Such students are notified that they must discuss their academic progress with their advisor, and further registration requires the advisor's approval. A clear academic plan is developed as part of this discussion.

Dean's Hold on Registration. Students with three or more incomplete grades, or one or more grades of F, or three or more grades below B-, will have their registration placed on Dean's Hold. In serious cases of unsatisfactory performance, a Dean's Hold may lead to dismissal from the School upon

recommendation by the department and review by the Academic Standards Committee. Students placed on Dean's Hold may be permitted to continue study by meeting conditions specified by the department and receiving formal written approval of the department and approval by the School's Academic Standards Committee.

Removal from Degree Program. Based on any of the criteria above regarding grades or academic progress, the Academic Standards Committee, after reviewing a student's individual record and circumstances, may decide to remove a student from their program.

ACADEMIC ADVISING. Serving as the first stop for guidance on courses and careers, academic advisors monitor students' progress toward mastery of the degree competencies. Academic advisors monitor course requirements and the attainment of competencies, paying attention to coursework that will assist students in maximizing the value of the practice and culminating experiences. For doctoral students, the academic advisors provide guidance, monitoring, and evaluation while the faculty committees oversee examinations, research proposals, and dissertation defenses. In all departments and programs of instruction, faculty members serve as advisors to students. Departmental policies and procedures regarding academic advising are reviewed annually by faculty committees in the department, and information is provided to students in academic handbooks and is available on the School's website.

Doctoral student advisors and the department doctoral directors provide the essential first response and overall oversight for individual student performance and progress toward mastery of degree competencies. Doctoral students prepare annual progress reports that are reviewed by academic advisors or dissertation sponsors. They receive additional advice and direction from faculty in departmental doctoral seminars. Additional monitoring and evaluation takes place within department-based faculty committees and, in the case of PhD degree students, within the joint Mailman School and Graduate School of Arts and Sciences committees. A school-wide Doctoral Committee was established following recommendations from the School's last accreditation report. This committee includes the directors of doctoral studies from each of the departments with doctoral programs, a doctoral student representative, and senior leadership from the Office of Student Affairs. This committee plays an important role in establishing and maintaining school-wide rules and standards that guide how each department monitors and evaluates doctoral student progress.

Oversight of the academic advising system for master's degree and doctoral degree students, is provided by a faculty member who serves as the director of the degree program and by a department or program coordinator. The department and program coordinators have monthly meetings organized by the Office of Student Affairs. These meetings serve as a clearinghouse for issues related to advising and student academic progress, as well as the development of best practices for ongoing quality improvement to the advising system.

PRACTICE EXPERIENCE. All professional degree students are required to complete a practice experience, which is carefully evaluated from the perspective of students and preceptors. As part of the practice experience the student, preceptor, and academic advisor and/or practice advisor come to a mutual agreement on the learning objectives and competencies to be mastered through the experience. These are included in the project agreement, the Scope of Work agreement, between the student and the site preceptor described in Criterion 2.4.A. The practice experience allows students to apply classroom based knowledge and skills to a field setting; hence, course learning objectives and practice experience learning objectives are intrinsically linked. The preceptors in the field evaluate student performance and progress toward obtaining competence. Since the practice experience happens at approximately the halfway point through their educational experience for professional students, it provides an important monitoring and evaluation landmark. It allows academic advisors to reflect with students about the impact of the practice

experience on their learning and professional goals, and to collectively chart the pathway for the remaining courses and competencies that students need to master.

CULMINATING EXPERIENCE. The culminating experience is an educational platform for professional and academic degree programs to showcase the achievement of degree competencies. Degree program culminating experiences share core values of integration, demonstration, and mastery of knowledge and skills. Culminating experiences vary by degree program and department and evaluation methods vary as well. For example, the required Thesis Courses I and II in Epidemiology use a grading rubric developed by the department (Electronic Resource File 2.7.A.). The HealthSquare simulation for Health Policy and Management students is evaluated through students' completion of the simulation and reflection on their progress.

2.7.B. Identification of outcomes that serve as measures by which the school will evaluate student achievement in each program, and presentation of data assessing the school's performance against those measures for each of the last three years. Outcome measures must include degree completion and job placement rates for all degrees (including bachelor's, master's and doctoral degrees) for each of the last three years. See CEPH Data Templates 2.7.1 and 2.7.2. If degree completion rates in the maximum time period allowed for degree completion are less than the thresholds defined in this criterion's interpretive language, an explanation must be provided. If job placement (including pursuit of additional education), within 12 months following award of the degree, includes fewer than 80% of the graduates at any level who can be located, an explanation must be provided. See CEPH Outcome Measures Template.

Measures to evaluate student achievement in each program include student grade point average, time to graduation, and percentage of graduates employed within one year of graduation. Refer to Table 2.7.B.1. for data for the last three years. The School also monitors student perception of their attainment of competencies at the completion of each course. These data are collected from course evaluations and serve as a valuable tool for monitoring competency attainment at the course level, with a particular focus on core courses. The course evaluation data serve as a feedback loop for refining the design of courses, as noted in Criterion 2.7.A.

Table 2.7.B.1. Measures by which the School will Evaluate Student Achievement

Measure	Target	2014-15	2015-16	2016-17
Average GPA – MPH	3.8	3.7	3.7	3.7
Average GPA – MS	3.8	3.8	3.7	3.8
Average GPA – MHA	3.8	3.6	3.7	3.7
Average GPA – DrPH	3.8	3.8	3.8	3.8
Average GPA – PhD	3.8	3.8	3.8	3.9
Overall average GPA	3.8	3.7	3.7	3.8
Graduation rate – MPH[a]	100%	92.4%	96.2%	97.6%
Graduation rate – MS[a]	100%	86.2%	80.1%	82.1%
Graduation rate – DrPH[b]	100%	88.9%	75.0%	88.9%
Graduation rate – PhD[b,c]	100%	55.6%	80.0%	72.7%
Overall graduation rate[d]	100%	90.2%	94.0%	94.9%
Graduate employment rate – MPH[e]	100%	95.0%	96.8%	Pending
Graduate employment rate – MHA[d,e]	100%	NA	93.2%	Pending
Graduate employment rate – MS[e]	100%	98.3%	97.9%	Pending
Graduate employment rate – DrPH[e]	100%	100%	100%	Pending
Graduate employment rate – PhD[e]	100%	100%	75.0%	Pending
Overall graduate employment rate[e]	100%	96.0%	97.0%	Pending

[a] Entering classes of 2011-12, 2012-13, and 2013-14, respectively (the 3 most recent classes to meet the maximum allowed time to graduation)
[b] Entering classes of 2005-06, 2006-07, and 2007-08, respectively (the 3 most recent classes to meet the maximum allowed time to graduation)
[c] A late graduate in the 2015-16 academic year raises this rate to 61.1%, over the minimum required threshold.
[d] The MHA program was launched in fall 2014, so no cohort has yet reached the 4 years maximum allowed time to graduation. Their graduation rates to date are not included in this table, or in the aggregate graduation rate, but are included in Template 2.7.1 and are expected to rise by the end of the 2017-18 academic year. The program graduated its first students in 2015-16.
[e] Rates are for graduates of the prior academic year; the table reflects the year in which they were surveyed for their employment status; Career Service Exit Survey 2016-2017 data will be available fall 2017

The School monitors student progress towards graduation for all its degree programs. For master's degree students, both full and part time students are expected to complete all degree program requirements within five years. Typically, full time MPH degree students complete their degrees within 24 months of enrollment at the School. MS degree students typically graduate within 24 to 30 months as they are more likely than MPH degree students to enroll on a part time basis. The School has set the same four-year graduation rate goals for MS degree student as for MPH degree students.

Tables 2.7.B.2.-6. present student progress for the MPH, MS, MHA, DrPH, and PhD degree programs for cohorts entering between 2011-12 and 2015-16.

Table 2.7.B.2. (CEPH Template 2.7.1) Students in MPH Degree, by Cohorts Entering Between 2011-12 and 2015-16

Cohort of Students		Entering Year 2011-12	2012-13	2013-14	2014-15	2015-16
2011-12	# Students entered[a]	488				
	# Students withdrew, dropped, etc.	12				
	# Students graduated	4				
	Cumulative graduation rate	0.8%				
2012-13	# Students continuing at beginning of this school year	472	478			
	# Students withdrew, dropped, etc.	11	6			
	# Students graduated	346	1			
	Cumulative graduation rate	71.7%	0.2%			
2013-14	# Students continuing at beginning of this school year[b]	115	471	509		
	# Students withdrew, dropped, etc.	4	10	5		
	# Students graduated	89	389	2		
	Cumulative graduation rate	90.0%	81.5%	0.3%		
2014-15	# Students continuing at beginning of this school year[c]	22	72	502	464	
	# Students withdrew, dropped, etc.	0	1	5	2	
	# Students graduated	12	62	420	3	
	Cumulative graduation rate	92.4%	94.5%	82.9%	0.6%	
2015-16	# Students continuing at beginning of this school year		9	77	459	434
	# Students withdrew, dropped, etc.		0	2	18	6
	# Students graduated		8	69	403	1
	Cumulative graduation rate		96.2%	96.4%	88.8%	0.2%
2016-17	# Students continuing at beginning of this school year			6	38	427
	# Students withdrew, dropped, etc.			0	0	0
	# Students graduated			6	35	370
	Cumulative graduation rate			97.6%	95.0%	85.5%

[a] For entering year 2011-12, six MPH students transferred to the MS program and two MS students transferred to the MPH program. Original entering class size was 492.
[b] For entering year 2013-14, five MPH students transferred to the MHA program and seven MHA students transferred to the MPH program. Original entering class size was 462.
[c] For entering year 2014-15, five MPH students transferred to the MHA program and seven MHA students transferred to the MPH program. Original entering class size was 435.

Table 2.7.B.3. (CEPH Template 2.7.1) Students in MS Degree, By Cohorts Entering Between 2011-12 and 2015-16

Cohort of Students		Entering Year 2011-12	2012-13	2013-14	2014-15	2015-16
2011-12	# Students entered[a]	51				
	# Students withdrew, dropped, etc.	2				
	# Students graduated	2				
	Cumulative graduation rate	3.9%				
2012-13	# Students continuing at beginning of this school year	47	52			
	# Students withdrew, dropped, etc.	1	1			
	# Students graduated	36	2			
	Cumulative graduation rate	74.5%	3.8%			
2013-14	# Students continuing at beginning of this school year	10	49	67		
	# Students withdrew, dropped, etc.	1	2	4		
	# Students graduated	6	27	2		
	Cumulative graduation rate	86.2%	55.8%	2.9%		
2014-15	# Students continuing at beginning of this school year	3	20	61	102	
	# Students withdrew, dropped, etc.	0	2	7	3	
	# Students graduated	0	10	43	4	
	Cumulative graduation rate	86.2%	75.0%	67.2%	3.9%	
2015-16	# Students continuing at beginning of this school year		8	11	95	81
	# Students withdrew, dropped, etc.		2	1	4	3
	# Students graduated		3	9	82	4
	Cumulative graduation rate		80.1%	80.6%	84.3%	4.9%
2016-17	# Students continuing at beginning of this school year			1	9	74
	# Students withdrew, dropped, etc.			0	0	0
	# Students graduated			1	6	60
	Cumulative graduation rate			82.1%	90.2%	79.0%

[a] For entering year 2011-12, six entering MPH students transferred to the MS program and two entering MS students transferred to the MPH program. Original entering class size was 55

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Table 2.7.B.4. (CEPH Template 2.7.1) Students in MHA Degree, By Cohorts Entering Between 2014-15 and 2015-16

Cohort of Students		Entering Year	
		2014-15	2015-16
2014-15	# Students continuing at beginning of this school year[a]	95	
	# Students withdrew, dropped, etc.	0	
	# Students graduated	0	
	Cumulative graduation rate	0.0%	
2015-16	# Students continuing at beginning of this school year[b]	95	87
	# Students withdrew, dropped, etc.	1	0
	# Students graduated	46	0
	Cumulative graduation rate	48.4%	0.0%
2016-17*	# Students continuing at beginning of this school year	48	87
	# Students withdrew, dropped, etc.	0	0
	# Students graduated	47	46
	Cumulative graduation rate	97.9%	52.9%

The MHA was launched in 2014-15 and students have not yet had the four maximum allowable years to graduate

[a] For entering year 2014-15, five MPH students transferred to the MHA program and seven entering MHA students transferred to the MPH program. Original entering class size was 97.

[b] For entering year 2015-16, one MPH student transferred to the MHA program. Original entering class size was 86.

Table 2.7.B.5. (CEPH Template 2.7.1) Students in DrPH Degree, By Cohorts Entering Between 2005-06 and 2015-16

Cohort of Students		Entering Year										
		2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
2005-06	# Students entered	9										
	# Students withdrew, dropped, etc.	0										
	# Students graduated	0										
	Cumulative graduation rate	0.0%										
2006-07	# Students continuing at beginning of this school year	9	8									
	# Students withdrew, dropped, etc.	0	0									
	# Students graduated	0	0									
	Cumulative graduation rate	0.0%	0.0%									
2007-08	# Students continuing at beginning of this school year	9	8	9								
	# Students withdrew, dropped, etc.	0	0	1								
	# Students graduated	0	0	0								
	Cumulative graduation rate	0.0%	0.0%	0.0%								

2008-09	# Students continuing at beginning of this school year	9	8	8	5							
	# Students withdrew, dropped, etc.	0	1	0	0							
	# Students graduated	0	0	0	0							
	Cumulative graduation rate	0.0%	0.0%	0.0%	0.0%							
2009-10	# Students continuing at beginning of this school year	9	7	8	5	9						
	# Students withdrew, dropped, etc.	0	0	0	0	0						
	# Students graduated	0	1	0	0	0						
	Cumulative graduation rate	0.0%	12.5%	0.0%	0.0%	0.0%						
2010-11	# Students continuing at beginning of this school year	9	6	8	5	9	6					
	# Students withdrew, dropped, etc.	0	0	0	0	0	1					
	# Students graduated	3	1	1	0	1	0					
	Cumulative graduation rate	33.3%	25.0%	11.1%	0.0%	11.1%	0.0%					

2011-12	# Students continuing at beginning of this school year	6	5	7	5	8	5	7				
	# Students withdrew, dropped, etc.	0	0	0	0	0	1	0				
	# Students graduated	1	2	4	0	1	0	0				
	Cumulative graduation rate	44.4%	50.0%	55.6%	0.0%	22.2%	0.0%	0.0%				
2012-13	# Students continuing at beginning of this school year	5	3	3	5	7	4	7	13			
	# Students withdrew, dropped, etc.	0	0	0	0	0	0	0	1			
	# Students graduated	3	1	1	0	0	0	0	0			
	Cumulative graduation rate	77.7%	62.5%	66.7%	0.0%	22.2%	0.0%	0.0%	0.0%			
2013-14	# Students continuing at beginning of this school year	2	2	2	5	7	4	7	12	17		
	# Students withdrew, dropped, etc.	1	0	0	0	0	0	0	0	1		
	# Students graduated	1	1	1	1	4	0	0	0	0		
	Cumulative graduation rate	88.8%	75.0%	77.8%	20.0%	66.7%	0.0%	0.0%	0.0%	0.0%		

2014-15	# Students continuing at beginning of this school year	0	1	1	4	3	4	7	12	16	15	
	# Students withdrew, dropped, etc.	0	0	0	0	0	0	0	2	1	0	
	# Students graduated	0	0	0	2	1	0	1	0	0	0	
	Cumulative graduation rate	88.8%	75.0%	77.8%	60.0%	77.8%	0.0%	14.3%	0.0%	0.0%	0.0%	
2015-16	# Students continuing at beginning of this school year		1	1	2	2	4	6	10	15	15	9
	# Students withdrew, dropped, etc.		1	0	1	0	1	1	0	3	0	0
	# Students graduated		0	0	1	2	0	1	0	0	0	0
	Cumulative graduation rate		75.0%	77.8%	80.0%	100.0%	0.0%	28.6%	0.0%	0.0%	0.0%	0.0%
2016-17	# Students continuing at beginning of this school year			1	0	0	3	4	10	12	15	9
	# Students withdrew, dropped, etc.			0	0	0	0	0	0	0	0	0
	# Students graduated			1	0	0	2	0	0	1	0	0
	Cumulative graduation rate			88.9%	80.0%	100.0%	33.3%	28.6%	0.0%	5.9%	0.0%	0.0%

Table 2.7.B.6. (CEPH Template 2.7.1) Students in PhD Degree, By Cohorts Entering Between 2005-06 and 2015-16

Cohort of Students		Entering Year										
		2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
2005-06	# Students entered	18										
	# Students withdrew, dropped, etc.	1										
	# Students graduated	0										
	Cumulative graduation rate	0.0%										
2006-07	# Students continuing at beginning of this school year	17	15									
	# Students withdrew, dropped, etc.	1	0									
	# Students graduated	1	0									
	Cumulative graduation rate	5.6%	0.0%									
2007-08	# Students continuing at beginning of this school year	15	15	22								
	# Students withdrew, dropped, etc.	1	0	0								
	# Students graduated	0	0	0								
	Cumulative graduation rate	5.6%	0.0%	0.0%								

Cohort of Students		Entering Year										
		2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
2008-09	# Students continuing at beginning of this school year	14	15	22	19							
	# Students withdrew, dropped, etc.	0	0	1	0							
	# Students graduated	0	0	0	0							
	Cumulative graduation rate	5.6%	0.0%	0.0%	0.0%							
2009-10	# Students continuing at beginning of this school year	14	15	21	19	23						
	# Students withdrew, dropped, etc.	1	0	1	0	1						
	# Students graduated	3	1	0	0	0						
	Cumulative graduation rate	22.2%	6.7%	0.0%	0.0%	0.0%						
2010-11	# Students continuing at beginning of this school year	10	14	20	19	22	26					
	# Students withdrew, dropped, etc.	0	0	0	0	2	1					
	# Students graduated	2	3	0	1	0	0					
	Cumulative graduation rate	33.3%	26.7%	0.0%	5.3%	0.0%	0.0%					

Cohort of Students		Entering Year										
		2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
2011-12	# Students continuing at beginning of this school year	8	11	20	18	20	25	27				
	# Students withdrew, dropped, etc.	0	0	0	0	0	4	1				
	# Students graduated	2	2	6	2	0	0	0				
	Cumulative graduation rate	44.4%	40.0%	27.3%	15.8%	0.0%	0.0%	0.0%				
2012-13	# Students continuing at beginning of this school year	6	9	14	16	20	21	26	16			
	# Students withdrew, dropped, etc.	1	0	1	0	0	1	1	1			
	# Students graduated	2	2	4	1	0	0	0	0			
	Cumulative graduation rate	55.6%	53.3%	45.5%	21.1%	0.0%	3.8%	0.0%	0.0%			
2013-14	# Students continuing at beginning of this school year	3	7	9	15	20	20	25	15	22		
	# Students withdrew, dropped, etc.	0	0	0	0	0	0	0	0	0		
	# Students graduated	0	2	2	6	2	2	0	0	0		
	Cumulative graduation rate	55.6%	66.7%	54.5%	52.6%	8.7%	11.5%	0.0%	0.0%	0.0%		

Cohort of Students		Entering Year										
		2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
2014-15	# Students continuing at beginning of this school year	3	5	7	9	18	18	25	15	22	20	
	# Students withdrew, dropped, etc.	0	0	0	0	0	1	0	2	0	0	
	# Students graduated	0	1	3	2	6	3	1	0	0	1	
	Cumulative graduation rate[a]	55.6%	73.3%	68.2%	63.2%	34.8%	19.2%	3.7%	0.0%	0.0%	5.0%	
2015-16	# Students continuing at beginning of this school year		4	4	7	12	14	24	13	22	19	19
	# Students withdrew, dropped, etc.		1	0	1	1	1	1	0	0	0	0
	# Students graduated		1	1	2	3	6	1	0	0	0	0
	Cumulative graduation rate		80.0%	72.7%	73.7%	47.8%	42.3%	7.4%	0.0%	0.0%	5.0%	0.0%
2016-17	# Students continuing at beginning of this school year			3	4	8	7	22	13	22	19	19
	# Students withdrew, dropped, etc.			0	0	0	0	0	0	0	0	0
	# Students graduated			0	0	2	4	5	3	0	0	0
	Cumulative graduation rate			72.7%	73.7%	56.5%	57.7%	25.9%	18.8%	0.0%	5.0%	0.0%

[a]A late graduate in the 2015-16 academic year raises the 2005-06 entering year rate to 61.1%, over the minimum required threshold.

2.7.C. An explanation of the methods used to collect job placement data and of graduates' response rates to these data collection efforts. The school must list the number of graduates from each degree program and the number of respondents to the graduate survey or other means of collecting employment data

To collect job placement data, the Office of Career Services (OCS) at the Mailman School conducts a post-graduate employment survey sent to all graduates. The survey protocol follows accepted protocols as defined by the National Association of Colleges and Employers and CEPH. The survey is sent 2-3 weeks prior to graduation and followed up with a survey approximately 6 months after graduation. The process yielded a 69% response rate in 2015-2016 (414 responses from 602 graduates). For graduates in 2016, OCS obtained a 94% response rate (628 responses from 670 graduates), the highest rate ever obtained.

In order to increase the survey response rate, the Office of Career Services re-sends the survey to non-responders and uses standard research methods to increase the "knowledge rate" regarding graduates (e.g., using reliable data collected through graduates' self-reports on LinkedIn, *ad hoc* student reports to the Office of Career Services staff that provide information about employment outcomes, and information collected from faculty and staff in the various academic departments). Due to these follow-up efforts, we had information regarding 491 graduates as of January 5, 2016, from a total of 602 graduates surveyed, a "knowledge rate" of 82%. Of the 491 graduates whose status was known, there were a total of 414 survey responses (84% of data); 40 students whose status was provided by faculty or academic department staff (8%); 25 provided *ad hoc* reports to Career Services (5%); and 28 whose status was found via LinkedIn (6%). It should be noted that 16 students who responded to the initial survey as job-seeking but never responded to repeated future outreach, and whose status could not be confirmed via faculty, LinkedIn, or emails, were considered lost to follow-up/non-responders. Also, international students who are not eligible for post-graduate employment (n=4) were listed as not seeking employment. Students who were employed but not in public health, and were seeking employment, were listed as job-seeking (there were three respondents in this category; thus three of the 15 job-seeking are technically employed).

The rigorous and systematic data collection methods used by the Office of Career Services have yielded solid response rates, with an overall average response rate of 83.4%. Moreover, the employment rates of Mailman School graduates are stellar—among the highest in the nation. Our graduate employment rates for all master's degrees exceed 95%, and range from 75-100% for doctoral degrees. Table 2.7.C.1. (CEPH Template 2.7.2.) presents the graduate employment rates and response rates by degree program.

Table 2.7.C.1. (CEPH Template 2.7.2.) Destination of Graduates by Employment Type and Survey Response Rates

	2013-2014	2014-2015	2015-2016
MPH			
Employed	373	361	412
Continuing education/training (not employed)	30	40	40
Actively seeking employment	11	14	10
Not seeking employment (not employed and not continuing education/training, by choice)	10	5	5
Unknown	91	89	35
Total	**515**	**509**	**502**
Response rate	**82.3%**	**82.5%**	**92.5%**
MS			
Employed	41	49	91
Continuing education/training (not employed)	3	9	6
Actively seeking employment	0	1	0

	2013-2014	2014-2015	2015-2016
MPH			
Not seeking employment (not employed and not continuing education/training, by choice)	1	0	2
Unknown	7	13	5
Total	**52**	**72**	**104**
Response rate	**86.5%**	**81.9%**	**95.2%**
MHA			
Employed	NA	NA	41
Continuing education/training (not employed)	NA	NA	0
Actively seeking employment	NA	NA	2
Not seeking employment (not employed and not continuing education/training, by choice)	NA	NA	1
Unknown	NA	NA	1
Total	**NA**	**NA**	**45**
Response rate	**NA**	**NA**	**97.8%**
DrPH			
Employed	8	3	7
Continuing education/training (not employed)	0	0	0
Actively seeking employment	0	0	0
Not seeking employment (not employed and not continuing education/training, by choice)	0	0	0
Unknown	4	4	0
Total	**12**	**7**	**7**
Response rate	**66.7%**	**42.9%**	**100%**
PhD			
Employed	13	9	4
Continuing education/training (not employed)	0	0	2
Actively seeking employment	0	0	1
Not seeking employment (not employed and not continuing education/training, by choice)	0	0	1
Unknown	2	4	0
Total	**15**	**13**	**8**
Response rate	**86.7%**	**69.2%**	**100%**

2.7.D. In fields for which there is certification of professional competence and data are available from the certifying agency, data on the performance of the school's graduates on these national examinations for each of the last three years.

The School does not offer academic or professional degree programs for which there is a requirement for certification to practice within one's public health field. However, opportunities for voluntary certification have emerged in recent years. In the summer of 2008, the National Board of Public Health Examiners (NBPHE) began to offer a certification exam for a new credential, Certified in Public Health (CPH). The NBPHE provides the scores that Mailman School students earn in each core content area, allowing the degree programs to assess effectiveness in preparing students in these areas. Pass rates for current students and alumni for the past three years are presented in Table 2.7.D.1. According to the data from the NBPHE examination, Mailman School students exceed the passing rates by a wide margin. Since 2008, 277 current School students and alumni have taken the exam, with a cumulative pass rate of 93%. The

School will continue to monitor the evolving nature of the exam and the adoption of this type of certification as a criterion for employment.

Table 2.7.D.1. Mailman School combined alumni and student performance on NBPHE examination (CPH), 2014-2016

	2014	2015	2016
Mailman Examinees	36	37	29
Mailman Passing Rate	92%	100%	93%
NBPHE Average	79%	76%	73%

2.7.E. Data and analysis regarding the ability of the school's graduates to perform competencies in an employment setting, including information from periodic assessments of alumni, employers and other relevant stakeholders. Methods for such assessments may include key informant interviews, surveys, focus groups and documented discussions.

ALUMNI/EMPLOYER FEEDBACK

The Office of Career Services administers a survey to organizations that participate in fall and spring Career Days. Typically, 35 to 45 organizations participate in each Career Day. The Career Day survey (Electronic Resource File 2.7.E.) asks respondents to provide demographic information about their organization, the School's Departments from which they typically recruit employees, the skills most important for employees, and the strengths and weaknesses that Mailman students bring to their organizations. The results of the surveys are shared with the Office of Academic Affairs, the Office of Student Affairs, departmental administrators, and faculty and graduate student committees for the purposes of curricular and program improvement.

During the spring 2017 Career Day, representatives from 25 organizations reported hiring a Mailman graduate in the last 5 years. Across all 17 competencies, an average 82% of the representatives agreed or strongly agreed that Mailman graduates demonstrated the competencies.

The Office of Career Services works closely with the School's Office of Alumni Affairs to strengthen relationships with the School's alumni.

STUDENT FEEDBACK

Graduating students complete a student satisfaction exit survey during the fall, spring, and summer semesters (Electronic Resource File 2.7.E.). The survey is distributed electronically by the Office of Academic Affairs and the Office of Student Affairs. The survey collects feedback regarding students' overall experiences in their degree programs and suggestions for improvements to the curriculum and School programming in general. Results are disaggregated by degree: Master of Public Health (MPH), Master of Science (MS), and doctoral degrees (both Doctor of Philosophy and Doctor of Public Health). The results of the surveys are shared with the Office of Academic Affairs, the Office of Student Affairs, the Office of Career Services, departmental administrators and faculty and graduate student committees. The average response rate since 2014 has been 76%.

2.7.F. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- The School's overall educational experience is designed to promote the mastery of the competencies listed in Criterion 2.6. through its courses, curriculum, and activities beyond the classroom.
- The School has a robust system to ensure that competencies are assessed from a number of sources and perspectives. Data from assessments are reviewed regularly by faculty and School leadership to make necessary instructional and curricular modifications.
- Well-designed courses with outcomes-based measures are at the foundation of the School's ability to facilitate the monitoring and evaluation of student attainment of competencies.
- Robust data regarding post-graduate employment reflect a strong and effective Office of Career Services that is actively monitoring the services it provides to students. The increase in response rates to 94% is notable.

Challenges

- Engaging with employers to assess perceptions of alumni and their ability to perform competencies in the work setting is challenging.

Plans

- In spring 2017, the School surveyed alumni in an effort to obtain information on graduate perspectives regarding their competencies and the extent to which their degree programs prepared them for their current employment. Plans to continue this effort and improve response rates are underway.
- Through its career fairs, the Office of Career Services assesses employer perception of graduates' workplace performance. Efforts to expand this work to employers of our alumni are underway.
- Assessing student learning is an ongoing process that requires continual review of data collection and tools. The School will continue to use best practices to fully assess student learning.

Criterion 2.0 - Instructional Programs

2.8. OTHER GRADUATE PROFESSIONAL DEGREES

If the school offers curricula for graduate professional degrees other than the MPH or equivalent public health degrees, students pursuing them must be grounded in basic public health knowledge.

2.8.A. Identification of professional degree curricula offered by the school, other than those preparing primarily for public health careers, and a description of the requirements for each.

In fall of 2014, the School and the Department of Health Policy & Management (HPM) launched a Master of Health Administration (MHA) degree in full-time, part-time, and executive formats. These cohort-based programs provide students with an interdisciplinary education that integrates coursework in organizational leadership and management, health policy, and public health and health systems. The MHA program incorporates an overview of public health and has been designed to combine management training with experiential learning. The programs' curriculum designs reflect state-of-the-art approaches to learning including case studies, practica, simulation, group activities, and problem-solving exercises. These combinations of teaching methodologies enable professors to connect theories and models to the realities of the workplace. The curriculum comprises three main components: an overview of the political, economic and legal healthcare framework; a broad introduction to public health, as well as an understanding about how the curriculum contributes to achieving the goals of public health; and management methods, analysis and content.

Students enrolled in the MHA programs, regardless of format, must complete a minimum of 45 total credits and a fundamental core management curriculum, which comprises 15 courses and 36 credits. The remaining courses/credit requirements comprise additional coursework to reflect the specific academic needs of each population, and constitute enrichment and elective coursework. Toward the end of the coursework, MHA students complete an integrated, comprehensive, two-day exercise that simulates the breadth and complexity of a multi-hospital marketplace. Working in teams of 5-7 members, students act as the executive leadership of a community hospital and are required to analyze the position of the institution and make all decisions central its successful management. All three MHA formats require students to utilize their practical experience to complete a special practicum project.

Full-time MHA Program. This program is a highly structured two-year program designed for students entering careers in the healthcare field. The full-time MHA program is designed for students who have a range of undergraduate backgrounds/degrees and limited full-time work experience. Students attend class five days a week and must complete a total of 55 credits, 9 of which are elective credits which may be taken at the Mailman School or another Columbia University School with prior approval. Typical elective offerings include Management of Public Health Non-Profit Organizations, the Business of Healthcare, Health Disparities, Drugs & Devices, Interest Group Politics, Cases in Hospital Management, Cross National Policy, and Mental Health Policy. Students have the opportunity to participate in the Consulting Workshop elective course, which provides a professional consulting experience working on a current strategic, policy, marketing or operational issue or situation for a client organization. With faculty members serving as advisors, students collaborate as a team of consultants to develop a solution and present it to their client, which have, in the past, included hospitals, clinics, health plans, community service organizations, and public health organizations.

To ensure that students have the skills needed to enter and compete in the workforce, they are required to complete a comprehensive Professional Development Program (PDP), which includes a 12-month co-curricular course and a 10-week 350-hour full-time practicum internship in a healthcare setting. The required PDP seminar provides focused training on essential skills such as presentation, communication,

interviewing, and teamwork. The required practicum that takes place during the summer after a student's first year of graduate studies. During the fall of their second year, full-time management students write a paper that includes a structured analysis of their summer practicum and give a presentation in small groups during a culminating experience called Practicum Day.

Part-time MHA Program. This program is a 28-month evening program geared toward candidates who are working full-time and have at least one year of work experience in a health-related industry. The program integrating professional experience in the classroom. Candidates must have at least one year of work experience prior to admission and work full-time for the duration of the program. Classes typically meet two nights per week from 5:30-8:20pm. Part-time management students must complete a total of 45 credits, 7.5 of which are elective credits that may be taken at the Mailman School or another Columbia University School with prior approval. The cohort-based model leads to enriching classroom discussions and provides for an in-depth understanding of the interconnectedness of the healthcare profession. Students can immediately apply their coursework to their workplace, advance their career, and create value for their employers.

The part-time management program includes an integrated practicum requirement where students develop a case about an issue at their work site, complete an in-depth analysis of that case, and present the case to HPM part-time management faculty and students on a scheduled day. Students are evaluated on the content of the case and presentation skills.

Executive MHA Program. This program is a 24-month long program designed for working healthcare professionals with five or more years of healthcare-related work experience. The program meets for one long weekend each month (Thursday to Sunday) and classes run from 9-5 with a one-hour lunch break. When classes are not in session, students communicate with each other, program staff, and faculty via email, phone, and video. Based on the unique profile of the executive population, half of whom are typically physicians, executive students have the option to pursue either an MHA degree or an MPH degree with a focus on healthcare management, depending on their specific interests and needs. Program advisors and faculty counsel students to determine which academic path meets their professional goals.

The executive MHA degree requires 45 credits and integrates current practical applications into the curriculum. While the executive MHA program does not include elective coursework, students are required to take additional courses in the Transformation of Economic Models of Healthcare Delivery, Entrepreneurship for Healthcare Managers, and Master Classes. Master Classes cover selective subject areas in health policy and management not covered in depth in the rest of the curriculum; each master class is designed differently year to year to reflect trends and shifts in the healthcare field. Topics have included the vertical integration of healthcare financing, the management of prevention, and private health insurance and public policy strategic and management challenges. For example, the master class concerning the vertical integration of healthcare financing delves into the evolution and challenges of healthcare financing including the fundamentals of cost control and the renewed trend towards integrating healthcare finance and delivery in provider settings. It examines how leadership and a deep understanding of the insurance business, including pricing, can determine the success or failure of a plan in both government and commercial markets. The course discusses the rationale and execution challenges as well as strategies to determine whether provider-created health plans, acquisitions or partnerships can be successful for a particular hospital.

The executive MHA program includes an integrated practicum requirement where students develop a case about an issue at their worksite, complete an in-depth analysis of that case, and present the case to executive program faculty and students. Students are evaluated on the content of the case and presentation.

2.8.B. Identification of the manner in which these curricula assure that students acquire a public health orientation. If this means is common across these other professional degree programs, it need be described only once. If it varies by program, sufficient information must be provided to assess compliance by each program.

The MHA degree, for all formats, meets CEPH's reclassification requirements for the MHA degree as "other professional degrees" in schools of public health and ensures a broad public health orientation. All students must complete Public Health Concepts (P8555), a 3-credit course that introduces students to concepts in the core public health knowledge areas and broad public health goals. This course develops students' understanding of basic principles and applications of epidemiological concepts, social and behavioral science and prevention theories, and environmental health and hazards. In addition to Public Health Concepts, MHA degree candidates must also take a 3-credit course in Analytics & Managerial-Decision Making I (P6545) and a 3-credit course in Issues and Approaches in Health Policy & Management (P6530). Analytics & Managerial-Decision Making I focuses on learning basic tools for collecting, analyzing, and presenting data in support of managerial decision making in the healthcare sector. Issues and Approaches in Health Policy & Management explores policy and management issues that affect health care practitioners; it examines, for example, the historical foundation of the U.S. healthcare system, the rise of managed care, and ways in which the government can ensure quality care. These two courses provide knowledge and skills to help managers navigate the healthcare field to meet broad public health goals. The curriculum is supplemented by numerous School and HPM seminars, lectures, and workshops where MHA students are exposed to broad public health issues and goals.

2.8.C. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- The School has a robust and well-subscribed CAHME accredited MHA degree programs, which blend public health core knowledge, management training, and experiential learning. All students must complete a course in public health concepts to achieve a public health orientation. Furthermore, MHA students attend numerous school-wide and HPM seminars, lectures, and workshops alongside students in public health degrees.

Challenges

- The MHA program has worked to incorporate a public health orientation into its curriculum. As a fairly new program, evaluating the effectiveness of that work needs follow-up.

Plans

- Collaborate with the HPM department to assess whether the program is achieving its goal of integrating a public health orientation.

Criterion 2.0 - Instructional Programs

2.9. BACHELOR'S DEGREES IN PUBLIC HEALTH
If the school offers baccalaureate public health degrees, they shall include the following elements:

Required Coursework in Public Health Core Knowledge: students must complete courses that provide a basic understanding of the five core public health knowledge areas defined in Criterion 2.1., including one course that focuses on epidemiology. Collectively, this coursework should be at least the equivalent of 12 semester-credit hours.

Elective Public Health Coursework: in addition to the required public health core knowledge courses, students must complete additional public health-related courses. Public health-related courses may include those addressing social, economic, quantitative, geographic, educational and other issues that impact the health of populations and health disparities within and across populations.

Capstone Experience: students must complete an experience that provides opportunities to apply public health principles outside of a typical classroom setting and builds on public health coursework. This experience should be at least equivalent to three semester-credit hours or sufficient to satisfy the typical capstone requirement for a bachelor's degree at the parent university. The experience may be tailored to students' expected post-baccalaureate goals (e.g., graduate and/or professional school, entry-level employment), and a variety of experiences that meet university requirements may be appropriate. Acceptable capstone experiences might include one or more of the following: internship, service-learning project, senior seminar, portfolio project, research paper, or honors thesis.

2.9.A. Identification of all bachelor's-level majors offered by the school. The instructional matrix in Criterion 2.1.A. may be referenced for this purpose.

Not applicable.

2.9.B. Description of specific support and resources available in the school for the bachelor's degree programs.

Not applicable.

2.9.C. Identification of required and elective public health courses for the bachelor's degree(s).

Not applicable.

2.9.D. A description of school policies and procedures regarding the capstone experience.

Not applicable.

2.9.E. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.

Not applicable.

Criterion 2.0 - Instructional Programs

2.10. OTHER BACHELOR'S DEGREES
If the school offers baccalaureate degrees in fields other than public health, students pursuing them must be grounded in basic public health knowledge.

2.10.A. Identification of other baccalaureate degrees offered by the school and a description of the requirements for each. The instructional matrix in Criterion 2.1.a may be referenced for this purpose.

Not applicable.

2.10.B. Identification of the manner in which these curricula assure that students acquire a public health orientation. If this means is common across these degree programs, it need be described only once. If it varies by program, sufficient information must be provided to assess compliance by each program.

Not applicable.

2.10.C. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.

Not applicable.

Criterion 2.0 - Instructional Programs

2.11. ACADEMIC DEGREES
If the school also offers curricula for graduate academic degrees, students pursuing them shall obtain a broad introduction to public health, as well as an understanding about how their discipline-based specialization contributes to achieving the goals of public health.

2.11.A. Identification of all academic degree programs, by degree and area of specialization. The instructional matrix in Criterion 2.1.A may be referenced for this purpose.

The Mailman School offers two academic degree programs: the Master of Science (MS) degree and the Doctor of Philosophy (PhD) degree. The MS and PhD degrees are offered by the Departments of Biostatistics, Environmental Health Sciences, Epidemiology, and Sociomedical Sciences. The PhD degree is conferred by the Graduate School of Arts and Sciences, as are all PhD degrees at Columbia University, but administered by the departments offering the degree. The instructional matrix in Criterion 2.1.A.1. (Template 2.1.1.) lists the School's academic degrees and their areas of specialization.

2.11.B. Identification of the means by which the school assures that students in academic curricula acquire a public health orientation. If this means is common across the school, it need be described only once. If it varies by degree or program area, sufficient information must be provided to assess compliance by each.

In addition to an in-depth education in a specific discipline, all MS and PhD degree students at the School receive a broad public health orientation and perspective, through coursework and school-wide programing, which includes three semester credit hours of epidemiology and the equivalent of three semester credit hours of instruction that introduces students to the breadth of public health.

Coursework. Coursework is an essential element in assuring a public health orientation and the curricula of all academic degrees provide students with the opportunity to demonstrate mastery of the basic principles and application of epidemiology as well as grounding in the interdisciplinary nature of public health research. To achieve basic competency in epidemiology, all academic degree students are required to take Principles of Epidemiology (P6400; 3 credits), or to demonstrate competency in this area by passing a waiver exam. Academic degree students with public health professional degrees from accredited schools and programs who have completed three semester credit hours of instruction in epidemiology and at least three semester credit hours of other broad public health courses may receive waivers, pending review of relevant syllabi by the academic director of the department in which the degree is offered.

Many of the required and elective methods courses in the curricula for the academic degree programs provide students with the opportunity to develop competence in other areas of public health that are relevant to their disciplinary specialization. A combination of rigorous methodological training, along with orienting students to public health and public health challenges and problem solving techniques, is recommended and implemented by many of our faculty who teach methods courses. A public health orientation is achieved in methods courses via course content and structure as well as pedagogy. For example, in quantitative methods courses such as Applied Regression I (P8100) and Analysis of Categorical Data (P8120), in addition to developing strong quantitative acumen, students engage in discussion and critique of journal articles (both research and practice oriented) from the American Journal of Public Health and other leading journals in the field. Similarly, in qualitative methods courses such as Qualitative Research Methods (P8785) and Community-Based Participatory Research (P8771), a similar approach is used, thereby acknowledging the growing importance of public health qualitative research expertise as a complement to the traditional emphasis on quantitative methods.

Interdisciplinarity in doctoral education is also achieved through required and elective coursework. For example, in the PhD degree program in Biostatistics, students are required to take a minimum of two courses in a cognate field, which includes core public health knowledge areas (e.g., environmental sciences, epidemiology, and health policy).

The School's course evaluation form (Electronic Resource File 2.7.A.) provides a valuable tracking and monitoring tool for assessing the efficacy of our courses in providing a public health orientation. The course evaluation form, monitored by the Office of Education, has two questions related to public health orientation.

Public Health Significance in Culminating Experience. For most students in academic degree programs, a thesis or dissertation comprises the culminating experience (Criterion 2.11.C., below), for which a section on public health significance is standard. This includes MS students (Biostatistics—Clinical Research Methods and Patient Oriented Research tracks—Epidemiology, Environmental Health Sciences, and Sociomedical Sciences) and PhD students (Biostatistics Epidemiology, Environmental Health Sciences, and Sociomedical Sciences). Thus, placing research in a broader public health context is part of acquiring a public health orientation and reflecting that it is acquired.

Departmental and School-wide Programming. Departmental and school-wide programming comprises departmental seminars, school-wide lecture series, and school-wide student groups. All academic degree students are encouraged to avail themselves of these opportunities for broader engagement with public health issues.

Departments that are home to academic degree programs offer journal clubs, seminars, and meetings that are well attended by students. These seminars and meetings provide interdisciplinary settings in which issues of public health research and practice are discussed. The School hosts lectures and symposia that foster a deep understanding of public health issues and challenges. An example of a school-wide opportunity for students enrolled in academic degree programs to acquire a public health orientation is the School's Grand Rounds on the Future of Public Health, which are well attended by students, faculty, and alumni (average attendance is more than 300 participants per event); the Office of Student Affairs collects data on student attendance. Information on this series and the broad public health orientation it provides can be found online. Other examples include the Dean's Seminar on Chronic Disease and the Global Health Initiative Series.

In addition, students in academic degree programs are active in student groups, which are interdisciplinary in membership and provide excellent opportunities for co-curricular programming. A diverse set of student groups span many areas of public health, including community engagement, global health, policy, obesity prevention, reproductive health, inequalities, underrepresented minority groups, and health promotion.

2.11.C. Identification of the culminating experience required for each academic degree program. If this is common across the school's academic degree programs, it need be described only once. If it varies by degree or program area, sufficient information must be provided to assess compliance by each.

The design of the curriculum and related competencies of all academic degree programs assures that MS and PhD degree students engage in culminating experiences that integrate disciplinary knowledge and a public health perspective leading to the successful undertaking of public health research. This is accomplished in each academic degree program through a variety of methods, including: capstone courses, thesis, comprehensive exams, and dissertation.

For MS degree students in the Department of Biostatistics, the culminating experience is tailored to the track of study. The Theory and Methods, Predoctoral Training, and Pharmaceutical Statistics tracks provide a capstone experience of statistical consultation through the Biostatistics Consultation Service BCS. In the capstone seminar, students present their experience and the statistical issues that emerged in their consultations, developing statistical report writing and presentation skills essential to their professional practice in biomedical and public health research projects. Theory and Methods and Pharmaceutical Statistics track students also complete a one term practicum experience and related poster presentation at the department's Annual Practicum Poster Symposium. This serves as the capstone experience for those with industry experience within the Pharmaceutical Statistics track. For the Clinical Research Methods and Patient Oriented Research tracks, students complete a master's essay project. Each student is required to submit a paper of publishable quality or a competitive research proposal. Students in the Statistical Genetics track participate in a capstone seminar course that combines, presentations, discussions, a journal club educational experience and skill building workshops. They also complete a practicum experience and related poster presentation.

For MS degree students in the Departments of Epidemiology and Sociomedical Sciences, there is a required master's thesis as a culminating experience. In order to complete the master's thesis, students are expected to define a research problem of public health significance, obtain and analyze data appropriate to the problem, and interpret the findings and their implications for the public's health and for future research in the field.

MS degree students in the Department of Environmental Health Sciences complete a three-month practicum, and a research thesis.

All PhD degree students demonstrate their ability to synthesize the knowledge that they have acquired and create new knowledge in a field of public health research, through the successful completion of qualifying examinations and an original dissertation. The successful PhD degree graduate is expected to be an independent scholar and researcher with the skills to teach both in their discipline broadly, as well as in their particular area of expertise.

2.11.D. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- All academic degree students complete required coursework to ensure a broad introduction to public health.
- Formal coursework is augmented through departmental and school-wide programming, such as journal clubs, seminars, meetings, and Grand Rounds, which explores the applications of disciplinary research and practice to the solving of real-world public health challenges.
- Culminating experiences provide an opportunity for students to link their own research and specialization to the broader work of the public health community.

Challenges

The provision of academic degrees by five different departments with diverse training programs requires flexibility in identifying ways to achieve public health orientation for all students.

Plans

- The School will continue to identify and implement innovative and collaborative ways to increase exposure to broad public health concepts, such that disciplinary studies are expanded and enhanced.

Criterion 2.0 - Instructional Programs

2.12. DOCTORAL DEGREES
The school shall offer at least three doctoral degree programs that are relevant to three of the five areas of basic public health knowledge.

2.12.A. Identification of all doctoral programs offered by the school, by degree and area of specialization. The instructional matrix in Criterion 2.1.A. may be referenced for this purpose. If the school is a new applicant and has graduates from only one doctoral program, a description of plans and a timetable for graduating students from the other two doctoral programs must be presented, with university documentation supporting the school's projections.

The Mailman School offers the PhD degree in the departments of Biostatistics, Environmental Health Sciences, Epidemiology, and Sociomedical Sciences. The School offers the DrPH degree in the Departments of Biostatistics, Environmental Health Sciences, Epidemiology, Population and Family Health, and Sociomedical Sciences. The PhD degree is conferred by the Graduate School of Arts and Sciences, as are all PhD degrees at Columbia University. Graduates of the PhD degree complete a minimum of 60 credit hours that constitute the combined requirements for the MA and PhD degree. Students entering the PhD degree program with MA degrees from other universities may receive up to 30 credits of advanced standing.

Students enrolled in the DrPH degree program must complete a minimum of 30 credit hours beyond the coursework for the MPH degree. Students who have not earned an accredited MPH degree or equivalent professional degree in public health must complete the coursework in the five courses of public health core knowledge, and demonstrate both public health work experience and written work that meets the School's practice and capstone requirements for the MPH degree. The instructional matrix (Table 2.1.A.1.) in Criterion 2.1.A. lists the School's doctoral degrees and their areas of specialization.

2.12.B. Description of specific support and resources available to doctoral students including traineeships, mentorship opportunities, etc.

Students admitted to the School doctoral programs are considered for research and teaching appointments, which include tuition support, health insurance, and a stipend. The specific amount of support to each student varies by department, discipline, and the availability of training grants. Sources of funds might include:

- **Training program fellowships (departmental or institutional).** School faculty lead, co-lead, or partner with a broad range of doctoral training programs across departments and the University to provide doctoral students with fellowships in a diverse array of topics. Fellows receive a stipend, partial tuition support, and travel funds that vary by fellowship.
- **Research-based employment- graduate research assistantships (GRAs).** Offered by departments, students gain valuable experience working part-time on faculty-run research projects and receive a stipend and/or tuition assistance. Most assistantships are for a 9-month period from the first day of class through last day of exams for both fall and spring semesters. Students are assigned to work 20 hours per week. Continued work over the summer is left to the discretion of the student and faculty supervisor.
- **Teaching Assistants (TA).** Each semester, there are a limited number of TA positions, appointed by departments, available to doctoral students. TAs receive a modest stipend or an hourly rate, with responsibilities that include serving as section leaders and assisting faculty in grading course papers and examinations. First priority in TA assignments are given to students to whom a department has a funding obligation and who are qualified for that assignment.

- **Other scholarships and fellowships arising both inside and outside the University.** All students are strongly encouraged to apply for fellowships and grants from government agencies and private foundations. Students interested in exploring these funding possibilities consult with the Deputy Chair for Doctoral Studies or with the liaisons or program director for the program in which they are enrolled.
- **NIH individual dissertation grant awards (F31 and R36).** Doctoral students have an outstanding record of success with NIH F31 and R36 awards. School-wide support exists to help students obtain these awards, including workshops by the Research Resources Office (R^2) and Doctoral Committee.

Department specific sources of support and resources available to doctoral students are the following:

DEPARTMENT OF BIOSTATISTICS

The Department of Biostatistics offers a limited number of fellowships for students in the DrPH and PhD doctoral programs. Admission to both doctoral programs is highly competitive, and departmental fellowships are awarded to the most outstanding applicants as funding allows. International students are eligible for departmental doctoral fellowships. Full fellowship support consists of tuition and a stipend. As part of the fellowship training and duties, doctoral fellows are expected to serve as TAs for one or two courses each year. The department participates in several training programs listed below which provide funding for doctoral students. Training grant funding is limited to American citizens and permanent residents.

- **Cancer Training Program.** The multidisciplinary Cancer Training Program, directed by Dr. Alfred I. Neugut of the Department of Epidemiology and funded by the National Cancer Institute, supports predoctoral students and postdoctoral trainees involved in cancer-related studies and research, including students from the Department of Biostatistics. Fellows receive a stipend, partial tuition support, and travel funds. Predoctoral fellows are typically students in the department's PhD or DrPH programs who are interested in cancer biostatistics.
- **Genetics of Complex Diseases (GCD) Program.** The goal of the GCD Program is to train pre- and post-doctoral fellows in genetic epidemiology and statistical analysis of psychiatric and other complex diseases. The GCD is centered in the Division of Statistical Genetics in the Department of Biostatistics and directed by Dr. Susan E. Hodge and co-directed by Dr. David A. Greenberg, faculty of the Department of Biostatistics in Psychiatry. Pre-doctoral fellows are typically students in the department's DrPH or PhD programs interested in statistical genetics. Fellows receive a stipend, partial tuition support, and travel funds.
- **The Initiative for Maximizing Student Development (IMSD).** The purpose of the National Institutes of Health-funded IMSD program is to increase the number of historically underrepresented students who receive doctoral training in public health, with the ultimate goal of developing a diverse research and scientific workforce in the biomedical and behavioral sciences. Students in the IMSD program receive a GRA salary, tuition support, and travel funds to attend one scientific conference per year. The IMSD program offers activities designed to strengthen skills and facilitate the transition into careers in research, including:
    - A seminar course that provides workshops on scientific writing, techniques and coping strategies for success in graduate school as well as research career and professional development.
    - Research placements characterized by strong mentoring relationships with faculty members in the school of public health.
    - Subsidized attendance at scientific conferences.

DEPARTMENT OF ENVIRONMENTAL HEALTH SCIENCES

All Department of Environmental Health Sciences PhD students receive full tuition, a stipend, and health insurance coverage. The amount of the stipend is set by Columbia University. Students are required to

maintain a full academic schedule that includes coursework, research, and other academic related responsibilities. Additionally, PhD students are expected to be a Teaching Assistant for a maximum of two semesters. This teaching experience counts toward part of student training. Support is provided throughout the entire five years the student is in the program. Currently, the Department of Environmental Health Sciences does not guarantee funding for DrPH students. For full-time DrPH students, support is typically found through their mentor once they begin their research project in year 2 of their studies.

DEPARTMENT OF EPIDEMIOLOGY
A substantial portion of Department of Epidemiology funds for PhD and DrPH students are funded through training programs that address a diverse range of health domains and epidemiological methods. Each program demonstrates the core values of the Department: a broad view of causation that encompasses factors from the molecular to the societal as they play out from conception until death; a collaborative, interdisciplinary approach; an emphasis on developing and teaching sophisticated methods; a focus on innovative intervention and evaluation; and active engagement in public health.

In addition to the slots funded through the specific Departmental Training Programs, doctoral students in Epidemiology are eligible for other funded fellowships. Availability varies from year to year. Applicants are encouraged to be proactive and pursue funding alternatives inside and outside the university, such as federally funded dissertation grants.

The Department's commitment to and leadership in training new generations of productive investigators is clear not only in the placement of its graduates in both the public health sector and academia around the world, but in its remarkable success at obtaining extramural funding for training. Department faculty lead, co-lead, or partner with a broad range of doctoral and post-doctoral training programs across the University, described below.

- **Cancer Epidemiology.** The Cancer Training Program in the Department of Epidemiology is home to two NCI-funded training grants. The first, a T32 program, is a collaboration among the School's Departments of Epidemiology, Biostatistics, and Environmental Health Sciences. The second is an R25 program to train pre- and postdoctoral fellows in cancer-related population science. The two programs include a total of fourteen trainees, half pre-doctoral and half post-doctoral, all engaged in cancer-related studies and research. Weekly seminars bring the participants together for presentations by the trainees, and the diversity of the group leads to significant cross-fertilization and sharing of ideas.
- **Environmental Life Course Epidemiology.** Pre-doctoral students in this training program work with two mentors, one in their primary academic department and the other in the complementary department. They are required to fulfill the requirements of their home departments and take a series of courses in life course epidemiology, toxicology, and research methods.
- **Fellowship in Family Planning.** The Columbia Doctors Obstetrics and Gynecology fellowship training programs have an excellent reputation for providing exposure to a wide range of clinical experiences and research opportunities while under the direct supervision of expert faculty mentors. The fellowship program in family planning and preventive services is a fast-paced program that exposes fellows to all aspects of this specialty. The program is two years in duration, with individuals spending time on research and clinical training.
- **Global HIV Implementation Science.** With support from the National Institute of Allergy and Infectious Diseases (NIAID), ICAP has established the Global HIV Implementation Science Research Training Fellowship to prepare pre- and postdoctoral individuals for careers as independently funded researchers and for leadership in global HIV implementation research. Pre-doctoral fellows are supported for a maximum of three years, and postdoctoral fellows are supported for a maximum of two years. This fellowship is part of ICAP's Next Generation Program, a multidisciplinary training initiative that provides students with hands-on training opportunities in New York and around the world.

- **Neuro-epidemiology Training Program.** The NIH/NINDS-funded T32 Neuro-epidemiology Training Program prepares neurologists and other research scientists for careers in epidemiological research focusing on neurologic disorders. Continuously funded since 1981, the program capitalizes on the strengths of the departments of Epidemiology and Biostatistics at the School and the Department of Neurology and the inter-disciplinary Gertrude H. Sergievsky Center at CUMC. The program provides structured, didactic training combined with the opportunity to participate in and expand upon ongoing epidemiologic studies of neurologic disease conducted by program faculty. Trainees have the opportunity to work in large ongoing epidemiological studies utilizing multiple study designs, including case-control and prospective cohort studies such as the Northern Manhattan Study and the Washington-Heights/Inwood Study of Aging, among others. Past trainees have successfully competed for independent funding from the NIH and other sources. All trainees spend a minimum of two years in the program. Pursuit of a degree (MS in Epidemiology) is recommended, but not required.
- **Psychiatric Epidemiology Training (PET) Program.** The PET Program was created in 1972 to train individuals from different disciplines in psychiatric epidemiology. The program has supported and trained over 175 researchers who have made valuable contributions within their respective research, clinical, and community settings. The mission of the program is to equip new generations of pre- and post-doctoral fellows with the skills and vision needed to conceptualize, measure, and test ideas about psychiatric disorders that will advance the field in both incremental and ground-breaking ways. To fulfill this mission, we emphasize a framework for investigating the etiology, course, and consequences of mental illness that highlights the dynamic interplay of multiple levels, that is, a person (biology, psychology), in context (family, social network, neighborhood, workplace, society) through time (person and contextual change).
- **Substance Abuse Epidemiology Training Program (SAETP).** The program began in 2012 with the objective of training promising individuals from different disciplines to conceptualize, plan, and conduct epidemiologic research on the causes, consequences and use of treatment for substance use and substance use disorders. SAETP has a multi-level, cells-to-society, life course perspective. SAETP accomplishes its objective by providing well-qualified junior scientists with a strong foundation in relevant substantive and methodological areas that will prepare them for successful careers and leadership in substance abuse epidemiology. SAETP is funded by the National Institute on Drug Abuse (NIDA). Due to SAETP's success, NIDA has enlarged it twice since it began.
- **Training in Interdisciplinary Research in Preventing Infections (TIRI).** TIRI is designed to train biomedical researchers from a variety of fields to conduct interdisciplinary research with a focus on infection prevention in clinical, institutional and community settings. TIRI supports two pre- and two post-doctoral trainees each year. Traineeships are awarded in one-year increments, although most trainees renew for a second year. Trainees are awarded an annual stipend, tuition assistance, health insurance, and funds for research-related travel and expenses. Trainees work with their faculty mentors to carry out their dissertation research in their primary discipline, and also work with a faculty preceptor in another field on an interdisciplinary field experience. Trainees work with a faculty mentor on one or more research projects in their primary area of expertise, as well as participate in an interdisciplinary field practicum. All trainees participate in a didactic interdisciplinary course, *Building Interdisciplinary Research Models*, and choose from a variety of infectious disease courses according to their interests and prior training.

DEPARTMENT OF POPULATION AND FAMILY HEALTH

DrPH candidates are responsible for all costs associated with the program, including tuition, other fees and relevant travel and accommodation costs. Students are encouraged to seek funding through NIH individual dissertation grant awards, existing grants of department faculty, and school and university scholarships and fellowships.

DEPARTMENT OF SOCIOMEDICAL SCIENCES

Since fall 2016, the Department of Sociomedical Sciences has been offering five years of funding to accepted PhD and DrPH students. The funding package includes tuition, fees, and funds for living expenses through either a stipend or a GRA. These five-year packages can combine funding from existing NIH training programs or endowed scholarships with additional funds provided by the department and/or school. The specifics of each package are detailed in the funding offer letter, which is sent to admitted students soon after the letter of acceptance.

Prospective students are encouraged to apply for external funding at the same time as they are applying to the program. Matriculated students who are funded by the department or by one of our NIH training programs are encouraged to seek independent funding. Sociomedical Sciences doctoral students have an outstanding record of success with NSF Graduate Research Fellowships and with NIH F31 awards, and the department provides additional support. Below are the department's NIH training programs:

- **HIV Training Program in the Criminal Justice System.** The National Institute of Drug Abuse (NIDA) provides funding for this program, which is a collaborative effort of faculty from the Mailman School and the School of Social Work. Pre- and post-doctoral fellows conduct bio-socio-behavioral HIV and drug abuse prevention, treatment, and care research in the criminal justice system.
- **Predoctoral Fellowship in Gender, Sexuality, and Health.** The nation's first multidisciplinary doctoral training program in gender, sexuality, and health, the Pre-doctoral Fellowship in Gender, Sexuality, and Health fellowship provides support for PhD students only in Sociomedical Sciences. This unique program prepares students for research and teaching careers focusing on the role of gender and sexuality in shaping reproductive and sexual health, both in the United States and abroad. The program serves as a model for the department's future direction in developing support for doctoral studies, and is funded by the Demographic and Behavioral Sciences Branch of the National Institute of Child Health and Development.
- **Behavioral Science Training in Drug Abuse Research.** The department partners with National Development and Research Institutes, Inc. (NDRI), in developing research in behavioral science on drug use. NDRI offers both pre- and postdoctoral level training, and has provided support to many of the department's DrPH and PhD students.

2.12.C. Data on student progression through each of the school's doctoral programs, to include the total number of students enrolled, number of students completing coursework and number of students in candidacy for each doctoral program. See CEPH Template 2.10.1.

Table 2.10.1. provides data on student progression through Mailman's doctoral programs, according to degree (DrPH or PhD) and department.

Table 2.12.C.1. (CEPH Template 2.10.1.) Doctoral Student Data for 2017

	BIO		EHS		EPI		SMS		POP
	PhD	DrPH	PhD	DrPH	PhD	DrPH	PhD	DrPH	DrPH
# newly admitted in 2017[a]									
# currently enrolled (total) in 2017[a]									
# completed coursework during 2016	8	4	3	0	6	5	3	1	7
# advanced to candidacy (cumulative) during 2016	15	12	3	0	35	18	5	1	4
# graduated in 2016	2	1	5	2	13	2	7	2	NA[2]

Abbreviations: BIO=Biostatistics, EHS=Environmental Health Sciences, EPI=Epidemiology, SMS=Sociomedical Sciences, POP=Population and Family Health

[a] Data will be available and updated in fall 2017

[2]Program does not yet have graduates.

2.12.D. Identification of specific coursework, for each degree, that is aimed at doctoral-level education.

The School's doctoral programs utilize courses that are specifically offered for doctoral students as well as courses offered to both masters and doctoral students. Each department determines the course requirements for their offered degrees and the eligibility for enrollment into those courses. Table 2.12.D.1. identifies courses that departments offer specifically for doctoral students. Course requirements for PhD and DrPH degrees can be found online in departmental handbooks.

Table 2.12.D.1. Specific coursework aimed at doctoral-level education by degree and department

Doctoral-Level Course	PhD	DrPH
BIOSTATISTICS		
P9109 Theory of Statistical Inference I	✓	
P9110 Theory of Statistical Inference II	✓	
P9154 Discrete Statistical Analysis	✓	
P9185 Doctoral Consulting Seminar	✓	✓
P9111 Asymptotic Statistics	✓	
P8111 Linear Regression Models	✓	
ENVIRONMENTAL HEALTH SCIENCES		
P9370 Journal Club in Environmental Health Sciences	✓	✓
EPIDEMIOLOGY		
P9410 Biological and Pathophysiology for Epidemiologists	✓	
P9415 Epidemiology of Drug Abuse in Community Samples*	✓	
P9400 Epi IV: Critical Thinking in Epidemiology	✓	✓
P9485 Epi V: Concepts in Causal Inference	✓	✓

Doctoral-Level Course	PhD	DrPH
P9487 Epi VI: Advanced Techniques in Epi Methods	✓	✓
P9489 Applications of Epi Research Methods II	✓	
P9405 History of Epidemiology	✓	
P9494 Publications, Presentations and Grants	✓	
POPULATION & FAMILY HEALTH		
P9650 Global Health & Humanitarian Systems Leadership	NA	✓
P9651 Research Design & Management in Global Health	NA	✓
P9672 Principles & Policy for Global Health & Humanitarian Systems I	NA	✓
P9673 Principles & Policy for Global Health & Humanitarian Systems II	NA	✓
SOCIOMEDICAL SCIENCES		
P8788 Theoretical Foundations of Sociomedical Sciences	✓	✓
P9789 Contemporary Debates in Sociomedical Sciences	✓	✓
P9779 Advanced Research Methods & Analysis	✓	✓

* Open to Master's students with permission from instructor

2.12.E. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion

This criterion is met.

Strengths

- The School invests significantly to ensure high quality doctoral education through academic programs in the departments of Biostatistics, Epidemiology, Environmental Health Sciences, Sociomedical Sciences, and Population and Family Health.
- The School utilizes numerous mechanisms to provide financial support of doctoral students.
- Doctoral students receive outstanding mentorship by a faculty with international reputations in their disciplines.

Challenges

- Funding to support doctoral students and their financial needs is increasingly constrained.

Plans

- Continue ongoing work with the Graduate School of Arts and Sciences and the Office of the Provost to devise strategies and new initiatives to provide support for doctoral education.

Criterion 2.0 - Instructional Programs

2.13. JOINT DEGREES
If the school offers joint degree programs, the required curriculum for the professional public health degree shall be equivalent to that required for a separate public health degree.

2.13.A. Identification of joint degree programs offered by the school. The instructional matrix in Criterion 2.1.A may be referenced for this purpose.

Joint degree programs (referred to as dual degree programs) at the Mailman School provide the School's MPH and epidemiology PhD degree students with an opportunity to develop formal expertise in other disciplines that are valuable to improving the public's health. All dual degree candidates must complete 42 credits of MPH curriculum; the manner in which these credits are achieved varies by the other degree and the agreements developed between the Mailman School and the partnering program or school. The heterogeneity of the dual degree curricula, while maintaining the integrity of the MPH requirements, enables students to synthesize their learning and tailor their course of study to maximize the integration between their joint programs.

The Mailman School offers 10 dual degree programs in conjunction with nine of the graduate schools and programs of Columbia University. See the instructional matrix (Table 2.1.1.) in Criterion 2.1.A. for each specific degree. Below is a list of the current dual degree enrollment for the 2015-16 school year.

Table 2.13.A.1. Dual Degree Enrollment for 2015-16 Academic Year

Degree	2015-16 Student Enrollment
MS Social Work/MPH	8
MD/MPH	6
DDS/MPH	3
MD/PhD	1
MS Urban Planning/MPH	1

2.13.B. A list and description of how each joint degree program differs from the standard degree program. The school must explain the rationale for any credit sharing or substitution as well as the process for validating that the joint degree curriculum is equivalent.

The Mailman School dual degree programs aim to provide a formal bridge among disciplines, fostering the development of uniquely trained and skilled public health professionals with considerable potential to benefit the health and well-being of society. Maintaining the integrity of the MPH degree program, therefore, is essential to ensuring a robust public health education for all graduates, regardless of dual degree status. To this end, students enrolled in MPH dual degree programs are required to complete a minimum number of credit hours in the School and complete the practice experience and culminating experience.

Applicants seeking admission to dual-degree studies must separately apply to each of the two collaborating schools and must meet the admissions requirements of both. Dual degree students must complete 42 credits for the MPH along with the required credits of the partnering school. Dual degree students must register in the fall and spring semesters for a cumulative minimum of 32 credits and 2 Residence Units, which provides the basis for flat-rate tuition charges. The 42 credits for the MPH include 32 credits taken at the School while in residency, an additional seven credits taken through cross-

registration while in residence and paying tuition at the partner school, and three shared credits taken at the partnering school. Alternatively, students may choose to take the seven credits by registering for a summer term at Mailman. Shared credit courses taken at a partner school must be public health related and approved by the Office of Student Affairs. Sample program plans for the MD/MPH and MSSW/MPH dual degree programs can be found in the Electronic Resource File 2.13.B.

The academic directors in the School's departments, in conjunction with corresponding offices in each School, have identified equivalent courses that may be applied to satisfy requirements for the MPH degree and other degrees. For example, Introduction to Biostatistics (P6103) is an equivalency for Quantitative Analysis (U6510) for dual degree students in the School of International and Public Affairs. A course is deemed an equivalency after departments have reviewed syllabi and determined that a specific course meets the competencies of their respective degree programs. Dual degree students taking courses outside of the Mailman School that they wish to apply toward the completion of MPH degree requirements, must be pre-approved by students' academic advisors, to ensure both public health and academic program relevancy. The Mailman School has clear requirements for the public health coursework that students must complete to be awarded the MPH degree.

As is the case with all MPH degree candidates, dual degree students applying for graduation must submit their transcripts for audit by the Office of Student Affairs in order to certify that the requirements for the MPH degree have been satisfactorily completed. This process serves as a final check for students, and as a monitoring process for the School, in order to maintain the integrity of the MPH degree in dual degree programs. Below, we provide a summary of the dual degree programs.

DDS/MPH students are required to complete 32 credits in the Mailman School in addition to the degree requirements of the DDS degree in the College of Dental Medicine (Columbia University), which consist of 7 public health credits taken while at the other School and three shared credits of coursework during the first three years of the degree.

MD/MPH students must complete 32 public health credits, in addition to the degree requirements of the MD degree in the College of Physicians and Surgeons (Columbia University), which consist of three shared credits of coursework and seven public health credits taken at the other School during the first three years of the degree. Most students elect to undertake the public health program between the third and fourth year of medical school, completing both degrees in five years.

MD/PhD. At the Mailman School, the MD/PhD dual degree is only offered to MD students pursuing a PhD in epidemiology. The PhD, as described in Criteria 2.11. and 2.12., is granted through the Graduate School of Arts and Sciences. Students are required to enroll in four residence units at the Graduate School of Arts and Sciences, in addition to completing 24 credits of public health coursework. Two residence units of advanced standing are granted for completion of the MD degree. Candidates fulfill their required credits in a combination of their third, fourth, and fifth years of medical study, coinciding with three years of developing clinical competence, and their sixth year of training, in which only doctoral work in public health is completed. After successful completion of USMLE Step I, those who have selected laboratories begin work under the direction of their thesis advisors combining laboratory work with the completion of any remaining course requirements. Students who have not selected laboratories have the option of completing a third rotation in the summer preceding the third year. The completion of the qualifying examinations must occur by the end of the third year.

Students' progress is monitored by their mentors, the thesis advisory committees, which must meet annually, and the Program Director and members of the Executive Committee. The majority of students develop a thesis proposal by the end of the first year of graduate work and the majority of coursework is completed by that time. During subsequent years, students work on their thesis research under the

direction of their advisors. Progress continues to be monitored by the thesis advisory committee, by the director of the graduate program in which the student is enrolled, and by the Medical Scientists Training Program directors. Depending on progress, the thesis is written and defended by December of the sixth year, so that the student can return to medical studies by January of the following year.

MSOT/MPH students must complete a minimum of 32 credits of public health courses with 10 shared credits in occupational health. This minimum may increase to 40 credits based upon their placement level when commencing the Occupational Therapy degree program. For students in this program, Issues and Approaches in Health Policy and Management (P6530) is an equivalency for Health Policy and Management (M6530).

MSUP/MPH students must complete a minimum of 32 credits of public health courses and five terms in residence: two terms in the Mailman School of Public Health and three terms in the Graduate School of Architecture, Planning, and Preservation, for a total of 84 credits. For students in this program, Introduction to Biostatistics (P6103) is an equivalency for Quantitative Techniques (A4208) in the Graduate School of Architecture, Planning, and Preservation.

MBA/MPH students must complete 32 credits of coursework in the Mailman School. Often, students pursuing this dual degree are enrolled in the Department of Health Policy and Management and a number of courses complete at the Columbia Business School are equivalent to those taken by students pursuing a stand-alone MPH degree from the Department of Health Policy and Management.

MIA/MPH or MPA/MPH students must complete at least 32 credits of courses toward the MPH degree. The curricula for the MPH, MIA, and MPA degrees offer courses with related or equivalent knowledge and skills. Students work with their faculty advisors to select courses in both Schools that facilitate the shared 10 credits being an integrated educational experience between the degree programs.

JD/MPH students are required to complete 32 credits in the Mailman School. During their enrollment, students earn a total of 10 MPH degree credits of required courses at the Columbia Law School that cover areas such as health care law, analysis of the roles of law in policy making, professionalism, ethics, antitrust law, and human rights.

MSN/MPH students must fulfill a minimum of 32 residency credits at the Mailman School. Students work with their faculty advisors to select courses in both the School of Nursing and the School of Public Health that facilitate the shared 10 credits being an integrated educational experience between the degree programs.

MSSW/MPH students must complete 32 credits of public health education in addition to 45 credits in the School of Social Work. On occasion, the second Social Work internship may count as the Mailman School practice experience with prior approval from the student’s public health advisor, who has vetted the practice experience.

2.13.C. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- The Mailman School has a range of dual degree offerings that reflect the School's commitment to interdisciplinary public health work and the strength of partnerships with other Columbia University professional schools.
- In every dual or joint degree program offered by the School, students are required to complete the same minimum number of credits as a standalone public health professional or academic degree student must complete. In some cases, through agreements with the partnering Schools, students may complete shared credits that count toward both degrees, underscoring the multiple ways in which the two degrees complement one another.

Challenges

- With the exception of the MSSW/MPH, recruitment of students of into dual degree programs has been limited.

Plans

- To increase interdisciplinary public health work and further fortify connections with other Columbia University professional schools, the School is planning to enhance promotion of its dual degree program plans to ensure their continued alignment with student and workforce needs.

Criterion 2.0 - Instructional Programs

2.14. DISTANCE EDUCATION OR EXECUTIVE DEGREE PROGRAMS
If the school offers degree programs using formats or methods other than students attending regular on-site course sessions spread over a standard term, these programs must a) be consistent with the mission of the school and within the school's established areas of expertise; b) be guided by clearly articulated student learning outcomes that are rigorously evaluated; c) be subject to the same quality control processes that other degree programs in the school and university are; and d) provide planned and evaluated learning experiences that take into consideration and are responsive to the characteristics and needs of adult learners. If the school offers distance education or executive degree programs, it must provide needed support for these programs, including administrative, travel, communication, and student services. The school must have an ongoing program to evaluate the academic effectiveness of the format, to assess learning methods and to systematically use this information to stimulate program improvements. The school must have processes in place through which it establishes that the student who registers in a distance education course or degree is the same student who participates in and completes the course or degree and receives the academic credit.

2.14.A. Identification of all degree programs that are offered in a format other than regular, on-site course sessions spread over a standard term, including those offered in full or in part through distance education in which the instructor and student are separated in time or place or both. The instructional matrix in Criterion 2.1.A. may be referenced for this purpose.

The School has developed a distance education program for two existing degree programs: the Master of Science in Biostatistics and the Master of Science in Epidemiology. This program, called CUBED (Columbia University Biostatistics and Epidemiology Digital Education), has been approved by New York State, CEPH, and Columbia University to advertise and begin recruiting students. We anticipate enrolling the first cohort of students in fall 2018.

2.14.B. Description of the distance education or executive degree programs, including an explanation of the model or methods used, the school's rationale for offering these programs, the manner in which it provides necessary administrative and student support services, the manner in which it monitors the academic rigor of the programs and their equivalence (or comparability) to other degree programs offered by the school, and the manner in which it evaluates the educational outcomes, as well as the format and methods.

DISTANCE EDUCATION
In fall 2018 the Mailman School plans to enroll the first students in the distance education program leading to a Master of Science in Biostatistics or the Master of Science in Epidemiology. The program was developed to provide comprehensive, flexible, effective training in biostatistical and epidemiologic methods used in clinical and translational research. The program will be offered using a hybrid methodology, requiring on-campus attendance for three separate weekends over the course of the 2-year program. Apart from on-campus activities, lectures throughout the program will be asynchronous, so that students can listen to lectures at any time and revisit as needed. Students will interact with professors, mentors, and seminar leaders face-to-face at an orientation weekend, complemented by email exchanges, discussion boards, synchronous help sessions conducted weekly, and monthly teleconferencing with mentors during the second year of training. Opportunities will be available for Skype-style and/or phone call office hours with professors and seminar leaders. While students in the program are expected to complete their coursework online (and all required courses will be available via distance format), students may choose to combine Mailman School online and on-campus courses.

The academic rigor of the distance education program will be monitored through processes identical to that of our traditional degree programs. The School-wide Curriculum Committee will review syllabi, evaluate competencies, and ensure alignment of instructional activities to stated learning objectives. The Director of Strategic Analysis and Evaluation will review student course evaluations and communicate with departments to identify opportunities for growth and innovation. Administrative and student support services will be provided by the Office of Student Affairs, with additional support from the Columbia Center for Teaching and Learning, Canvas Information Technology, and the Columbia University Information Technology. For more information, please see the "Educational Assessment of CUBED Program" in Electronic Resource File 2.14.B.

As with our traditional courses, the evaluation of educational outcomes will be conducted through a review of student grades, periodic feedback from employers, and assessment of student course evaluations.

EXECUTIVE EDUCATION

The School offers two executive degree programs: the Executive Master of Science in Epidemiology (Exec MS) administered through the Department of Epidemiology, and the Executive Masters of Healthcare Management (EXEC) and Executive MPH (EMPH) programs administered through the Department of Health Policy and Management (Criterion 2.1.A., Table 2.1.A.). Students enrolled in the EXEC program declare their degree, MPH or MHA, during the second term.

The purpose of the executive version of the MS, MHA, and MPH is to allow mid-career professionals and others working in the field to attain additional skills and credentials to excel in their public health praxis. By tailoring the scheduling of class sessions around the demands of full-time employment and building cohorts of working professionals, the executive degree programs enable members of the public health workforce to engage in ongoing education while developing professional networks and sharing experience with peers. These rigorous and selective programs attract a wide range of professionals who enrich the classroom experience with their expertise, experience, and diverse perspectives. Taught by the Mailman School's renowned faculty, classes meet for one long weekend per month. Faculty advisers are readily available by phone and email, and hold office hours on the weekends that classes meet.

The academic rigor of the executive versions of the degree programs is monitored through processes identical to those of our traditional degree programs. The School-wide Curriculum Committee reviews syllabi, evaluates competencies, and ensures alignment of instructional activities to stated learning objectives. The Director of Strategic Analysis and Evaluation reviews student course evaluations and communicates with departments as necessary to identify opportunities for growth and innovation. Administrative and student support services for executive degree students vary by department. In Health Policy and Management, administrative functions are performed by staff in executive-specific roles. In Epidemiology, administrative staff oversee the traditional and executive MS programs. For all students, student support services are provided by the Office of Student Affairs. As with our traditional courses, the evaluation of educational outcomes is conducted through a review of student grades, periodic feedback from employers, and assessment of student course evaluations.

Executive Education Degrees. The Mailman School's executive programs in Healthcare Administration (Executive MHA) and Epidemiology (Executive MS) offer professionals the opportunity to earn the following degrees.

Executive Masters of Healthcare Management (MHA or MPH). The executive programs provide a unique interdisciplinary education across three areas of expertise: organizational leadership and management, health policy and public health, and health systems. Enrolled students come from a range of career fields including government agencies, hospitals, consulting companies, pharmaceutical

corporations, insurance companies, finance, foundations and other healthcare enterprises. Through a combination of teaching methodologies, including case studies, simulations, and collaborative learning, the executive MHA and MPH Programs help students connect theories and models to the realities of the workplace.

Faculty members teaching in the executive programs include full time faculty from the Mailman School and other professional schools at Columbia University such as the business school, along with senior practitioners in the field. The faculty is especially adept at relating classroom theory to the realities of the workplace. In addition, the program provides career planning and career placement services to assist students in their effort either to change jobs or to advance within their current organization.

Cohort-based learning is essential to the executive MHA and MPH experience and new classes enter in September. Students do not need to declare their degree choice (MPH or MHA) until their second term. The curriculum comprises three main components: an overview of the political, economic and legal healthcare framework; an overview of the public health system; and management methods and content. The MHA curriculum requires students to take additional management coursework whereas the MPH curriculum provides a more in depth understanding of public health and its application to the healthcare system. Students are counseled, as needed, to assist them in choosing the best academic path for their professional growth.

Courses and curriculum share the same rigor and educational expectations of the traditional MPH and MHA degree programs, including degree length (45 credits), coursework in the five areas of knowledge basic to public health, a practice experience, and a culminating experience. The program is monitored and evaluated using the same strategies (course evaluations, exit surveys, employer surveys, and alumni surveys) as the MPH degree program. The targets pertaining to academic performance and graduation rate set for the overall MPH degree program, pertain to the EXEC degree program as well.

Executive MS in Epidemiology. This is a rigorous research degree program designed to provide working health professionals with the knowledge, skills, and credentials needed to engage in population health research. Students gain a command of major concepts and techniques in epidemiology and a solid foundation in biostatistics with a focus on applied skills, including advanced modeling using SAS software. The Executive MS is based on three objectives:

1. Concepts: develop a command of the major concepts and techniques of epidemiology as well as a solid grounding in biostatistics.
2. Methods: acquire the knowledge and skills needed to develop testable hypotheses and to design research projects, from clinical trials to broad population studies.
3. Application: take a research-based thesis project from hypothesis to data analysis and application in the real world.

Classes meet one long weekend a month (Friday, Saturday, and Sunday) for 20 months, divided into five semesters, which allows for continued full-time work outside the classroom. When class is not in session, students collaborate on projects and submit assignments using an online course platform. Throughout the program, students communicate with their instructors and classmates via phone or email. Most completed assignments are submitted through the e-learning platform.

Supportive features accommodate the needs of the executive student, including meals each day that classes meet, workshops to refresh or sharpen research skills, and dedicated mentoring and advising. Program courses and curriculum share the same rigor and educational expectations of our traditional MS degree program, including course requirements, an orientation in public health, and a thesis. The program is monitored and evaluated using the same strategies (course evaluations, exit

surveys, employer surveys and alumni surveys) as the MS degree program. The targets pertaining to academic performance and graduation rate set for the overall MS degree program, pertain to the Exec MS degree program as well.

2.14.C. Description of the processes that the school uses to verify that the student who registers in a distance education course or degree is the same student who participates in and completes the course or degree and receives the academic credit.

The Mailman School offers several online courses through regular degree programs and special distance courses for non-degree or degree students. All students, including those enrolled in distance education programs, are bound by the School's academic honor code and are required to complete a course in academic and research ethics. Additionally, faculty may ask students to check a box indicating that the work they are submitting has been completed in compliance with the School's honor code.

Student identity verification process begins with the application process. All students provide personal identity information along with official documentation of prior educational background. Additional application documentation may include standardized test, scores letters of recommendations, and, for international applicants, TOEFL or IELTS scores. This documentation is reviewed by admission specialists, program directors/chairs, and, in some cases, a program admissions committee to validate the authenticity of the student's academic credentials and to determine a student's academic preparedness for the program. Once a student is admitted, they create a unique identifier (UNI) comprised of letters and numbers, and password within the University authentication system. A UNI is created only after the identity information provided by the student has verified and vetted. Once the student is given the UNI, the student is able to access Columbia Student Services Online (SSOL), which allows students to register for courses. The UNI and password serve as an ongoing identity verification method across Columbia University.

Online courses are posted through Courseworks, Columbia's Learning Management System. Students access the system using their UNI and password. Per Columbia's Technology Usage Agreement, *"each user of Information Resources must ensure that his/her account or password is properly used and is not transferred to or used by another individual*." The full policy is available online. Additionally, Courseworks provides faculty with student participation analytics, such as lecture access, file downloading, and discussion forum contribution. These analytics can be useful in detecting when a student may not be completing the work.

Course instructors often incorporate effective test design to mitigate possible student cheating. For example, when using objective assessments, faculty members randomize the questions in an exam from a test question pool. In addition, instructors might incorporate both formative and summative assessment styles to provide multiple data points on a student's academic performance. This allows instructors to detect when someone other than the registered student could be submitting work on behalf of the student.

Proctored examinations are another option used by some instructors of online courses. If a proctored examination is used, a student will identify an appropriate proctor according to specific Mailman guidelines. In some courses, hardcopies of exams are mailed to the proctors. In others, passwords that grant access to online exams, and are unique to the students, are sent to the proctors, bypassing student involvement. The proctor monitors the examination process and, in some cases, is responsible for collecting examination documents. At the completion of the exam, students sign a statement that the examination was conducted in compliance with Mailman's Honor Code and the proctors sign a statement that the examination was conducted according to the instructions. The name and contact information of

proctors are accessible to the instructors, who may subsequently verify the identity of the proctor and their compliance to the examination process.

2.14.D. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- The School's executive degree programs are well-established and well-received. As with traditional programming, executive degree program courses are rigorous, regularly reviewed, and subject to same high academic standards to which all other courses are held. These executive programs support the School's mission of recruiting students of the highest caliber, and permit those with other commitments or interests to obtain a Mailman School education within a flexible format.

Challenges

- To meet the needs of the professional public health workforce, the School needs to expand its academic offerings in distance education and executive formats.

Plans

- The School has developed University-approved and New York State-approved distanced-based, online MS degree programs in both Biostatistics and Epidemiology. Enrollment will begin in fall 2018.
- A priority for the School over the next two years is to expand its executive education programs and online opportunities to respond to the changing needs of students and the public health workforce.

Criterion 3.0 - Creation, Application, and Advancement of Knowledge

3.1. RESEARCH
The school shall pursue an active research program, consistent with its mission, through which its faculty and students contribute to the knowledge base of the public health disciplines, including research directed at improving the practice of public health.

3.1.A. Description of the school's research activities, including policies, procedures, and practices that support research and scholarly activities.

The research portfolio of the Mailman School reflects a full range of research activities that span multiple disciplines and focus on developing solutions for complex public health challenges around the world and in the communities that make up New York City. The work of the School is reflected in the strategic goal *to conduct research that creates, advances, and translates knowledge to influence practice, policy, and action regarding critical population health challenges and solutions worldwide*. This goal is supported by a robust record of successfully competing for grants and contracts, which constituted 79% of the School's FY2016 revenue, as well as numerous examples of impacts of our research in practice, policy, and service locally and globally.

The School's diverse research program is structured around the conceptual and programmatic interests of individual faculty as well as the interdisciplinary collaboration of groups of faculty, within the School and across Columbia University. Faculty members have expertise and interests that are broad and range from the study of neurobiology to strengthening health systems. Their work takes place within each of the six departments and three school-wide centers, and across more than 50 School affiliated centers and programs. Faculty also collaborate widely with programs and institutes on the Columbia University Medical Center campus and larger Columbia University on the Morningside campus. These research collaborations, including joint ventures and jointly funded programs result in a productive and interdisciplinary environment that supports robust scholarly activities and addresses major public health challenges from climate and health to microbe discovery and surveillance. Research findings are disseminated through publications in prestigious journals and presentations at national and international scientific meetings. Students benefit from the conduct and dissemination of research at the School via their direct involvement in faculty scholarship and their participation in the many research seminars and lectures that are organized by departments, centers, and programs, and by faculty scholars themselves.

Refer to the Electronic Resource File for the following documents showing the breadth and depth of the Mailman School's research activities:

- Summary of Primary Faculty Research Activity by Department/School-wide Centers (Electronic Resource File 3.1.C.)
- Table 3.1.1. (CEPH Template) Primary Faculty Research Activity (Electronic Resource File 3.1.C.)
- Table 3.3.1. (CEPH Template) Funded Training and Continuing Education Activity (Electronic Resource File 3.3.B.)

POLICIES, PROCEDURES, AND PRACTICES

The Mailman School follows the University's research policy and procedures and the regulations and guidelines of the sponsoring agency. The University dictates the conduct of research. These policies and practices are contained in the following handbooks and in Electronic Resource File 3.1.A.:

- **Sponsored Projects Handbook** provides practical guidance to faculty and administrative staff of Columbia University in the management of sponsored projects funded by both governmental and private organizations. The Sponsored Projects Handbook gives new investigators and administrators the research policies and procedures of the University and serves as a reference guide for all investigators and administrators. The Sponsored Projects Handbook contains all University policies related to the conduct of sponsored research. A link to the policies that are most often referred to by faculty and staff involved in research is provided here.
- **Clinical Research Handbook** is a companion resource to the Sponsored Projects Handbook. It is geared towards clinical research coordinators and follows the key phases of conducting clinical research at Columbia University, from training to audits. It also includes a chapter on FDA-regulated research.
- **Animal Research Handbook** is a companion resource to the Sponsored Projects Handbook. It is designed to be a reference guide for faculty and staff who are involved in research using animals.

A summary of relevant research related policies and resources is presented in Table 3.1.A.1.

Table 3.1.A.1. Mailman School Policies and Procedures Supporting Research and Scholarly Activities

Policy	Handbook	Location
Copyright Policy	Faculty Handbook	Appendix H: Columbia University Copyrights Policy
CUMC Conflict of Interest	Faculty Handbook	Appendix G: CUMC Conflict of Interest Policy
HIPAA Privacy and Information Security Training	Clinical Research Handbook	Electronic Resource File 3.1.A. (Clinical Research Handbook, page 30)
Human Subjects	Sponsored Projects Handbook	Electronic Resource File 3.1.A. (Sponsored Projects Handbook, page 30)
Medical Research Involving Animals	Animal Research Handbook	Electronic Resource File 3.1.A. (Animal Research Handbook)
Misconduct in Research	Faculty Handbook	Appendix C: Columbia University Institutional Policy on Misconduct in Research
Proprietary Rights in the Intellectual Products of Faculty Activity	Faculty Handbook	Appendix D: Statement of Policy on Proprietary Rights in the Intellectual Products of Faculty Activity
Responsible Conduct of Research	Sponsored Projects Handbook	Electronic Resource File 3.1.A. (Sponsored Projects Handbook, page 32)

RESEARCH ADMINISTRATION

The administration of research programs is conducted through several offices at Columbia University and the Mailman School.

Office of the Executive Vice President for Research. (Columbia University) The Executive Vice President for Research, reporting directly to the President of the University, has overall responsibility for the University's research enterprise, encompassing a broad spectrum of research departments, institutes and centers in the natural and biomedical sciences, the social sciences and the humanities. The Office of

the Executive Vice President for Research works with the Mailman School to promote an environment that sustains the highest standards of scholarship, health, and safety.

Vice Dean for Research and Faculty Affairs. (Mailman School) The Vice Dean for Research and Faculty Affairs oversees all aspects of the Mailman School's faculty research activities and reports directly to the Dean. The Vice Dean for Research and Faculty Affairs works closely with the Vice Dean for Finance and Administration and is responsible for ensuring research compliance with federal regulations. The Vice Dean for Research and Faculty Affairs identifies the needs for centralized and shared resources at the School, informs faculty about research opportunities and policies, and organizes and coordinates programs that serve to provide start up or seed money for faculty research. One example is the Calderone Award, which provides $25,000 to junior faculty. Proposals for this award are solicited on a yearly basis with 4-6 awarded annually. In addition, the Dean's Pilot Grants program, established in 2015, provides funding to faculty at all ranks for collaborative research projects.

Sponsored Projects Administration (SPA). (Columbia University) SPA serves as a central resource to support the research community at the University by providing guidance and stewardship for the researchers and administrators on all campuses. Its mission is to provide administrative support to investigators in their pursuit of research and other scholarly activities while ensuring compliance with federal, University, and private sponsor regulations, terms, and conditions. SPA operates through delegation of authority from the University Board of Trustees as a unit of the Office of the Executive Vice President for Research. SPA works closely with the School's departments and centers and administration.

SPA is responsible for a wide range of services including the following:

- Review and submission of sponsored research proposals
- Award negotiation and acceptance
- Establishment financial accounts
- Sponsor communication during the life cycle of the award
- Award close-out activities
- Sponsored project data collection and reporting
- Grants education, including pre and post award training
- Identification of possible sources of funding for research, training and service activities
- Management of aspects of post award administration that do not involve financial accounting
- Assisting departments in ensuring that the terms of the awards are fulfilled

Human Research Protection Program. Columbia University has implemented a comprehensive Human Research Protection Program including the CUMC Institutional Review Board (IRB). The program is charged with the responsibility of ensuring that all research studies that involve human subjects conducted by faculty, employees, and staff are done ethically and in a manner that promotes the protection of the research participants. In accordance with institutional policy, all such research must be in compliance with state and federal regulations, and must meet or exceed the standards of accreditation as set forth by the Association for Accreditation of Human Research Protection Programs. The Human Research Protection Program is composed of all entities, offices, and individuals engaged in and/or responsible for the review and conduct of human research at Columbia University. The University has two Federal-wide Assurances: one for Columbia University Medical Center and one for the main campus at Morningside.

The Research Resources Office (R^2). The R^2 Office supports the School's researchers in the development and preparation of grant applications and provides continuing education for faculty. The office helps researchers identify appropriate funding opportunities; develop project ideas; organize, edit, and prepare grant applications; and arrange for internal review and feedback on applications prior to submission. R^2 provides training in grantsmanship, research management, and professional development-related issues. This office works closely with the Vice Dean for Research and Faculty Affairs to enhance

the capacity of faculty researchers to submit successfully funded applications. The R^2 Office provides access to grant-related resources that include:

- Templates and guidance documents for grant proposal preparation
- A library of sample grants and sample grant components
- Updates on research-related news
- Information about current and future funding opportunities

3.1.B. Description of current research undertaken in collaboration with local, state, national or international health agencies and community-based organizations. Formal research agreements with such agencies should be identified.

Faculty at the Mailman School are engaged actively in research conducted, locally, nationally, and internationally. Given the School's location in New York City, faculty collaborate with community-based organizations located in neighborhoods that surround the school (e.g., Washington Heights and Harlem) as well as other parts of New York City, the states of New York and New Jersey, and the surrounding region. Furthermore, the School has an extensive global research portfolio, including collaborations with health agencies and regional organizations on six continents.

Columbia University's Sponsored Projects Administration (SPA) tracks formal research agreements for sponsored project awards including research, education and training, and service. Agreements from government agencies and non-government organizations are retained at SPA, and departments receive a copy of the agreements. Between July 2014 and July 2015, there were 563 research agreements, exclusive of NIH awards that are captured in Criterion 3.1.C. These agreements, comprising cooperative agreements, grant sub-awards, and contracts, are provided in Electronic Resource File 3.1.B.

The research databases maintained by SPA do not track the location of research activity or type of community-based organization and/or partner. In order to determine the level of research activity conducted with community-based partners, the Vice Dean for Education sent a survey in 2017 to all primary faculty principal investigators requesting data for the sponsored projects detailed in Criterion 3.1.C. Of the 316 projects for which data were collected, 148 (47%) projects were community-based (Electronic Resource File 3.1.C. [CEPH Template 3.1.1.] "Primary Faculty Research Activity").

Examples of Research in Collaboration with Local Community-Based Partners

Air Pollution in the South Bronx. The School's Department of Environmental Health Sciences hosts the National Institute of Environmental Health Sciences (NIEHS) Center for Environmental Health in Northern Manhattan (CEHNM) whose research includes work on environmental causes of cancer, neurotoxicology/neurodegenerative diseases, and respiratory diseases. CEHNM includes a Community Engagement Core, which collaborates with the West Harlem community to improve environmental health and quality of life, and to develop the community's capacity to address environmental health concerns affecting their neighborhoods.

In partnership with South Bronx Unites, a community-based organization working to promote and protect the social, environmental, and economic future of the South Bronx, CEHNM is conducting the South Bronx Air Pollution Exposure Study. The focus of the study is to assess the extent to which the addition of a large food delivery service operation increases air pollution and respiratory health problems in this already stressed community. The study is measuring air pollution before the facility is opened, and later in 2017, when trucks start using the facility.

Building on this pilot project, an R21 proposal was submitted to NIEHS to further measure air pollution, truck traffic, and resident health across time. The partnership with South Bronx Unites has facilitated

access to many locations in residential buildings, schools, and playgrounds where air pollution is now being measured. In addition to publishing findings in academic journals, the results will be presented to community groups and used by South Bronx Unites to advocate for better air quality and environmental justice in the community.

Smoke-Free Housing Policy in the South Bronx. The Department of Sociomedical Sciences in collaboration with the Columbia Population Research Center, conducts community-oriented research examining the intersections between the built environment (housing and neighborhoods), poverty, equity, and poor health outcomes. One notable example is a study in partnership with South Bronx Overall Economic Development Corp (SoBRO) that represents a collaboration between academic and community partners to advance knowledge and best practices in smoke-free housing policy compliance and enforcement. The study, Smoke-Free Living: Evaluating Compliance and Refining Enforcement of Smoke-free Housing Policy in Low-Income Multiple Unit Housing, is conducted by faculty at the School in collaboration with SoBRO and with advisement from the New York City Department of Health and Mental Hygiene and the New York City Housing Authority. The study is evaluating an intervention and examining compliance and resident outcomes in affordable housing units based in the South Bronx and Northern Manhattan, areas with the highest asthma prevalence and starkest environmental health disparities not only in New York City, but the nation. The mixed-methods research project is collecting qualitative and quantitative data by conducting key informant interviews, focus groups, sensory observations, and resident surveys, as well as nicotine and particulate matter monitors to gather information on tobacco smoke in the buildings, secondhand smoke exposures, resident smoking behaviors, assessment of resident health concerns and health conditions and related outcomes. The research team tracks environmental exposures and health outcomes among residents and compares them at two time points. Results will substantially improve the evidence base for the efficacy of harm reduction models in affordable housing settings.

Getting Ready for School in New York City. The Department of Population and Family Health has several initiatives that aim to improve child and adolescent health in New York City. One example, funded by the US Department of Education, the Getting Ready for School (GRS) program is a preschool intervention project for Head Start children with two main innovations: 1) an integrated curriculum targeting early literacy, math, and self-regulation skills; and 2) a comprehensive approach that jointly supports the efforts of classroom teachers and parents. GRS partners with two New York City Head Start programs to develop the classroom curriculum, and it has been implemented in 28 preschool classrooms across eight Head Start and Universal Pre-K centers in inner-city New York.

Examples of Research in Collaboration with State and National Partners

The School collaborates with the New York City Department of Health and Mental Hygiene, the largest city health department in the U.S., since the School's inception in the 1920s, and with the New York State Department of Health. There are numerous collaborations on important public health issues that impact the daily lives of New Yorkers. For instance, a recent collaborative project examined the social costs of mental health issues and the financial effects on the healthcare system. As part of the project, the Global Research Analytics for Population Health (GRAPH) program at the School worked on developing a rank of mental illness compared to other conditions, such as heart disease, cancer, and accidents in New York City. GRAPH estimated the economic burden of mental illness by reviewing lost productivity time, as well as the medical, social service, policing, and criminal justice costs. The project included mapping the burden and the preventable burden of psychopathology in New York City. The final report found that mental illness and substance use disorders are among the leading contributors to the overall disease burden for New Yorkers; depression was the single largest contributor after heart disease. Major depressive disorder is the greatest source of disability in New York City, contributing with substance misuse to an estimated $14 billion in annual productivity losses. The Mailman School report was a prelude to making policy recommendations, and provided a road map for the formulation of financial and

reimbursement streams and contributed to the initiation of a major New York City-wide initiative led by the Mayor of New York City.

State Medical Marijuana Laws, Use, and Consequences. The Department of Epidemiology has an active research portfolio of NIDA-funded studies to investigate trends in nonmedical prescription opioid use and opioid use disorder in the United States. A recently funded study, State Medical Marijuana Laws and Marijuana Use and Consequences since 2004, investigates the effects of state-level marijuana laws on the prevalence of marijuana use among adolescents and adults as well as other related consequences. Since 1996, 29 states and the District of Columbia passed laws legalizing medical use of marijuana, and other states are considering such laws. Whether these fast-changing laws lead to increases in marijuana use is now largely a matter of opinion and debate. This NIDA funded study addresses questions of major public health significance, adding important knowledge about fast-changing marijuana laws and their effects on marijuana use among adults and adolescents, contributing to general knowledge about the relationship of state legislation to substance use.

Maine Survey of Early Care and Education Teachers on Young Children's Challenging Behavior. In partnership with the state of Maine and statewide organizations, including the Ounce of Prevention and ZERO TO THREE, the National Center for Children in Poverty (NCCP) completed a statewide survey of early care and education teachers as part of an Early Childhood Mental Health initiative. The survey culminated with the introduction of state legislation to promote young children's social-emotional growth and well-being. NCCP's survey asked teachers and providers in center-based and home-based child care and preschool programs about the incidence of young children's challenging behaviors, effects of this behavior on other children, family circumstances of children experiencing behavioral problems, frequency of children's removal from settings due to behavior concerns, and resources that are available and needed to help children exhibiting challenging behavior. The survey findings, presented to stakeholder groups and Maine legislators, showed that a high percentage of teachers and providers reported having children with challenging behavior in their settings, and that involuntary removal of children from these settings due to challenging behavior was common. The survey results also pointed to teachers' perception of limited resources to support children with behavioral problems, high rates of adverse circumstances among families of children with challenging behavior, and desire for more training and on-site consultation to help address children's challenging behavior and promote their social and emotional growth.

Examples with International Health Partners

ICAP, the largest school-wide center, is conducting 22 CDC and NIH funded research studies focused on answering key questions related to implementation and scale-up of health interventions in 24 African and Central Asian countries, including evaluations aimed at identifying optimal service delivery models for HIV prevention, care, and treatment. ICAP is leading major studies on critical areas of research, including randomized controlled trials on microbicides and Pre-Exposure Prophylaxis (PrEP) for HIV prevention. In addition to HIV, ICAP conducts implementation science research on approaches to managing tuberculosis, malaria, and HIV co-infections, and leads efforts to evaluate health systems strengthening and quality improvement initiatives around the world. ICAP's international research portfolio has contributed to enhancing global understanding of effective approaches to implementing health services in resource-limited settings and to strengthening health systems. Findings from ICAP studies have informed decision making of ministries of health in numerous countries and have contributed to evidence-based recommendations from leading global organizations, including the World Health Organization.

Short-term PrEP for Female Partners of Migrant Miners in Mozambique. From September 2015 to April 2016, ICAP collaborated with Mozambique's Ministry of Health and the World Health Organization to conduct a multi-phase study of targeted use of antiretroviral Pre-Exposure Prophylaxis (PrEP) to prevent HIV infection among female partners of miners in Mozambique. The first phase of the

study found that PrEP is a highly acceptable prevention method in this population, and that men's influence was a strong factor in women's acceptability of PrEP. Phase 2 measured uptake and adherence to PrEP among HIV-negative female partners of male miners. This study provides important new information about acceptability of PrEP in a highly vulnerable population.

Population HIV Impact Assessment (PHIA) Project. In partnership with the U.S. Centers for Disease Control and Prevention and host countries, the ICAP-led PHIA project measures the reach and impact of HIV programs in 13 U.S. *President's Emergency Plan for AIDS Relief (*PEPFAR)-supported countries through nationally representative HIV surveillance surveys. The PHIA project conducts HIV-focused, cross-sectional, household-based, and nationally representative surveys of adults and adolescents ages 15 years and over, and children ages 0 to 14 years. The surveys also ask questions about access to preventive care and treatment services for adults and children. The project will measure national and regional progress toward UNAIDS 90-90-90 goals and guide HIV policy and funding priorities. Preliminary findings on HIV prevalence and incidence from three countries, Malawi, Zambia, and Zimbabwe, were presented at the 2017 Conference on the Retrovirus and Opportunistic Infections in Seattle, Washington, and are available on the PHIA website. These findings demonstrate the major success of PEPFAR HIV treatment and prevention programs in these countries.

Forced Migration and Health Program Projects. The School's Forced Migration and Health Program is a world leader in humanitarian research and training that influences policy and practice in complex emergencies. The program uses a community-based participatory research model with governments, international agencies, and community-based organizations. One project, Education for Children in Extreme Adversities, is exploring two primary areas: 1) key questions related to assessment of children and youth in extreme adversities; and 2) understanding educational needs for displaced children and youth. The Forced Migration and Health Program partners with the Inter-Agency Network for Emergency Education (INEE). INEE has a global network of practitioners and organizations working on issues related to education in emergency and fragile settings. The analysis is conducted at a global level and the mapping exercise will focus on specific regions in Africa, Asia, North America, South America, and Europe.

A partnership with Save the Children on Measuring Separation in Emergencies, aims to develop, field-test, and disseminate a suite of inter-connected, practical, methodologically-sound tools that can be used in emergency contexts to generate robust measurement and assessment of the scale and nature of separation. Ultimately, this improved capacity to measure the separation of children will support evidence-based advocacy, and better informed program design and implementation of prevention of separation, interim care, and family tracing and reunification activity linked to child protection systems worldwide.

3.1.C. A list of current research activity of all primary faculty identified in Criterion 4.1.a., including amount and source of funds, for each of the last three years. These data must be presented in table format and include at least the following information organized by department, specialty area or other organizational unit as appropriate to the school: a) principal investigator, b) project name, c) period of funding, d) source of funding, e) amount of total award, f) amount of current year's award, g) whether research is community based and h) whether research provides for student involvement. See CEPH Data Template 3.1.1.; only research funding should be reported here. Extramural funding for service or training/continuing education grants should be reported in Table 3.2.2 (funded service) or Template 3.3.1 (funded training/workforce development, respectively.

Table 3.1.1. (CEPH Template) Primary Faculty Research Activity shows funded projects for the last three years (203 sponsored projects in FY2015, 185 projects in FY2016, 90 projects in FY2017)

(Electronic Resource File 3.1.C.). A summary of research activity is also provided by department and school-wide center (Electronic Resource File 3.1.C.)

3.1.D. Identification of measures by which the school may evaluate the success of its research activities, along with data regarding the school's performance against those measures for each of the last three years. For example, schools may track dollar amounts of research funding, significance of findings (eg, citation references), extent of research translation (eg, adoption by policy of statute), dissemination (eg, publications in peer-reviewed publications, presentations at professional meetings) and other indicators. See CEPH Outcome Measures Template.

Table 3.1.D.1. lists outcome measures and performance targets that the Mailman School follows to assess the success of its research activities.

Peer-reviewed grant support. The Columbia University Medical Center and Mailman School track the number of research grants submitted, dollars requested, sponsor type, department, and success rates. Department chairs work with individual faculty members to set targets for successful grant submissions by faculty and for the department overall. The department level targets are shared with the Dean and reviewed by Dean's Leadership Team. These contribute to the School's targets for overall grant submissions and proposal success rate.

Research dissemination. While the School does not set a target for the number of publications by individual faculty, these data are tracked on faculty curriculum vitae and reviewed during annual faculty reviews. The School monitors publications using SCOPUS. The data in Table 3.1.D.1 identify the total number of publications attributed to primary faculty. These numbers represent individual publications in the SCOPUS database and may involve other faculty and students affiliated with the School. The School's Office of Communications tracks the number of faculty and students research-related appearances in the media including television, newspaper, radio, and other media outlets. The information is used by the School to monitor the reach of its research translation to the public and policy makers.

Table 3.1.D.1. Measures by which the Mailman School Evaluates the Success of its Research Activities

Outcome Measure	Target	2014-15	2015-16	2016-17
Number of grant proposals submitted annually by primary faculty [a]	200	258	218	203
Proposal success rate for all sponsored projects [a]	35.0%	34.0%	37.0%	37.0%
Annual support for Dean's Pilot Awards to increase likelihood of successful NIH funding [b]	$100,000	NA	$125,000	$275,000
Number of articles published by primary faculty in peer reviewed journals annually [c]	750	721	726	Pending
Number of faculty and student research-related appearances on television, in newspapers, and other media [d]	375	433	358	394

[a] Data as of FY2017 Q3; data for full fiscal year will be provided in fall 2017
[b] Dean's Pilot Awards began in 2015-16
[c] Data collected via SCOPUS by calendar year and reflects 2015, 2016, and is pending for 2017
[d] Number of appearances from 2014-15 includes 86 Ebola-related media appearances

3.1.E. Description of student involvement in research.

Student involvement in research is extensive at the Mailman School for students in the academic and professional degree programs. In the academic degree programs, students participate in research activities as part of their degree requirements. Many students in the professional degree programs are also actively engaged in research with faculty throughout the School. Student co-authorship is not tracked centrally but individual departments and school-wide centers track publications of their faculty and student co-authorship is often included. Examples of student publications are available in Electronic Resource File 3.1.E. Students in all programs often hold graduate research assistantships and others are supported as work-study students or hourly employees on research projects.

In 2017, all primary faculty whose research awards are listed in Table 3.1.1. were surveyed (Electronic Resource File 3.1.C., "Primary Faculty Research Activity") and asked to identify whether their research involved students and was community-based. Of the 337 research projects surveyed, 193 (57%) had students participate in their research activities. Table 3.3.1. (CEPH Template) Funded Training and Continuing Education Activity (Electronic Resource File 3.3.B.) provides information on training grants and external funding for doctoral and other students in FY2015-2017. Additionally, student investigators often initiate funded research as well as unfunded research as part of their academic work.

Doctoral research. All doctoral dissertations are based on original research in which a faculty advisor is responsible for training and guiding the student through a research project. In many instances, doctoral dissertations are based on a component of a larger existing or ongoing research project being carried out by the faculty advisor. All doctoral students are required to complete the Columbia IRB training online prior to beginning their dissertation research. Additionally, all students must take the one point course provided by CUMC, Responsible Conduct of Research and Related Policy Issues, during their first year of training. A list of recent doctoral dissertations is provided in Electronic Resource File 3.1.E.

Masters research. Several masters degrees (MS and MPH) at the School require students to complete a research thesis as a culminating experience. As outlined in Criterion 2.5.A. and 2.11.C., the culminating experience and research requirements vary by department. MPH students, because of their greater practice orientation and requirements, and their relatively shorter tenure at the School, have less intense involvement in research than doctoral students. However, because of the volume of innovative research at the School, MPH and MS students do find both formal and informal opportunities to engage in faculty research regardless of degree requirements. Additionally, MPH students often engage in practicum placements that involve service based research in the areas of community needs assessment, program evaluation, formative research and other research endeavors designed to develop or improve health programs and outcomes. Many of these involve obtaining IRB approval, and collaborating with a faculty principle investigator on the protocol as well as the project itself. This year, for example, students will be working on service-based projects with a wide range of communities (e.g., the Tahono O'dham nation (AZ); Latino border communities (AZ and Mexico); Harlem, NYC; Rakai Uganda; and numerous settings in the Dominican Republic.

Training programs. Training programs are a significant source of support for student research at the Mailman School. Federal training grants provide support for up to five years including a stipend, a tuition allowance, funds for supplies and travel, and health insurance. In FY2017, the School's doctoral students and post-doctoral fellows were supported by 53 government training programs and private awards listed in Table 3.3.1. (CEPH Template) Funded Training and Continuing Education Activity (Electronic Resource File 3.3.B.). Refer to Criterion 2.12.B. for description of training resources available for doctoral students.

3.1.F. Assessment of the extent to which this criterion is met and an analysis of the program's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- The Mailman School is a globally recognized leader in public health research in a world-class research university.
- The international research work of the faculty reaches six continents and has significant impacts in practice, policy, and service.
- The School's research portfolio contains both strong discipline-based and interdisciplinary research that encompass a broad range of critical public health issues, from the design and support of effective health systems to the discovery of new knowledge to fight infectious disease.
- The research structure at the School, at CUMC and across the University, fosters the capacity for faculty from multiple disciplines, schools and programs to collaborate on important interdisciplinary research.
- The robust body of faculty work is amplified by multiple opportunities for students to participate in research activities, at both the doctoral and master's levels.

Challenges

- The uncertainty of federal support for public health research is a major concern. The current climate and the potential reduction in critical areas such as environmental health and reproductive health represent a substantial challenge.
- As faculty turn to non-federal funding sources to compensate for potential reductions in federal funding, the lack of indirect costs presents challenges and must be absorbed by the School.
- To pursue large interdisciplinary research funding, the School needs to enhance its capacity and administrative infrastructure to successfully respond to funding opportunities as they appear.

Plans

- The School has launched a large school-wide initiative to facilitate its ability to respond to large interdisciplinary science initiatives. The focus is to remove obstacles to the creation and sustainability of interdisciplinary teams, make it easier for investigators to pursue resources, provide key administrative supports, and implement practices and policies that reward collaborative science.
- The School is pursuing opportunities to diversity its funding sources. To that end, the School has established the Columbia Population Health Partnership, a new center within the Dean's Office that seeks to expand create research-based partnerships within the corporate sector.

Criterion 3.0 - Creation, Application and Advancement of Knowledge

3.2. SERVICE
The school shall pursue active service activities, consistent with its mission, through which faculty and students contribute to the advancement of public health practice.

3.2.A. Description of the school's service activities, including policies, procedures and practices that support service. If the school has formal contracts or agreements with external agencies, these should be noted.

The Mailman School is committed to public health service, which is an essential component of the School's mission, vision, goals, and objectives. Service shares priority with teaching, research, and diversity and inclusion, and supports the agendas related to these core components of the School. The School's strong commitment to public health service is demonstrated in the collective activities of the School and its departments and centers, in the activities of its individual faculty and students, and in the explicit focus of many of the School's research projects on topics that are directly applicable to the delivery of public health services. Faculty participate in various service activities, such as serving as advisors, board members, and committee members of non-profit organizations, NGOs, and private and public organizations and corporations; editors and editorial boards of professional journals; consultants for departments of health, medical centers, and foundations; and experts providing testimony or reports on critical public health matters. Students at the School also participate in service activities through service-learning courses, practicum experiences, faculty service projects, and student government organizations. See Criteria 2.4.A., 2.4.B., and 3.2.D. for a full description of student participation in practica.

POLICIES AND PROCEDURES THAT SUPPORT SERVICE
For faculty, the School's practice and service expectations and responsibilities are outlined in the School's policies for appointment and promotion, described fully in Criterion 3.2.B. In addition, the University has formal policies (Electronic Resource File 3.2.A., "Statement on University Policy on Conflicts of Interest") that clarify expectations regarding conflict of commitment stating, "Officers of instruction are permitted to engage in outside consulting activity up to an average of one day per week." Professional service activities (e.g., leadership in professional organizations, expert testimony and consultation, and participation on community advisory boards or boards of nongovernmental organization) are expected and encouraged, and an important component of the contributions that School faculty make to public health practice and policy. Faculty are encouraged to seek advice from their department chair or the Vice Dean for Research and Faculty Affairs if they have questions or concerns regarding the amount of time they have available for external service activities, and whether it would conflict with their commitment to research, teaching, and service to the department and School. For students, the School does not track individual service activity, although student organizations must register with the Office of Student Affairs and track events in OrgSync. The student groups must plan and execute a minimum of three events per semester, many of which are service oriented. As described more fully in Criterion 3.2.E., student organization activities promote community engagement and serve the needs of community organizations and members.

PRACTICES THAT SUPPORT SERVICE
The Office of Field Practice
In 2012, the School established the Office of Field Practice (OFP) and appointed Dr. Linda Cushman as an Associate Dean for Field Practice. The creation of this central school office established a focal point for the coordination of practice-related activities for the School and the professional practice community. OFP works with departments, centers, practitioners, students, and faculty to highlight practice project and opportunities through a variety of activities, including seminars, open-houses, and visits to various

community sites. OFP identifies and supports opportunities for the School to collaborate with practitioners and partners to address emerging public health challenges. The Office also supports student engagement in experiential opportunities that best meet their career objectives and prepare them as future public health practitioners. OFP works continually to facilitate relationships among students, public health organization, faculty, and practitioners. One recent example is the work of several students representing different Mailman School departments with a local NGO (Getting Out and Staying Out) that serves formerly incarcerated men. As a team with different interests, skills, and career aspirations, the students collaborated with Getting Out and Staying Out staff and clients to produce educational materials and practical supports to increase clients' access to and participation in primary health care services. The work involved data collection, analysis, advocacy, and policy work. Students were mentored by two faculty members with expertise in research methods and social work respectively. Through collaborations like this one, OFP works continually to facilitate relationships among students, public health organization, faculty, and practitioners.

Departments and School-wide Centers
Below are selected service activities associated with the School's departments and school-wide centers. These highlighted activities demonstrate the active involvement of our faculty in sharing their professional knowledge and expertise with the broader community including the provision of technical assistance, consultation, and collaboration. Table 3.2.2. (CEPH Template) Funded Service Activity (Electronic Resource File 3.2.C.) provides a list of the School's funded services activities and Table 3.2.C.1. (Criterion 3.2.C.) provides a summary of faculty involvement and the types of service activities.

The Incarceration and Public Health Action Network. The Mailman Incarceration and Public Health Initiative seeks to integrate understanding of incarceration and public health through efforts aimed at influencing public policy and facilitating dialogue among faculty, researchers, and policymakers. Since its inception, the School has launched a seminar series to bring together a diverse group of scholars, clinicians, criminal justice officials, and policy advocates and held a two day conference entitled, *A Public Health Approach to Incarceration: Opportunities for Action.* The initiative has spawned collaborations with the John Jay College of Criminal Justice, the Columbia University Center for Justice, and several community-based organizations, including Harlem Community Justice Partners and the Mayor's Young Men's Initiative. Additionally, the initiative has spawned several university-wide student activities and organizations. The School's Office of Career Service organized a training for all career service offices at the University on how to assist formerly incarcerated students on how to find employment.

Associated with this effort are two Mailman School faculty, Professors Bob Fullilove and Kim Hopper who, in 2010, spearheaded collaboration between the School and the **Bard Prison Initiative (BPI)**, a program that provides inmates of the New York prison system the opportunity to get a college education. Dr. Fullilove serves as senior advisor to BPI's public health program and has embarked on an effort to provide a concentration of courses in public health at three of the medium security facilities that host BPI classes. The three correctional facilities, Woodbourne, Fishkill, and Taconic, house inmates who are in the final stages of their incarceration prior to release. BPI students often choose to take courses within this concentration because the favorable possibilities for getting a job in the public health sector and the prospects for doing graduate work in this field. Three BPI graduates have obtained employment with the New York City Department of Health and Mental Hygiene and two of them have earned master degrees in public health from Columbia University upon their release from prison.

Columbia Children's Center for Environmental Health (CCCEH) conducts community-based research in the United States and overseas to study the health effects of prenatal and childhood exposures to common urban pollutants. In addition to their research mission, CCCEH also has a key service component because of the critically important implications their findings have on public health policy

including needed regulatory action by agencies such as the US Environmental Protection Agency (EPA) or the Food and Drug Administration (FDA). Dr. Virginia Rauh, a neuro-epidemiologist and Deputy Director at CCCEH, is one of several School scientists often called upon to provide testimony and public education for the purpose of increasing public and governmental awareness of the risks and benefits associated with regulatory activity. One recent case concerns efforts by the EPA to further restrict the sales and applications of a widely used organophosphate insecticide, closely studied by Dr. Rauh for the past 15 years. Dr. Rauh was asked by the NIH to provide educational sessions for EPA staff, congressional leaders and staff, and community groups. She participated in NIH-initiated 'Congressional Briefings' on several occasions, most recently in November of 2016, to share the latest scientific findings concerning the hazardous effects of such chemicals on children's brain development. Additionally, she participated in a town hall event in Atlanta ('The Role of Environmental Health Science in Improving Health Outcomes and Community Decision-making', October 2016) for the purpose of educating community residents and stakeholders about the health hazards associated with pesticide exposure.

Global Consortium on Climate Change and Health. The School is spear-heading a Global Consortium on Climate and Health Education to support all schools of public health, medicine, and nursing in the world, committing to education on the health impacts of climate changed and offering curricular contents for their use. This effort is a continuation of work initially organized by the United States White House and a small group of leaders from health professions schools and endorsed at the Paris Climate Accords (COP21) and then by the World Health Organization as a key health-related outcome of COP21. The School has led follow-up efforts to recruit a global network of health professions schools who pledge to educate their students on the human health impacts of climate change. To date, the School's leadership has resulted in a global commitment of 115 pledged schools from across Asia, Europe, Latin America and the United States. The long-term goals of the Consortium are to: 1) develop a global network to educate tomorrow's leaders in climate and health; 2) develop and provide a climate-health curriculum relevant to the most critical stakeholders, including private sector and implementers; and 3) accelerate the development of cross-sectoral climate and health dialogue and research to address the most pressing challenges and opportunities.

Consultations and Technical Advising. School faculty serve as consultants and technical advisors providing knowledge and expertise towards the formation of national and international policy. For example, Dr. David Bell, a faculty member in the Department of Population and Family Health and an adolescent medicine physician, serves on the expert review panel for the US Office of Population Affairs (OPA) and the CDC. In 2014, the OPA and the CDC published clinical recommendations, Providing Quality Family Planning Services (QFP) in the MMWR. QFP defines what clinical services should be offered in a family planning visit (i.e., services to both prevent and achieve pregnancy, preconception health and STD services), integrates existing guidelines that are appropriate for use in the family planning setting, and fills gaps in describing how family planning services should be offered (e.g., recommendation on how to provide contraceptive counseling and to serve adolescents). As a member of the expert review panel, Dr. Bell provided technical assistance and professional consultation during the development and release of these guidelines. He has been asked to serve as an expert on a specialized panel to discuss the provision of quality family planning services to LGBTQIA clients. Dr. Bell serves on the Community Advisory Council for the Center for Alternative Sentencing and Employment Services at the Nathaniel Clinic in Central Harlem. The clinic helps justice-involved people and Harlem residents to recover from past trauma and improve emotional and physical health so they can live safely and with purpose in the community. As a member of the Community Advisory Council, Dr. Bell provides technical assistance and consultation on the program's major initiatives and policies.

Dr. David Rosner, a faculty member in the Sociomedical Sciences Department, has been actively involved in a variety of legislative and legal efforts to hold industries accountable for environmental pollution and occupational diseases linked to their products. He has testified in major lawsuits brought by

state attorney generals against the lead pigment and paint industries for creating a massive public health crisis over childhood lead poisoning. In Rhode Island, Dr. Rosner testified for 6.5 days in a landmark trial that concluded with nearly a $4 billion verdict for the State public health department. The money was to be used for remediating the lead paint hazard in the state's housing and thereby ending future damage from lead poisoning among the state's children. Dr. Rosner is now engaged by the States of California, Oregon and Washington in a major environmental pollution lawsuit. The issue is the pollution of broad areas of these state's waterways by polychlorinated Biphenyls (PCBs), a material manufactured since the 1930s by Monsanto but which is now a universal pollutant, particularly of the bays and shorelines of these states. In recent years PCBs have been identified by a variety of agencies such as IARC and NIOSH as a human carcinogen and these states are bringing suit against Monsanto. In addition to this work in court cases, Dr. Rosner has worked with congressional leaders on issues of global warming and industrial regulation. This past year he received a "Certificate of Special Congressional Recognition" from the Office of Senator Sheldon Whitehouse for his work on occupational and environmental diseases.

3.2.B. Description of the emphasis given to community and professional service activities in the promotion and tenure process.

The Mailman School values community and professional service involvement of faculty, as evidenced by the School's tenure guidelines (refer to the Faculty Handbook). The School's Tenure Review Advisory Committee (TRAC) considers all aspects of a candidate's record—scholarship, teaching and service—in evaluating whether he or she meets the University's expectations for faculty. In discussing a candidate's community and professional service activities, TRAC uses various measures that vary from one discipline to another but include any of the following:

- Service to both the candidate's university and discipline
- Appointments in public positions and consultancies that utilize the candidate's scholarly expertise
- Public outreach

In preparing a tenure nomination, the nominating department or school uses the candidate's curriculum vitae, case statement, statement of the nominee, supplemental materials, referee evaluations, preliminary evaluations, and recommendation for witness to inform TRAC about its assessment of the quality of the nominee's scholarship, teaching, and service. Service is explicitly evaluated in the case statement, referee letter, and curriculum vitae. The case statement discusses the nominee's contribution beyond teaching and scholarship to service at the University and his or her discipline. It also describes future service expected of the nominee. Types of service of relevance to the review include administrative positions within the University, positions in disciplinary associations, editorial positions on journals, and membership on grant review panels or juries in addition to public outreach and governmental service relevant to the candidate's scholarship. Every nomination to tenure must be supported by evaluations from outside scholars using a specified "referee letter" contained in the Tenure Guidelines document (Electronic Resource File 3.2.B.). This letter requests comment and observation on the candidate's teaching and/or mentoring, leadership, or service. The curriculum vitae provides TRAC with essential summary of the candidate's career and accomplishments by including:

- University service, including positions held and major committee assignments
- Service to the discipline, including positions held in scholarly associations, editorial positions on journals or membership on grant review panels and juries
- Public outreach involving the use of the candidate's scholarly expertise

It should be noted that CUMC Faculty Template includes a section entitled "Report of Clinical and Public Health Activities and Innovations" that allows faculty the opportunity to highlight their contributions/role in practice or public health service activities. This section is not mandatory, making extracting community and professional practice and service activities in a systematic manner challenging.

3.2.C. A list of the school's current service activities, including identification of the community, organization agency or body for which the service was provided and the nature of the activity over the last three years. See CEPH Data Template 3.2.1. Projects presented in Criterion 3.1. should not be replicated here without distinction. Funded service activities may be reported in a separate table; see CEPH Data Template 3.2.2. Extramural finding for research or training/continuing education grants should be reported in Template 3.1.1. (research) and 3.3.1. (funded workforce development), respectively.

As part of the annual performance appraisal process, all faculty and staff are requested to report on notable accomplishments with respect to research, education and service as relevant to their job responsibilities and roles. However, community and professional service activities are not collected in a systematic manner and are not required to be included on Columbia University Medical Center faculty curriculum vitae. As described in Criterion 3.2.A., the faculty of the school are significantly involved in service activities. In an effort to facilitate summarization, the Mailman School conducted a survey of all primary faculty in fall 2016. Primary faculty were asked to provide information on the types of non-funded service activities that they were engaged between the years 2015-2017 ("Table 3.2.1. (CEPH Template) Service Activity of Faculty", Electronic Resource File 3.2.C.). A summary of the community and professional practice and service activities of the 95 primary faculty who responded appear in Table 3.2.C.1.

Table 3.2.C.1. Summary of Service Activities of Primary Faculty

Type of Service Activity	% of Primary Faculty
Consult with public/private organizations on issues relevant to public health	80
Providing testimony or technical support	55
Provide guidance on public health matters to community organizations, advocacy groups, or nongovernmental organizations.	63
Serve as board members or officers of professional associations	31
Serve as members of community-based organizations, community advisory boards, or other groups	29
Serve in editorial positions for academic journals	49
Provide peer review of manuscripts	92
Other forms of service to the public health community outside of research and education	57

Based on respondents to survey (n= 945); activities conducted between 2014-2017

Faculty participate in a diverse array of service activities ranging from NGO board members to editors of professional journals and consultants for departments of health. Examples of the community service activities and the advisory committees and boards that faculty serve on are listed in Table 3.2.C.2.

Table 3.2.C.2. Examples of Community Service Activities of Primary Faculty from 2015-2017

Consultations	Advisory Panels
New York Department of Health and Mental Hygiene	Lancet Commission on Adolescent Health and Wellbeing
New York City Police Department	Steering Committee for NIH/NINDS Parkinson's Disease Biomarker Program
Public messaging on screening and early detection for Ovarian Cancer Research Fund	Health and Human Rights Working Group for World Health Organization and UN High Commissioner for Human Rights
Influenza forecasting for NYC Health and Hospitals	WHO Global Network for Bioethics Centers
Child disability measurement for UNICEF	Mold remediation for NYC Housing Authority
Centers for Medicare and Medicaid Services	Division on Health Politics of American Political Science Association
Sesame Workshop play-based learning centers in low income countries	Senior Advisory to WHO Mental Health Division
WHO FORWARD Project	National Cancer Institute Physician Data Query (PDQ) Guidelines Committee
Global Fund to Fight AIDS, TB and Malaria	National Academy of Science standing committee on the Department of Defense programs to counter biological threats
Office of Pesticides, Environmental Protection Agency (EPA)	Deloitte, Social Determinants of Health Advisory Committee
Black Men Health Toolkit, National Alliance of State and Territorial AIDS Directors (NASTAD)	Community Affairs Committee for Mount Sinai Health Systems- development of outreach to community not-for-profits

Mailman School faculty are routinely recognized for their service and practice in the field of public health; below are some examples:

- Global Emergency Medicine Association Presidential Lifetime Achievement Award (R. Moresky)
- French National Institute of Health and Medical Research, 2016 Inserm International Prize (L. Fried)
- The Scientific Committee on the History of Prevention of Occupational and Environmental Disease award for "Outstanding Scholarship on the History of Work and Health" (D. Rosner)
- President, International Association of Gerontology and Geriatrics (J. Rowe)
- Board Member, ChildFund International (C. Landers)
- 2017 SENECA Medal for Aging (U. Staudinger)
- Technical Advisory Group of the High Level Working Group for the Health Rights of Women, Children, and Adolescents, World Health Organization and the UN Office of the High Commissioner of Human Rights (L. Freedman)
- 2016 Next Avenue Influencer in Aging (R. Finkelstein)
- Komen Scholar, an international advisory group to Susan G. Komen Foundation (D. Hershman)
- President, Association of American Physicians (L. Fried)
- Outstanding Leadership Award from the Dhaka University Statistics Department Alumni Association (A. Chowdhury)
- International Science and Technology Cooperation Award (China's top science honor for foreign scientists) (I. Lipkin)
- 2016 Award for Distinguished Contributions to Psychology in the Public Intere.st (Early Career) by the American Psychological Association (M. Hatzenbuehler)

- 2015 Advocate Award by the Environmental Advocates of New York (F. Perera)
- New York State Department of Health Commissioner's Award (A. Cohall)
- American Public Health Association's Excellence in Science Award (G. Li)

In service to both internal and external stakeholders, the School sponsors numerous symposia on topics of public health import. These symposia take place at the School, at locations of local and international partners, and virtually, in an effort to bring together experts in the field and engage Mailman faculty, students, and public health professionals and leaders practicing in the field. Examples of several symposia are listed below.

Turning the Tide: A New Generation of Public Health Interventions (April 2017, New York, NY)
Bringing together leading social and behavioral public health scientists from across the country, this day-long conference highlighted how designing effective, methodologically rigorous, and sustainable interventions demands ongoing exploration.

Redesigning a System: The Health Equity Factor (April 2017, New York, NY)
With over 200 participants, prominent healthcare leaders came together to discuss critical public health issues on care, equity, and drug pricing, and considered possible solutions.

The Columbia-Fudan Global Summit on Population Aging: A Dialogue on Research, Policy, Health Systems and Industry Initiatives (October 2016, Shanghai, China)
As lifespans continue to increase, countries must look to develop policies and structures that promote the active engagement and health of their aging populations. This three-day summit drew aging experts from around the world to help countries prepare for the growth and opportunities of their aging populations.

Global Health, HIV, and Health Systems: The Dean's Grand Rounds on the Future of Public Health (March 2016, New York, NY)
The fight against HIV/AIDS in sub-Saharan Africa faces an unprecedented challenge because of demographic changes brought about by reductions in infant mortality. Ambassador Deborah Birx, the U.S. Global AIDS Coordinator, outlined how PEPFAR's strategy will build better health systems.

Big Data: The Efficacy of Real World Evidence in the Digital Health Ecosystem (October 2016**,** New York, NY)
This symposium brought together scientists, physicians, IT architects, public health practitioners, investors, attorneys, and more to share a vision about designing and scaling technologies to improve health outcomes around the world.

Annual Virtual Conference on Menstrual Hygiene Management: Channeling Girls' Recommendations into Global Advocacy and National Level Change (October 2016**,** Virtual)
The conference focused on the voices of girls captured globally to guide action and political commitments. The presentations highlighted initiatives that translate voiced needs into actionable programming, strategic shifts in education, and how to capture measurable change.

In addition to non-funded service activities, Mailman School faculty secure a substantial amount of funding for service projects. During FY2016, faculty received $208,197,893 for service-based projects. A comprehensive list of funded service projects is in Electronic Resource File 3.2.C., "Table 3.2.2. (CEPH Template) Funded Service Activity".

3.2.D. Identification of the measures by which the school may evaluate the successes of its service efforts, along with data regarding the school's performance against those measures for each of the last three years. See CEPH Outcome Measures Template.

Achievement of the School's service objectives is tracked through the outcome measures in Table 3.2.D.1.

Table 3.2.D.1. Measures to Evaluate Success of the Mailman School's Service Efforts

Outcome Measure	Target	2014-15	2015-16	2016-17
Number of service activities conducted by student organizations in NYC [a]	45	NA	40	Pending
Percent of practicum experiences completed in New York City[b]	60.0%	63.0%	60.0%	Pending
Number of courses with service learning component	6	3	3	3
Percent of faculty engaged in service based activities/projects[c]	65.0%	44.0%	53.0%	55%
Total funding for grant-funded service projects[d]	$150,000,000	$146,075,078	$208,197,893	Pending

[a] Data collected via OrgSync by the Office of Student Affairs starting in 2015-16; data currently being collected and will be available for final self-study report in fall 2017
[b] Practica are completed during the summer, therefore data will be available fall 2017
[c] Data is based on responses from 96 primary faculty to a fall 2016 survey and is likely an undercount
[d] Data collected per fiscal year; years represented include FY2015, 2016, and 2017; data for FY2017 was collected fall 2016 and will be updated to include entire FY2017 in final self-study submitted in fall 2017

3.2.E. Description of student involvement in service, outside of those activities associate with required practice experience and previously described in Criterion 2.4.

Mailman School students work through the Office of Student Affairs and recognized student life organizations on service-related activities. To maintain active status as a recognized student organization, groups must plan and execute a minimum of three events per semester and must register their organization and events in OrgSync. Events should incorporate the following components: an educational or professional event that relates to the mission of the organization and/or supports supplementary education, career exploration, skill development, and/or networking; a social or community event or activity that promotes community engagement across students, faculty, and/or staff; and, a collaborative event that includes the support of other Mailman groups, Mailman organizations or offices, other CUMC groups or schools, other Columbia University departments, or other universities, which promotes interdisciplinary, multi-perspective understanding. Many of these events include community service components.

OrgSync tracks the wide range of activities that our more than two dozen student groups conduct with organizations and community groups in New York City and the Washington Heights area that surrounds the campus. Activities have included Volunteer Day at Harlem Grown; a menstrual hygiene product drive; a bone marrow drive; community street cleanup; and many mentoring activities conducted by the Bloom Girls Mentoring group.

In academic year 2015-2016, fifteen student groups reported conducting 40 events specifically related to service in and for the New York City community. A few highlighted service events stand out, specifically the Day of Service held in early April. In celebration of National Volunteer Month, School students joined their colleagues across CUMC for several service opportunities throughout New York City. Activities included City Meals on Wheels; Community Kitchen and Pantry-Prep & Serve; revitalizing the

JFK High School Community Garden; and assisting a local food bank. Additionally, students collaborated with Mailman School faculty, Dr. Bob Fullilove, and a local community organizer in hosting a Girls' Sports Night. In the fall semester of academic year 2016-2017, which is typically the lighter programming semester, nine student groups each conducted one service event.

One group to note, which conducted far more service-related programming than any other group in 2015-16, is Bloom Girls Mentoring. The group's mission is to provide mentorship to girls and young teens in the Washington Heights community, specifically at Community Health Academy of the Heights (CHAH). To this end, Bloom Girls Mentoring provides weekly day group lessons on health related topics including, puberty, sexual reproduction, and drugs and alcohol; brings guest speakers and health professionals to reinforce day group lessons and offer career exposure; connects female mentors to the 7th and 8th grade girls of CHAH; helps young women build confidence, inner strength, and a sense of self-worth; and enables young women to make healthy lifestyle choices.

The student group Greater Community Reach (GCR) connects Mailman School students with Northern Manhattan to create a model for community engagement. GCR promotes an urbanist perspective in public health by integrating concepts of space, place, and cultural history into patterns of health and disease in the community. GCR organizes many of the drives on campus, including Suit For Success Clothing Drive for Washington Heights Men's Shelter; general clothing drives; and holiday toy drives.

On a final note, the Office of Career Services maintains a database of internship opportunities. Many students participate in unpaid internships that go beyond their required practicum and provide needed service to nonprofit and government agencies. A total of 245 unpaid internships were included in the OCS database in AY2016-2017 and many were filled by our students.

3.2.F. Assessment of the extent to which this criterion is met and an analysis of the program's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- The School's culture and history embrace service as core to its mission.
- Faculty and students are highly engaged in service both to the public health practice community and the local and global communities disproportionately impacted by poor health outcomes.
- The creation of a centralized Office of Field Practice established a focal point for the coordination of practice-related activities for the School and the professional practice community.

Challenges

- Systematic tracking of service activities among faculty, staff and students does not exist centrally and accurate reporting of the School's broad and deep commitment to service is challenging and likely undercounted.

Plans

- In an effort to continually recognize, promote and support service activities, the School will enhance its reporting systems to better capture the service activities of faculty and students. For example, the utilization of the section of the CUMC Faculty Template contributions/role in practice or public health service activities should be mandated and included in faculty reviews.
- In conjunction with student leaders and student organizations, ODCI, the Office of Student Affairs, departmental academic directors, and faculty are developing plans to enhance service-based learning offerings, with the goal of expanded coursework in this area.
- To further engage students in service activities, the Office of Student Affairs, will engage Mailman Student Ambassadors—returning students who assist during orientation—with a more formalized effort to promote opportunities for incoming students to participate in service early in their time at Mailman. This effort is in response to second-year students providing feedback in town hall meetings and to the Office of Student Affairs on their lack of knowledge of existing service opportunities early in their tenure at the School.

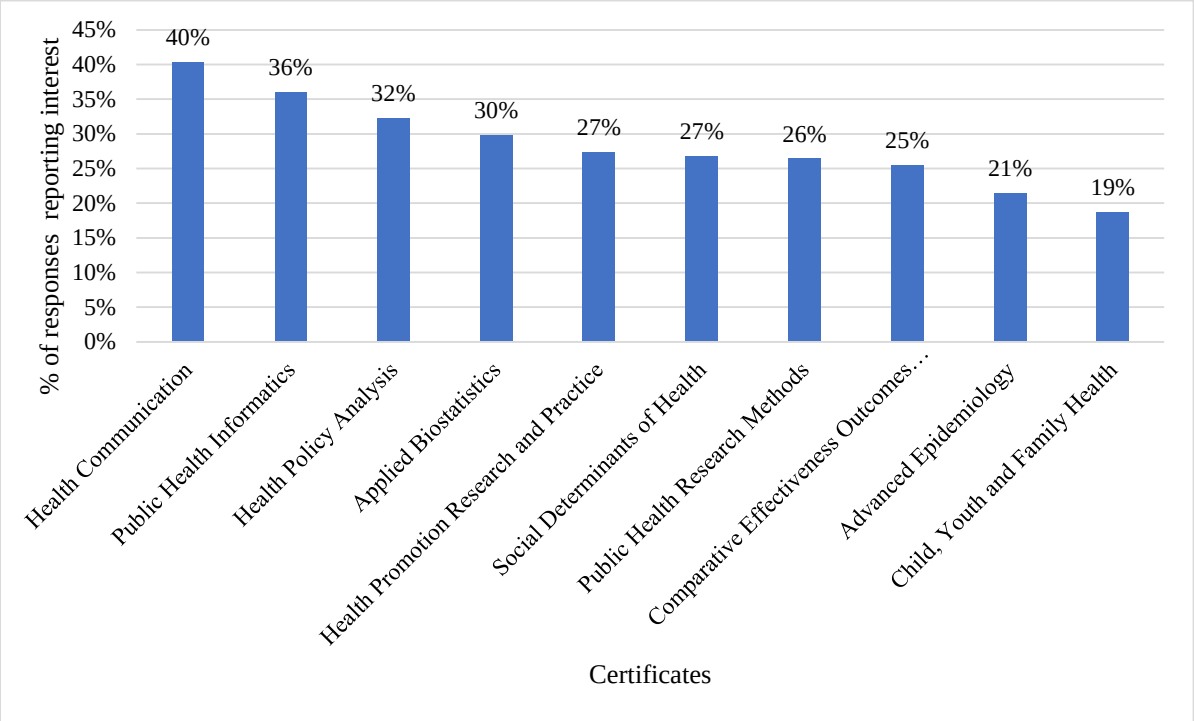
Criterion 3.0 - Creation, Application and Advancement of Knowledge

3.3. WORKFORCE DEVELOPMENT
The school shall engage in activities other than its offering of degree programs that support the professional development of the public health workforce/

3.3.A. Description of the ways in which the school periodically assesses the continuing education needs of the community or communities it intends to service. The assessment may include primary or secondary data collection or data sources.

The Mailman School serves a diverse community of public health learners in terms of scope of practice and geographic location. The School does not centralize the assessment of training needs. However, in response to growing interest in our certificate programs as stand-alone professional development opportunities for the public health workforce, the School conducted a brief survey in spring 2017 among approximately 4,500 employers. The overall purpose of the survey was to assess: 1) interest among public health employers regarding the School's current certificate content areas as non-degree offerings; 2) type of desired setting for such continuing education/training programs (e.g., online, in-person or hybrid); 3) capacity for financial support of employees; 4) interest in executive-style degree programs and 5) interest in training in emerging topics or methods. The surveyed came from the Mailman School's employer database and represented a range of sectors including government, nonprofits, hospitals, pharmaceutical companies, consulting firms, insurance firms, and technology and marketing firms. All the employers have been in engaged with the School's Office of Career Services in some capacity—attending Mailman career fairs, posting jobs for students, or otherwise. While the majority of respondents were based in New York, respondents included international organizations as well as respondents from California, Massachusetts, New Mexico, Pennsylvania, New Jersey, Arizona, Texas, Washington DC, Maryland, and Connecticut. The results of the survey will be used to guide the development of the School's planned expansion into non-degree professional development and continuing education activities and to ensure such activities match the needs of the communities the School serves. Initial survey results are summarized in Figure 3.3.A.1. below.

Figure 3.3.A.1. Top 10 Certificates of Interest Among Mailman School Employers



The School's centers and departments that offer workforce development, executive education, and training programs employ a variety of means to assess the needs of communities served. Methods include engagement with collaborating organizations whose staff have field experience and professional knowledge; needs assessment surveys conducted with alumni, key stakeholders and employers of Mailman graduates; and advice from faculty members and other experts in the public health workforce. Several examples are described below:

Region 2 Public Health Training Center. Since 2001, the School has been responsible for fulfilling the duties of a Public Heath Training Center (PHTC) funded by the Health Resources and Services Administration (HRSA). Currently, the Region 2 PHTC is a partnership between the Mailman School and four local performance sites located at the Rutgers School of Public Health, New York State Association of County Health Officials in Albany (NY), Impactivo Consulting in San Juan (Puerto Rico), and the University of the Virgin Islands (St. Thomas). Training needs of the partner organizations are assessed by the Mailman through periodic standardized surveys used to collect information about workforce training needs relevant to health department priorities. The needs assessment tool is based on the Council on Linkages Between Academia and Public Health Practice's Public Health Core Competencies. As of March 2017, the center has completed data collection for training needs assessments for health departments in New York, New Jersey, and the United States Virgin Islands. The data from training needs assessments are translated into training recommendation reports used by the center and the health departments to prioritize training development and implementation. A sample of a report, "Sample Report from Region 2 Public Health Training Center", is available in Electronic Resource File 3.3.A.

Epidemiology and Population Health Summer Institute (EPIC). As a continuing education resource for public health and epidemiology**,** EPIC provides public health practitioners, clinicians and other members of the public health workforce opportunities to gain foundational knowledge and applied skills for advancing population health research. EPIC's intensive short courses are offered in classroom and

online distance learning formats. To assess the needs of colleagues in the field, EPIC has utilized a number of outreach/evaluation mechanisms ranging from informal conversations to formal course and program evaluations to determine the need for specific courses. The outreach/evaluation mechanisms include hosting weekly lunches and social events to engage participants and solicit feedback; sending emails to past participants soliciting feedback; sending emails to non-participants with research portfolios (obtained from the NIH) to inquire about additional needs; communicating with colleagues at local institutions including the NYC Department of Health; and, formal anonymous course evaluations. As a result, the following courses have been added to EPIC's offerings, many of which are not classically housed within the epidemiology discipline but for which a demand exists: Social Network Analysis, Qualitative Research Methods, Geographic Information Systems, Metao'mics Analysis of Microbial Communities, Microbial Communities Profiling Methods, Communicating Public Health Science in the Media, Natural Language Processing, and Analysis of Big Data.

A recent example of workforce input occurred during summer 2016 at the completion of EPIC's courses. From its inception, EPIC has held an Injury Epidemiology and Prevention course; however, in order to be responsive to the NY State and NYC Department of Health Injury Prevention Programs, the instructor held a conference call with directors of these programs to assess needs of their workforce. In response to this call, the Injury Epidemiology and Prevention course for 2017 will feature current advanced methods and will be updated each year. In addition, the course will be held the afternoon before the annual injury conference at Mailman to help defray NY state travel costs.

ICAP Education and Training Initiatives. ICAP raises independent funds to support the training of individuals engaged in global health around the world, with the goal of building their capacity to address health needs of the communities they serve. To this end, ICAP provides professional development seminars and trainings, both in-person and web-based, in ICAP countries and headquarters in sub-Saharan Africa, South East Asia, the Caribbean, and New York City. The continuing education needs are assessed in a culturally appropriate manner and customized to the specific needs of programs and communities. For example, the Introduction to Quality and Improvement course, offered to mid-career professionals from the CDC, USAID, and DOD offices in sub-Saharan Africa, and their health ministry counterparts, conducted a baseline needs assessment that included two surveys and a series of key informant interviews. Results were used to craft course learning objectives and the evaluation strategy. Participant response was assessed via surveys administered during the course. Learning was assessed via pre- and post-tests. Behavior and results were assessed via a series of on-line surveys administered 6, 12 and 18 months following the course. Ongoing assessment of the learning needs of the target trainees is conducted via an annual review meeting with the CDC and pre-course surveys conducted with new trainees. Similarly, the Introduction to Health Systems Strengthening course, which works to build systems thinking capacity among United States government staff working on HIV programs in resource-limited settings and their health ministry counterparts, was developed after careful assessment of continuing education needs of the target audience. A baseline needs assessment among CDC, USAID, and DOD staff and their health ministry colleagues was conducted prior to course development and used to determine course content, learning objectives, and participant eligibility criteria. Annually, the course is evaluated via participant surveys and pre- and post-tests. Learning needs are assessed from year-to-year in the context of an annual consultation with US government country offices. A comprehensive list of ICAP training, "List of ICAP Education Initiatives and Training", is provided in Electronic Resource File 3.3.A.

Reproductive Health Access, Information and Services in Emergencies (RAISE). The RAISE Initiative is designed to catalyze change in how sexual and reproductive health is addressed in field services, humanitarian organizations, and global decision-making. An initiative of the Department of Population and Family Health, RAISE works collaboratively with partners in Chad, Democratic Republic of Congo, Myanmar, Pakistan, Somalia, and Yemen to provide training and technical assistance to those in emergency settings. To identify areas for skills development among the NGO and ministries of health

staff, RAISE conducts comprehensive process evaluations using in-depth systematic observation in service delivery sites, key informant interviews, and review of program client data. The evaluations assess the functioning of program systems—such as supply chain management, infection prevention, supportive supervision, and use of data—and effectiveness of program strategies, such as community outreach and counseling. These areas are the topics of workshops, which have included supportive supervision systems, data collection and use, community engagement strategies, and values clarification to help staff recognize how their own attitudes towards abortion, contraception and the women who use them to influence the quality of the care they provide.

Department of Environment Health Sciences (EHS). To respond to the professional development needs in the environmental public health workforce, EHS surveyed faculty members to determine priority areas of focus for new training programs. As a result, two new non-degree continuing education programs will be launched this year: Epigenetics Bootcamp and Radiation Safety Officer (RSO) Training.

- **Epigenetics Bootcamp.** EHS faculty members and colleagues at CUMC and peer institutions reported challenges in identifying and hiring staff with appropriate training in epigenetics. Given the expertise of the newly recruited Chair of the Department, Andrea Baccarelli, EHS has developed a short course to provide training for potential candidates for these positions who may want to transition into the field or for personnel already hired in those position, but who might not have fully developed expertise in epigenetics. For the Epigenetics Bootcamp, demand was also evinced from a one-day workshop offered at the 2016 Conference of the International Society of Environmental Epidemiology in Rome. The workshop was very well received by the 25+ participants. The exit survey provided feedback on content and whether participants recommended creating an expanded regular workshop in New York City. Participants responded enthusiastically and encouraged Mailman to create the bootcamp. During the preparation of the Epigenetics Bootcamp, EHS re-contacted several of the Rome workshop participants to obtain additional feedback.
- **Radiation Safety Officer (RSO) Training.** EHS faculty members, aware of the demand for specific training to become a Radiation Safety Officer (RSO), developed a course to meet the training requirement for a Nuclear Regulatory Commission type C license, providing the skills needed to successfully implement a radiation protection program in the pharmaceutical, biotechnology, university, hospital, or medical laboratory setting. Ongoing assessment of the learning needs of the target trainees will be conducted via a review of post workshop evaluation and via pre-course surveys conducted with new trainees each year.

3.3.B. A list of the continuing education programs, other than certificate programs, offered by the school, including number of participants served, for each of the last three years. Those programs offered in a distance-learning format should be identified. Funded training/continuing education activities may be reported in a separate table. See CEPH Template 3.3.1 (Optional template for funded workforce development activities). Only funded training/continuing education should be reported in Template 3.3.1. Extramural funding for research or service education grants should be reported in Templates 3.1.1. (research) and 3.2.2. (funded service), respectively.

The Mailman School's centers and departments offer workforce development and continuing education opportunities that help to train thousands of public health professionals around the globe. Some of the training occurs in the context of research and training grants and contracts, while other trainings are developed collaboratively with partner organizations to enhance the skills and performance of workers. Workforce training includes a diverse array of opportunities including capacity building workshops, short-term courses and in-depth programs taught by Mailman faculty through in-person and web-based modalities. These programs are designed to meet professional and educational goals of project staff, personnel from health departments, collaborating agencies, and organizations and professionals looking to

deepen their knowledge of public health practice and science. Refer to "Mailman School Continuing Education Programs" (Electronic Resource File 3.3.B.) for a current list of continuing education programs offered by the School in the various departments and centers and number of participants served from 2014-2017. In addition, Table 3.3.1. (CEPH Template) Funded Training and Continuing Education Activity (Electronic Resource File 3.3.B.) details the funded training/continuing education activities of the School.

3.3.C. Description of certificate programs or other non-degree offerings of the school, including enrollment data for each of the last three years.

Currently the Mailman School does not offer opportunities for non-degree seeking students to enroll in certificate programs. As discussed in Criterion 3.3.A., the School is interested in developing additional opportunities for professionals to engage with Mailman by enrolling in academic courses and other non-degree earning academic credentials, including but not limited to certificate programs. When the School renewed its Core Curriculum and developed the 23 certificate programs offered as part of the MPH program, the certificate programs were approved as a NY State Department of Education as credentials for degree-seeking and non-degree seeking students. At that time, the School decided to launch the certificate programs for students enrolled in the MPH program only. Future plans include offering specific certificate programs for public health professionals interested in deepening their knowledge of public health and engaging with the Mailman School without earning a Mailman degree. The survey described in Criterion 3.3.A., and summarized in Electronic Resource File 3.3.C., "Workforce Survey Summary Report", is an effort to assess the needs of the public health workforce as we move in this direction. Current enrollment of MPH students per certificate is listed in Table 3.3.C.1.

Table 3.3.C.1. Number of MPH Students Enrolled in Certificate Programs

Certificate	2015-16	2016-17	2017-18[a]
Advanced Epidemiology	20	23	Pending
Applied Biostatistics	38	45	Pending
Child, Youth and Family Health	20	22	Pending
Climate and Health	14	15	Pending
Comparative Effectiveness Outcomes Research	44	41	Pending
Environmental Health Policy	9	9	Pending
Epidemiology of Chronic Disease	58	45	Pending
Global Health	80	66	Pending
Health and Human Rights	12	12	Pending
Health Communication[b]	NA	5	Pending
Health of an Aging Society	8	6	Pending
Health Policy Analysis	62	68	Pending
Health Policy and Practice	45	47	Pending
Health Promotion Research and Practice	51	44	Pending
History, Ethics and Law	7	8	Pending
Infectious Disease Epidemiology	62	53	Pending
Injury Prevention and Control	4	1	Pending
Molecular Epidemiology	9	11	Pending
Public Health and Humanitarian Assistance	42	36	Pending
Public Health Informatics	15	14	Pending
Public Health Research Methods	39	33	Pending
Sexuality, Sexual and Reproductive Health	33	35	Pending
Social Determinants of Health	25	34	Pending
Toxicology	16	17	Pending

[a] Data will be available fall 2017 and submitted with final self-study
[b] New certificate as of 2016-17

3.3.D. Description of the school's practices, policies, procedures, and evaluation that support continuing education and workforce development strategies.

Currently, the School does not have centrally administered practices, policies, and procedures in place for continuing education and workforce development. As described, the current continuing education and workforce development programs are offered and conducted by Mailman centers and departments. Each department and center coordinates and oversees their respective continuing education and workforce programs collaborating with appropriate partner organizations, identifying and responding to training needs, and evaluating effectiveness in meeting learner's needs.

As the School moves forward with development of school-wide continuing education programs including certificate programs for members of the public health workforce, we intend to institute policies and practices that support the development, implementation, and evaluation of high quality programs. As outlined in Criterion 1.5.B., recommendations for policies are brought to the Policy Advisory Committee for discussion with a broad representation of the School's stakeholders. Recommendations from the Committee will be forwarded to the Dean's Leadership Team for further discussion and decisions.

3.3.E. A list of other educational institutions or public health practice organizations, if any, with which the school collaborates to offer continuing education.

École des Hautes Études en Santé Publique (EHESP). The collaboration between the Mailman School and France's EHESP is designed to foster leadership and excellence in public health education, research, and practice and create a joint vision of public health on both sides of the Atlantic. Initiated in November 2009, the global collaboration includes joint research projects, teaching, and practica opportunities in the United States and France aimed at facilitating the involvement of faculty and students on issues of importance to public health in the 21st century. The exchange of faculty and graduate students promotes cooperation on education and scientific research. EHESP has extensive continuing education offerings, both in French and English, connected to their extensive training of the health workforce in France. EHESP School of Public Health has a distinguished history of training public health executives who oversee major health systems in France and around the world. Its alumni network comprises all public hospital administrators, health inspectors, pharmacological inspectors, long term-care facility administrators, and public health servants throughout the French state. The collaboration between the School and EHESP includes a specific focus on enhancing the capacity of EHESP in the area of epidemiology for all trainees.

Universitas Indonesia. The Mailman School entered into an academic cooperation agreement with the Univeristas Indonesia in 2016 in the areas of collaborative research and publications, capacity building, and promotion of evidence-informed policy and practice. While the agreement will have a research component, there is a particular focus on the development of continuing education activities in the form of short courses, workshops and other learning activities to enhance the capacity of the public health workforce and the academic community in the areas of children and family wellbeing, social protection, population statistics, and child and maternal health. The current agreement renews a long-term collaboration between Universitas Indonesia and the School and seeks to enhance the successful exchange of scholarly activity between the two institutions.

Europublic, co-funded by the Erasmus Programme of the European Union. Six renowned European universities, all recognized as centers of excellence in public health higher education, are collaborating to deliver Europubhealth+. As the only United States based partner, the Mailman School joins these prestigious universities to train students who wish to embark on a career in public health. The program aims to accomplish the following objectives: 1) to analyze and address the determinants of health problems from a population perspective, and 2) propose, plan, implement, and evaluate culturally appropriate, evidence-based policies and interventions for the effective improvement of population health in international, national and local contexts.

3.3.F. Assessment of the extent to which this criterion is met and an analysis of the program's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- Through its departments and centers, the School has an established history and significant long-term partnerships at the local, state, national and international level aimed at educating and training the public health workforce.
- ICAP is a world-renowned leader in training individuals and partner organizations to build their capacity to address the health needs of communities sub-Saharan Africa, South East Asia, the Caribbean, and New York City.

Challenges

- Developing a financial model to sustain low cost and free non-degree offerings for the public health workforce is challenging particularly given the diminishing resources for public health workforce development.

Plans

- The School has recognized the importance of building upon existing relationships domestically and internationally to develop continuing education and workforce development courses and non-degree offerings that reach audiences not traditionally served by the School. Plans for growth will be guided in part by the translation of the findings from our recent survey of public health employers assessing their training and continuing education needs.
- Offer specific certificate programs for public health professionals interested in deepening their knowledge of public health without earning a Mailman degree.
- Developing a range of online education opportunities including professional trainings, course modules, and certificate programs.
- Developing executive education opportunities that combine a mixture of in-person and distance learning formats in areas where the School has deep expertise such as climate change and health, epigenetics, big data and health communications.

Criterion 4.0 - Faculty, Staff and Students

4.1. FACULTY QUALIFICATIONS

The school shall have a clearly defined faculty which, by virtue of its distribution, multidisciplinary nature, educational preparation, practice experience, and research and instructional competence, is able to fully support the school's mission, goals, and objectives.

4.1.A. A table showing primary faculty who support the degree programs offered by the school. It should present data effective at the beginning of the academic year in which the self-study is submitted to CEPH and should be updated at the beginning of the site visit. This information must be presented in the table format, organized by department, specialty area or other organizational unit as appropriate to the school and must include at least the following: a) name, b) title/academic rank, c) FTE or % time, d) tenure status or classification*, g) graduate degrees earned, h) discipline in which degrees were earned, i) institutions form which degrees were earned, j) current instructional areas and k) current research interests. See CEPH Data Template 4.1.1.

The Mailman School defines primary faculty as faculty who are full-time Columbia University employees with professorial appointments (assistant professor, associate professor, professor) in one of the six departments of the School. Faculty in any of three school-wide centers have faculty appointments in a Mailman School department. All primary faculty curriculum vitae can be found in Electronic Resource File 4.1. As of October 2016, the Mailman School had 152 primary faculty members (Electronic Resource File 4.1.A.). The number of faculty in each department, as of October 2016, is presented in Table 4.1.A.1.

Table 4.1.A.1. Number of Primary Faculty by Department, October 2016

Department	Number of Primary Faculty
Biostatistics	26
Environmental Health Sciences	15
Epidemiology	44
Health Policy & Management	18
Population & Family Health	20
Sociomedical Sciences	29
Total	152

A total of 39% of Mailman School faculty hold the position of professor, 28% are associate professors, and 33% of the faculty are assistant professors. Thirty-two percent of the School's primary faculty members have tenure and 24% are in tenure track positions. The 152 primary faculty members represent 150.85 full time equivalent (FTE) instructional personnel.

4.1.B. If the school uses other faculty (adjunct, part-time, secondary appointments, etc.), summary data on their qualifications should be provided in table format, organized by department, specialty area or other organizational unit as appropriate to the school and must include at least the following: a) name, b) title/academic rank, c) title and current employment, d) FTE or % time allocated to the school, e) highest degree earned (optional: schools may also list all graduate degrees earned to more accurately reflect faculty experience), f) disciplines in which listed degrees were earned and g) contributions to the school. See CEPH Data Template 4.1.2.

The Mailman School has 261 "affiliated" faculty members with professorial titles who contribute to the teaching, research, and service mission of the School. These faculty either have primary appointments elsewhere within Columbia University or hold adjunct faculty appointments. Summary data for the

Mailman School's 261 affiliated faculty members who are part time or have secondary appointments within the Mailman School of Public Health are presented in the Electronic Resource File 4.1.B. The distribution of 261 affiliated faculty by department and school-wide center is presented in Table 4.1.B.1. below. A total of 48% of the affiliated faculty hold the position of professor, 13% are associate professors, and 39% are assistant professors. Affiliated faculty curriculum vitae are included in Electronic Resource File 4.1.

Table 4.1.B.1. Number of Affiliated Faculty by Department or School-wide Center, October 2016

Department or School-wide Center	Number of Non-primary Faculty Members
Biostatistics	15
Environmental Health Sciences	23
Epidemiology	110
Health Policy and Management	29
Population and Family Health	47
Sociomedical Sciences	35
Columbia Aging Center	2
Center for Infection and Immunity	0
ICAP	0
Total	261

In addition, non-faculty personnel with other appointments at Columbia University support the mission, goals, and objectives of the Mailman School (Electronic Resource File 4.1.B.). These 158 personnel include 78 officers of research (associate research scientists, research scientists, and senior research scientists) and 80 officers of instruction (instructor, lecturers, senior lecturers, and special lecturers). Some of these personnel have appointments in one of the three school-wide centers: ICAP, the Center for Infection and Immunity, and the Columbia Aging Center, rather than within one of the School's six departments.

4.1.C. Description of the manner in which the faculty complement integrates perspectives from the field of practice, including information on appointment tracks for practitioners, if used by the school. Faculty with significant practice experience outside of that which is typically associated with an academic career should also be identified.

The Mailman School faculty complement integrates perspectives from the field of practice in a variety of ways, as reflected in the diversity of their activities. Given the School's demonstrated record of leadership in public health practice, it is vital to recruit, promote, and retain faculty with expertise in the field of public health practice.

There are two academic tracks for full-time faculty appointments at Columbia University Medical Center (CUMC): 1) the unmodified or tenure track, which requires a research-intensive focus, and 2) the "at CUMC" non- tenure track. The "at CUMC" title is used for faculty whose responsibilities are a mixture of activities in education, applied health sciences (clinical and/or public health interventions), and investigation. Titles in this track include the academic rank along with the suffix "at CUMC". Faculty with the "at CUMC" title frequently make significant, high quality contributions in one or more of the areas of focus. Appointments with "at CUMC" titles are exempt from the limits on non-tenured service and they are only reviewed by the Mailman School Committee on Appointments and Promotions. As of October 2016, 44% of all professorial appointments of the primary faculty were at CUMC titles. Among these faculty, 38% of all full professors, 28% of all associate professors, and 34% of all assistant professors had at CUMC titles.

All academic contributions are considered at the time of academic advancement. These are described in detail by rank (Assistant Professor, Associate Professor, Professor) in "Professorial Advancement by Rank - Tenure Track" and "Professorial Advancement by Rank - Non-Tenure Track" Electronic Resource File 4.1.C. Briefly, criteria for advancement regarding scholarship by rank are described below.

Assistant Professor. Recognized expertise in a clinical or public health discipline and a developing local reputation as an expert within the discipline. Participation in guideline/quality assurance or public health intervention or outreach panels and writing groups. Participation in national societies related to clinical or public health innovation/investigation/practice. Participation in multicenter clinical trials or public health intervention programs as a site participant rather than a leader.

Associate Professor. Regional or national recognition of clinical or public health expertise by virtue of:

- Honors and leadership in regional or national professional societies of the clinical or public health discipline
- Important contributions to institutional or national quality assurance programs, clinical or public health practice guideline development or public health policy panels
- Development of or leading the application of clinical or public health technology that changes practice or patient outcomes
- Membership on editorial boards of clinical or public health specialty journals
- Authorship of book chapters, case reports or membership in clinical or public health research as a site investigator for large multicenter trials or public health intervention programs within the discipline
- Development of guidelines/patient care or public health protocols that are used locally, regionally, or nationally

Professor. Sustained leadership in clinical or public health discipline with a defined and major impact on practice within the discipline.

- Publication of reviews and book chapters related to the clinical or public health discipline
- National or international recognition as an expert in the clinical or public health discipline
- Service as a consultant to federal agencies charged with assessing clinical treatments or public health intervention programs
- Invited lectureships or teaching related to the discipline on a national or international level
- Prominent role on national organizations/committees defining treatment methodologies, care guidelines, technologies or public health interventions that improve clinical care or public health outcomes

4.1.D. Identification of measurable objectives by which the school assesses the qualifications of the faculty complement, along with data regarding the performance of the school against those measures for each of the last three years. See CEPH Outcome Measures Template.

Table 4.1.D.1. provides measurable objectives regarding the qualifications of the faculty complement at the Mailman School. Faculty members are expected to hold appropriate advanced degrees and demonstrate excellence in scholarship, teaching, and service to a degree appropriate to the level of rank and type of appointment. For appointments and promotion, all faculty are evaluated on the basis of their contributions to and leadership in scholarship, practice, teaching, obtaining sponsored funding, and by the use of comparison letters in which experts in the same field evaluate the candidate in the context of his or her peers in the field.

Table 4.1.D.1. Measurable Objectives by which the School Assesses the Qualifications of its Faculty Complement

Measure	Target	2014-15	2015-16	2016-17
Percent of primary faculty with doctoral degree or other terminal degree	99.0%	99.4%	99.4%	99.4%
Percent of primary faculty with joint appointments	25.0%	20.9%	25.8%	26.3%
Average course evaluation score – overall course rating (5-pt scale)[b]	4.5	4.0	4.0	Pending
Average course evaluation score – instructor effectiveness (5-pt scale)[b]	4.5	4.2	4.2	Pending
Average graduate satisfaction survey score – quality of teaching (4-pt scale)[b]	3.8	3.3	3.4	Pending
Number of articles published by primary faculty in peer reviewed journals annually[a]	750	721	726	Pending
Percent of faculty listed as PIs on federal grants[c]	70.0%	57.0%	64.0%	Pending
Percent of faculty listed as PIs on grants[c]	80.0%	68.0%	75.0%	Pending

[a] Data collected via SCOPUS by calendar year and reflects 2015, 2016, and is pending for 2017
[b] Data pending completion of 2016-2017 academic calendar year (expected July 15, 2017); will be available for fall 2017 self-study
[c] Data collected by calendar year and reflects 2015, 2016, and is pending for 2017

4.1.E. Assessment of the extent to which this criterion is met and an analysis of the program's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- The School has an outstanding and diverse complement of primary and affiliated faculty across the core disciplines of public health, at all ranks, who demonstrate leadership and excellence in public health and who support the School's mission, goals, and objectives.
- The international work of the School's faculty reaches six continents and has significant impacts in practice, policy, and service.

Challenges

- As renowned faculty retire, the recruitment of promising junior faculty is a priority. The rising cost of living in New York City presents a particular challenge for younger faculty at the assistant and associate professor level.
- The School continues to work to recruit and retain underrepresented minority faculty of color at all levels to meet established targets.

Plans

- The School will continue to recruit highly qualified faculty to support its work in research, education and service. There is an increased investment in new faculty recruits with a primary focus in Biostatistics, Environmental Health and Epidemiology.
- The Dean and Department Chairs will continue to collaborate with the Provost's office in the development of strategies to recruit and retain a diverse faculty. Programs such as the Provost's Grant and mentoring opportunities will be augmented by increased innovation and collaboration led by the Director of the Office of Diversity and Inclusion.

Criterion 4.0 - Faculty, Staff and Students

4.2. FACULTY POLICIES AND PROCEDURES

The school shall have well-defined policies and procedures to recruit, appoint, and promote qualified faculty, to evaluate competence and performance of faculty, and to support the professional development and advancement of faculty.

4.2.A. A faculty handbook or other written document that outlines faculty rules and regulations.

The Columbia University Faculty Handbook outlines faculty rules and regulations and includes major University policies and procedures. Guidelines for faculty appointments and promotions (Electronic Resource File 4.2.A., also available online) provide additional information about Mailman School appointment and promotion procedures. In addition, the Mailman School Faculty Rights and Responsibilities document (Electronic Resource File 1.5.C) provides school-specific rules and regulations for faculty, and the Mailman School By-laws provide information about governance that structures faculty rules and regulations (Electronic Resource File 1.5.C).

4.2.B. Description of provisions for faculty development, including identification of support for faculty categories other than regular full-time appointments.

The Mailman School, Columbia University Medical Center (CUMC), and Columbia University provide support for faculty development, through several mechanisms, including those described in the Mailman School By-laws and Mailman School Faculty Rights and Responsibilities (Electronic Resource File 1.5.C.). We highlight these provisions below.

The Office of Academic Affairs at CUMC offers a range of professional development programs to all full- and part-time faculty at CUMC, which includes the Mailman School. Programs and activities span clinical, educational, research, and academic administration domains. General career development program areas include leadership and management, strategies for success in academia, mentoring, balancing work and life, time management, and curriculum vitae writing, among others. The Office of Academic Affairs offers programming specific to educator development, including clinics on educational scholarship and educator career advancement as well as collaborative summer educator development institutes. In addition, the office provides resources for research team management.

Faculty Support for Education

The Senior Director of Educational Initiatives at the School is a primary resource for faculty seeking support for more effective teaching methods, syllabi and curriculum design, student assessment, course evaluation, and recent advances in public health education. Faculty members take advantage of the opportunity to improve teaching capabilities, refine current courses, and develop new courses by meeting with the Senior Director for one-on-one consultations and/or by attending workshops. The Senior Director provides support to specific faculty upon request by the Vice Dean for Education, department chairs or academic directors. Specifically, the Senior Director of Educational Initiatives supports School faculty and academic program development by:

- Leading workshops and consulting with faculty on teaching skills and methods such as lecturing, interactive presentations, small group teaching, problem-based learning, and design of effective multimedia projects
- Collaborating with faculty in the development of successful teaching and learning practices informed by education research in the social and behavioral sciences
- Supporting and facilitating ongoing curricular quality improvements
- Highlighting “best practices” of faculty teaching at the School

- Assisting and mentoring faculty in submitting articles and presentations to national conferences to document educational innovations in public health education
- Developing rigorous process and outcome evaluation approaches and instruments to meet the needs of instructors' efforts to continuously evaluate and improve team-taught courses
- Supporting committees involved in curriculum review and planning by providing expertise in educational methods and evaluation and current knowledge of published research in health sciences education
- Collaborating with the Columbia Center for Teaching and Learning on CUMC and University-wide initiatives related to teaching and learning

The Center for Teaching and Learning (CTL), a University resource with an office at CUMC, offers a range of resources and support services to faculty engaged in education. The CTL provides regular workshops on educator development and instructional innovation (e.g., Course Redesign Institute and Active Learning Institute), programming on the use of classroom and educational tools and technology to enhance learning outcomes, and personalized consultations and support for instructors and instructional teams to meet address course-specific needs.

Full- and part-time faculty who offer courses are provided with teaching assistant (TA) support during the semester or summer term during which the course is offered. Faculty may request additional TA support from the Vice Dean for Education to develop a new course or to redesign an existing course. TAs receive training and can provide support in the creation or revision of course materials, evaluation of assignments and assessments, class session preparation and set up, and communication with students. In academic year 2016-2017, TAs also attended a workshop on creating inclusive classrooms discuss strategies for identifying, avoiding, and responding to microaggressions, and creating a supportive learning environment. TA support creates more time for instructors to focus on substantive course content and course administration, with the added benefit of experience for the TA. Typically, for every 20 students enrolled in a course, instructors are offered TA support.

Faculty Support for Research

The Mailman School has an excellent infrastructure to support both full- and part-time faculty in research. While part-time faculty cannot submit grants at the School, they can contribute to all other research activities and access the support provided for those activities. The Columbia University Sponsored Projects Administration (SPA) provides institutional assistance with grant submission process, and works closely with faculty and support staff to ensure successful submissions and post-award management. In addition, each department has a departmental administrator and support staff who assist with the preparation and submission of applications as well as with post-award management. Ethical conduct of research at the Mailman School is overseen by the Columbia University Institutional Review Board (IRB), which offers IRB-related faculty development programming. The Research Compliance and Administration System, RASCAL, is a web-based application developed to assist researchers and administrators with the University's research compliance and research administration processes. Investigators can manage IRB communication and documentation, and can complete requisite training modules through RASCAL.

At the School, the Research Resources (R^2) office, led by the Associate Dean for Research Resources, supports researchers in the identification of grant opportunities and in the development and preparation of grant applications. The office identifies and communicates to faculty appropriate funding opportunities and provides assistance with the development of project ideas as well as with the organization and preparation of grant applications. The R^2 office arranges for internal review and feedback on applications prior to submission. The R^2 office provides training and workshops in grantsmanship, research management, and professional development-related issues, as well as cutting-edge scientific areas. Support of the R^2 office is available to all full- and part-time faculty at the School.

To help junior faculty establish their own research programs, the School has established the Calderone Junior Faculty Prize, with a generous gift from Frank A. Calderone. Each year, three to six awards are provided to junior faculty for salary support, the purchase of equipment, supplies, and/or travel. The award is competitive, with junior faculty submitting brief proposals for review by a school committee. Junior faculty members may also apply for internal pilot grant funding through a number of centers and their own departments.

For all full-time School faculty, regardless of rank, the Dean established the Dean's Pilot Awards. These competitive awards provide up to $75,000 for the collection of pilot data that can lead to successful competition for federal or other grant funding.

Faculty Mentoring
The School is committed to helping faculty develop their skills and capabilities. The School's mentoring program is designed to enhance career success of junior faculty. Mentoring is viewed as foundational to creating an inclusive and supportive scholarly community in which faculty succeed. The School's comprehensive mentoring program for junior faculty ("Mailman School Mentoring Principles and Practices", Electronic Resource File 4.2.B.) is intended to complement and formalize existing departmental efforts. In keeping with University mentoring guidelines ("Columbia University Guide to Best Practices in Faculty Mentoring", Electronic Resource File 4.2.B.), the program is designed to enhance faculty performance through goal setting, regular assessment of progress against defined goals, and effective feedback in the context of a constructive relationship. A self-assessment tool for areas of focus and goals (Electronic Resource File 4.2.B.) help structure this career development process for junior faculty, particularly those with "at CUMC" titles and three paths for career advancement.

4.2.C. Description of formal procedures for evaluating faculty competence and performance.

Department chairs, senior faculty members, and deans share the responsibility for evaluating faculty competence and performance. A key aspect of this process is providing feedback to faculty members, particularly junior faculty members, regarding their goals, progress, and future prospects. Major evaluations occur when a faculty member is hired, during the fourth year of appointment, when he or she is being considered for promotion, and if applicable, at the time of review for tenure. Department chairs also conduct annual reviews of faculty. Formal procedures for evaluating faculty are contained in the Faculty Handbook, and a brief description is provided below.

Hiring. The competence, performance, and potential of faculty candidates are evaluated comprehensively in the hiring process. Evaluations of faculty candidates follow the University guidelines for best practices in faculty searches and hiring (Electronic Resource File 4.2.C.).

Fourth Year Review. It is the policy of the University that all tenure-track faculty members receive the benefit of a review by their departments, according to departmental guidelines, during the course of their fourth year. The Mailman School has extended this policy to include all assistant professors. The fourth year review is considered a developmental review, and an important opportunity to communicate formally with junior faculty members about their strengths and weaknesses ("Mailman School Guidelines for Fourth Year Review", Electronic Resource File 4.2.C.). The objectives are to review the individual's progress and make recommendations concerning how chances for promotion might be improved. In most cases, a two-person committee reviews the faculty member. The committee may consist of the individual's department chair and one other senior faculty member from the department, appointed by the department chair. For individuals also holding appointments in related centers or institutes, or for individuals who do most of their work in another department, the Dean may ask the center or institute director or chair to serve as an additional member of the committee.

The fourth year review is an internal review and no outside letters are solicited. Individual members of the review committee are free to consult informally with outside colleagues to assist them in reaching their own conclusions with regard to peer recognition, but no outside comments are incorporated in the final report. Although the relative importance of the different faculty tasks varies by the title the individual holds, the central roles of faculty members in public health are research, teaching, and public health service (activities affecting the health of the public). Therefore, the candidate's performance in the applicable areas constitutes the major evidence upon which the review is based. Other service and contributions to the School, University, and professional community also are recognized and reviewed.

The review committee's report includes a review of the individual's progress and recommendations concerning how his or her chances for promotion might be improved. The chair of the committee—the candidate's department chair—provides a copy of the report to the candidate and meets with the candidate to discuss the report, and provides guidance on whether career progress is satisfactory, and if needed, how it should be improved. The candidate then prepares a written response to the report, in the form of a letter addressed to the chair of the committee. This letter presents the candidate the opportunity to respond to the review committee's report. If the candidate disagrees with or wants to clarify any of the points made in the report, he or she addresses these points in the response. Copies of the review committee's report and the candidate's response are kept on file in Human Resources and Faculty Affairs. For tenure-track faculty, copies are sent to the Provost's office. At the time of a faculty member's review for promotion or tenure, the fourth year review materials are available to the chair of the review committee (the candidate's department chair).

Promotion and Tenure. The Mailman School Committee on Appointments and Promotions (COAP) reviews all cases for promotion and tenure at the School. Procedures for promotion and tenure are explicated fully in "Mailman School COAP Regulations" (Electronic Resource File 4.2.C.). Briefly, department chairs or designated representatives present the candidate for promotion to COAP. A majority vote of COAP members from other departments is required for promotion. For tenure candidates, only the School COAP members with tenure vote on cases involving nomination to tenure or on cases reviewing the promotion of tenured faculty. All COAP nominations to tenure follow the regulations set forth by the Columbia University Tenure Review Advisory Committee (TRAC), which serves in an advisory capacity to the Provost who determines whether the candidate should be recommended to the President and Trustees for tenure ("Columbia University Tenure Guidelines", Electronic Resource File 4.2.C.).

The Dean of the School must approve all nominations for tenure prior to solicitation of letters concerning the candidate. The Dean will assess whether the proposed tenure position meets the needs of the School. After solicitation of letters and a positive vote by the School COAP, the proposal is referred to the Columbia University Medical Center COAP ("CUMC COAP Checklist", Electronic Resource File 4.2.C.) for review. If approved, the proposal is sent to the Provost for TRAC review.

The TRAC evaluation is the culmination of a process of review involving multiple considerations of the nomination within the department and school. The purpose of the final review is to confirm that the earlier reviews were rigorous and substantive and that all candidates meet the same high standards, regardless of the school or department originating the nomination. By examining both the process by which candidates are nominated and their qualifications, the standing committee seeks to ensure a University-wide consistency in the evaluation of nominations to tenure and thereby to promote the appointment of faculty of exceptional quality and distinction throughout the institution.

Interim Reviews and Other Systems for Faculty Evaluation. Performance of faculty members is evaluated at the time of the annual departmental budget reviews between department chairs and the Deans. The evaluations are used to develop salary recommendations. Other areas of performance evaluation include assessment of teaching (Criterion 4.2.D.). These evaluations include: formal class

evaluations by students, informal feedback from faculty and students, occasional class visits, and review of course syllabi by the curriculum committee.

All junior faculty members receive an annual review by their department chairs or designated senior faculty members. The review, for which there is an online tool, focuses on performance in research, education. and service, or public health practice during the prior year. Performance is compared to the goals that the faculty member had for the year. In addition, the faculty member's goals for the coming year are discussed, along with additional resources that might be needed.

4.2.D. Description of the processes used for student course evaluation and evaluation of instructional effectiveness.

All courses with two or more enrolled students receive an end-of-semester course evaluation through Courseworks, Columbia University's course management system. The overall response rate is approximately 70%, which is achieved through periodic reminders to students to complete evaluations. The course evaluations include three standardized questions: assessment of overall course performance, assessment of instructor effectiveness, and assessment of whether the course learning objectives were met. Course directors and individual instructors can develop a customized template to suit course needs or assess specific course components. The course evaluations provide students with the opportunity to provide qualitative feedback. Instructors can view a report containing quantitative analyses of all questions and a collection of all qualitative comments through Courseworks after they have submitted grades.

Data are analyzed centrally by the School's Director of Strategic Analysis. Analyses by course and instructor are completed on the three standardized measures. When a course has multiple sections, anonymous comparisons to peers are also completed. A report of the results of the three standardized measures for all courses for the semester is presented to the Vice Dean for Education for review. Additionally, department-specific reports are distributed to chairs. A list of faculty performing in the bottom decile for any of the three standardized measures is generated for the Vice Dean for Education and the chairs for further intervention as needed.

4.2.E. Assessment of the extent to which this criterion is met and an analysis of the program's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- Faculty rules, regulations, responsibilities and rights are defined clearly at the School, CUMC and at the Columbia University and are widely accessible.
- The School has a robust infrastructure comprising resources at the School, CUMC, and University levels for the development of faculty of all ranks, including those without full-time appointments, in research, education, and leadership development.
- The School has a strong formal faculty mentoring program.
- There are comprehensive formal procedures to evaluate faculty competence and performance, including rigorous assessment at the time of hire, annual reviews, an in-depth fourth-year review for junior faculty, and multiple levels of review for promotion and tenure.
- The systematic processes used for student course evaluation enable a constructive view of courses and instructor effectiveness at the School. Data from course evaluations are regularly used to recognize top performers who received teaching awards as well as to identify problem areas for intervention.

Challenges

- While response rates for course evaluations are approximately 70%, we would like to increase our response rate to be more comprehensive in our evaluation of courses and instructor effectiveness.

Plans

- CUMC has offered a CUMC Management and Leadership Course to provide senior leaders a four-day program that explores and develops fundamental concepts and skills of leadership and management. To date, close to 20 Mailman leaders have participated. We plan to work with Faculty Affairs and Career Development at CUMC to ensure that a broader range of faculty leaders can participate.
- Changes in the course evaluation, particularly in length, will be examined to see if we can achieve an improvement in evaluation completion rates.
- The ODCI and Office of Education will work to assess the effectiveness of diversity and cultural curriculum enhancements through the addition of appropriate items to course evaluations.

Criterion 4.0 - Faculty, Staff and Students

4.3. STUDENT RECRUITMENT AND ADMISSIONS
The school shall have student recruitment and admissions policies and procedures designed to locate and select qualified individuals capable of taking advantage of the school's various learning activities, which will enable each of them to develop competence for a career in public health.

4.3.A. Description of the school's recruitment policies and procedures. If these differ by degree (e.g. bachelor's vs. graduate degrees), a description should be provided for each.

The Office of Student Affairs (OSA) is charged with central recruitment and admissions activities. OSA sponsors and/or organizes recruitment events and advertising and coordinates admissions, financial aid, and the registrar function for the Mailman School, including student records. In keeping with Columbia University's equal opportunity policies, the School is committed to recruiting a diverse and talented student body in all degree programs. As such, the School's recruitment activities include:

- Advertisements in the special Career and Education issues of *The New York Times*, identifying Columbia as an affirmative action organization
- Participation through the Association of Schools and Programs of Public Health (ASPPH), in the development and distribution of brochures about public health and careers in public health
- School-sponsored recruitment day events
- Distribution of brochures describing the MD/MPH dual degree program to attract incoming medical students from New York City
- Formal representation of the School at the American Public Health Association's annual meeting and selected other professional conferences
- Recruitment efforts by individual faculty members as part of their participation in a wide range of professional meetings and work with health organizations
- Recruitment activities conducted by the academic departments
- Student involvement in the recruitment of prospective students and alumni
- Joint recruiting sessions with Harvard, Yale, and Johns Hopkins Universities
- Attendance at diversity-specific events, both locally and nationally
- On site counseling sessions for walk-ins and by appointment
- Student-sponsored tours of campus for prospective students
- Recruitment events at the New York City Department of Health and Mental Hygiene and other non-profit organizations
- Increased involvement of faculty in on-site recruiting events (open houses, admitted students days)
- Recruitment efforts at Historically Black Colleges and Universities and other predominantly minority undergraduate institutions
- Coordinated recruitment events with other CUMC schools—Physicians and Surgeons, Dentistry, and Nursing
- Virtual events providing information on the admissions and financial aid processes
- Alumni involvement in the recruitment of prospective students
- Information sessions with Columbia University undergraduates, including those from Columbia College, Barnard, and the School of General Studies

4.3.B. Statement of admissions policies and procedures. If these differ by degrees (e.g. bachelor's vs. graduate degrees), a description should be provided for each.

OSA administers the admissions process for MPH, MHA, MS and DrPH degree programs. There are two separate school-wide admissions committees: a masters admissions committee, which reviews all masters (MPH, MS, and MHA) degree applications, and a doctoral admissions committee, which reviews DrPH degree applicants. Masters committees from each of the departments review masters applicants at the departmental level. The doctoral committees of the four departments (Biostatistics, Epidemiology, Environmental Health Sciences, and Sociomedical Sciences) that offer the PhD degree review applications to their respective PhD programs, and while the Graduate School of Arts and Sciences confers PhD degrees at Columbia University, it does not play a role in the admission of students. Doctoral committees in each department review candidates for the DrPH. All application decisions are then presented to the school-wide committees for final decision. All prospective students apply for admissions to the Mailman School through *Schools of Public Health Application Service* (SOPHAS), where students apply to the specific degree program, department, and in the case of the MPH, certificate (specialization). The admissions committee treats the MPH certificate elections of applicants in SOPHAS as a designation of interest; enrolled students officially select a certificate in their first year, and can change course of study if they desire and meet the requirements, if any, for the certificate.

The admission committees of the School include representation and participation by faculty from the relevant departments of the School, members of the admissions office, and the Dean of Students. The objectives of these committees are to identify those masters and doctoral applicants best prepared to take advantage of the School's programs, and to assure that the mission and goals of the School, and its capacity to serve students, are considered during the admissions process. Departmental committees for masters and doctoral programs have similar charges in evaluating applications at the departmental level. Committee members are charged with reviewing and scoring the following documents submitted by applicants:

- Official transcripts of all undergraduate and graduate studies
- Graduate Record Examination (GRE)
- Work experience in public health or related field
- 500-word personal statement
- Three letters of recommendation
- Interviews, for Executive MPH students in Health Policy and Management, and in select cases for the MPH, MS, MHA, DrPH, and PhD
- Résumé or curriculum vitae
- Writing samples, for doctoral applicants
- TOEFL scores (for those whose college education was not obtained in the United States, or conducted in the English language)

Academic records are reviewed for the overall scores, performance in relevant courses, and the strength of the academic institution and program. Applicants submit a personal statement describing their interest in the area of concentration, relationship of prior education and experience to the area of concentration, and career objectives. Doctoral applicants are asked to state their research interests. Personal statements are reviewed to determine applicants' understanding of the field and the specified concentration, evidence of interest and motivation, and appropriateness of fit with the School's mission, goals, and objectives, and with the focus of the department. References are used to assess applicants' motivation, aptitude for graduate work, commitment to public health, and strength of character. Work experience is assessed in terms of relevance to the applicants' program choice. Applicants' quantitative, verbal, and analytic skills are evaluated, in part, based on standardized test scores. An applicant may request a waiver of the standardized test requirement if evidence from other sources is available; the admissions committee

evaluates and rules on these requests. Interviews are required only in the MPH, Executive MPH, and the MHA degree programs in the Department of Health Policy and Management, and are requested or offered in some other cases, to clarify issues raised in the personal statement or other submitted materials. Interview notes become part of the applicant's file.

The standards for admission vary by degree program and department. In general, standardized test scores of students offered admission are in the top 50th percentile of standardized test scores in verbal and quantitative reasoning; exceptions are made for students who demonstrate academic excellence in relevant coursework and have outstanding letters of recommendation and personal statements. Applicants from foreign countries must score at least 100 on the TOEFL.

At the school-wide admissions committee meetings, a committee member from the relevant academic department presents essential details about an applicant, including the primary departmental reviewer's recommendation. The committee makes one of three possible decisions: accept, reject, or waitlist, a temporary designation for candidates who meet the minimum admissions criteria, but will only be accepted based on space availability. The committee members make final decisions on admission for all applications.

In an effort to protect our environment, reduce paper waste, and increase storage capacity, the majority of our recruitment materials and publications has been moved online. This strategy allows us to update information in real time, thereby keeping prospective students aware of any changes in deadline dates, admissions requirements, etc. Prospective students can get additional information online via the Mailman School website, described in detail in Criterion 4.3.C. below.

4.3.C. Examples of recruitment materials and other publications and advertising that describe, at a minimum, academic calendars, grading and the academic offerings of the school. If a school does not have a printed bulletin/catalog, it must provide a printed web page that indicates the degree requirements as the official representation of the school. In addition, references to website addresses may be provided.

The most comprehensive means of informing prospective students about the School is the Mailman School website where prospective students may view information on becoming a student, view information for current students (including academic calendars), browse the faculty directory, and read student handbooks. (2016-17 academic year handbooks are available for the preliminary self-study). Information on the School's grading policies is located in school-wide masters handbooks (page 24) and doctoral handbooks (page 7).

The section for prospective students provides links to degree offerings, departments, faculty, career services, life and community, and the application process, which includes information regarding deadlines, tuition and fees, financial aid, planning a visit, and applying via SOPHAS.

The current students section of the website provides links to academic offerings (including degree requirements, academic calendars, course offerings, the MPH Core curriculum and certificates, policy and procedures, and student handbooks), the Office of Educational Programs, the Office of Student Affairs, and the Office of Field Practice.

The School also offers a brief Viewbook, which highlights features of the School for prospective students.

4.3.D. Quantitative information on the number of applicants, acceptances and enrollment, by concentration, for each degree, for each of the last three years. Data must be presented in table format. See CEPH Data Template 4.3.1.

Required CEPH Data Template 4.3.1. can be viewed in Electronic Resource File 4.3.D. A summary of the information is presented in Table 4.3.D.1., below.

Table 4.3.D.1. Summary of Applicants, Accepted, and Enrolled Students, 2015-2017

Program Applicants	2015-2016	2016-2017	2017-2018[a]
Masters Degrees			
Number of Applicants	2,448	2,542	Pending
Number (%) of Applicants Accepted	1,578 (64%)	1,561 (61%)	Pending
Number (%) of Admitted Students Enrolled	602 (38%)	636 (41%)	Pending
Percent of All Applicants Enrolled	25%	25%	Pending
Doctoral Degrees			
Number of Applicants	420	467	Pending
Number (%) of Applicants Accepted	68 (16%)	60 (13%)	Pending
Number (%) of Admitted Students Enrolled	28 (41%)	29 (48%)	Pending
Percent of All Applicants Enrolled	7%	6%	Pending
All Applicants			
Number of Applicants	2,868	3,009	Pending
Number (%) of Applicants Accepted	1,646 (58%)	1,621 (54%)	Pending
Number (%) of Admitted Students Enrolled	630 (38%)	665 (41%)	Pending
Percent of All Applicants Enrolled	22%	22%	Pending

[a]Data will be available October 2017.

There were a total of 3,009 applicants for academic year 2016-17 representing an increase of 5% from academic year 2015-16. This increase was primarily attributable to the increased number of master's degree applicants, which grew from 2,448 to 2,542. The number of doctoral degree applicants over the past two years increased by 11%, from 420 to 467.

At the time of the last accreditation, the School's selectivity rate was 62%, meaning that three-fifths of those who applied were granted admission to the School. For the past two years, selectivity has improved: it was 58% in 2015-16 and 54% in 2016-17.

Applicants and Acceptances by Degree and Department

CEPH Data Template 4.3.1. (Electronic Resource File 4.3.D.) indicates the number of applicants by degree during the last three years. The large majority of applicants to the School (approximately 64%) apply to the MPH degree program. In academic year 2016-17, of 1,987 applicants, 1592 (80%) applied to master's degree programs, while 395 (20%) applied to doctoral degree programs. Between 2015 and 2017 there were increases in the numbers of MPH, MS, DrPH, and PhD degree applications.

Overall, in the MPH degree program, the acceptance rate was 64% in 2015-2016 and 53% in 2016-2017. The acceptance rate increased in the MS degree program: 67% in 2015-2016 and 69% in 2016-2017. In the DrPH degree program, the acceptance rates were 14% in 2015-2016 and 8% in 2016-2017. The comparable rates for the PhD degree program were 17% and 15%, respectively. Thus, overall, acceptance rates into the master's degree programs are substantially higher than those for the doctoral programs.

Over the past two years the yield rate (proportion of accepted students who enroll) for the MPH degree program has declined slightly; it was 35% in 2015-2016, 32% in 2016-2017. The comparable rates for the

MS degree program fluctuate more; these rates were 47% in 2015-2016 and 56% in 2016-2017. For the DrPH degree program, the yield rates were 53% in 2015-2016 and 55% in 2016-2017. Finally, the yield rates for the PhD degree program were 37% in 2015-2016 and 47% in 2016-2017.

CEPH Data Template 4.3.1. (Electronic Resource File 4.3.D.) also shows the number of applications, acceptances and admissions, by program area and degree, 2015-17. In the last two years, the Department of Sociomedical Sciences has received the largest number of applications (26% of the total), followed by Health Policy and Management (19%), Epidemiology (19%), Population and Family Health (12%), Biostatistics (9%), and Environmental Health Sciences (7%). The General Public Health MPH degree program received 5% of all applications and the Executive MPH degree program received 4% of all applications over the past two years.

Biostatistics' admissions are characterized by a small one-year MPH degree program, a robust MS degree program, a DrPH degree program that is declining in size, and a growing PhD degree program. For the admissions cycle 2017-18, the Biostatistics Department is admitting student into a two year MPH program for the first time. Environmental Health Sciences has seen an increase in MPH degree admissions, a DrPH degree program that is slowly declining in size, and a PhD degree program that has shown consistent growth. Epidemiology has a large and stable MPH degree program, a smaller and consistent MS degree program, a DrPH degree program that, by design, is decreasing in size, and a large PhD degree program. Health Policy and Management has large MPH and MHA degree programs, and a stable Executive MPH degree program. Population and Family Health has a stable MPH degree program, and a new DrPH program. Sociomedical Sciences (SMS) has a large and stable MPH degree program as well as large DrPH and PhD degree programs

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4.3.E. Quantitative information on the number of students enrolled in each specialty area identified in the instructional matrix, including headcounts of full- and part-time students and a full-time-equivalent conversion, by concentration, for each degree, for each of the last three years. Non-degree students, such as those enrolled in continuing education of certificate programs should not be included. Explain any important trends or patterns, including a persistent absence of students in any degree or specialization. Data must be presented in table format. See CEPH Data Template 4.3.2.

Required CEPH Template 4.3.2. is found in Electronic Resource File 4.3.E. The total number of enrolled students has decreased from 1,423 in 2015-16 to 1,392 in 2016-17. The percentage of full-time equivalent (FTE) students over the two years has been stable, at 83%. The largest enrollment in the past two years, by total FTE students, was in the Department of Health Policy and Management (338 students in 2015-16 and 316 students in 2016-17), followed by the Department of Epidemiology (306 students in 2015-16 and 304 students in 2016-17); and Sociomedical Sciences (214 students in 2015-16 and 201 students in 2016-17). Population and Family Health (124 students in 2015-16 and students in 2016-17) and Biostatistics (121 students in 2015-16 and 133 students in 2016-17) were very similar, followed by Environmental Health Sciences (54 students in 2015-16 and 59 students in 2016-17) and General Public Health (25 students in 2015-16 and 31 students in 2016-17).

Enrollment ranking across departments has been relatively stable over the past two years. While enrollment of FTE students has decreased slightly in the Departments of Health Policy and Management, Epidemiology, Sociomedical Sciences, and Population and Family Health, it has increased in the Departments of Biostatistics, Environmental Health Sciences and General Public Health.

Dual Degrees. The School also maintains close ties with other units of Columbia University through dual degree programs and cross-enrollments. As described in Criterion 2.13. the School has ten dual degree programs with nine Schools, and 56 of its MPH degree students were enrolled in these programs in the

fall of 2016. The largest programs are those with International and Public Affairs (24 students), Social Work (14 students), Medicine (8 students), Nursing (4 students), and Business (4 students).

4.3.F. Identification of measurable objectives by which the school may evaluate its success in enrolling a qualified student body, along with data regarding the performance of the school against those measures for each of the last three years. See CEPH Outcome Measures Template.

The School measures its success in enrolling a qualified student body using a number of criteria, which are detailed in Criterion 4.3.B. In addition, all applicants to the DrPH and PhD degree program must have earned the MPH degree or equivalent, and some departments have specific pre-admission requirements for certain programs, as described in materials for prospective students and student handbooks and in Criterion 4.3.C. The screening of applicants who meet these basic requirements includes a review of the areas of evaluation described in Criterion 4.3.B.

Table 4.3.F.1. presents information regarding indicators that the School uses to assess the strength of enrolling a qualified student body, including standardized test scores, undergraduate GPA, average GPA of enrolled students, and graduation and employment rates.

Table 4.3.F.1. Measurable objectives by which the school may evaluate its success in enrolling a qualified student body.

Measure	Target	2014-15	2015-16	2016-17
Average GRE percentile among matriculating students – Verbal Reasoning	80th	73rd	74th	75th
Average GRE percentile among matriculating students – Quantitative Reasoning	80th	70th	67th	73rd
Average GRE percentile among matriculating students – Analytical Writing	80th	61st	65th	69th
Average undergraduate GPA among matriculating students	3.5	3.4	3.5	3.5
Average GPA of enrolled Mailman School students	3.8	3.7	3.7	3.8
Overall graduation rate	100%	90.2%	94.0%	94.9%
Graduate employment rate[a]	100%	96.0%	97.0%	Pending

[a] Graduate employment rate defined as within six months after graduation; data available for 2016-17 graduating class will be available December 2017

4.3.G. Assessment of the extent to which this criterion is met and an analysis of the program's strengths, weaknesses and plans relating to this criterion

This criterion is met.

Strengths

- The Mailman School engages in a wide range of local, regional, and national recruitment activities to recruit a diverse and talented student body.
- Admissions policies and procedures at the Mailman School are systematic and well-defined. The central Admissions Office works harmoniously with departmental academic coordinators and admissions committees.
- Recruitment materials, centrally located on the School website, offer prospective students a depth and breadth of information regarding the educational offerings and experience at the Mailman School
- The School continues to attract academically strong and diverse candidates from all over the world.
- Overall application and enrollment numbers remain strong.

Challenges

- Given the increasing number of graduate programs and schools of public health nationally and regionally, the School's high tuition and New York City cost of living are a barrier for many students.
- The increasingly complex and competitive marketplace of public health admissions necessitates new leadership and new skill sets in our Office of Admissions.

Plans

- The School is working with the Board of Overseers and the Office of Institutional Advancement to increase private funding for scholarships to ensure we can recruit and yield highly selective and diverse candidates.
- The School is currently re-organizing the Office of Admissions and has created a new position to lead the effort and is also hiring several new positions. The recommendations for this re-organization come out of a strategic planning group that met throughout the previous academic year and included the Vice Dean for Education, representatives from the Office of Admissions, the Office of Student Affairs, the Office of Communication and faculty (admissions committee). The goal of this group was to utilize enrollment data and trends to plan strategic recruitment and yield efforts to address quality and diversity.

Criterion 4.0 - Faculty, Staff and Students

4.4. ADVISING AND CAREER COUNSELING

There shall be available a clearly explained and accessible academic counseling system for students, as well as readily available career and placement advise.

4.4.A. Description of the school's advising services for students in all degree programs, including sample materials such as student handbooks. Include an explanation of how faculty are selected for and oriented to their advising responsibilities.

Advising for students at the Mailman School occurs through academic advisors, the Office of Student Affairs, and the Office of Career Services, which also advises alumni.

Academic Advisors. Students are assigned an academic advisor from their department upon admission to the School. Academic advisors are assigned based on specific interests or requests of students, as articulated in their personal statements submitted as part of the application materials. New faculty who will be advising students are oriented by the departmental and/or degree program coordinators. Academic advisors are assigned to ensure informed choices, reasonable uniformity within areas of concentration, and optimal utilization of School resources. Academic advisors are listed in the General Information section of students' academic profile in Student Services Online, an online portal for the administrative management of degree progress, including registration and grades, and financial aid awards. Students are strongly encouraged to meet regularly with their advisors.

Academic advisors counsel students in academically related matters, monitor their academic progress, and provide guidance regarding selection of practicum opportunities. Specifically, the roles of academic advisor are to:

- Provide guidance in the selection of courses to ensure fulfillment of department and school requirements.
- Help students identify courses that are relevant to the student's interest and long-term goals.
- Assist in decision making about appropriate practicum experiences and work opportunities, when needed.
- Serve as a primary or secondary reader for the student's master's essay, or serve on the student's doctoral examination or dissertation committee, if the expertise of the advisor is relevant to the student's interests.

Academic advisors are responsible for approving all student registrations and program changes. Some departments have made alternative arrangements because of the difficulty of having all advising faculty available during registration periods. In those departments, students meet with their advisors regarding their program of study during the semester so that they can have substantial, in-depth discussions about the student's goals and interests. Student Services Online allows advisors to access student academic records when needed so they can monitor academic progress online. Advising materials are found in student handbooks. In addition, the Department of Population and Family Health provides an advising guide for MPH students (Electronic Resource File 4.4.A.), and the Department of Epidemiology requires doctoral students to submit annual progress reports with their advisors (Electronic Resource File 4.4.A.).

First-year MPH and MHA students are pre-registered for their first semester classes, and MS and doctoral students register with their departments during new student orientation. For subsequent semesters, students are instructed to consult with their advisors before registering for classes. The advising relationship generally continues throughout their academic careers for master's degree students; doctoral

degree students typically change advisors after they pass their qualifying exams and begin the research phase of their studies. Advisors are selected based on shared research or practice interests of the faculty member and the student. If the student's interests change, the student can select a different faculty advisor in their department.

Students pursuing dual degree programs with other University schools are assigned an academic advisor in their department, and are also advised by a faculty advisor who coordinates the program in the second school in which the student enrolls. Specific academic concerns about course selection and departmental requirements are done within a student's department.

Departmental Coordinators. In addition to the assigned faculty advisor, departments have academic program coordinators who provide students with academic information and assistance, and guide students in need of academic and non-academic resources throughout the academic year. Departmental coordinators routinely seek out assistance and guidance from the Office of Student Affairs as needed..

Office of Student Affairs (OSA). Under the direction of the Associate Dean of Student Affairs and Dean of Students, the Office of Student Affairs provides all centralized services for students at the School. The OSA plans the major events of the academic year, including new student orientations and graduation. Staff work closely with the academic departments in addressing students' needs. The OSA pursues the School's educational mission by providing and promoting rich co-curricular learning opportunities such as leadership and professional development. The OSA comprises two divisions: Admissions and Financial Aid and Student Academic Affairs/Student Life, each contributing to advising students.

The Admissions and Financial Aid division provides counseling to applicants throughout the admissions process, and counsels students on financial issues and financing their degree. Student Academic Affairs/Student Life is responsible for all academic aspects of a student's experience while studying at the School, from orientation, registration, grades, and academic progress reviews, through degree audit and graduation. Routine functions of Student Academic Affairs/Student Life include school-wide communication through frequent academic, administrative, and events announcements; maintaining student files and electronic records of students in the School; clearing students for graduation; and providing academic, administrative, and student information to faculty. This office provides extensive support to faculty who work with students through training sessions and individual consultative meetings in addressing student difficulties.

The personal development needs of individual students are addressed by the Student Academic Affairs/Student Life team. Mailman School students come from international as well as domestic locations and range in age from 19 to 67 with professional backgrounds in many sectors, including medicine, nursing, dentistry, engineering, law, journalism, international affairs, business, pharmacy, government service, and research. The Assistant Director of Student Development and Programming is responsible for bringing a sense of community to this diverse population through student groups and programming designed to enrich the student life experience at the school. In addition, OSA works with department faculty and staff to identify students experiencing academic difficulty as early as possible each semester. Advisors and departments work with the Office of Student Affairs to ensure that students are completing all requirements in time to graduate. Staff from the Office of Student Affairs advise on general policies and procedures related to dual degree study.

New Student Orientation. Since 2010, the incoming class has been introduced to the Mailman School experience through a comprehensive, five-day orientation program, co-designed and developed by faculty, administrators, and students. Orientation provides the foundation for student advising from faculty and staff, as well as key resources and support services at the School, CUMC, and the University.

Additionally, interactive and preparatory programming comprises virtual and in-person activities and learning modules were implemented as an introduction to academic standards, community citizenship, the city, and the field of public health. In support of enhanced faculty and peer engagement, daily opportunities for networking and social activities, specifically focusing on special student sub-populations (e.g., international, doctoral, LGBTQIA, underrepresented minorities, et al.), take place. Students meet with faculty, staff, and new and continuing students within and across their departments. Students also receive information about degree-specific curricula, research, service programs, and other activities available at the Mailman School.

Action-oriented and skill building experiences are threaded throughout the week. Activities germane to advising include student-led programming on graduate life preparedness, and distribution of materials (e.g., Mailman School publications, departmental student handbooks, and other information to help students become familiar with their program). These materials are also provided through an online, "pre-orientation" experience, offering students pre-arrival access to resources and virtual information sessions to support their transition. This is part of an ongoing focus on going green and offering students immersive programming before and during orientation. While orientation's five-day experience supports both academic and social integration to the school, extended pre and post programming (e.g., International Student Pre-Orientation, Student Life Welcome Expo, Community Health and Outreach Fair, student organization month-long events, and Alumni-Networking Roundtables) provide an overview of the student life cycle through academic discourse, support resources, service, and engagement. (Electronic Resource File 4.4.A. for sample orientation agenda)

Student Academic Progress Reviews and Advising. Students are ultimately responsible for tracking and maintaining their own academic progress and ensuring they have met all School and departmental requirements. It is understood, due to life circumstances, some students may not meet these minimum standards, so systems are in place to put students back in good standing. The OSA monitors students' academic progress each semester, provides support to students who fall below satisfactory academic progress, and makes recommendations intended to return students to good academic standing.

The Office of Student Affairs, in conjunction with the Office of Educational Programs and departments, audits students' academic progress each semester to ensure students meet the benchmarks of their respective degree programs. Students whose semester GPA falls below 3.0, who receive F (Failing) or UW (Unofficial Withdrawal) grades, and/or who carry Incomplete Notations (INs) into a new semester are considered in poor academic standing and not making satisfactory academic progress. The OSA also monitors co-curricular degree requirements and whether students are taking the necessary classes to complete their academic plans.

Masters degree students identified as not making satisfactory progress, based on the criteria established by the School's Academic Standards Committee, are sent notifications, with copies to their department chair and advisor, alerting them of the need to closely review their current status with their faculty advisor, and to agree upon a plan to address the deficiencies. Augmenting the School's objective criteria for academic progress is an individualized program put in place for each student who is identified as needing academic support. These unique support plans and academic programs emerge from conversations with advisors and OSA staff, as well as conversations with students. Doctoral students are monitored within their departments, and faculty committees within the department review their progress. Departments with doctoral programs have doctoral seminars in which students present their research in progress, and receive advice and direction from faculty.

Personal Advising. Recognizing that students face many life issues that are not academic in nature, but may have an impact on academic performance or progress, OSA Student Academic Affairs/Student Life staff, along with the Dean of Students, work with students who are experiencing challenges outside of the

classroom. Professional staff in OSA are trained and available to support students through situations which might occasionally arise that interrupt a student's progress. These might include health or medical problems, family crises, issues of personal well-being and stress management, as well as challenges negotiating the environments of Columbia University, Washington Heights, and/or New York City. Students are strongly encouraged to meet with OSA staff when such difficulties arise. OSA staff can provide immediate support to students and/or connect students to CUMC or University resources. OSA staff are available by appointment or for walk-ins. These advising sessions may involve some form of academic advising to complement departmental advising efforts, but may also provide referrals to health professionals, if necessary. This team also responds to student emergencies that may arise during or after the business day, either through direct intervention in the office or through an extensive on-call system that functions outside of business hours.

Office of Career Services (OCS). OCS serves both matriculated students and School alumni. OCS maintains walk-in hours twice per week for quick answers to career planning and job search questions. The Office also schedules individual appointments with matriculated students and alumni to discuss career management issues in more depth and breadth. Annually, the OCS provides more than 1,600 in-person contacts with users. To support the career goals of students seeking employment outside of our metropolitan area or in functional areas where our resources are limited, the OCS supports and encourages reciprocal service arrangements with other University career centers as well as peer public health career centers nationwide.

To prepare students for the realities of the job market, the OCS conducts departmental group workshops as well as OCS workshops on career development topics, résumé writing, job search correspondence, LinkedIn and social media for job search, interviewing, networking, salary negotiation, medical school applications, and PhD applications. Many workshops and events are tailored to specific populations and are co-sponsored by academic departments, certificates, and student groups. OCS also organizes and facilitates employer presentations, site visits, and job fairs.

OCS provides guidance on topics including employer research, networking, informational interviewing, job interviewing, cover letter, résumé and curriculum vitae development, thank you letters, job offers and the out-of-town search. OCS offers cover letter and résumé or curriculum vitae critiques during scheduled appointments. OCS maintains a database of recent alumni from which staff make referrals to current students seeking advice on specific job functions, industries and/or employers.

4.4.B. Description of the school’s career counseling services for students in all degree programs. Include an explanation of efforts to tailor services to specific needs in the school’s student population.

The Office of Career Services (OCS) provides outstanding support to students and alumni with the career counseling by helping students develop and refine career exploration and career management strategies, providing infrastructure to support successful job searches for current students and alumni, and promoting students and the School to different employers. The mission of OCS is to guide, educate, and connect Mailman School students and alumni, to build the next generation of public health leaders:

- **Guide.** We provide empathetic counseling and coaching to help students and alumni explore, develop, and refine their career vision and goals, now and throughout the lifelong career development process.
- **Educate.** We train students and alumni to develop skills in self-marketing, communications, professional etiquette, and relationship building, to empower them to achieve their career and professional goals.
- **Connect.** We cultivate school-wide partnerships with a broad range of relevant employers and establish alumni and student networks, to increase professional opportunities.

OCS offers a number of opportunities for students to engage in in-person career counseling services activities, including year-round individual appointments and walk-in hours, general and tailored workshops, career fairs and employer engagement on campus, and career week field trips and site visits. In addition, OCS offers a number of physical and online resources for job searches and career development for current students and alumni.

Individual Appointments and Walk-Ins. Individual appointments are personalized hour-long appointments with an OCS staff member. Beginning in spring 2016, OCS devotes 4 hours per week to walk-ins, which allows students to drop in to the office for 15-20 minute quick advising sessions. The program has been very popular, serving 80-100 students per semester. From September 1, 2015 to August 31, 2016, OCS provided 1,598 individual counseling appointments, of which 86 were short walk-in appointments and the remaining were hour-long appointments. These appointments covered a range of topics including career self-assessment, résumé/cover letter review, interview coaching, networking skills, salary negotiation, and other topics. During the past five years the number of individual sessions has increased by 142%.

General and Tailored Workshops. In 2015-16, OCS provided 47 general workshops on a range of topics such as résumé review, salary negotiation, LinkedIn for job search, and interview skills. Approximately 2,570 students RSVP'd for workshops and events in 2015-16. In 2014-15, there were 54 workshops with 2,236 RSVPs.

In addition to the general workshops offered to the student population, OCS provides a broad range of tailored presentations and events for specific academic departments, certificates, and student groups. OCS provides guest speakers for academic courses such as the Health Policy and Management Professional Development Program, Global Health Certificate Pre- and Post-Practicum Seminars, Accelerated MPH Leadership Course, and Patient-Oriented Research Certificate Career course. OCS has created tailored events such as the Sexuality, Sexual, and Reproductive Health certificate alumni panel, specialized job search workshops for the Biostatistics department, several workshops for PhD students including the Initiative for Maximizing Student Development seminar program, "Lunch & Learn" presentations for the Executive MHA program, Department of Environmental Health Sciences Casual Conversations, and specific presentations on career outcomes for students in certificates including the Child, Youth and Family Health Certificate and the Public Health Research Methods Certificate. OCS has also collaborated with the Office of Field Practice to provide workshops for the Summer Practicum Workshop Series. A sample workshop flyer can be found in Electronic Resource File 4.4.B.

Career Fairs and Employer Presentations & On-Campus Recruitment. OCS organizes three annual career fairs: Career Days in the fall and spring and the Administrative Fellowship Fair launched in fall 2015. A Career Day information packet from spring 2017 is found in Electronic Resource File 4.4.B. Data on participation by students and alumni are presented in Figure 4.4.B.1., and data on employers are presented in Figure 4.4.B.2. During the past five years, student attendance has increased by 104% while employer attendance has increased by 74%. In addition, OCS brings hundreds of employers to campus, via career fairs, employer presentations, and site visits. The number of employer presentations and on-campus interviews has increased 179% in the last 5 years.

Figure 4.4.B.1. Student and Alumni Attendance at Career Fairs, 2011-2016

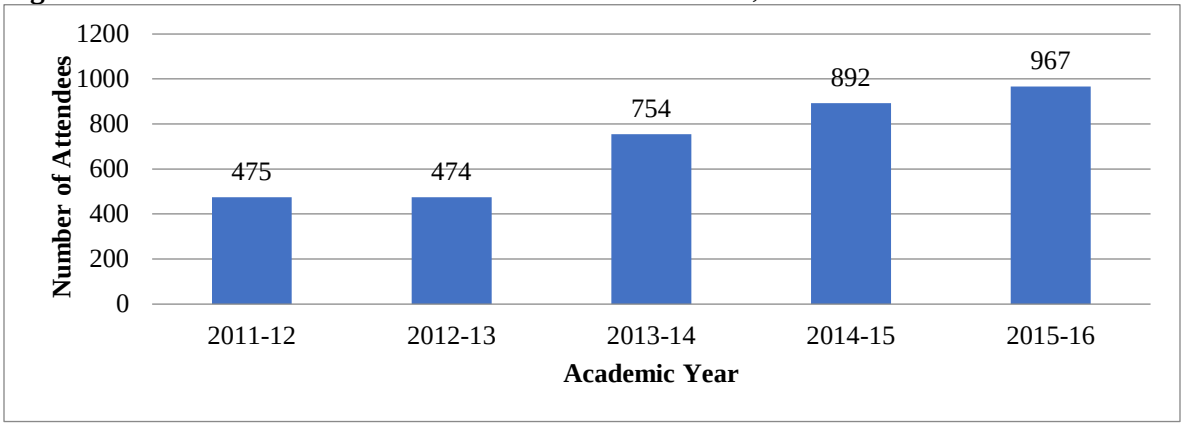
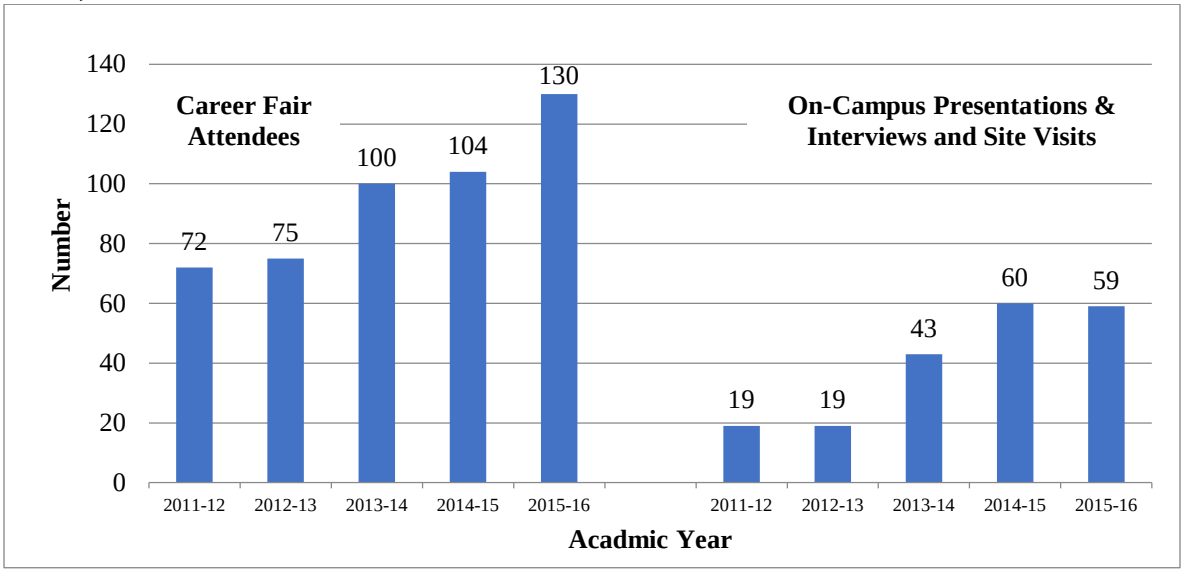


Figure 4.4.B.2. Number of employers on campus for career fairs and other career-related or recruitment events, 2011-2016



DC Career Week and Site Visits. OCS offers a yearly field trip to Washington, DC during spring break which includes site visits to up to 22 different organizations and/or panel discussions with up to 50 representatives. Sample biographies from DC Career Week are found in Electronic Resource File 4.4.B. In 2016, there were 22 site visits including Kaiser Family Foundation, University Research Co. LLC, OSHA, USAID, DAI, NORC, Department of State, RTI International, Patient Centered Outcomes Research Institute (PCORI), Vaxtrac, Environmental Protection Agency, Families USA, Pact Inc., US Department of Health and Human Services, The Lewin Group, International Food Policy Research Institute (IFPRI), National Association of County and City Health Officials (NACCHO), Booz Allen, Congressional Budget Office, Manatt Health, and 105 students registered to attend. This was representative of prior years.

OCS also sponsors a New York City-based site visits program, launched in 2016, which allows students to visit employers in the New York City area. In fall of 2016, OCS sponsored two site visits, one to Mt. Sinai and one to Manhattan Health Solutions. There were between 20 and 30 students at each event. In the spring of 2017, OCS hosted site visits to the International Rescue Committee and NYC Department of Health and Mental Hygiene and created a virtual alumni panel for UNICEF.

Resource Room. OCS offers students access to a resource area with approximately 133 library books, a fax/scanner/printer, and a computer to use for job search as well as a private space, available upon reservation, for job-search related phone calls.

Career Handbook and Online Resources. OCS has created a unique, proprietary online PDF book tailored to the Mailman School, that includes information on career decision-making, career areas in public health, networking, social media for job search, résumés, cover letters, interviewing, job offer analysis, success on the job, and medical and PhD admissions ("Mailman School Career Handbook 2017", Electronic Resource File 4.4.B.). OCS has created and/or linked to more than 360 career-related resources, handouts, videos, subscription-based job boards, industry-specific tip sheets, and other materials, all of which are accessible via our online job board portal, CareerLink. Approximately 279 are external resources and 86 were created by OCS staff. Résumé videos are accessible online.

In spring 2016, OCS transitioned its interview preparation system to Big Interview, which allows students to capture recordings of themselves answering interview questions and then share the recordings with career services staff, faculty or peers to gain feedback on their interviewing skills. As of May 30, 2017, 111 students had utilized this software.

Job Postings and Employer Contacts. The CareerLink database houses job and internship postings added by employers targeting Mailman School students and alumni. In 2014-15, OCS transitioned from advertisement of postings primarily via email to job board postings, thus improving knowledge of OCS employer partnerships. As of May 2017, there were 4,203 organizations and 7,753 contacts in the system, representing substantial growth over time (Figures 4.4.B.3. and 4.4.B.4.).

Figure 4.4.B.3. Number of Job Postings in Mailman Database, 2012-2016

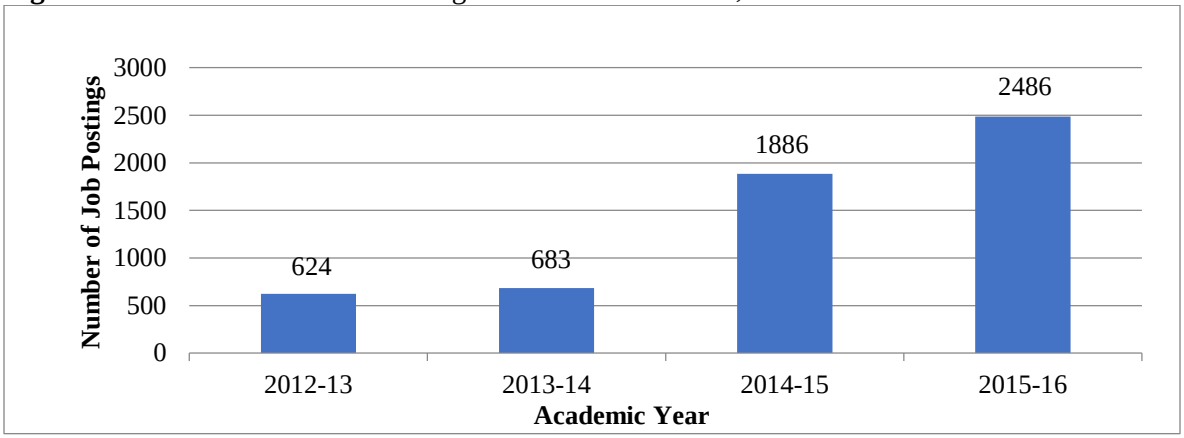
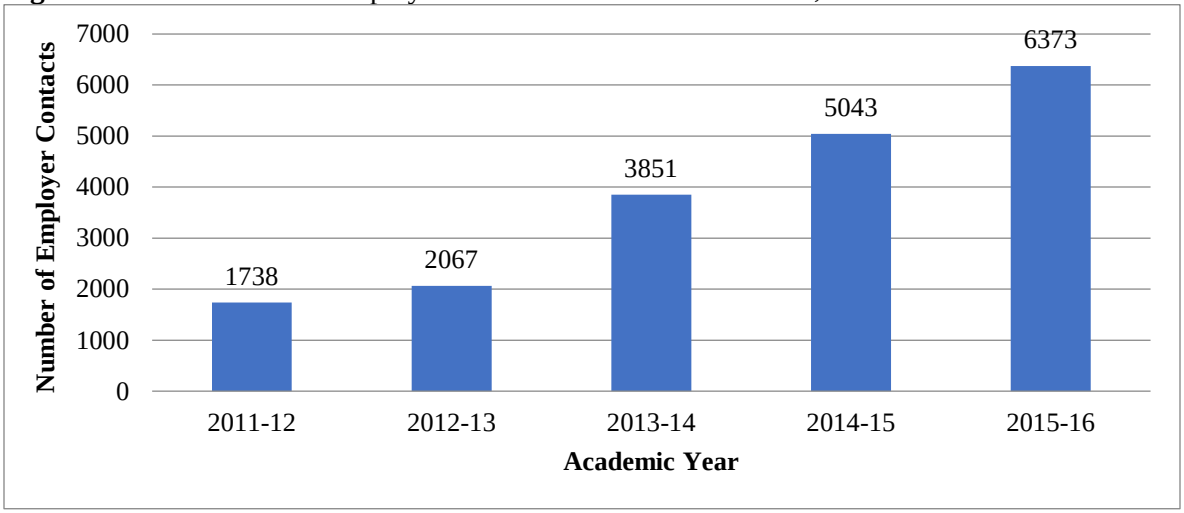


Figure 4.4.B.4. Number of Employer Contacts in Mailman Database, 2012-2016



Weekly Announcements Email. OCS sends emails to all enrolled students on a weekly basis and allow alumni to subscribe to the announcements. Weekly emails include career-related tips for students, a list of featured, career-related events, and featured jobs and internships.

Alumni Resources. In collaboration with Alumni Relations, OCS maintains two different alumni networking and mentoring programs and collaborates on numerous alumni networking events and programs. The online system, CareerLink, has 1,153 alumni in the online alumni networking database who have signed up to speak to students. Since the launch of this program in September 2014, there have been 643 student-alumni connections made through the system, for a total of 219 individual students and 307 unique alumni mentors (there were 147 student-alumni connections in 2014-15; 197 in 2015-16, and 299 so far in 2016-17). There are 27 alumni in our new alumni coach program who have offered to schedule individual networking appointments with students, and there have been 111 individual alumni-student coaching sessions conducted since the launch of this program in September 2016.

OCS offers an annual Job Search Boot camp, with 50 to 80 attendees per event since its launch in summer 2013; appointments upon request (two per semester during school and unlimited during the summer); lifetime access to the CareerLink job board and resources, as well as the ability to attend career fairs, workshops and events; and a new online webinar series specifically tailored for alumni (the first of a monthly webinar series began in December 2016, and had 49 alumni attendees).

Reciprocity with CEPH-accredited Schools of Public Health. OCS maintains collegial, reciprocal relationships with other career services offices of CEPH-accredited schools nationally, allowing students to gain access to the job boards of approximately 18 other schools nationwide. There were 33 reciprocity requests in 2011-12, 30 requests in 2012-13, 37 in 2013-14, 62 in 2014-15, 62 in 2015-16, and 43 so far in 2016-17.

Outreach and Marketing to Students and Employers. OCS promotes its services to students in a variety of ways. Staff provide a one-hour talk at orientation, with an overview of services and role; students receive weekly emails with career tips and events; important career events are posted to students' Facebook groups; and annual presentations are given at faculty/department meetings with an overview of the employment outcomes/results for each department, as well as encouragement for faculty to refer students and alumni to our services. OCS partners with other offices and divisions at the School, including Student Affairs (via partnerships on events as well as outreach to student leaders for student groups and collaboration on student-run events); Alumni Relations (partnering on events as well as

outreach to alumni to be mentors or to hire students); Office of Educational Programs (providing feedback on career outcomes by certificate); and Office of Field Practice (partnering on employer outreach and providing workshops that are incorporated with programs offered to students in relation to their practicum).

OCS conducts ongoing outreach efforts to employers that include outreach at national, regional, and local conferences and events, such as the APHA, All Ivy Sustainable Development Career Fair, NYC Master's Level Social Work Fair, Baruch College Government/Nonprofit career fair, BIO International conference and NY BIO Conference, Columbia Business School Healthcare Conference, Digiday career fair, Healthcare Pioneers conference, NY Tech Day, Startup Career Fair, Unite For Sight global health conference, Graduate Virtual Fair, HEOR Career Fair, and Nursing School fair. OCS conducts individual outreach via LinkedIn; employer directories via the National Association of Colleges and Employers; connections with other units at Columbia University; and individual, targeted research based on surveys of student interests.

4.4.C. Information about student satisfaction with advising and career counseling services.

After each individual counseling appointment, job fair or career services workshop, OCS sends a survey to students requesting feedback regarding the event's helpfulness and confidence in performing the outcome addressed (e.g., ability to write résumé, network, and interview). OCS disseminates a post-graduate outcomes survey to ask about satisfaction with career services programming and how students heard about the job they obtained. Between April 2014 and December 2016, OCS received 439 responses to surveys from students. Of these, 52% of respondents stated the services they received from were "extremely helpful," 32% "very helpful," 12% "somewhat helpful," and 4% "not very helpful." In 2015, the Assistant Dean of Career Services updated the survey to ask for specific feedback regarding a student's appointment with specific counselors/advisors. This feedback has been used to provide training for OCS staff to ensure top performance. Students were also asked whether their job search skills had improved after the appointment. In an analysis of 385 individuals who answered this question, the following numbers are the answers to the prompt, "*After my appointment, I feel more able to*":

- Write a résumé (76%)
- Search for jobs and internships (63%)
- Use social media (e.g., LinkedIn) for job search (54%)
- Write a cover letter (45%)
- Network (35%)
- Interview (30%)
- Choose a career path (27%)
- Negotiate salary (14%)

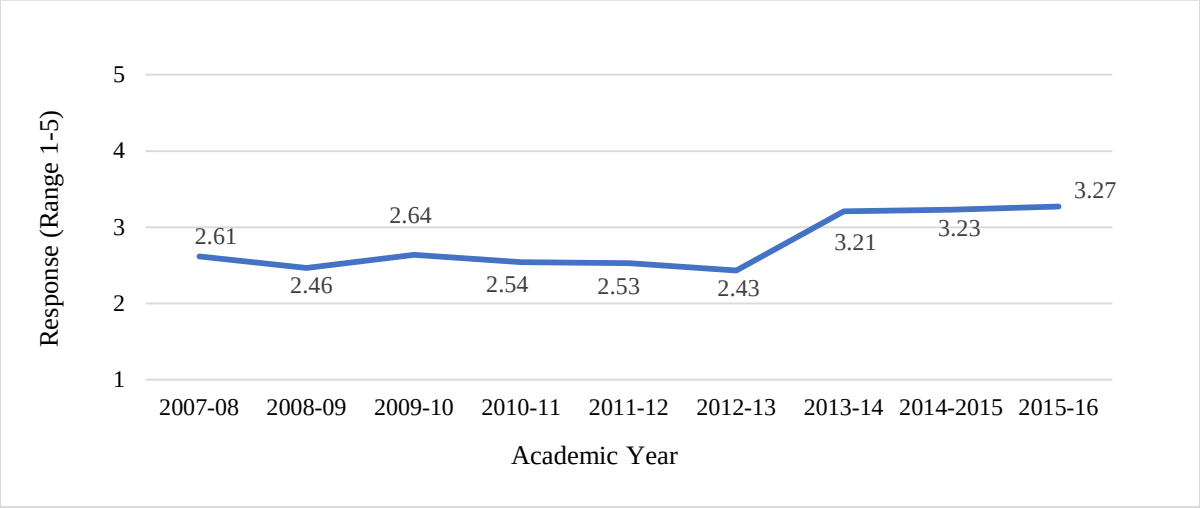
In addition to feedback regarding appointments, OCS conducted a qualitative coding analysis of 288 comments from the employment outcomes survey, including comments from the surveys sent in 2014 and 2015. The feedback comments were coded as follows:

- Positive comments (133 responses)
- Negative comments (24 responses)
- More staff needed (19 responses); the wait for appointments is too long (11 responses) (Note - this survey was conducted before the addition of a new staff member in December 2015)
- Career services should offer a broader range of jobs (18 responses)
- Need more support with résumé/curriculum vitae (17 responses)
- Career Services is supportive (15 responses)
- Want more engagement with career services (11 responses)
- Want more networking tips (10 responses)

- Provided feedback on workshops (9 responses)
- Want better job postings (7 responses)
- Want better integration with MPH curriculum (7 responses)
- Career services helped with job placement (7 responses)

The Office of Educational Programs also sends a survey to all graduating students. As seen in Figure 4.4.C.1., below, the satisfaction with career services has increased with new staff leadership added in 2013. Efforts to obtain and analyze quantitative and qualitative feedback from students and alumni are critical to improve the ability of OCS to provide quality career services resources that meet the needs of students and graduates.

Figure 4.4.C.1. Student Responses to Satisfaction with Career Services, 2007-2016



4.4.D. Description of the procedures by which students may communicate their concerns to school officials, including information about how these procedures are publicized and about the aggregate number of complaints and/or student grievances submitted for each of the last three years.

The Mailman School is an academic community committed to fostering intellectual inquiry in a climate of academic freedom and integrity. Its members—students, faculty, and staff alike—are expected to uphold these principles and exhibit tolerance and respect for others. The concerns of students may be expressed and resolved informally or formally, as described in the Community Standards and Conduct section (pages 9-11) of the student handbook.

Informal Communication and Resolution of Concerns. Students are encouraged to communicate concerns to faculty and administrative leadership about any aspect of their experiences. Students are encouraged, but not required, to seek an informal resolution to their complaints. OSA staff are available to support students in their discussions at this stage of the process. For concerns that cannot be resolved in this manner, the student is referred to the Dean of Students who may discuss the situation with the Vice Dean for Education. Some complaints can be addressed at this point through a process of counseling and evaluation if the student is in agreement. Students are advised of their options that include:

- Taking no action—sometimes discussion is the goal
- Role playing or problem solving, should a student wish to have a conversation with the faculty person in question

- The Dean of Students, serving as an intermediary between the faculty member and the student, mediates the concerns
- The Dean of Students speaking to the relevant department chair

Students may bring their concerns to Columbia University's Ombuds Office, which serves as an informal, confidential resource to assist with conflict resolution. The Ombuds Officer provides information, counseling, and referrals to appropriate University offices. The Ombuds Officer will mediate conflicts if both parties agree, but does not have the authority to adjudicate disputes and does not participate in any formal University grievance proceedings.

Formal Communication and Resolution of Concerns. The School has specific procedures in place for students to communicate three types of grievances: grievances of faculty misconduct, grade grievances, and academic integrity and honor code grievances.

Grievances of Faculty Misconduct. The Dean has put in place procedures to address student grievances concerning professional misconduct by faculty. In addition, the University statutes and the general policies of the University describe the roles and responsibilities of faculty in their teaching and research. Faculty members have a right to expect freedom in the classroom to discuss their subjects and not to be penalized for their private opinions. Faculty have obligations arising from their position in the academic community, specifically:

- The University's commitment to the principle of academic freedom is defined in Section 70a of the University Statutes. That commitment assures officers of the freedom to determine the content of what they teach and the manner in which it is taught and the freedom to choose the subjects of their research and publish their results. It guarantees that they will not be penalized for expressions of opinion or association in their private or civic capacity.
- In conducting classes, faculty should make every effort to be accurate and show respect for the rights of others to hold opinions differing from their own. They should confine their classes to the subject matter covered by the courses and not use them to advocate any cause.

The student grievance procedures are to be used when a student believes that a faculty member has failed to meet these standards in one of their classes. The procedures provide students with avenues for informally resolving complaints about the School's faculty and for seeking formal redress from the Dean if those efforts at mediation fail. They provide for an appeal to the Executive Vice President for Health and Biomedical Sciences and to the Provost of the Dean's decision by either the student or faculty member. These procedures do not take the place of the grievance procedures already established to address disputes over grades. Students also should use alternative procedures in the following situations:

- If the alleged misconduct involves discrimination and sexual harassment, a student should file a complaint with the appropriate Columbia University office. The procedures for handling such complaints are linked to the Referral Form: Discrimination, Harassment, Gender-Based Misconduct.
- Complaints against the School's faculty that allege scientific or scholarly misconduct also are evaluated using other procedures. These are contained in the Columbia University Institutional Policy on Misconduct in Research.

If the faculty member holds an appointment in the Mailman School, students may use the above described procedures to address faculty misconduct in relation to the standards quoted above from the Faculty Handbook. If the faculty member holds an appointment from another school, students must use that school's procedures. Students may ask for assistance from the Mailman School's department chairs and the deans in identifying and understanding the appropriate procedures.

Any student enrolled in the University and directly affected by the behavior of a faculty member of the Mailman School may ask for a grievance hearing. The student initiates the hearing by submitting a written statement to the Dean of the Mailman School documenting the grievance. The request must be submitted no later than thirty (30) days after the end of the semester within which the misconduct was alleged to have occurred. The Dean will review the complaint to determine if there are sufficient grounds to proceed with a hearing or if the issues raised by the student can be resolved in another manner. If the Dean determines that a hearing is warranted, the Dean will appoint an *ad hoc* advisory committee to operate as a fact-finding body and report on whether the complaint is justified. The *ad hoc* committee serves in an advisory capacity to the Dean of the School. When appropriate, the committee may recommend remedies to the student's complaint and disciplinary action against the faculty member. The composition of such an *ad hoc* advisory committee cannot be determined before the event: it is determined by the Dean depending on the expertise needed to address the issues. Membership will normally consist of faculty members and, at the discretion of the Dean, could include a student and/or senior administrator. The accused faculty member is given the student's letter of complaint and invited to provide the *ad hoc* advisory committee with a written response. The committee reviews both statements and is given access to other written documents relevant to the complaint. It will normally interview both the grievant and the faculty member and may, at its discretion, ask others to provide testimony.

The committee is expected to complete its investigation in a timely manner and submit a written report to the Dean who may accept or modify its findings and recommendations. The committee ordinarily convenes within 10 business days of being appointed by the Dean and completes its investigation and sends the Dean its report within 30 business days of convening. Any actions taken by the Dean, including faculty discipline, will be imposed in a manner that is consistent with the University's policies and procedures. The Dean will inform both the student and the faculty member of this decision in writing. The Dean usually issues a decision within 30 business days of receiving the committee's report.

Either the student or the accused faculty member may appeal the Dean’s decision. Findings of fact, remedies granted the students, and penalties imposed on the faculty member are subject to appeal. There are two possible levels of appeal. The student or faculty member should first appeal to the Executive Vice President for Health and Biomedical Sciences by submitting a written request within 15 business days of the date of the letter informing them of the Dean's decision. If either is dissatisfied with the outcome of the appeal to the Executive Vice President, a further review by the Provost may be requested. To exercise that right, they must write to the Provost within 15 business days of the date of the letter informing them of the Executive Vice President's decision. Usually, the Executive Vice President and the Provost will each take no longer than thirty (30) business days to complete their evaluation of an appeal. They normally confine their reviews to the written record but reserve the right to collect information in any manner that will help them make their decisions on the appeal.

The Executive Vice President and the Provost will inform the student and the faculty member of their decisions in writing. Any actions taken by the Provost will be imposed in a manner that is consistent with the University's policies and procedures. With the exception of actions that are accorded further review by the University statutes, the decision of the Provost is final and not subject to further appeal.

All aspects of an investigation of a student grievance are confidential. The proceedings of the grievance committee are not open to the public. Only the student grievant and the faculty member accused of misconduct receive copies of the decisions of the Dean and the Provost. Everyone involved with the investigation of a grievance is instructed to treat the process with utmost respect and confidentiality.

Grade Grievances. There are four steps the complete process of grade grievance and the majority of cases are resolved informally (steps one and two). Those remaining unresolved proceed to steps three and four.

1. Questions about a course grade should be discussed first with the course instructor. If the grade questions remain unresolved after discussing with the faculty member, proceed to step two.
2. Questions about a course grade should be discussed with the program head or department chair, if necessary.
3. In the case of a serious, unresolved disagreement between a student and instructor concerning grades, the student must submit an official email of complaint to the Office of Student Affairs. The Dean of Students makes an initial determination of the merits of the case and decides whether to convene a committee. In general, only grades of B- or below will be considered for this process, and students must have met the basic requirements of the course in question (as outlined in the course syllabus).
4. If after the initial determination, a formal inquiry is moved forward, the Dean of Students will appoint a committee of three faculty members to review the case. The committee will decide whether the grade warrants a change either to a higher grade, a lower grade, or if the grade should remain the same. The Office of Student Affairs will notify the student of the committee's decision and the student will have five business days to respond to the decision. If the student does not agree with the decision, the student may appeal to the Dean of Students who will then review the case with the Vice Dean for Education. The decision of the appeal committee is final.

Academic Integrity and Honor Code Grievances. The Mailman School holds students to the highest standards of academic integrity and students are bound by the Honor Code of Academic Integrity, as described in the Community Standards and Conduct section of the student handbook (pages 2-3). If students (or faculty) suspect an Honor Code infraction, the following parameters must be followed:

- Confidentiality must be strictly maintained by all parties; only those with a legitimate need to know shall be informed.
- Professors must withhold assigning grades for any disputed assignments and the final course grade until the Disciplinary Hearing and Honor Board Procedures have been completed.
- A written complaint is required to initiate the process. If a student or faculty member suspects that an Honor Code infraction has occurred, he or she (hereafter referred to as the “witness”) must address a written complaint to the Dean of Students, describing the circumstances of the suspected infraction and the person believed to be responsible.

Within five business days of receipt of a written complaint addressed to the Dean of Students, the Dean of Students (or her/his designate from within the Dean of Students' office) will contact the witness to discuss the witness' complaint. The witness is encouraged to describe the relevant facts, as well as his/her impressions and thoughts regarding the gravity of the incident, its implications, and consequences. Based on this conversation and all relevant information, the Dean of Students will determine whether the complaint warrants a formal disciplinary procedure. Should the complaint warrant formal disciplinary review, the Dean of Students and the Director of Student Affairs will convene an *ad hoc* Honor Board within 10 business days of that decision.

An accused student may appeal the Honor Board decision in writing to the Dean of Students within five business days of receipt of a decision. If no appeal is brought within that 5-day period, the decision of the Honor Board is final and no longer subject to appeal. Upon receipt of a request for appeal, the Dean of Students convenes a Final Appeal Committee comprised of the Mailman School of Public Health Dean, the Vice Dean for Education, and the Dean of Students. All materials from prior hearings are submitted to the Final Appeal Committee for review. The committee may choose to call the accused student or others to give further testimony, but this is not required and is left at the discretion of the members of the Final Appeal Committee. The Final Appeal Committee reviews the case and makes the final determination.

Other Grievances. On rare occasions, a student may also communicate a grievance by submitting a written statement to the Dean documenting the grievance. The request must be submitted no later than 30 days after the end of the semester within which the event occurred. The Dean will review the complaint and refer the student to the responsible dean: either the Dean of Students or the Vice Dean for Education. The responsible dean then arranges an individual meeting with the grievant.

In addition, students collectively express concerns about the School, to which the School leadership will respond in a timely manner. For example, in the fall of 2016, a group of students expressed a set of concerns to the School leadership about the diversity and inclusivity of the School (Electronic Resource File 4.4.D.). Per the students' request, the Dean and other members of the School leadership—the Vice Dean for Education, the Dean of Students, and the Director of ODCI—met with students several times soon thereafter to plan a collaborative course of action to address their concerns. Outcomes included the development of the ODCI website to enhance communication and publish data on diversity at the School, seminars with researchers and mentors from underrepresented minority groups, a curriculum renewal review to examine diversity competencies in courses, and an examination of service learning courses at the School (see Electronic Resource File 1.8.B. for a list of courses). The Dean and the School leadership have a history of responding in timely fashion and taking swift action to address student concerns. They, along with faculty and staff, are committed to co-creating a positive community at the School with students, for all.

Table 4.4.D.1., below, provides an aggregate number of the grievances described above for the past three years. Examples of grievance materials are provided in Electronic Resource File 4.4.D.

Table 4.4.D.1. Aggregate Number of Grievances 2014-15 to 2016-17

Grievance	2014-2015	2015-2016	2016-2017
Faculty misconduct from a student	0	0	0
Grade grievance from student	0	2	1
Academic integrity and honor code from faculty, student, or staff	11	7	13
Request for appeal of an honor board decision from student	1	0	0
Other grievances	2	2	4

4.4.E. Assessment of the extent to which this criterion is met and an analysis of the program's strengths, weaknesses and plans relating to this criterion.

This criterion is met.

Strengths

- The School offers a wide-ranging set of interconnected advising services, including departmental academic advisors and academic coordinators, the Office of Student affairs, and the Office of Career Services. There are well-established lines of communication between departmental and school personnel engaged in advising.
- The School has an outstanding Office of Career Services with an extensive set of services and resources, as well as robust mechanisms for data collection. Its success is reflected in the nearly complete employment rate of graduates and increasing satisfaction with the Office of Career Services.
- There are clear procedures by which students may communicate formally their concerns to Mailman School officials, with separate processes for categories of grievances. There is a culture of resolution of concerns through effective communication at the School.
- The School leadership is responsive to student feedback and requests for change provided in a number of fora, and works with students to ensure that the Mailman School community meets their needs.

Challenges

- Tracking and managing student and faculty concerns around community conduct and standards requires development of additional reporting systems and enhanced resources to investigate and resolve incidents in a timely and efficient manner.

Plans

- The Office of Career Services plans to establish an Employer Advisory Board, which will have a goal of creating a representative group of employers who can meet with School leadership to provide direct feedback regarding our students and the curriculum.
- In the coming year, the Office of Student Affairs plans to collaborate with the University's Office of Student Conduct and Standards to provide our team with a more cohesive and comprehensive method of addressing student concerns, and enhanced capacity to manage grievances and faculty concerns regarding student conduct and adherence to community standards. The Office of Student Conduct and Standard has significant resources in the form of highly sophisticated reporting and tracking systems that can support the School's Office of Student Affairs to streamlined communication between students, faculty and staff. It also will facilitate a more transparent and consistent manner in handling difficult situations that arise academically as well as within the community.

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