

COLLABORATING WITH YOUR BIOSTATISTICIAN

Mailman SPH Assembly—10/12/10—Bruce Levin

- **How can we improve communication for better research outcomes?**

The ability to communicate the essentials of a research idea in clear language understandable to intelligent colleagues outside one's area of expertise is at the core of every successful grant proposal and publication.

- Listen carefully to each other and be patient.
- Think carefully about the goals of your study, explain concepts, but only as necessary.
- Define terms, and be prepared to learn some new vocabulary as well.
- Demonstrate mutual respect for each other's areas of expertise.
- Be willing to ask and answer clarifying questions to improve understanding, even about concepts and assumptions so fundamental to your own discipline that they are rarely challenged.

An investment in this collegial process will yield great dividends in good collaborative research.

- **Why is it advisable to collaborate with a biostatistician at the beginning of a project?**

Biostatistical expertise in the planning phase of a project or the preparation of a proposal helps to ensure that:

- the goals and specific aims of the study are translated into specific hypotheses
- those hypotheses can be properly tested by the study design and methods
- the data to be collected are appropriate for the desired outcomes, and
- the statistical analysis plan enriches the study with an objective, quantitative/qualitative conclusion

- **How can a biostatistician improve the quality of the research?**

By:

- Narrowing and formalizing study hypotheses
- Vetting endpoint measures and covariates for their ability to achieve study goals
- Calculating the sample size and power to detect important alternatives
- Planning and writing the statistical analysis section, including important modeling aspects, methods for handling missing data, and much more
- Reviewing the entire proposal
- Working with appropriate data management and project coordinators
- Analyzing the data
- Helping to interpret findings and preparing manuscripts for publication

- **When is the appropriate time to begin working with a biostatistician?**

The earlier the better for optimum research results. Biostatisticians are best thought of as scientific colleagues with specific expertise to contribute to all phases of a research project.

The best time to begin working with a biostatistician is as soon as you have thought of an idea for a study. Contact the Department of Biostatistics as early in proposal development or as close to the beginning of a project as possible.

Once a collaborative relationship is established, the P.I. should plan to write in a substantial percentage effort for the biostatistician. Experience shows that NIH proposals score highest when the percentage effort is not less than 10%. Experience also shows a direct correlation between success in funding and the amount of time spent with your biostatistician and his or her effort written into the grant.