

## **Grant Writing Workshop**

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### **“Working with a Statistician”**

#### **How to Approach a Statistician**

For most grants, if you don't have a statistician that you work with on a regular basis, requests will go to the chair of the Department of Biostatistics in the School of Public Health (Dr, Lisa Sullivan at [lsull@bu.edu](mailto:lsull@bu.edu) ). The department chair will make every effort to find a statistician to work with you. For grants that will include a statistician for a percent effort of funding, grant preparation is done free of charge, with the expectation that funding will be available if the grant is funded.

For some small grants, other resources (which may involve a fee) are available, including:

The Biostatistics Consulting Group (BCG) in the Department of Biostatistics

<http://sph.bu.edu/Biostatistics/biostatistics-consulting-group/menu-id-617606.html>

Biostatistics consulting for members of the Department of Medicine (DOM)

<http://www.bumc.bu.edu/medicine/research-in-the-department/biostats-consult/>

Consulting through the Clinical and Translational Science Institute (BU CTSI)

<http://ctsi.bu.edu/index.php/research-resources/consulting/>

The Data Coordinating Center (DCC)

<http://sph.bu.edu/DCC/data-coordinating-center/menu-id-43.html>

#### **When to Approach a Statistician**

A statistician should be approached as early as possible in the grant development process. Ideally this would occur when an investigator first thinks of submitting a grant. A statistician can help with all aspects of grant development including clarifying the specific aims and designing the study. It is best not to approach a statistician at the end of the process to ask for a data analysis plan and sample size calculations. The statistician may find some flaws in the design of the study, but at that point it may be too late to address them.

## Top 10 Pet-Peeves of Statisticians Collaborating on Grants

(Courtesy of the BUSPH Department of Biostatistics)

1. **It's too close to the grant deadline:** Just like you, statisticians are not usually sitting in their offices with nothing to do, hoping that someone will stop by with a grant request. Even if they have some time, a week and sometimes even a month isn't adequate time to help prepare a grant. Contact a statistician as early as possible in grant development (as soon as you have an idea is best). Lead times can range from one month to several months or more depending on the complexity of the grant.
2. **Being treated as a "service" rather than as a collaborator:** Just like you, statisticians are professionals with extensive training in their field. Your interactions will be much more successful if you treat them with the respect that they (often) deserve.
3. **Everything is a pilot study.** Some studies should be pilot studies, but many studies should be more than a pilot at the current stage of research. Don't use the term "pilot study" as an excuse to not do power calculations or design your research with care.
4. **Asking a statistician to write a data analysis plan before the specific aims are written.** Often, the data analysis plan is one of the last sections written in a grant. The data analysis plan depends on the specific aims and the components of the study design.
5. **Asking a statistician to write an analysis plan to match a specific analysis that you have read about in a paper.** While it's admirable when an investigator tries to figure out an appropriate analytic approach in advance, a particular method may be inappropriate for the proposed research.
6. **Make meaningful changes to the grant and neglect to inform the statistician.** As an example, changing the primary outcome of a study does happen during the course of grant preparation, but it has a significant impact on the work that a statistician has performed.
7. **Lack of response to questions.** Generally, a statistician will ask many questions during the course of grant development. If you don't know the answer to a question, it may be helpful to discuss it. Remember that a statistician cannot complete their parts of the grant without answers to these questions.
8. **Not providing enough detail in order to perform sample size calculations.** Performing sample size calculations should be a collaborative effort between the statistician and the investigator. At times, investigators leave the details up to the statistician, who should not be relied upon to determine a clinically relevant effect or search the literature for meaningful background information.
9. **The percent effort on a grant is too low or the amount of effort/time it takes to plan and perform statistical analysis is greatly underestimated.** "Don't you just push a few buttons?" Data analysis is not just pushing a few buttons and is often a complicated and time consuming process. A statistician will provide what they think is a reasonable estimate of effort for your grant. If you greatly decrease this percentage of effort, they would likely not want to work with you.
10. **Not adequately addressing data management or analysis support.** Every grant should have information regarding data management and analysis including staff and computing needs. Often (but not always) a faculty statistician will guide a more junior analyst and provide advice on the data entry/management process.