

Washington, DC and Proposal-Writing
 Comments from a Panel Discussion at the Lamont-Doherty Earth Observatory
 June 22, 2007

FEDERAL FUNDING FOR SCIENCE

Raising external funds to support research is a crucial career step for junior scientists. At Lamont, 95% of research funds come from the federal government, and 75% come from the National Science Foundation (NSF). The Office of Management and Budget (OMB) in the Executive Branch oversees the budget for all federal agencies, including NSF. A typical program manager exercises power through the way they organize the review process: they choose the reviewers and the panels, and they often write up the outcome of the panels. The review process varies widely by program. You should understand how your proposal will be reviewed before you submit. NSF program managers usually control \$5-\$20 million, depending on the size of the program (see Figure 2).

Figure 1

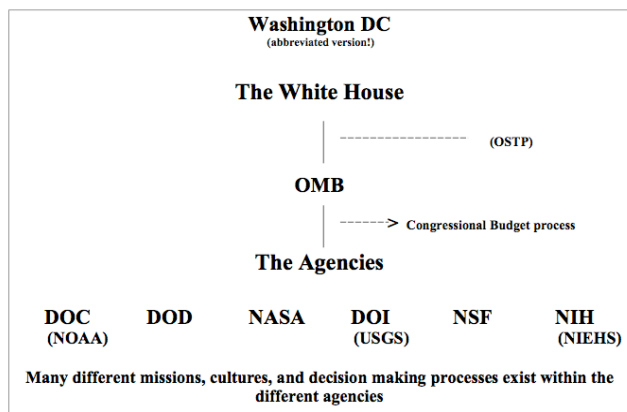
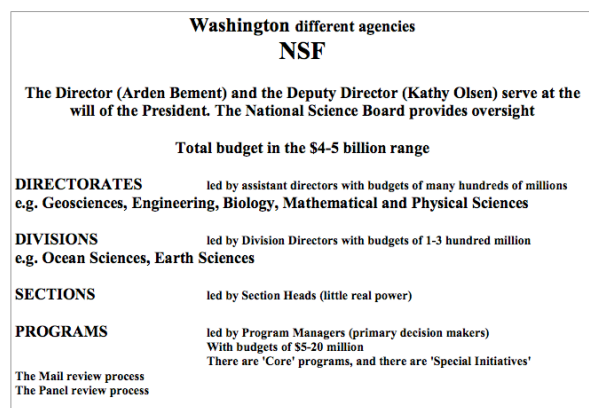


Figure 2



BE STRATEGIC

Understand the funding agency’s objectives. Basic research agencies, like NSF, are driven by initiatives from within the science community. Mission-oriented agencies, like NASA, fund programs to fulfill strategic objectives. A mission-oriented agency will not fund a proposal that lies outside the agency’s mission, even if the science is stellar.

Be active in the community. Get involved in major NSF programs, attend workshops and contribute to the proposals that emerge from workshops. Make time for collaborative opportunities at AGU. Provide ideas and writing. Learn the language of the community you’re targeting. Accept invitations to serve on panels.

Develop a dialog with your program manager. If you plan to be in Washington, DC, call your program manager to set up a meeting. Program managers are scientists and they like to hear what other scientists are working on. Bring a paper you are interested in, and allow them get to know you. Let your program managers know when you plan to submit a proposal.

Chair a workshop. By organizing a workshop, you can set the research agenda and invite thought-leaders in your field. Workshops are a great way to cultivate future letter-writers for tenure and promotion. ADVANCE has funds available for women scientists who are interested in chairing workshops.

Think long-term. A scientific career requires a forward-looking, long-term approach. Most graduate students develop an approach to their research that is focused on discrete projects.

Understand the controversies that exist, and consider the questions that need to be answered in your field.

Don't take proposal rejections personally. Read your reviews and learn from them. Look for opportunities to turn proposal rejections into other research opportunities or publications. Consider re-submitting. Success rates tend to peak around the second submission. If you resubmit, make sure you substantially modify the proposal and address the review comments.

CRAFTING A PROPOSAL

Understand what a proposal is not. A proposal is not a paper.

- * The typical reader of a paper wants to read the paper; the typical reader of a proposal does not.
- * Papers are about what you have done; proposals are about what you intend to do.

And what a proposal is. A successful proposal is generally concise, persuasive and includes:

- * A project summary that can be read on a 5-minute Washington DC Metro ride.
- * A good idea.
- * A solid plan for how you would carry out this idea.
- * Background material that demonstrates you know what you are talking about.
- * A realistic budget – find out the average award size for your program.
- * References - including political ones.

The project summary is critical. Reviewers won't read every word of your proposal, but they will read your project summary. Don't bury your most critical points in the body of the proposal. Don't leave this to last minute.

Establish credibility. One way to build credibility is to do some of the research beforehand. Then the proposal is an extension of what you have already done. Another option is to "buy" credibility – i.e., find someone else who is a recognized expert and add him/her to your proposal.

A great outreach section is not a substitute for quality science. The intellectual contribution is the most valued component of your proposal. Reviewers rarely use the outreach component to rank proposals, unless outreach is fundamental to the program (e.g., increasing the participation of women in science, etc).

Consider the viewpoint of the reviewers. They have to rank a stack of proposals, and then decide on the select few that are to be funded. As a result, reviewers are looking for reasons *not* to fund proposals.

Other Quick Tips: Results from prior research matter only if you've been funded before. Include good figures. Figures can convey complex information and are a great way to get the reviewer's attention. Get peers and mentors to read your proposals before you submit them. Provide them with a 7-10 day turnaround time if possible. Check for typos!