Grantsmanship 2.0—Introduction to Multi-Investigator Proposals

By Beth Schachter

Most readers of this column are very familiar with research grants to single PIs. However, you may know far less about the various multi-investigator grants that could be a great source of support for your next academic career stage. These include multi-PI R01s and program project or center grants (the National Institutes of Health [NIH] P series), pre- and postdoctoral training grants (the T series), shared instrumentation grants (the S series), and NIH research contracts (the U series),\(^1\),\(^2\) as well as the new multidisciplinary team grants from the National Institute of General Medical Science (NIGMS).\(^3\)

There are compelling reasons for midcareer and senior faculty to become familiar with multi-investigator proposals. Importantly, much high-impact 21st century biomedical and life science research involves collaborative projects. Multi-investigator funding mechanisms are aimed at hastening and enriching the research enterprise, including, for the NIH, speeding up the translation of fundamental discoveries into practical applications to improve human health and wellbeing. The extent to which this aim is actually accomplished with the current array of grant structures is a matter of ongoing dialog and debate. Therefore, it is useful for faculty to discuss the pros and cons of participating in, and possibly taking leadership roles in, the development of one or another multi-investigator grant.

If you wait to respond to a request for application (RFA) for a thematic center or program project grant or the like, you will be faced with a next-to-impossible deadline for proposal submission. Rather, consider two sources to learn about multi-investigator grants earlier.

Using Funding Agency Expertise

Recipients of multi-investigator grants often credit their success to the advice of the NIH institute program officers (POs) who oversee various multi-investigator grants. When you are starting to explore the possibility of developing an application, POs can give you inside information about what the institute currently wants (or doesn’t want) to fund, which is critical since multi-investigator grant options can vary among institutes. Thus, for example, the National Institute of Diabetes, Digestive, and Kidney Diseases recently introduced the High Impact Interdisciplinary Science Grant\(^4\) and the National Institute of General Medical Science has introduced the Collaborative Program Grants for Multidisciplinary Teams\(^3\) to replace the program project and center grants.

When it’s time to develop the proposal, POs can give unbiased...
perspectives on, for example, the strength of the assembled team and available resources. Because these POs have often overseen multi-investigator projects for many years, they can offer a wealth of information, answering questions before you even think to ask them.

For applications in response to an RFA, the announcement will identify the scientific administrator in charge. Otherwise, you can find the names of POs who administer P-, T-, S-, or U-type grants on topics similar to the one you might be considering by using the Matchmaker function in the NIH Reporter Database, searching on “similar program officials.”

**Using Local Expertise: Round Up a Panel of Multi-Investigator Grant PIs**

If you are in a research-intensive academic institution, you are surrounded by in-house experts, scientists who have been successful in multi-investigator funding mechanisms. Consider bringing them together as a panel of current and former PIs of multi-investigator grants. Obvious hosts for this panel discussion would be the dean’s office (e.g., faculty development or research, or the combination) or a faculty organization such as a women’s faculty group.

**What to Talk about in the Panel Discussion**

Without much preparation, the invited speakers could recount how they developed their multi-investigator proposals: how they assembled the group; how they determined the overall theme; and what are the key ways in which the proposal differs from a single-PI R01. It’s important that speakers tell how they best articulated their ideas. Panelists who are currently PIs on multi-PI R01s can also provide insights into possible future directions being discussed at the funding agency. Panelists with long-term experience as multi-investigator grant PIs may also bring important historical perspectives including changes they have observed in the funding landscape over time.

Planning and writing successful multi-investigator proposals requires skills beyond those needed for fundable single-investigator research proposals. These include learning to think more broadly and strategically as a scientist, a leader, and a manager and then articulating those thoughts in a persuasive fashion. Therefore, panelists could be charged with recounting how they assembled their research team, got them to work together (if relevant), and expressed this interactivity in the grant application. In addition, given that some of these projects are time- and resource-consuming to develop, panelists could discuss the sort of administrative support they got for putting together the grant and how they went about negotiating for that help.

Such a panel discussion is an opportune time to discuss when to consider dual- or multi-PI vs. individual-PI R01s. It is also a perfect venue to (anecdotally) compare and contrast the multi-PI R01 and program project grant mechanisms with which to fund research on a large but focused question. Whereas multi-PI R01s provide funding just for the science, program project grants give funding for both administrative and research cores to support the work. With the extra money comes extra responsibility and complexity, and hearing experienced investigators discuss these two mechanisms could be useful in helping to decide which route to take for certain projects. (NIGMS has begun to assess its return on investment, and has a blog posting on the topic. The comments following the main post make it clear that the topic is still open to discussion.)

**Some Nuts and Bolts of the Panel Discussion**

Before the panel discussion, the organizers should 1) provide panelists with a few questions to answer to create a cohesive thematic discussion; and 2) hold a conference call for the panelists, organizers, and the designated moderator. The moderator can review the proposed format and articulate his or her expectations. The panelists can raise questions or make suggestions in response to the organizers’ instructions and comments. At this time, the moderator can outline
the actual structure of the event, including how much time each panelist will have to speak and whether questions will be taken during each presentation, at the end of each presentation, or only after all panelists have spoken.

As for the panel discussion itself, budget an hour or so. This means that time should be allocated judiciously. To save time and also provide a good resource for the attendees, do not give lengthy oral introductions of the panelists. Rather, provide their brief biographical sketches in the online announcement and in handouts distributed at the event. After a brief oral introduction of each panelist at the event, the moderator should review the protocol for presentations, including the length of time each panelist has and how the questions will be handled. If that information has been sent to the panelists ahead of time, reiterating it at the event makes the moderator’s timekeeping task much simpler and less stressful and ensures that all panelists will get their full turn at speaking.

**Going Forward**

The panel discussion on multi-investigator grants can be a first step in the process of increasing institutional participation in grant applications of this sort. Meeting organizers could facilitate sharing of successful multi-investigator grant proposals along with the accompanying critiques. Since panelists are local, they might continue to serve as resources for prospective applicants seeking more information and might even offer to read some sections of applications. They could also point potential applicants to existing descriptions of institutional resources that need to be included in multi-investigator proposals.

**Conclusion**

Programs such as the ones described here can help give mid-career and senior scientists the wherewithal to successfully move into leadership roles. Academic investigators who have succeeded in moving into tenured positions have the opportunity to help shape their research environment, both within their institution and within the broader research community.

These initiatives are good for you and for your institutions. Onward!

**Note**

The article was based in part on a panel discussion moderated by the author for FOCUS on Leadership & Health for Women, Perelman School of Medicine, University of Pennsylvania, in May 2017.

**References**


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**Career Navigator**

**About the Author**

Beth Schachter is a grantsmanship coach and editor, working as Beth Schachter Consulting (www.bethschachterconsulting.com) and as a principal at Still Point Coaching & Consulting (www.stillpointcoaching.com).
DEAR LABBY:

I am a new graduate student at an “impressive” university. I come from a small, well-known liberal arts college. We had great teachers who involved us in research. In my graduate program, I have decided to work in a laboratory with two postdocs and four graduate students. The research and learning culture here is really different from my experience as an undergraduate. Lab training is accomplished by watching and learning techniques from “my” postdoc. As a first-year student, I only interact with the PI during lab meetings, and we all seek input from her on our projects at that time. In our lab meetings, we discuss our results, lab issues, and our shared reading for the week. The meetings often turn into exercises to point out the holes in the work presented by our lab mates. I find it troubling because I know that my postdoc likes to “nail” or even ridicule others in the group. The PI has not intervened so far. I understand constructive criticism, but this does not seem like that to me. I am not looking forward to my upcoming presentation, which will be based on the work that I have done with my postdoc. This is not how I learned science was done! But is it?

—New Kid on the Block

DEAR NEW KID ON THE BLOCK:

Congratulations on your new adventure. Yes, there are cultural differences between liberal arts colleges and research-focused institutions, the major one being the mission of the institutions! One focuses on developing young people to reach their academic and professional goals, while the other is focused on pushing the boundaries of knowledge and training others to do the same. Developing critical thinking skills is one of the most important things that one learns in graduate school. Your postdoc seems to be overzealous in this exercise, as ridicule, condescension, and sarcasm are indeed inappropriate. It is essential to get strong constructive feedback during these group meetings, with a stress on the word “constructive.” Perhaps you could engage your postdoc in your presentation as you develop it. This may help him or her feel a partnership in your presentation. Also, Labby suggests that you have a heart to heart talk with your postdoc, letting him/her know how these derisive comments make you feel. In addition, you should schedule a one-on-one appointment with the PI, who may also want to be aware of the effect that this person may be having on the lab culture. An environment that allows ridicule as a normal and acceptable way to interact may become hostile. So, no, this is not the way science is done! Ideally, science is carried out in a supportive and open environment where new ideas can be examined and explored.

—Labby