



## Significance, Innovation, and All That

Have you or your PI submitted an R01 grant application recently? If so, you have grappled with the new short format. I'm just starting a renewal application, which means trying to figure out what the National Institutes of Health (NIH) and, more importantly, my peers who will do the actual reviewing, want to see in each of the sections.

The biggest change for me—apart from halving the page count—is the absence of the good old “Background and Significance” section. That’s where I used to devote several carefully crafted pages to the history and philosophy of my research program. Reviewers probably skimmed through that, so perhaps it’s no loss. In its place are two shorter sections, titled—somewhat enigmatically in my view—“Significance” and “Innovation.” I think I know what these words mean, and how they differ. However, what I’m supposed to write in that part of the application is still puzzling. There are various helpful hints on the Web, some put out by NIH Institutes. But what I need to figure out is what my peers expect to see in these sections. And I expect they are as confused as I.

### Thinking about Innovation

Despite this carping, I’m happy NIH is asking me to spell out why my proposed work will be “significant” and “innovative.” I feel these are the criteria I should be judged by, and they are the criteria I try to apply when reviewing other people’s grants. I’ve always feared the alternative, which is to be judged by feasibility. I can never resist the urge to propose far more than my group could ever actually do, including blue-sky experiments that probably don’t have a chance of working. And, anyway, we usually end up doing something quite a bit different. Thank goodness the NIH awards grants to most of us, not contracts! So in my view, encouraging innovation by making it an explicit component of the proposal is a step forward.

Thinking about the process of evaluating grants, and about innovation more generally, brings up two important ASCB topics: Should

we be participating more as a society in shaping NIH policy around grants and peer review, and (more importantly) are we being innovative enough as a society and field?



Tim Mitchison

### Addressing NIH Policy

Currently, the ASCB does not have a committee whose sole mission is to keep track of, and seek to influence, NIH-set policy. Our Public Policy Committee (PPC) works hard on securing more funding for science and educating legislators. PPC has been particularly active on stem cell policy. Nevertheless, the Committee’s #1 goal is to increase the NIH and National

Science Foundation (NSF) budgets as a whole, which we all support. With the prospects for necessary funding increases becoming dimmer, the PPC has begun to focus more of its efforts on internal NIH policy, including how the money the NIH already receives is spent. In the last few years, the PPC has actively participated in the redesign of the NIH peer-review system and participated in the development of the NIH policy implementing President Obama’s stem cell Executive Order. The ASCB also worked with Toni Scarpa, director of the NIH Center for Scientific Review (CSR), to attract more reviewers for CSR Study Sections. Recently, the PPC has written to NIH Director Francis Collins suggesting an external review of NIH operations to make sure the money Congress already provides to the agency is being most effectively used. For many years, the ASCB has had excellent working relationships with the leadership of the NIH, which often allows us to work “under the radar” on issues of importance to our members. Individual ASCB members have also contributed large efforts to the NIH committees responsible for setting NIH policy. As a society, however, there is certainly more for us to do.

How NIH and other agencies spend their money are crucial issues for many ASCB members. I feel we could do more as a society to inform our members, and perhaps influence policy, in this area. Funding agencies frequently

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In late April, ASCB sent each regular, postdoctoral, and emeritus member a link to the ASCB election site. Since spam filters may prevent some messages from being received, members are encouraged to go to [www.ascb.org](http://www.ascb.org) to vote. Your member number (the same number used to access MBoC) will enable you to vote and ensure that each member votes just once. If you do not receive the link and/or do not know your member number, contact the ASCB at 301-347-9300 or [ascbinfo@ascb.org](mailto:ascbinfo@ascb.org). ■

request input on diverse topics pertaining to grants, and our society commands considerable respect at NIH and other agencies. If we can organize effectively, I think we can have considerable impact. We would have to be careful; arguing that basic cell biology research is more important than  $x$  or  $y$  research could sow discord in the larger community, and backfire badly. But when I read a document like Francis Collins's list of research priorities for the NIH (*Science* 327:36–7), with its emphasis on high-throughput and translational approaches, I feel we should respond as a society. While members of the ASCB Council and PPC did so in private conversation with Collins in December, we may need to seek input from members and draft more formal position statements about such issues.

In that light, I very much enjoyed Robert Weinberg's recent defense of hypothesis-driven research in the genomic era (*Nature* 464:678). His hypothesis-free protagonist Todd Golub made some good points too (*Nature* 464:679). Genomics is going to make great strides in the next decade; but it alone will not be sufficient to solve mechanistic problems, or develop new therapies.

At a more down-to-earth level, NIH frequently seeks outside advice on issues relevant to cell biology, for example, NIGMS's recent call for input on training biomedical scientists ([www.nigms.nih.gov/Training/StrategicPlan.htm](http://www.nigms.nih.gov/Training/StrategicPlan.htm)). The ASCB asked members, Council, and several committees for input (using the website, Facebook, and Twitter). In the absence of much response, President-Elect Sandra Schmid prepared a largely ad-hoc response to that particular call. It is time to be more active as a society in monitoring such NIH requests for input and responding when appropriate.

### Are We Innovative Enough?

Thinking innovatively, of course, shouldn't be limited to NIH policy or our own individual research. While vigorously defending basic cell biology as a research approach, I think we also need to ask ourselves if our field is still as innovative as it needs to be. We were the frontier in the 1980s and 90s. Are we still? In some ways I think we are. Our community vigorously pioneers new research techniques, especially those based on microscopy, and spreads them to other fields. I also see us as very open to new

kinds of questions. The cell biology of RNA, for example, is a fast-breaking field that has been well-represented at recent meetings. In other measures of innovation I'm not so sure.

I recently helped ASCB Annual Meeting Program Chair Jody Nunnari go over the titles of poster categories for the 2010 Annual Meeting. They had changed relatively little from one year to the next. With their emphasis on dividing up research by subcellular structure, they felt old-fashioned to me. They also made me realize the extent to which our meeting is failing to represent fully some of the most exciting developments in modern cell biology, particularly in areas like signaling and stem cells.

I don't want us to become the society of traditional approaches to membrane and cytoskeleton biology. And I feel more innovation may be in order, certainly in our meeting program, but perhaps also in our field. That said, I know from ASCB membership surveys and individual conversations that most ASCB members want us to retain if not expand our focus on core cell biology. I strongly support this view. My feeling is that a healthy society should continually experience some degree of creative tension between representing well-established interests of its core membership and expanding into new areas. My current impression is that we might be expanding more slowly than would be ideal. Biology is exploding out in all sorts of new directions. At the same time as retaining our focus on core cell biology, I think we also need to embrace more vigorously new kinds of questions and approaches that involve cells, and consider some of them as additions to an expanding core program. In fact, member and Council input regarding areas for expansion strengthens this conviction.

What kind of science ASCB should represent is one of the key questions the ASCB Council started debating in May as part of a strategic planning process. Many of you already provided input through the recent member survey—the response was over 20%. Your feedback is critical, and we anticipate asking you more questions as the process evolves. My hope is that a more innovative ASCB will emerge from this process. I welcome your thoughts and comments on these issues. ■

*Comments are welcome and should be sent to [president@ascb.org](mailto:president@ascb.org).*