

MOVERS

**Robert Rosner, laboratory director,
Argonne National Laboratory, Illinois**



2002–05: Chief scientist, Argonne National Laboratory
1997–02: Director, Center for Astrophysical Thermonuclear Flashes at Chicago
1991–97: Chairman, Astronomy and Astrophysics, University of Chicago, Chicago, Illinois

Staying true to Robert Rosner's two great passions — his wife and scientific discovery — set him on an astronomical career path. To avoid a commuter marriage, Rosner decided to stay in the Cambridge area after finishing his physics PhD at Harvard University, while his wife completed her doctoral degree — even if it meant changing fields. He became, in effect, the 'accidental' astrophysicist.

Rosner was offered a postdoc with Giuseppe Vaiana, who had just moved to Harvard. Vaiana was a leader in experimental solar physics, and one of the first people to use imaging X-ray telescopes to look at the Sun. "He, more than anyone else, channelled my passion for astrophysics," says Rosner.

Now that he knows an unplanned foray can dramatically influence your job path, Rosner advises young scientists to anticipate that even the best-laid career plans are likely to change. "I hadn't realized to what extent the postdoc would mould the rest of my career. I thought it was an interlude," he says.

After 17 years in the Boston area and a tenured position with the Smithsonian Astrophysical Observatory, Rosner left Boston with his wife. They both took positions at the University of Chicago.

In the early 1990s, Rosner was asked by Chicago's provost to head a committee to examine the relationship between the university and Argonne National Laboratory, which the university operates. The time spent thinking about the role that national labs have to play within national research agendas awakened Rosner's desire for furthering US excellence in science and technology. Three years ago, he joined Argonne on a part-time basis as chief scientist.

He says that his new role as lab director is the greatest challenge of his career, particularly because scientists rarely get formal training in leadership and management. But he says that his on-the-job experience with past mentors, including his predecessor at Argonne, has prepared him for the task at hand.

One of his first tasks, he says, will be to secure the development of a new accelerator — the rare isotope accelerator — to open fresh frontiers in nuclear physics. And he has a broader goal: to make sure that Argonne seizes every opportunity it can to play a key role in maintaining the United States' leading position in science and technology. ■

RECRUITERS & ACADEMIA

Zen and the art of grant application

The grant-writing seminars I took did not fully prepare me for the actual process of applying for a grant from the US National Institutes of Health (NIH). First was the time issue. I applied for a grant to study a protein found in relative abundance in a cell's endoplasmic reticulum. This protein has no known function, and I was determined to find it.

I sent the grant application in June and didn't get summary statements back until December, which meant that, with luck, I could address the issues raised and resubmit by June. I had to take a deep breath and swallow the realization that it would take an entire year just to resubmit my application. For my next submission, I will plan for this long period — while hoping for a faster turn-around.

I also became trapped in a catch-22. It is very difficult to get funding for something, such as my protein, that is not well understood. The thinking, perhaps, is that there are so many things to study that we do understand, why add things we know nothing about? This leaves me scratching my head as to how anyone will ever get funding to study the large number of proteins of 'unknown function' that have been identified by the Human Genome Project.

To overcome this apparent paradox, it seems you need to find something that is understood or that you can flesh out, or you must search the literature

for something that seems to explain to some extent what you propose to study. I found a paper showing that my protein could bind and activate tissue plasminogen activator, an important molecule for the regulation of fibrinolysis in the vascular system and something related to human health (which is a plus when seeking funds).

I discovered from reviewers' comments that it pays to be as detailed as possible, and so build their confidence in your ability to carry out the experiment. I learned this the hard way: a reviewer said my description of the techniques and experimental approaches were too brief and superficial — and that I did not have an established track record with the studies. I had no doubt about my ability to do the experiments, and I had included in the initial application information that I had used the technique before. But I realized that writing down exact protocols might provide that added information to boost reviewer confidence in my abilities.

All told, deep breaths and an eye to including even what you may consider obvious should help you to steer your application to success. ■

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GRADUATE JOURNAL

Dissin' the dissertation

A graduate career is bookended by the Graduate Record Examination and the dissertation, and to me, neither seems all that useful. Allow me a moment to rant on about why scientists should not have to write dissertations. Am I the only one who thinks this is an antiquated system?

Sure, the history and literature students write a big book to form the bulk of their PhDs, but do any potential labs or colleges ever ask to see a scientist's dissertation upon application? They open up the manila envelope (or e-mail these days) and take a quick glance at the CV with their eyes shooting straight to the publication list. Our graduate careers are defined by what we learn and what articles we get into which journals.

So, here I sit, bitter and with dissertation.doc as a constant open window on my laptop. I peck away at it and thank my lucky stars that I will never have to do this again. I have jumped through so many hoops during the graduate-school circus and this one just seems so silly. Will anybody ever read this book I'm writing? Unlikely. But, for now, I'm back to working on it.

It's going to be a crazy two weeks ahead. Send pizza, coffee and beer... ■
Jason Underwood is a graduate student in molecular biology at the University of California, Los Angeles.