

Volume 11 | Issue 9 | Page 13

by Kathryn S Brown

PROFESSION

## A Winning Strategy For Grant Applications: Focus On Impact

*The Scientist* 1997, **11**(9):13**Published** 28 April 1997

Sidebar: [The Dos and Don'ts of Winning Dollars](#)  
Sidebar: [Grant Writing - For More Information](#)



**A NEW STRATEGY:** UC-Irvine's Keith Woerpel, who revised his rejected grant applications to focus on impact, now has several grants.

To Keith Woerpel, 1994 will forever be the year he learned to write grants—the hard way. An assistant professor of chemistry at the University of California, Irvine, Woerpel wrote five grant applications that year. All were rejected.

"I was getting burned really badly," Woerpel remembers. Obviously, something was wrong. When Woerpel shared research ideas with colleagues, he sounded animated. But that animation didn't come through when he was writing up his work for grant reviewers. Reading his grant

applications was like perusing term papers. "If I'd been writing a 10-page paper for college, I would have been very proud," he says.

Painful as it was, Woerpel forced himself to go over his rejected grants, paragraph by paragraph. Then he did some reorganizing. His goal: to sound less like a student, and more like a researcher brainstorming with friends. Instead of rambling into a grant application with a long research history, he started with a quick bit of context—and then explained how his work added to it. The new focus, he says, was impact: From the beginning, he stressed how his work was new and exciting: "I [tried] to make it simple and bold," Woerpel recalls.

The strategy worked. Last year, Woerpel received a Presidential Early Career Award from the National Institutes of Health. Today, his lab at

UC-Irvine has one grant from NIH and two from the National Science Foundation. The cache boosts Woerpel's chances of winning tenure.

By stressing his research's impact, Woerpel hit on one of the key themes running through the NIH grant-review world today ([T.W. Durso, \*The Scientist\*, Dec. 9, 1996, page 1](#)). NIH is also renewing its emphasis on research creativity and fine-tuning its institutional missions. Today, agency staff and peer reviewers suggest grant applicants reflect on three questions: What impact would my research have? Is my research original and creative? And how can I tailor my research to the goals of a specific NIH institution?

---

**"Just pick up the telephone and call the review staff at different institutes."**

Jean Chin,  
NIGMS

The changing emphasis comes as NIH grapples with dividing limited research dollars among ever-increasing grant applications. Choosing which grants will get funded has always been a daunting task, notes

---

Constance Atwell, associate director for extramural activities at NIH's National Institute of Neurological Disorders and Stroke (NINDS). "The problem is that there's so much good science," Atwell says.

"Sometimes the only way to distinguish applications is to find a flaw. In the past, [grant] reviews have been dominated by reviewers trying to find something wrong with an application." Problems with a project's technical feasibility-like neglecting to mention how you would reach an elusive sample population-constitute one example.

Today, rather than search for what's amiss, NIH staff would like to focus on what's good in grant applications, Atwell maintains. Accordingly, the agency is drafting new guidelines for grant reviewers. That's where research impact and creativity enter the picture-and where scientists can use a winning strategy to get funded.




---

**CHANGING EMPHASIS:** New guidelines for NIH grant reviewers will focus on research impact and creativity, notes NINDS's Constance Atwell.

---

The first key to a successful grant-as Woerpel found-is focusing on research "Why is the research exciting?" Atwell asks. "An applicant should be careful describing the rationale for the study and exactly how the results will change understanding of the biological question being addressed." The trick, review to emphasize how your work will propel a field forward.

Here are a few grant-writing rules to remember, according to National Institutes of Health reviewers and staff:

- check NIH's Web site for information on grant policy;
- call program staff ahead of time to learn what's hot-and what's not;
- ask colleagues to critique your grant application before submission;
- keep research goals simple and clear;
- carefully follow reviewers' suggestions for revisions when your grant application is returned.
- promise the world in one lab project;
- stack a grant

Next, scientists should consider the creativity of the proposal. Scientific creativity is a topic of much debate. Through the years, fostering creativity hasn't been easy for academics in general, grant reviewers typically walk straight and narrow, approving grant projects that advance current research by expected increments. That can stifle new ideas. Tenure-track faculty, in particular, desperately seek grants, so they can't risk appearing too "out there" on grants. To fund innovative projects, some scientists turn to grants rather than try getting funded at NIH.

This

is **NIH Division of Research Grants**

at <http://www.drg.nih.gov>

very

difficult **Biomedical Grants on the Internet**

is at <http://www.biomed.lib.umn.edu/grantstext.html>

acknowledges

Ellen Barrett's **Hints for Writing Successful NIH**

**Grants**

at [http://chroma.med.miami.edu/research/Ellens\\_how](http://chroma.med.miami.edu/research/Ellens_how)

professor

in **Who's Who In Federal Grants Management**

at <http://www.os.dhhs.gov/progorg/grantsnet/whosw>

department

of

physiology and biophysics at the University of Miami. "If you take off in a new direction, they're going to look at your application very, very closely to see that you can do this." Barrett, who has lectured on grant writing, has online hints for getting NIH funding.

Sometimes creativity hits halfway through a project when researchers stumble across an unexpected finding. It's the classic Catch-22 in basic research. On the one hand, researchers should follow every intriguing research lead. On the other hand, the rigid performance review requires them to follow the plan laid out in their initial grant. "I think there's a bigger benefit to serendipity in the grant process than we give credit for," says Kim Wise, a professor of molecular microbiology and immunology at the University of Missouri.

Now, NIH is trying to give creativity a little extra credit.

application with too much history and extra information;

- be vague in describing experiments;
- dash off and send a grant application without carefully reviewing it;
- get discouraged if your grant isn't approved the first time out.

-K.S.B.

Wendy Baldwin, deputy director for extramural research at the agency, recently released a plan to "change the perception that NIH does not reward creativity" in grant applications. The plan basically asks NIH reviewers to keep an eye out for creative research proposals. Examples of creativity might include new methodological tools for exploring old problems, or-at the extreme-venturing into barely studied biological territory. NIH director Harold Varmus is expected to formally comment on the plan this spring.

Talking about research impact and creativity is fine, but how can grant writers use this information? What does it mean when someone says, "Be more creative"? Like much of the grant process, this challenge can be a hopeless mystery at 9:00 p.m., when you've finally got time to work on your grant application.



**WORK THE WEB:** A wealth of information on scientific areas of interest, policies, and procedures can be found on the NIH Web page, says Donna Dean, associate director of the Division of Research Grants.

Fortunately, some mysteries can be solved at 9:00 p.m.-on the Internet. "Week by week, NIH is putting up more information on its Web page," reports Donna Dean, associate director of NIH's Division of Research Grants. "You can find out about scientific areas of interest and policies and procedures.

You can look at the home pages of the specific organization you're applying to. You can find out who's on the review committees. The list goes on." (See accompanying list of helpful Web addresses.)

The trick is to use this information to help tailor your grant proposal to a specific NIH institution. You can even find out who will review your grant-and obtain a description of what they're looking for in a research proposal. If you can't find this information on the Internet, don't stop there, advises Jean Chin, a program director at NIH's National Institute of General Medical Sciences (NIGMS). "So many researchers just throw their grant applications into a black box, blindfold themselves, and wait for the end," Chin says. "Just pick up the telephone and call the review staff at different institutes. Ask them, 'Do you think this idea will fly?' or 'What is your group most interested in right now?'"

Indeed, several NIH staff members emphasize that they don't mind hearing from grant applicants-even though applicants may not want to seem a nuisance. "People call the program staff and say, 'Gee, I'm sorry to bother you,'" says Atwell. "Don't be sorry. That's what we're paid for. And it never hurts to have the staff know your name."

Research trends do change with the times. In fiscal year 1997, for example, Congress called for federal agencies to focus on the biology of brain disorders; new approaches to pathogenesis; preventive strategies against disease; genetics in medicine; and computers in medicine and research. Given these broad guidelines, NIH's various institutes further define current emphasis-say, on the etiology of stroke or the molecular basis of diabetes.

Congress also is pushing agencies to review their research missions and make sure their funding fulfills those missions. The 1993 Government Performance and Results Act (GPRA) calls on federal agencies to formally measure the outcome of research grants. This focus on performance affects grant applicants in every field, according to Jean Morrow, a program analyst in the policy and management division of the Department of Energy. "First, you really want to make sure that your research activity matches the goals of the agency you're applying to," Morrow says. "Then you need to think about how you will measure your own performance. How do you know if your project is reaching its goals?" Timeless Tips

No matter what their focus, all scientists can do a few things to boost their odds of getting a grant approved. First, suggests Woerpel, give yourself plenty of time to write it. "You have to let your mind roam. I take two months, and I doodle an unbelievable amount. I go through a lot of paper. I even wake up and write myself notes in the middle of the night."

Like Woerpel, most researchers know the trials of grant writing all too well. It can easily steal a third of a scientist's time. "You lose track after so many evenings," says Mark Walter, a chemist at the University of Alabama in Birmingham,



**FOREVER WRITING:** After spending so many evenings writing grant applications, "you lose track," says UAB chemist Mark Walter.

with a groan. Worse yet, countless evenings don't guarantee success. Walter, for example, endured three rounds of peer review of his first NIH grant before it was approved.

When you're satisfied with your grant application, give it to someone who won't be. "Find a friendly enemy," advises Atwell. "Don't have your friends read it because they're not going to say, 'Oh, yuck,' or 'This is kind of boring.' You need a skeptical but cooperative colleague who's willing to be tough." It also may help to think of grant writing as a way of marketing ideas. It's not enough just to have an idea, says Dean. At some level, you have to sell that idea to the reviewers. And that requires clear, concise, and interesting writing.

Once you submit your application, then comes the hard part: waiting. It can take about nine months to hear the outcome of a grant application. Every year, about 12,000 grant applications wind their way through NIH's dual-review system-going first to study sections of researchers and then, depending on the research topic, moving up the ladder to advisory councils for the various NIH institutes.

Even after 20 years, Wise gets frustrated by the time involved. "I'm just as much toiling away on grants now as I ever did," he says. And after all the waiting, the news on a grant application may not be good. According to NIH statistics, the agency rejects some 80 percent of grant applications the first time around.

This is the time for what may be the grant writer's best friend: persistence. "You just have to keep trying," Wise stresses. "Revisions are a fact of life." When all fails, he takes heart from a saying he read long ago: "There is no substitute for a good idea."



**TRY AND TRY AGAIN:** Missouri's Kim Wise offers this simple reality of grant writing: "Revisions are a fact of life."

---

Kathryn S. Brown is a freelance science writer based in Columbia, Mo.

[Return to top](#)