NIH Center for Scientific Review

peer review notes

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Rescuing NIH Applications from the Shutdown Chaos

"CSR staff and reviewers have been truly remarkable in tackling the unprecedented mountain of work created by the government shutdown," said NIH Director Dr. Francis Collins. "It says a lot about the vitality and commitment of those who power NIH peer review, and I want to say how much these efforts are appreciated."

"The 16-day shutdown hit us hard," said CSR Director Dr. Richard Nakamura, "because it happened just as we were beginning our fall review meetings." CSR reviews 54,000 applications a year in three cycles.

"It was heart-wrenching," said Dr. Nakamura. "Each day that passed meant the work of hundreds of applicants, reviewers and staff was thrown into disarray, threatening to disrupt the research everyone knows is important." CSR was forced to cancel 283 review meetings, involving over 11,000 applications and 5,250 reviewers.

"The most overwhelming part, however, was not the shutdown but the response," said Dr. Nakamura. "Reviewers and staff rallied with incredible commitment and generosity to complete the reviews on schedule -- despite significant personal costs, which for many will continue to be racked up for weeks to come."

"We didn't think it was possible," he continued. "When CSR and NIH leadership got back to work and assessed the damage, we concluded that shifting all the uncompleted reviews to the next round would be the most practical thing to do."

"But we didn't know how strongly the community would respond," he continued. "Applicants told us the 3-4 month delay really mattered to them, and reviewers told us they would give completing their reviews top priority."

NIH Director Dr. Francis Collins was moved, and when he asked us if we could change course with stronger than expected support from our reviewers, we did. To get the job done, meetings often had to be split into two or three meetings, held on weekends or late at night. Scientific Review Officers (SROs) had to convert some meetings into video or internet-assisted meetings.

Reviewers to the Rescue

The Molecular Genetics A study section agreed to meet on a Sunday, giving up a weekend or more. "There was no question we would do all we could," said the chair, Dr. Chris Lima, who is a Howard Hughes Medical Institute Investigator at the Sloan-Kettering Institute. "When you are serving on a study section, you put yourself in your colleagues' shoes. A four-month delay is tantamount to many labs having to stop what they're doing."

Other study sections held multiple meetings. "It certainly was a lot of work, but it was important work to do" said, Dr. Lisa Najavits, who chaired two face-to-face review meetings that were five days apart. To make them happen, she carved four days out of her packed schedule -- no small feat for someone who sees patients, runs a small business, works as a researcher in psychiatry at Boston University School of Medicine, and also serves as a lecturer at Harvard.

What's more, she came to the meetings with her arm in a sling after having broken her shoulder ice skating. But she didn't make a big deal of this. "It was a privilege to chair both meetings," she said. "There was an inspiring sense of teamwork and commitment to public health by all involved."

During the surge to rescue the reviews, the extraordinary became the ordinary. "Ask anyone at CSR and you'll hear the same story," said Dr. Michael Sveda, SRO of the Molecular Genetics A study section. "It's one thing that people don't understand about peer review -- how committed reviewers are and how much they care."

CSR Staff Make Many Sacrifices

"We suffered a tragic loss during the shutdown," said Dr. Nakamura. "Dr. Priscilla Chen, the much admired SRO of our Skeletal Biology Development and Disease study section died of a stroke while home alone. Had she been expected at work, she might well have been reached before she died."

"The overall story, however, is a very positive one," he continued. "Our staff did what we thought was impossible." For weeks on end, many SROs worked weekends and late evenings. Holiday leave and vacations were either canceled or shortened.

What literally strained backs, necks and personal lives was that much of our fall workload was severely compressed into the time when we gear up for winter reviews. Many SROs had to produce summary statements from their delayed meetings while recruiting reviewers and assigning them to incoming applications for their next meetings.

Our receipt and referral staff also had to process 16,697 applications in one month instead of two. "It was extremely stressful," said Dr. Cathie Cooper, Director of CSR's Division of Receipt and Referral. "We had very little time to deal with the usual complications of assigning applications to review groups and funding Institutes and Centers. And our referral officers are SROs who were already overloaded from the shutdown."

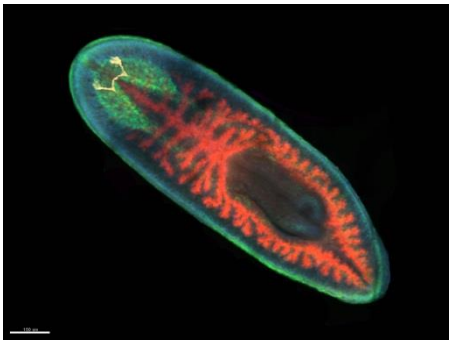
In addition, CSR's administrative and technical staff went into overdrive managing thousands of extra tasks related to canceling, rescheduling and supporting affected review meetings.

Thank You from CSR's Director

"It has been humbling to witness," said Dr. Nakamura. "To everyone who helped NIH rescue this country's health research from the shutdown fire, I say thank you from the bottom of my heart. And since the crunch continues . . . thank you for your continued efforts. "

"If the shutdown did anything good it reminded us we are responsible for something very important and exciting, and together we can do great things," he said. "And now that Congress has passed a budget, we are all glad to focus back on the important work we do."

How NIH Peer-Reviewed Science Powers U.S. Science and Health



"As we look to improve how NIH reviews grant applications, we shouldn't forget that peer review works very well most of the time," said CSR Director Dr. Richard Nakamura. "Scientific and health breakthroughs are heralded in the press almost every day. And you often can trace them back—directly or indirectly—to one or more NIH peer review groups that found great promise in an application."

"There are powerful stories that need to be told," he said. "They illustrate why support for peer-reviewed science is so important to our future." CSR is starting to do this by sharing stories like the one below.

The Blossoming of Regeneration Research

Dr. Alejandro Sánchez Alvarado didn't have high expectations in 1997 when he submitted his first NIH application for independent research at the Carnegie Institution of Washington.

"I was trying to develop a model system that -- if not forgotten -- was at least the laughing stock of the scientific establishment," said Dr. Sánchez Alvarado. He wanted to study regeneration in the flatworm (planaria). About the only individuals studying flatworms at the time were kids who watched them regenerate themselves from tissue bits in biology class.

"Most of the regeneration research in the U.S. at that time was being done in vertebrates and, for the most part, it was phenomenological," he said. What made his application extraordinary was that he proposed to "develop tools to perturb and manipulate the process molecularly and genetically."

"I had no evidence I could do this," he explained. "I just had a list of experiments that needed to be done and a series of tools that needed to be developed . . . I hoped the little preliminary data I had could convince the review panel there was some really interesting biology to be discovered."

"It was a bold application for a new investigator," said Dr. Judith Greenberg, who was his Program Officer at the time. "And this was not the work he had done as a postdoc." Dr. Greenberg is now Acting Deputy Director at the National Institute of General Medical Sciences (NIGMS) and Director of its Division of Genetics and Developmental Biology.

Getting a "Bad" Score

His application was reviewed in October 1997, and six months later he anxiously tore open the NIH scoring letter.

"It was such a low score I thought I had flunked out," said Dr. Sánchez Alvarado. "Before I got the comments, I called Dr. Greenberg for some advice on how to improve my score. After some paper rustling, she said, 'I'm not at liberty to tell you anything now, but I can tell you -- in my experience at NIH – almost no one with this score has ever been denied funding.'"

"I got it totally backwards!" he laughed. No one had told him how the NIH scoring system worked.

Getting the Review Right

When the summary statement arrived, it stated: "This is an ambitious but exciting application . . . if successful, it promises to teach us much about the mechanism of regeneration . . . A great deal rests on the applicant developing transgenesis with planarians, but there is much confidence in Dr. Sanchez's ability and this is further corroborated by the thoughtful and well documented strategy in the proposal which is backed up with alternative methodologies. Despite the risk involved, this was considered to be a most promising application . . . ."

"The reviewers got it right," said Dr. Greenberg. "They overlooked the risk—or maybe embraced it—and they recognized the potential."

"With this grant, he developed most of the tools needed," she said "and he has reinvigorated the field of regeneration research and launched the careers of a lot of researchers." He also has served as an NIGMS Council member and received an NIH MERIT Award. He currently is a Howard Hughes Medical Institute Investigator at the Stowers Institute for Medical Research in Kansas City, Missouri.

Advancing Basic Research

Because planaria and vertebrates share an incredible number of genes, the characterization of gene functions in planarians promises to advance studies of human stem-cell function, regeneration and wound healing. How this could unfold is still a scientific mystery.

"It is really early to know what will come of this," said Dr. Sánchez Alvarado. "The linear plot of a good narrative would be that we might be able to identify a series of molecular cascades or cellular events that may be coaxed to promote or induce regeneration in organs or organisms that are not very good at it."

"Of course, science is never linear," he noted. "Still, in my heart of hearts, I think that to really understand and address many of the problems that afflict us, we need to look beyond the present emphasis to produce practical outcomes, which in my opinion is artificially restricting our way of interrogating life to unacceptably narrow confines and unsatisfactory depths."

Could NIH Fund this Kind of Application Today?

"I know it is tough these days," said Sánchez Alvarado. "But I think there is always room for good science and a need for new paradigms of investigations." He tells his students they need to "have a thick skin and deep-seated belief that what they are doing is important and it will matter down the road."

As a reviewer and former NIGMS council member, he understands the challenges reviewers face today when budgets are tight and there are so many really good applications to consider. "The granularity of resolution is not there for an individual

reviewer to distinguish an A+++ from an A++ application, and both of these projects may be really, really important," he said.

He encourages reviewers to "fight for two or three applications they think are truly meritorious. Keeping an eye on the long-term is the best way to navigate this storm."

Know a Great Story Where Peer Reviewers Identified Research that Had a Big Impact? Let us know.

New Video Tells Emerging Scientists How CSR Can Help Jumpstart their Careers

Emerging researchers rave about our Early Career Reviewer (ECR) Program, which gives them experience reviewing NIH grant applications. But don't take our word for it. Hear what they have to say in our new video: Jumpstart Your Research Career with CSR's Early Career Reviewer Program.

In the video, five participants share the insights they've gained into peer review and discuss how they believe the program will help them produce better NIH grant applications and advance their careers.

"We're always looking for good candidates," said Dr. Karyl Swartz, Director of the program and Director of CSR's Division of AIDS, Behavioral and Population Sciences. "Early Career Reviewers provide valued expertise as well as fresh perspectives." She noted that scientific review officers have engaged nearly 800 of these reviewers since the program was established in 2011.

View the video or visit the Early Career Reviewer Web page.

NIH Changes Continuous Submission Policy to Improve Reviews

NIH recently modified the policy that allows chartered study section members, reviewers with recent substantial service, and NIH council members to submit at any time R01, R21 and R34 applications that would otherwise have standard due dates.

What Has Changed

- ***NIH now has clear submit-by dates for having qualifying applications considered in a specific council round.*** Applicants used to have to consult a table of different submit-by dates.

- ***NIH has redefined the timeframe for reviewing continuous submission applications.*** Instead of providing reviews in 120 or fewer days following receipt, NIH will release summary statements at least 30-days prior to the council meeting.

What This Means for Qualified Reviewers and Council Members

- ***You will still have an extra 1-2 months to prepare your application for a given review round***—which is about the amount of time you spend reviewing applications for others.

- ***You may have to wait longer to get your summary statement.*** The time from receipt to review could be less than 120 days or up to 240 (rarely) days.

Why Did NIH Make the Change?

To improve the quality of our reviews: The earlier 120 day requirement forced our Integrated Review Groups to create many small special emphasis panels. In the past, the assignment of applications to these panels was determined more by the timing of their submission than their scientific content. Now, we will be able to create larger and more scientifically focused panels. Such panels will have a greater depth of expertise and provide more robust reviews.

- ***To end the confusion over how late you can submit a qualifying application for a particular council round.***

The Updated Continuous Submission Policy Did Not Change

- The criteria for recent substantial service
- The time from submission to council consideration
- The late window to request a specific study section

Learn More About the NIH Continuous Submission Policy

Correcting Your Application After Submission

If you submit your application and then see a problem when you view the assembled copy in eRA Commons, can you fix it? The answer depends on when you submitted your application. [If you're an NIH reviewer or council member, it could also depend on whether your application qualifies for continuous submission.]

After submission, NIH gives you a window of two business days to view and reject your application, make changes, and submit a changed/corrected copy. So if you submit your application on a Monday, you have the rest of Monday and all day Tuesday and Wednesday to view and rework your application and then submit it.

The Two-Day Viewing Window Does Not Extend the Submission Deadline

You must make your changes and submit your changed/corrected application -- error-free -- by 5 p.m. local (application organization) time on the submission date. Otherwise, your application will be late and will not move into the review process.

How Can You Ensure You're Able to Use the Viewing Window to Make Corrections?

- ***Submit early!*** Start the submission process at least half a day, if not days, in advance. Remember, the office of sponsored research (or equivalent) at your institution may have internal deadlines that you will need to meet in order for your Authorized Organizational Official to have time to process and submit your application and allow time for the possibility of making any changes.

- ***Check your submission!*** It normally takes just a few minutes for applications that pass Grants.gov validations to be retrieved by the NIH and assembled for viewing in eRA Commons. But it can take longer just prior to major deadlines, so keep checking in eRA Commons until you see your application image.

- ***Reject the "bad copy" first!*** If you simply try to submit another copy, our system could reject it as a duplicate. Learn More.

- ***Submit the changed/corrected copy before 5 p.m. local (applicant organization) time on the submission date***. Learn More.

What If You Want to Change Your Application After the Viewing Window?

Before the Submission Deadline*:* When your two-day viewing window closes, your application automatically proceeds through CSR's Division of Receipt and

Referral processing. At this point, the only way you can submit a corrected version of your application is to withdraw it from our system and submit a new version through Grants.gov.

After the Submission Deadline: If the submission deadline has passed, then a new copy of the application may be submitted for a later submission date/council. We are not able to accept any changed pages to your application that would correct oversights/errors discovered after the submission deadline.

When problems caused by federal computer systems can be demonstrated and documented with the eRA Commons Help Desk before the submission deadline has passed, it is sometimes possible for NIH to accept a late, corrected application.

Learn More

The NIH Office of Extramural Research provides extensive information about how to submit, track and view your applications, how to find help if you need assistance with your application submission, and other important instructions and advice that you will find helpful when applying electronically for an NIH grant.

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