PlatformTranscripts

Equipment Funding Opportunities and Strategies for Success (Part 6)

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Editor's Note: *This series of edited transcripts is from Symposium A-14 at the Nashville M&M meeting August 10, 2011, organized on behalf of the Facility Operation and Management Focused Interest Group, co-chaired by Owen Mills and Christopher Gilpin. This is the last of the six talks on this topic.*

Thanks very much for the opportunity to speak to you about Shared and High-End Instrumentation Programs at the NIH. There are differences and overlaps among the instrumentation programs in different government agencies. I hope you will find my presentation informative. The Shared and High-End Instrumentation Grant Programs (SIG/HEI) have been administered by the National Center for Research Resources (NCRR) since their inception in 1982, more than 30 years ago by Dr. Marjorie Tingle who retired in September of 2011. After the dissolution of NCRR at the end of 2011, SIG/HEI Programs were moved to NIH's Office of Research Infrastructure Programs (ORIP) under the Division of Program Coordination, Planning, and Strategic Initiatives (DPCPSI) in Office of the Director (OD). The current Program Director of the SIG/HEI is Dr. Abraham Levy. These programs provide funds to research laboratories to purchase or upgrade expensive equipment too costly to obtain with regular NIH grants. SIG Program provides funds for the cost range of $100,000–$600,000, and HEI Program provides funds from $750K–$2M.

Both programs are cost-effective mechanisms in the ways that they enable purchase of shared equipment for an average of 8–10 NIH grantees to support their research projects. The instruments are usually placed in core facilities for open accessibility. They are specialized instruments and not for general usage; they are dedicated to biomedical research. With the latest technological capabilities, these instruments are key tools in accelerating NIH research projects.

Funds from both programs are provided for the purchase or upgrade of commercially available instruments only. The awards are for one year and for the direct costs of the equipment only. These programs do not support personnel, extended warranty, or service contracts related to the equipment. Each application should have only one principle investigator (PI) who is not required to have active NIH grants. However, the PI on a SIG or HEI grant should be a technically competent person for the requested instrument. Similar to any NIH funding mechanism, only one resubmission is allowed. Different from the NSF, there is no limit on the number of applications an institution can submit.

In order to be eligible for the programs, each application should include a major user group of 3 or more researchers with NIH-supported projects. To be qualified as major users for program eligibility, these researchers should have NIH grants with the activity codes R01, P01, U01, R35, R37, DP1, and DP2. The application should have a strong justification of needs demonstrating that the NIH-funded projects will be enhanced by the requested instrument, for example, higher signal-to-noise ratio, higher resolution, enhanced throughput, etc. Because these instruments are very complex in nature, the application should include adequate technical expertise for the instrument. Due to the shared nature of the instrument, the application should include an appropriate administration plan to assure fair and optimal usage of the instrument. An acceptable administration plan should include a group of advisory committee members that is consisting of users and non-users to manage the instrument. Lastly, institutional commitment and a charge-back plan for long-term maintenance of the instrument should be included in the application.

Over the last five years of SIG applications, the most requested instruments were confocal microscopes, followed by mass spectrometers, biomedical imagers, and cell sorters. The awards were spread across all equipment types. Every equipment type has a similar success rate, and the pattern hasn't changed for many years. There are fewer types of equipment that fall into the HEI categories. Again, award distribution spreads through all equipment types. In the HEI Program, the most requested instruments are biomedical imagers, and this pattern hasn't changed for many years either.

Once you have submitted a SIG or HEI application to the NIH, your application will be sorted by instrument type and assigned to respective instrument-specific Study Sections by the Division of Receipt and Referral at the Center for Scientific Review. About 10–15 instrument-specific Study Sections are conducted every year. Reviewers are all ad hoc and are expert users; many of them have been successful SIG/HEI applicants who understand the program and have insightful information about the particular instrument type. After the initial peer review, these applications will receive a secondary review by the Council for NIH Office of the Director before a funding decision is made by Program Staff.

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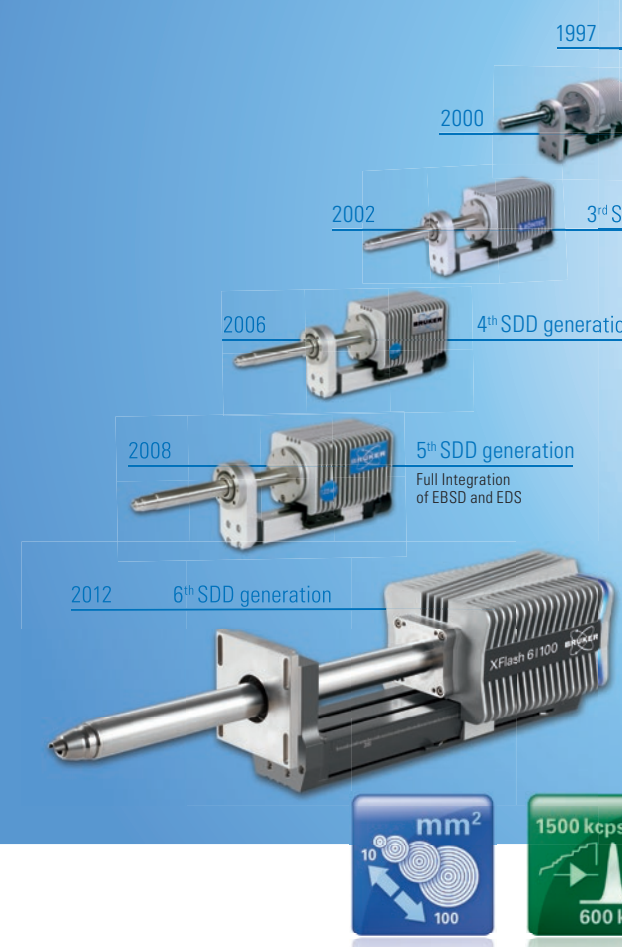

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During the peer review, reviewers are asked to evaluate the following criteria, and each is weighted equally before the final impact score is reached. Is the need for such equipment justified? Is the new equipment going to enhance the users' NIH-funded research projects? Will this equipment accelerate new discoveries? Is there technical expertise in place? How will the equipment be maintained, run, and who will train new users? In the administration plan, does the institution have a plan to provide fair user time and make sure there are no conflicts among users? Is it open to potential users? Next, it is important to have a financial plan for long-term maintenance in ways of institutional commitment and a charge-back plan. Because these programs only fund the direct costs of equipment for one year, it is important to strategize to collect fees from users and secure appropriate support from the institution to keep the machine going for years to come. Finally, the impact to the overall community will also be evaluated.

The SIG Program is offered annually with a March receipt date. In a five-year average, the normal number of applications per year is about 400, and the number of awarded is about 130–140, a success rate of about 30%. An average SIG award is about $355K, and the amount is increasing as the equipment becomes more costly. The SIG Programs normally have an annual budget of $43M. The HEI Program is offered every other year with a September receipt date. The number of applications has been about 100 per receipt date, and the percentage of awards every year is about 14–15%. Although the receipt date for the HEI Program is every other year, we fund HEI awards throughout the two-year period; therefore, the success rate is about 30%. An average HEI award is about $1.6M. The budget for the HEI Program is normally $20M per year.

Program announcement is re-issued annually for SIG and bi-annually for HEI Programs. The most recent program announcement for SIG is PAR-13-008, which expired on March 22, 2013. A new program announcement for SIG will be posted around November 2013. There is a receipt date for HEI application on September 13, 2013. The Program Announcement is PAR-13-101. Interested applicants are encouraged to go to SIG/HEI websites (http://dpcpsi.nih.gov/orip/diic/shared_instrumentation.aspx and http://dpcpsi.nih.gov/orip/diic/high_end_instrumentation.aspx, respectively) for program-related information including a list of past awards. You will see the list of what equipment was funded and the amount awarded. Dr. Levy's contact information is listed on these websites if you have further questions. Thank you.

Question. You mentioned that the SIG and HEI Programs provide funds to purchase equipment for biomedical research. Can researchers from other disciplines be listed as users?

Answer. Yes. Once 75% of the instrument usage has been utilized for biomedical research, researchers from non-biomedical disciplines can certainly be listed as the users.

Question. Transmission Electron Microscopes, in particular with aberration correctors, are getting to a price range that is pushing the upper limits of the SIG award. For example, you almost cannot buy a TEM with $600K, even a basic 120 kV instrument. How do we convince the funding agencies that a standard 120 kV TEM with a decent digital camera is a high-end instrument? In terms of science, there could be an argument that they may never fund the basic TEM. Are there any plans you have about the upper limit for the HEI Program that you can share with us and how can we deal with this situation?

Answer. I would say the $2M cap for HEI is going to stay. As you can see from the slides, there are EM applications in both SIG and HEI Programs. Depending on the needs of the users, some groups may need electron microscopes that are more or less expensive than the others. In any case, you will need to provide strong justification of need for applications. To reiterate, it is the **justification of need** that is the gateway for favorable reviews. There have been many HEI applications for biomedical imagers that cost between $5–6 million or more. These applicants negotiated with their institutions to pitch in the difference. Understandably, vendors are willing to provide discounts to meet the cost range, because this is a potential business to them. In either case, SIG/HEI applications should provide a means to leverage institutional commitment as well as vendor discount toward the purchase of shared equipment.

Question. NIH only allows us to submit a single resubmission, that is A1. How do we submit an application to be distinguished as a "new" application from a "resubmission" application for the same equipment after an unsuccessful A1 submission?

Answer. According to NIH guidelines, a new application is expected to be substantially different in content and scope. Of course this guideline is difficult to apply to SIG/HEI applications because you will continually need the same equipment. Possible ways to make your SIG/HEI applications appear "new" are change in the grant title, PI, or user table. You can refer to the SIG program announcement for guidance. To strengthen your application, you should definitely include modifications suggested by the previous reviewers. However, you should not include an introduction section that makes your application look like a resubmission.

Question. Do reviewers evaluate resubmissions differently?

Answer. No, the criteria for new and resubmission applications are the same, except that there is an additional section in which the reviewers may factor into their final impact score whether the resubmission has addressed the previous concerns. If the resubmission application has addressed the concerns, it will certainly receive a better score.

Question. How is the priority score for an NIH grant application derived?

Answer. Before the review meeting, each application is assigned to at least three primary reviewers who perform detailed reviews of the application and give both component and preliminary priority or impact scores in integers from 1 to 9, 1 being the best. The component scores are the scores for the five criteria described in my talk: justification of need, technical expertise, research projects, administration, and institutional commitment. The scientific review officer, who we call the SRO, would average the preliminary score for each application and rank the applications according to averaged scores before the meeting. At the start of the meeting, the SRO will decide which

Microscopy Society of America Awards

Nominations are now open for the Microscopy Society of America Annual Awards. The awards process is one way in which the Microscopy Society of America recognizes the significant and diverse contributions that individuals make to our field. Deserving nominations for consideration should be submitted electronically no later than December 15th, 2013 to:

AssociationManagement@microscopy.org

The Main Society Awards Are

Distinguished Scientist Awards

These Awards recognize preeminent senior scientists from both the Biological and Physical disciplines who have a long-standing record of achievement during their career in the field of microscopy or microanalysis.

Burton Medal

The Burton Medal was initiated to honor the distinguished contributions to the field of microscopy and microanalysis of a scientist who is less than 40 years of age on January 1st of the award year. (Please note the change in the selection criterion regarding age.)

Outstanding Technologist Awards

These Awards honor technologists from both the Biological (Hildegard H. Crowley Award) and Physical Sciences (Chuck Fiori Award) who have made significant contributions such as the development of new techniques which have contributed to the advancement of microscopy and microanalysis.

Morton D. Maser Distinguished Service Award

This Award was initiated to recognize outstanding volunteer service to the Society as exemplified by Mort Maser, who served the Society for many years with great dedication. This award is made to honor an MSA member who has provided significant volunteer service to the Society over a period of years.

The Albert Crewe Award

The Albert Crewe Award was initiated to recognize the distinguished contributions to the field of microscopy and microanalysis in the physical sciences of a postdoctoral fellow of not more than 6 years' standing (since doctoral graduation).

The George Palade Award

The George Palade Award was initiated to recognize the distinguished contributions to the field of microscopy and microanalysis in the life sciences of a postdoctoral fellow of not more than 6 years' standing (since doctoral graduation).

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Further details of the nomination process can be found on the society webpage at:
www.microscopy.org

applications are to be discussed—usually the top 40% to 50% portion of the list—and the discussion is conducted from the top, down. The rest of the applications will be given ND (not discussed). If any of the reviewers from the ND group feels strongly that a particular application should be brought up for discussion, this application will be discussed at the end. After discussion of each application, the primary reviewers will be asked to give modified impact scores, which are used to establish the range for the rest of the review panel to vote on. The final priority or impact score for this application is the average of all scores from the entire review panel, multiplied by 10.

Question. If the application did not receive a score, what should we do next?

Answer. Although it was not discussed during the review meeting, the application did receive a full review by the assigned reviewers whose critiques were reflected in the Summary Statement. You should read the Summary Statement carefully and address all concerns to increase the competitiveness of your resubmission.

Question. If we feel that the review was not fairly conducted, can we appeal? What are the proper steps?

Answer. There is an appeal process for NIH Initial Peer Review if you want to appeal; however, you are encouraged to discuss this with the Program Staff first. You can prepare a letter that describes the perceived errors of the initial review and explain the reasoning behind the appeal. Make sure your institutional official endorses the letter before submitting to the NIH. Appeal letters should be received no later than three weeks prior to the Council meeting. Appeals will be reviewed by NIH staff and Council. If a complete description of the issue is not presented, it will be classified as a grievance rather than an appeal, and no action will be pursued. If the appeal stands, the application will be re-reviewed by a different review panel.

Question. Why did NIH decide to limit the number of resubmissions to one?

Answer. Based on the Peer Review Report, it was found that there was marked reduction in the number of awards made in response to the original application. Many applications were funded after more than one re-submission (that is, A2 application). This is a burden on applicants and reviewers as well as a delay in funding for meritorious science. NIH therefore implemented this change to increase the likelihood of meritorious original applications to be funded within two submissions. Regardless of this change, there have been many SIG/HEI awards to the original applications.

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