Center for Scientific Review
Center for Scientific Review Advisory Council Meeting
National Institutes of Health
U.S. Department of Health and Human Services

December 3, 2012

The Center for Scientific Review Advisory Council (CSRAC) convened at 8:00 a.m., Monday, December 3, 2012, at the Health and Human Services Building, 5635 Fishers Lane, Rockville, MD. The entire meeting was held in open session. Dr. Richard Nakamura presided as Chair.

Members Present

Bruce Alberts, Ph.D.
Etty N. Benveniste, Ph.D.
Alice M. Clark, Ph.D.
Pamela Hammond, Ph.D.
David Korn, M.D.
Peter R. MacLeish, Ph.D.
Andrew W. Murray, Ph.D.
Richard K. Nakamura, Ph.D.
Keith R. Yamamoto, Ph.D.

Kate Bent, Ph.D., was the executive secretary for the meeting.

I. Welcome, Meeting Overview, and Approval of Minutes

Dr. Richard Nakamura, acting CSR Director, welcomed attendees to the fourth meeting of the CSRAC. He thanked members for adjusting their schedules to participate in this meeting when it was re-scheduled in the aftermath of Hurricane Sandy.

The minutes from the May 14, 2012, CSRAC meeting were approved.

II. Office of Extramural Research Update

Sally Rockey, Ph.D., NIH Deputy Director for Extramural Research in the NIH Office of Extramural Research (OER), discussed programs and policies that affect the scientific community. She began by noting that several research organizations in the New York area were seriously affected by the storm, and NIH is issuing guidance to help them deal with the impact.

Budget Situation

- ***Flat Budget:*** Over the last few years, with the exception of increased funding from the American Recovery and Reinvestment Act of 2009, the NIH budget has remained flat. With costs rising, a flat budget means funds have the buying power they did in the year 2000 before the NIH budget was doubled. Success rates for Research Program Grants (RPGs) are at about 17.5 percent, an historic low. A lot of stellar research is being left unfunded.
- ***Continuing Resolution and Potential Sequestration:*** A Continuing Resolution that leaves spending at last year's level is in effect for six months. A possible concern is sequestration in January. A report issued by the Office of Management and Budget shows NIH funding

would decrease by 8 percent if sequestration went through in January 2013, which could mean a loss of many new RPGs.

Policy News

- ***Special Council Review:*** As piloted in May 2012, NIH Institute and Center (IC) Councils must provide additional consideration of new and renewal applications from investigators who currently receive $1 million or more in direct costs of NIH funding for RPGs. She explained that this consideration does not cap funding, but is a good management technique for Councils to discuss providing more funding to these laboratories.
- ***Principal Investigator Salary Issues:*** Overall, 40–50 percent of salaries for principal investigators (PIs) come from NIH funds, although precise amounts are hard to determine. Discussions have taken place about how institutions can become less reliant on NIH funding. More immediately, the U.S. House of Representatives passed a bill limiting maximum salaries paid to PIs from NIH funds to the "executive-2" level. Some in Congress want to lower the maximum further. In response to questions from Dr. David Korn and Dr. Keith Yamamoto, Dr. Rockey said they are modeling the impact of percent-of-total-effort versus a salary cap, and reviewing trends in staffing that relies on soft money.
- ***HHS Policy on Conference Grants:*** The Department of Health and Human Services (HHS) now prohibits the use of grant funds to purchase food and beverages for conferences. Grant recipients must manage funds so that HHS funds are not used to pay such expenses.
- ***Public Access to Research Results:*** Since 2008, researchers who publish the results of their NIH-funded research must make their publications publicly available within 12 months. Compliance is about 75 percent. A November 2012 *NIH Guide* notice reaffirms compliance is required to receive Type 5 continuation funding. A grace period and other measures will help bring people into compliance if they are not already.
- ***A2 Application Resubmission Policy:*** Dr. Rockey shared data on the impact of the policy to eliminate an applicant's ability to submit a second resubmission (A2). About 50 percent of grants funded since then have been A0s, i.e., they were funded after their first submission. Investigators' average time to award decreased from an average of 90 to 50 weeks. A study of 3,800 unsolicited R01 grant awards made in FY 2011 showed that allowing highly meritorious A2s to be resubmitted would displace about 400 A0s and 350 A1s.

Program News

- ***Collaborative Research at the NIH Clinical Center:*** In late November, Opportunities for Collaborative Research (U01) at the NIH Clinical Center was announced, which will allow extramural researchers to use Clinical Center resources. A new website details the resources available, and 14 ICs have signed on. CSR will coordinate about half of the reviews for these grants.
- ***NIH Guidelines for Human Stem Cell Research:*** The NIH policy, effective July 9, 2009, has been challenged in several court cases, although not successfully. One appeal went to the Supreme Court, but Dr. Rockey said it is not yet clear if the Court will take up the case.
- ***Biomedical Research Working Group:*** Dr. Rockey reviewed findings from this group, charged by the Advisory Committee to the Director (ACD) to develop a model of a

sustainable and diverse U.S. biomedical research workforce and recommend actions NIH can take to achieve it. The group focused on Ph.Ds., who make up 75 percent of NIH-funded PIs, and recommended a follow-up study of M.Ds., M.D./Ph.Ds., and others.

Among the findings, most biomedical Ph.D. candidates are funded from NIH research grants, with the time needed to earn the degree and age when earned rising since the 1970s. Compared to chemistry Ph.Ds., biomedical Ph.Ds. have a longer period for training and establishing their careers. As the biomedical workforce ages, people remain in the system longer, thus diminishing opportunities for those starting out. Postdocs in the biomedical field earn less than those in other fields, not catching up until 20 years out. NIH-funded postdocs are paid less than counterparts funded by the National Science Foundation and Department of Energy.

Dr. Rockey shared a model to understand where U.S.-trained Ph.Ds. work. Although the model has uncertainties because of the data available, it shows only 43 percent go into academia, yet this is where the current system trains all students to go.

Recommendations based on these findings include providing graduate students with broader experience and training, increasing postdoc entry-level salaries, and tracking people throughout their careers to inform future policy changes.

- ***Outreach:*** OER has a new website, blog, and Twitter feed to communicate with the scientific community.

Discussion Highlights

- ***Salaries for Postdoctoral Researchers:*** Dr. Korn said an NIH committee recommended step increases for postdocs in the early 2000s, but there was no follow-through as funding tightened. Dr. Andrew Murray said younger PIs are under great pressure to get grants and thus spend less time in the lab. Dr. Rockey agreed the lower success rate means a huge effort to get funding. The number of applications has increased because of a growing number of applicants, rather than because of an increasing number of submissions per PI.
- ***Biomedical Working Group:*** Dr. Pamela Hammond asked about models for a more diverse workforce. Dr. Rockey said another working group is focused on diversity issues. (This working group was on the agenda later in the meeting.) Dr. Bruce Alberts asked if NIH planned to put resources behind the proposal to diversify training for other than research options. Dr. Rockey said NIH Director Francis Collins is committed to this idea.
- ***A2 Aftermath:*** Dr. Etty Benveniste asked if NIH had data about what happens to PIs who score well in their A1 but do not receive funding. Dr. Rockey said, contrary to anecdotal reporting, they have not had to totally retool their labs but instead come in with a different variation of their research. She did not have data on their success rates. Dr. Benveniste said it is hard to advise faculty when their grants receive good scores (3 to 4) but are not discussed. Dr. Rockey said talks are underway about how to provide more information to applicants in summary statements, even if their applications are not discussed.
- ***Career Tracking:*** In response to a question from Dr. Nakamura, Dr. Rockey explained the benefits of tracking for institutions and individuals, as well as ways to automate it to reduce the reporting burden. Two efforts could help: a system to be piloted this summer called Science CV, which researchers will use to create and maintain CVs for multiple uses; and a

unique identifier system called ORCID, which is being developed by a nonprofit consortium. By having a researcher affix his or her ORCID number on grants, publications, presentations, and other work, NIH could track careers much more easily. Dr. Nakamura noted OER is trying to balance privacy concerns with the ability to ensure that NIH investments are wise.

III. Enhancing Peer Review Survey

Dr. Luci Roberts, Ph.D., Director of Planning and Evaluation for OER, reported on the Phase II survey on changes that resulted from the Enhancing Peer Review (EPR) process. The survey, which was conducted with applicants, reviewers, scientific review officers (SROs) and program officers (POs), and IC Advisory Council members, showed positive approval ratings for most of the changes. Dr. Roberts focused on four changes with more mixed reactions: shortened applications, the single resubmission policy, summary statements, and the 9-point scoring system. A Phase I survey also covered the latter two changes.

Shortened Applications

Applicants were asked whether the now shortened sections of the grant application are sufficient to describe their research projects, and the other groups were asked if these sections are sufficient to evaluate applications. Applicants as well as reviewers, SROs and POs generally agreed that the application sections were sufficient to describe research projects and evaluate their scientific merit. Applicants, however, were less positive about the introduction to resubmission section compared to other shortened sections. Reviewers, SROs, and POs were less positive about appendices. POs had the lowest rate of agreement that the section on research strategy is of sufficient length for describing clinical research. All groups had high rates of agreement that the spaces devoted to specific aims, biographical sketch, and literature cited are sufficient in length.

Single Resubmission Policy

Dr. Roberts said single resubmission is the least favored change. Applicants and reviewers were asked if the policy has helped, hindered, or had no effect on the NIH peer review process. Most rated it as having hindered the peer review process. Although the level of dissatisfaction was higher if their application was not discussed or not funded, 50 percent of applicants who were funded stated that the policy hindered the peer review process. In the open-ended section, applicants were concerned that the policy reduced their chances of getting funded. Fifty-five percent of reviewers said the policy hindered the peer review process. Reviewers and applicants raised concerns about equity issues and continuity.

SROs and POs were not asked a directed question about the policy, but were asked to rate the extent to which all 15 changes, including single resubmission, contributed to EPR objectives. Twenty-six percent of SROs and 19 percent of POs felt the A2 policy contributed to EPR objectives, and most chose it as an element of the EPR in need of further changes.

Open-ended comments by all groups reflected concern that good science is being passed over, particularly in this time of tight funding.

Summary Statements

SROs, POs, and applicants rated the bulleted form now used in summary statements negatively. Concerns included not enough information provided, unclear comments because of sentence

fragments and incomplete statements, and some inconsistency between critique comments and what is discussed at a meeting. Program staff who could not attend a study section meeting reported reluctance to rely on the critique comments to advise applicants or to make funding recommendations. IC Advisory Council members who had experience with the bulleted statements were more divided in their views.

SROs were asked this question in Phase I and Phase II of the survey. While the positive responses increased, they were still low.

Nine-Point Scoring Scale

The survey showed divergence in views about the 9-point scale. Reviewers indicated it contains sufficient range, although many, in open-ended comments, said they would like half-point increments. SROs said more changes are needed, noting some concerns about score inflation and reviewers not using the entire range to score applications. POs rated it as one of the three EPR changes least helpful for advising applicants.

Overall Satisfaction

The Phase II survey asked three questions related to overall satisfaction. Applicants, reviewers, and SROs said they preferred the new system; POs preferred the old; and IC Advisory Council members had no preference. The majority of all stakeholders rated the system as very fair in the two most recent Council rounds.

In terms of satisfaction with peer review in the most recent two rounds, 72 percent of reviewers were very or somewhat satisfied. Applicants were more divided, with 46 percent very or somewhat satisfied, and 42 percent somewhat or very dissatisfied. However, when review outcome is taken into account, the majority of applicants whose applications were funded or discussed were satisfied.

In sum, the three main areas identified as most problematic by one or more stakeholder groups were bulleted summary statements, the 9-point scoring system, and the A2 policy.

Discussion Highlights

- ***Scoring Range***: Dr. Peter MacLeish asked about getting reviewers to use the full scoring range, which he identified as a critical problem. Dr. Roberts said Dr. Nakamura and Dr. Sally Amero, NIH Review Policy Officer, will co-chair a group within the Extramural Advisory Working Group to look at this issue. Dr. Murray suggested conducting an experiment to see how reviewers would rank on a bell curve. Dr. Nakamura said thinking has changed over time, and that absolute scores are now favored over rank order. Discussions will help determine how to make scoring as useful as possible to POs and Councils. Dr. Korn observed scoring inflation tends to occur when funding is tight. Dr. Nakamura acknowledged a general sense of frustration because of the low success rates due to tight funding. The review process can mitigate frustration to the extent possible with the fairest system of review.
- ***Criteria and Overall Scores***: Dr. MacLeish said further confusion sometime arises when applicants compare their impact scores to their criteria scores. Dr. Roberts said a narrative overall impact statement was introduced as a result of feedback from the Phase I survey. Dr. Yamamoto, who served on the EPR working group, said the group felt it was important not

to have a formulaic link between criteria and overall scores. A challenge to using the higher scores is that the descriptors attached to them are weak.

- ***Discussion of applications:*** Dr. Nakamura said the intention of limiting discussion was to spend more time on applications with a more significant chance of an award, but many in the scientific community thank that not discussing an application is a severe criticism of their science. Dr. Rockey said more written feedback might give applicants useful information without extending meetings to discuss all proposals. Dr. Murray suggested asking the three initial reviewers to produce a consensus paragraph, but Dr. Nakamura said such discussions would have to be held in open session. Dr. Yamamoto said every application could be discussed if the chair exercised good time management and had a clear understanding of each application. Dr. Benveniste agreed that even short, salient feedback would help applicants, because getting a "not discussed" review back is not as helpful.

IV. CSR Advisory Council Policy Discussion and Working Group Recommendations

Dr. Nakamura said a CSRAC working group has developed some peer review and grant policy suggestions that members would like him to present to relevant NIH bodies since the issues are beyond CSR's domain. He asked Dr. Yamamoto to present the working group's thoughts.

Dr. Yamamoto thanked members for participating in the discussions that led to the proposed policy considerations. The group generated a robust list of issues, and moved forward with five for this meeting.

Five Proposals to Be Considered for Testing

Dr. Yamamoto summarized the five proposals.

- ***Treat all applications as new*** and let investigators instead of NIH decide when resubmission is futile. The council suggested a pilot where investigators who opt-in could resubmit any R01 application as many times as they wanted, but they could submit no more than two research project grant applications in any 12 month period.

- ***Encourage more NIH Institutes and Centers (ICs) to allow investigators to respond to their reviews prior to Council consideration*** so very promising applications that might slip through the system could be identified. Principal investigators (PIs) with "gray zone" applications would be asked to provide a response to their reviews. IC Program staff would submit these comments and applications to their Councils, which provide the second level of peer review.

- ***Enhance communications with PIs:*** Study sections and NIH program staff should do better at communicating to PIs about applications that are unlikely to be successful or, alternatively, are of potential interest.

- ***Encourage NIH ICs to take full advantage of the R56 funding mechanism to provide bridge funding to promising investigators.*** These "High Priority, Short-Term Project Awards" provide one year funding for high-priority new or competing renewal R01 applications that score just outside an ICs funding limits.

- ***Provide longer-term funding for some PIs:*** For investigators with large and successful programs, NIH should consider offering funding for a longer duration but at a lower overall amount. The savings would be used to fund more applications. Restrictions on participating PIs would be necessary to ensure that the result would be revenue-positive.

CSR Staff Perspective

A panel of CSR staff responded to the working group's proposals, particularly the first one.

- ***Support for the new application policy***: Dr. Alex Politis, Chief, Infectious Disease and Microbiology Integrated Review Group (IRG), expressed support for the group's first proposal. He said CSR hears that losing the A2 means good research is lost or significantly delayed. Dr. Delia Olufokunbi Sam, SRO for the Health Disparities and Equity Promotion Study Section, suggested applications that score within a certain range but are not funded could be considered in the next Council round without re-review. Dr. John Firrell, SRO in the Surgical Sciences, Biomedical Engineering & Bioengineering IRG, said re-review is difficult for some applicants. They are not able to interpret the critique from the first reviews; when they do respond, another set of reviewers may have a different view. He suggested trying the change first with the R21 or other mechanism, rather than the R01.
- ***Workload***: Dr. Kalman Salata, Deputy Director of the Division of Receipt and Referral, noted treating every application as a new one would mean not having to determine if applications were duplicative from the past. However, at least at first, there may be a larger number of applications.

Open Discussion and Feedback

Discussion continued among CSRAC members, with the CSR staff panel, and with others in the audience.

- ***Scoring compression:*** Dr. Murray said the issue of scoring compression is serious. Treating every application as new and providing better feedback to applicants could mean that the applications that do come back are strong ones that nearly missed funding. Dr. Alice Clark, referring to Dr. Yamamoto's earlier point, said the descriptors attached to scoring levels could be further discussed to see whether they accurately convey what reviewers think about the proposals. Dr. Tom Peterson, Chief, Bioengineering Sciences and Technologies IRG, asked if CSRAC had talked about an absolute scale versus forced ranking if the A1 were eliminated. Dr. Nakamura said discussions are underway about scoring.
- ***Responses to and from reviewers:*** Dr. Benveniste said review/feedback system is stalemated as applicants try to second-guess what reviewers want, particularly when they have only a single resubmission opportunity. Both she and Dr. Korn expressed strong support for a pilot treating each application as new. Dr. Dana Plude, Chief, Biobehavioral and Behavioral Processes IRG, said after each review, records of the previously assigned reviewers are destroyed; thus, there is not necessarily continuity of reviewers as some applicants expect. He said eliminating the A1 takes care of this issue.

In terms of providing feedback, Dr. Politis said reviewers do not always feel comfortable being too blunt nor do they have the authority to prevent A1 resubmissions. Dr. MacLeish said that reviewer feedback can also help improve the science of an application.

- ***Funding longevity but at a lesser level:*** Returning to the fifth of the working group's proposals, Dr. Politis raised concerns about special review of applications for funding over a longer project period. Dr. Benveniste said details would have to be worked out, and some discussion ensued about how to ensure that the policy would result in making more funding available for other researchers. Dr. Nakamura stressed this is a suggestion that would be carried to the ICs and program communities, not one that CSR could implement on its own.

  Dr. Carole Jelsema, Chief, Molecular, Cellular, and Developmental Neuroscience IRG, suggested looking at the data for investigators who receive merit or similar awards and then sometimes have difficulty when they later compete for R01s. She wondered if a similar situation might occur for those who participated in the proposed program.

Council Recommendations

Motions were made and seconded on advancing the five suggestions. Dr. Yamamoto stressed the proposals are not to set policy but for Dr. Nakamura to present and discuss with his colleagues at NIH. While all five suggestions were passed unanimously, there was a proviso that details would need to be fine-tuned for the fifth proposal, which related to exchanging a longer period of funding for a lower overall amount of funding.

V. NIH Update

NIH Director Francis Collins, M.D., Ph.D., via telephone from London, announced Dr. Nakamura as the new Director of the Center for Scientific Review. He praised Dr. Nakamura's work leading CSR as acting director and noted the search committee was enthusiastic about his selection as permanent director. Dr. Nakamura thanked Dr. Collins and said he was honored and humbled by the assignment. Dr. Collins also thanked CSRAC for providing constructive advice about peer review.

Dr. Lawrence Tabak, D.D.S., Ph.D., NIH Principal Deputy Director, presented updates on other NIH issues.

Supporting New Discovery and Leadership Announcements

As a backdrop for his presentation, Dr. Tabak quoted researcher, physician, and essayist Lewis Thomas, who said, "it is hard to predict how science is going to turn out, and if it is really good science, it is really hard to predict." Nonetheless, he noted that the 2012 Nobel Prize for Chemistry recipients are among the 137 NIH-funded researchers to date who have gone on to become Nobel Laureates.

He announced new leadership in addition to Dr. Nakamura: Janine Clayton, M.D., Director of the Office of Research on Women's Health; Gary Gibbons, M.D., Director of the National Heart, Lung, and Blood Institute; David Murray, Ph.D., Director of the Office of Disease Prevention;

and Christopher Austin, M.D., Director of the National Center for Advancing Translational Sciences.

Budgetary Challenges

Of the $30.9 billion in the NIH fiscal year 2012 budget, 83 percent supports extramural research. The balance between applied and basic research has remained constant, but the flat budget has decreased purchasing power, and success rates are at an historic low. This requires priority-setting and continuous scanning of the horizon for new and emergent opportunities.

Despite these challenges, extraordinary opportunities have been identified through three working groups of the Advisory Committee to the Director: securing the future of the biomedical work force, harnessing the power of big data, and enhancing diversity of the NIH-funded workforce. The groups were reporting to the ACD after the CSRAC met, but Dr. Tabak shared some highlights.

ACD Working Group Updates

- ***ACD Working Group on the Future Biomedical Research Workforce:*** As discussed earlier by Dr. Rockey, launching an independent career as a researcher is more difficult than in other disciplines and more difficult that it was several decades ago. The group's recommendations relate to training and support for graduate students, postdoctoral researchers, and staff scientists, as well as ways to strengthen other pathways to a scientific career.
- ***ACD Working Group on Harnessing Big Data:*** The recent explosion in biomedical data offers new opportunities but also challenges in how to share and use them. Recommendations include promoting data-sharing through central and federated catalogs, supporting informatics methods and applications, building capacity, and developing an NIH-wide IT strategic plan, as well as consistent funding to support the recommendations.
- ***ACD Working Group on Enhancing Diversity:*** The NIH-funded workforce does not reflect the diversity of the nation, with only a small number of underrepresented minorities moving through the educational pipeline to earn a Ph.D. For those who manage to get their degrees and apply for NIH grants, a recent NIH-sponsored study by Donna Ginther et al. showed that Black applicants are less likely to receive NIH R01 awards than White applicants. Dr. Ginther shared her data and analyses with the working group, which helped in their work.

The Early Career Reviewer (ECR) Program has involved 433 ECRs to date, with 21 percent African American, 12 percent Hispanic, and 1 percent Native American participation. The program seems to be an effective way to assist researchers when they prepare their own grant applications.

Dr. Tabak focused on one of the group's recommendations: to conduct research on possible unconscious bias. A new ACD working group would oversee collection and analysis of data relevant to peer review and grant-making decisions. With additional guidance and ideas from CSRAC, NIH would pilot different forms of validated implicit bias/diversity awareness training and, if validated, extend the training to study section members. Another recommendation is to design experiments to determine the effects of anonymizing applications with respect to the applicant and his or her institution. These will require NIH to proceed thoughtfully and carefully.

Discussion Highlights

- ***Implementing the recommendations:*** In response to a question from Dr. Hammond about the timetable for implementing the diversity recommendations, Dr. Tabak said a small number would be implemented this fiscal year in preparation for a larger launch in fiscal year 2014.
- ***Enhancing diversity:*** Dr. MacLeish asked how the working group envisions increasing institutional support to enhance diversity. Dr. Tabak was not able to provide specifics prior to the ACD presentation, but noted some institutions already doing well in involving diverse populations in biomedical research might be able to do more with additional infrastructure support. Dr. Yamamoto questioned the point made in the Ginther study that only citations and peer review committee experience reduce disparities for African American applicants. He noted minority faculty are often requested to serve on many committees when they are trying to launch their own careers. Dr. MacLeish said minority researchers in his institution have been successful in receiving R01s and are limited from taking on too many outside commitments. Dr. Tabak noted not all institutions provide strong direction to new researchers. They are looking at how to help individuals who do not receive such support from their department chairs or other leaders.
- ***Funding Big Data Initiatives:*** Dr. Yamamoto urged trans-NIH support for these programs, rather than having to go out and get support from ICs. Dr. Tabak agreed and said IT and informatics are like peer review, in that there is a need for corporate support.

VI. The State of CSR

Dr. Nakamura thanked Dr. Tabak for his wise counsel and support. He said his work at CSR would be much harder without Dr. Tabak's strong support and advice.

Dr. Nakamura said the role of peer review is to ensure the wise spending of 83 percent of the NIH budget. Although funding has been static, the government has high regard for science, and, unlike in many countries, decisions on how to spend the funds remain largely in the hands of the scientific community. He has tried to emphasize, and Dr. Collins has supported, the development of a science of peer review to test out new ideas and improve the system.

When he first came to CSR, the Ginther report covering the fairness of peer review was about to be released. The NIH community has a deep commitment to understand and eliminate bias based on appearance versus the quality of science. He promised to involve Council once the working group recommendations related to peer review are released.

CSR has a balancing act between financial constraints and the danger of the country losing a generation of scientists as a result. Other countries, he noted, are ramping up their funding support. CSR will play a critical role in continuing to help the country fund the best science and to ensure that the money available is used in the most effective way. It requires collective thinking and action by CSR staff and the entire scientific community.

CSR workloads are high. Dr. Nakamura said he would like to see all applications discussed, as many in the community want, but that would require more resources for reviewers and SROs. One silver lining of the funding crisis is that CSR can readily hire highly qualified SROs with outstanding research and peer review experience.

He stressed the role of CSRAC in identifying critical questions and coming up with solutions, as well as underlined CSR's commitment to the future of science in the United States.

Discussion Highlights

Most of the discussion related to the reviewing and funding of basic and clinical research applications.

- ***Perception about the need to link to human biology:*** In answer to a question from Dr. Alberts, Dr. Nakamura said CSR has 240 SROs, with a total staff of about 380. Dr. Alberts asked those in the audience about a point he hears from younger scientists: the pressure to submit an application that shows a clear path to human biology. He asked SROs if they see this in their study sections. One SRO said it has not been an issue in basic science study sections. Dr. René Etcheberrigaray, Director of the Division of Neuroscience, Development and Aging, said study sections that emphasize a particular disease have an obligation to emphasize the clinical component, but, overall, reviewers appreciate fundamental discovery.

- ***Leadership commitment to basic science:*** Dr. Murray said his impression is that the basic biomedical science community, hearing NIH leadership stress the mission of human health, thinks they need to connect every application to clinical and human health relevance. He suggested emphasizing NIH support for basic science to study sections. Dr. Nakamura agreed there is concern that basic science that can show credible relevance to disease will score better, even though SROs and chairs stress to reviewers that a strong basic science argument without that link is sufficient. Dr. Korn urged NIH to respond to this perception. Although the NIH leadership is outspoken in support of basic science, he said many in the community do not believe it, yet many advances today stem from fundamental research conducted decades ago. Dr. Nakamura asked for suggestions, observing low funding rates exacerbate the problem. Dr. Alberts suggested looking at the membership of study sections to ensure basic science is present. Dr. Nakamura said CSR will resume the practice of evaluating IRGs, and the balance of reviewers within study sections will be part of the process.

  Dr. Yamamoto said the fact NIH has multiple constituencies means the NIH Director and other leaders often craft their message to fit their audience. But as President Obama has said, the government must support basic science because the private sector usually cannot. That should be a foundational point to make, no matter the audience. Dr. Nakamura said he would involve CSRAC in looking over the portfolio and membership of review committees.

- ***Study section review of certain applications:*** When the floor was open for further comment, Dr. Tom Peterson said the Modeling and Analysis of Biological Systems Study Section often deals with very new areas of science, and scientists are trying to weigh the ultimate value of a four- or five-year investment. Some basic science is so new, it is difficult for even the leaders in the field to assess the impact. Dr. Korn said all reviewers should remember the quote from

Lewis Thomas, as shared in Dr. Tabak's slides, about the impossibility of predicting the results of scientific discovery.

Dr. Robert Elliot, SRO for the Bioengineering of Neuroscience, Vision and Low Vision Technologies Study Section, reminded the group that temporary reviewers are recruited when expertise in a chartered study section is not sufficient to review certain applications. He said the requirement to minimize the number of reviewers used has a deleterious effect on the review process. Dr. Nakamura said this had been an efficiency and budgeting issue that he will review. Improved video infrastructure will help bring in reviewers with specific expertise.

VII. Closing

With no further comments or questions, Dr. Nakamura again thanked CSRAC for their participation. The meeting adjourned at 2:55 p.m.

We do hereby certify that, to the best of our knowledge, the foregoing minutes of the December 3, 2012, meeting of CSRAC are accurate and complete. The minutes will be considered at the next meeting of the Advisory Council, and any corrections or comments will be made at that time.

D. Schneider for K. Bent

Kate Bent, Ph.D.
Executive Secretary
Center for Scientific Review Advisory Council

Richard Nakamura, Ph.D.
Chair
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