

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

**December 16, 2013**

The Center for Scientific Review Advisory Council (CSRAC) convened at 8:30 a.m., Monday, December 16, 2013, at the Bethesda Marriott, 5151 Pooks Hill Road, Bethesda, MD. The entire meeting was held in open session. Dr. Richard Nakamura presided as chair.

**Members Present**

Roberta Diaz Brinton, Ph.D.  
Alice Clark, Ph.D.  
Susan Essock, Ph.D.  
Pamela Hammond, Ph.D.  
Michael Hollingsworth, Ph.D.

David Korn, M.D.  
Marie Krousel-Wood, M.D., M.S.P.H.  
Richard K. Nakamura, Ph.D.  
Keith R. Yamamoto, Ph.D.

Donald Schneider, Ph.D., was the executive secretary for the meeting.

**I. Welcome, Meeting Overview, and Approval of Minutes**

Dr. Richard Nakamura, CSR Director, welcomed CSRAC members, CSR staff, and other attendees to the sixth meeting of the CSRAC. He asked CSRAC members to introduce themselves. After reviewing the meeting agenda, he thanked the members rotating off the Council at the end of 2013 for their service: Ety Benaviste, Ph.D., John Cacioppo, Ph.D., Marie Krousel-Wood, M.D., M.S.P.H., and Andrew Murray, Ph.D. He noted they and others on the Council have made sure CSR is aware of issues and concerns affecting the scientific community, such as how to deal with reviews in the wake of the government shutdown in October 2013.

The minutes from the May 6, 2013, CSRAC meeting were approved, pending a clarification requested by David Korn, M.D. Keith Yamamoto, Ph.D., suggested future minutes should include a section at the end wrapping up action items. Roberta Diaz Brinton agreed and noted CSRAC should generate the list of items.

**II. Toward Assessment of Peer Review Group Outcomes**

NIH Principal Deputy Director Lawrence Tabak, D.D.S., Ph.D., reported on NIH activities to assess peer review undertaken at the request of NIH Director Francis Collins, M.D., Ph.D. Dr. Tabak acknowledged the central role peer review plays in fulfilling NIH's mission and the global interest in the NIH peer review system. The NIH leadership is challenged with determining if the current system results in selecting the best applications and whether these applications yield the most valuable science. Issues to consider include:

- How could NIH systematically evaluate characteristics of study section "performance" to ensure resources are directed toward the most compelling opportunities?

- How could NIH more proactively identify emergent fields of science to ensure a dynamic system responsive to changes in scientific trends?

### **Possible Quantitative Approaches Being Explored**

Dr. Tabak said four approaches are being explored. He stressed these ideas will not necessarily be adopted, and he seeks feedback on them to augment, not replace, the gold standard of qualitative judgment.

#### *Analysis of Study Section “Inputs”*

The Office of Extramural Research (OER) has plotted the number of new applications, number of new awards, and relationship between the two in different study sections, while controlling for different sizes of study sections. The pattern may indicate areas of newer, more vibrant science compared with those of stagnation, but he stressed the pattern could be interpreted in other ways.

Another potential approach is to examine awardees who submit competing renewals by Integrated Review Group (IRG). Among possible interpretations, a higher level of renewals might indicate an area in which ongoing work is showing promise, an area of science that requires long-term effort, or a study section that favors established investigators. Lower renewal rates may indicate areas in which funded research has not generated results worth pursuing.

#### *Tracking Indicators of Emergent Fields*

Possible indicators include word bursts in the scientific literature and in applications, the inclusion of new investigators on applications, and citation analyses. Another possible indicator is altmetrics, or the tracking of information in websites, blogs, social media, and other online platforms. Dissemination via these methods represents a new world for younger scientists.

#### *Analysis of Study Section “Outputs”*

Dr. Tabak said, in theory, the bibliometric history of publications or patents attributed to funded applications could define the “quality” of the study section that reviewed the application. However, this metric involves waiting longer than many critics or supporters now demand.

He recognized that citation analysis can be distorting. In response, the Division of Program Coordination, Planning, and Strategic Initiatives (DPCPSI) is working on a Relative Citation Rate that normalizes citations or the rate of citations by scientific field. IRGs can then be compared according to an average impact factor and average citations/year/publication (CYP). An analysis of data from 2007 to 2011 shows “hot” and “cold” study sections by citation rate.

#### *Analysis of Study Section “Uniqueness”*

The fourth potential quantitative approach is to examine the scientific similarity among applications reviewed by a study section through fingerprints of the applications, reviewer citation patterns, assignments and assignment requests, and applicant publications.

Before opening the floor to discussion, Dr. Tabak reiterated the limitations of quantitative approaches, noting they do not replace expert qualitative input. He thanked the NIH colleagues who have worked on these various analyses and tools.

## Discussion Highlights

- ***Risk of a one-dimensional look:*** Michael Hollingsworth, Ph.D., said he applauded the effort to try to quantify impacts but a reliance on citations can be one-dimensional. Dr. Tabak said the challenge is to respond to stakeholder demands for more real-time assurance. He encouraged the Council members to share their ideas of other immediate measures that could add more dimension to the measurement of impact.
- ***Composition of study sections:*** Dr. Brinton suggested an analysis of study sections to include, but not be limited to, gender, decision-making processes, and ways of thinking. Dr. Tabak agreed metrics that point to a study section that supports “outperforming” research might serve as a signal to study the characteristics of that study section.
- ***The use of quantitative tools:*** Dr. Yamamoto expressed concern about the notion that quantitative tools do in fact exist to augment expert opinion. The scientific community needs to push back the demand to use these tools. Dr. Tabak said some quantitative approaches may be flawed, but the need to monitor in real time remains, and the effort should continue to find valid quantitative tools. Dr. Korn said he agreed with Dr. Yamamoto. He referred to wording in the presentation about “most valuable,” “most important,” or “most compelling” science. He questioned whether it is possible to discern what is often not known for many years about what ultimately becomes the most transformative science. Dr. Tabak said there is a lot of pressure on NIH to find ways to better quantify its successes and direct its resources.
- ***“People not projects”:*** Pamela Hammond, Ph.D., referred to a quote in the press by NIH Director Collins about awarding grants to ensure “superstars” get funding and asked about the impact of such a policy on diversity. Dr. Tabak said the quote was taken out of context. By statute, NIH funds projects. Support for early career investigators, the New Innovator award, and other mechanisms support the diversity and stability of the biomedical workforce.
- ***Beyond a quick return on investment:*** Dr. Brinton said the challenge in developing new tools and processes should not be to address the pressures for a quick return on investment, but to improve and learn so the result is a portfolio of transformative science.

## III. CSR and Assessment of Peer Review Outcomes

CSR Director Richard Nakamura, Ph.D., said it is important to note that the recent push to better measure the quality of peer reviews has occurred when the grant success rate has fallen to historic lows—about 16 percent in 2013. The ability to differentiate among applications that are in the top 10 percent of all those received is difficult.

Peer review is the standard to do that, but, he asked, can we do better? CSR encouraged an approach to measure peer review quality with the following principles:

- Is based in scientific judgment
- Is validated via feedback based on actual scientific outcomes
- Is tested to ensure that any quality measure delivers benefit and not harm
- Is systematically compared against a broad set of putative quality measures.

He then briefly presented possible measures that reflect these principles.

## Possible Measures Related to Quality in Peer Review

- **Evaluation of the distribution of applications:** Preliminary results are available to test the assumption that, through percentiling, the highest quality applications are distributed evenly across study sections.
- **Surveys of scientists and scientific administrators:** CSR will administer surveys to collect opinions about various aspects of peer review immediately after review meetings. The government shutdown held up implementation, but the instrument has been developed.
- **IMPAC database analyses:** OER and CSR are analyzing the database to examine success rates by different variables, such as PIs, institutions, study sections, and renewals. Some results are available in ARGO.
- **DRR Database:** The CSR Division of Receipt and Referral (DRR) receives requests for review assignments. The Office of Planning, Analysis and Evaluation (OPAE) and DRR are considering whether these requests correlate in any way to the quality of review.
- **Text analysis:** CSR and OER are undertaking several analyses to see what can be learned from the text of applications and reviews, including what is known as opinion mining.
- **Bibliometric analysis:** DPCPSI, CSR, and other groups are determining what can be learned through the Relative Citation Rate, co-citations and collaborations, and other aspects of journal publication.
- **Network or structural analysis:** CSR is using the previously conducted Mapping of Science exercise to determine how IRGs and study review groups (SRGs) are covering science.
- **Other possible studies from outside of NIH:** Dr. Nakamura briefly touched on other areas that could be analyzed, such as factor analyses, historical analyses, and econometric studies.

It is critical to do analyses of the performance of quantitative measures against long-range analyses of award productivity.

## Preliminary Studies: Two Examples

- **Intra IRG–Cross IRG Application Ranking Study:** CSR studied five IRGs to attempt to determine if the quality of highly ranked applications is the same across study sections. About two dozen reviewers reviewed applications that had scored in the top 20<sup>th</sup> percentile in other study sections than their own and rank-ordered them 1 to 10 by impact. One IRG had a highly significant difference; and four were not significant.
- **Tolerance for innovation:** How do study sections react to innovative science outside the standard approaches and concepts in the field? CSR developed an innovation index and measure against bibliographic performance. In sum, the great majority of study sections (90%) do not penalize non-conforming applications; basic science SRGs tend to be more conformist than clinical or translational SRGs; there is a wide distribution among IRGs and an inverse correlation between innovation and bibliometric measure of quality.

Dr. Nakamura asked for Council feedback about pursuing these types of studies.

## Discussion Highlights

- **Study section performance:** Susan Essock, Ph.D., said she applauded the variety of measures to see how study sections perform, as no one measure is perfect. Dr. Brinton stressed the importance of a vision to guide analytic strategies. Dr. Nakamura noted the subtlety in measuring the advancement of science.
- **Importance of good reviewers:** Dr. Hollingsworth said a key issue lost in the analyses is how to help Scientific Review Officers (SROs) select good reviewers. Excellent panels are needed so applicants feel their proposals are understood. Dr. Nakamura agreed and asked for new ideas to measure the quality of reviewers.
- **Renewals:** Dr. Korn suggested studying the success rate of competitive renewals. From the floor, Sally Rockey, Ph.D., NIH Deputy Director for Extramural Research, said OER has collected information on renewals, but has not analyzed them by IRG. In a related study, OER will look at renewals of applications from Early Career Investigators. Dr. Hollingsworth said the issue is not just renewals, but funding.

## IV. Office of Planning, Analysis and Evaluation (OPAE): An Update

George Chacko, Ph.D., OPAE Director, reviewed the activities of his office and its interactions within and outside NIH.

### Building a Data Infrastructure

Using open-source software, OPAE is developing protocols to use data from administrative records to help address scientific questions in peer review.

OPAE assisted with three IRG evaluations in 2013—Biological Chemistry and Macromolecular Biophysics, Population Sciences and Epidemiology, and Infectious Diseases and Microbiology—with assistance from other NIH staff, CSRAC, and outside groups. The main benefit seems to be the transparency in the process, rather than specific evaluations.

### Going Forward with Ranking

As Dr. Nakamura discussed, OPAE continues to look for ways to examine reproducibility, robustness to context, and continuous evaluation strategies. A number of other evaluations are in early planning stages.

## Discussion Highlights

- **Power of humans to discern:** Dr. Chacko asked for suggestions on how OPAE could understand the limits of discrimination by review panels for applications that are very similar in merit. Dr. Korn noted the same difficulty in order to rank order applications in the pilot study. Dr. Nakamura said one idea was to review applications twice, by two different groups, to assess replicability. This is occasionally done due to Council requests for re-reviews, but has not been attempted systematically. Dr. Yamamoto said that since reviews are qualitative, variance between reviews would not necessarily mean the process is not good. He agreed with Dr. Hollingsworth about the importance of the quality of reviewers and determining how to ensure the best people participate in the review process.

- **Overfitting the data:** Dr. Hollingsworth warned against reading too much into data to set policy, especially given small sample sizes. Dr. Brinton noted the question is what to do with pilot data, rather than to propose policy. Dr. Nakamura agreed that relying on very small sample sizes is dangerous, and asked for guidance about setting policy.

## V. Basic and Integrative Biological Sciences (BCMB) IRG Changes

Noni Byrnes, Ph.D., Director of the CSR Division of Basic and Integrative Biological Sciences, asked for CSRAC approval to combine two study sections in the Biological Chemistry and Macromolecular Biophysics IRG.

### Rationale

In 2004, the MSFA (metallobiochemistry, metalloenzymes, mechanistic enzymology) study section was formed in this IRG. Two years later, the section was split into two (MSFA and MSFE) at the request of the mechanistic enzymology community, but the workloads in both have remained low at 37 to 40 applications per round. The proposed solution to merge them occurred during the review of the IRG in 2013.

Dr. Byrnes explained why the 2006 concerns of the community were not likely to arise as an issue. Dr. Yamamoto, who served on the BCMB IRG Evaluation Panel, reported the panel felt the proposal was rational and well based. A motion was made and seconded, and CSRAC unanimously agreed to merge the two study sections.

## VI. CSR Diversity Initiatives

Dr. Nakamura said CSR is undergoing a serious examination of how to evaluate award disparities by race and ethnic group. Early evidence indicates this disparity begins with scores out of study sections, and not subsequently in the process. This session of the meeting included updates on the Advisory Committee to the Director (ACD) Workgroup Subcommittee and the Early Career Reviewer Program.

### ACD Diversity Workgroup Subcommittee on Peer Review

Monica Basco, Ph.D., discussed projects to evaluate the contributors to award disparities, including a survey of new investigators, an R01 funded by the National Institute of General Medical Sciences (NIGMS) carried out by principal investigator Molly Carnes, Ph.D., and a text-mining project. As reported later in the meeting by OER Deputy Director Della Hann, Ph.D., OER also conducted an analysis of grant funding.

The workgroup is looking at three categories of factors that may contribute to disparity in grant funding, as well as possible solutions:

- **Bias in peer review:** There is no well-defined method to identify bias, but the group is soliciting ideas from the community and carrying out anonymizing experiments. NIH has consulted with the National Science Foundation and Office of Personnel Management about bias awareness training. A workshop for NIH leadership was well received.

- **Grant writing experience:** Limited experience or access to experienced mentors, deficits in grant writing, and limited institutional experience with grants may negatively impact scores. Possible solutions, such as the National Research Mentoring Network and the BUILD (Building Infrastructure Leading to Diversity), are being put into place.
- **Quality or type of science:** The subcommittee is studying whether under-recognized or undervalued areas of science, questions related to the significance of proposed work, or problems with the approach in the application may affect scores disproportionately.

### **Early Career Reviewer (ECR) Program**

Dr. Basco and Karyl Swartz, Ph.D., Director of the CSR Division of AIDS, Behavioral and Population Sciences, reported on the Early Career Reviewer (ECR) program. As of September 2013, the program received 3,200 applications; accepted 2,384; and 1,086 study sections have included an ECR. All CSR IRGs have ECRs on their rosters.

Dr. Swartz reported on home institutions and demographics of the ECRs. A survey showed ECRs are overwhelmingly positive about the experience. The SROs and chairs work closely with the ECRs. The goal of the program is to increase the success of ECRs when they apply for their own grants. She said it is too early to determine whether this has occurred, but they will compare success rates between ECRs and non-ECRs.

### **Discussion Highlights**

- **Institution assistance:** In answer to a question from Dr. Korn about differences in the fate of applications from scientists in historically Black colleges and university (HBCU) medical centers compared with applications from target populations in other institutions, Dr. Hann noted HBCUs are not among the top-tier recipients of NIH funding, but HBCU medical centers represent a much smaller slice. Dr. Korn noted HBCU medical centers have a great deal of mentoring and other assistance in place, and it would be interesting to see how applications from these institutions fare.
- **Anonymizing experiments:** In response to a comment from Dr. Yamamoto, Dr. Basco described challenges and potential solutions in anonymizing applications. Dr. Yamamoto said he was initially opposed but now strongly supports such efforts.
- **Groups to study within the diversity initiative:** Dr. Hollingsworth asked what types of groups are studied. Dr. Basco said they will look at many characteristics, including race and ethnicity, gender, and differences due to disabilities and the applicants' home institutions.

## **VII. Insights from Analyses of NIH Administrative Data on Peer Review Outcome Disparities**

At the outset of her presentation, Dr. Hann stressed the OER analysis was a team effort led by Robin Wagner, Ph.D., who could not attend the meeting.

As context, comparison of the race and ethnic composition of the U.S. population and of NIH investigators shows a lower proportion of African American and Hispanic/Latino principal investigators (PIs) than reflected in the population at large.

### **Main Findings and Background Data**

Dr. Hann presented the findings from the analysis in “headline” form, then shared data that backed up each point.

- Differences in fields of science do not explain the disparities in success rates of African American PIs. Classifying SRGs into three main categories (clinical, basic, behavioral) did not reveal any difference in outcomes of applications by race.
- Racial composition of SRGs is likely to have a minimal effect on discussion or success rates. There is only a small correlation between diversity in study section membership and discussion rates of applications submitted by underrepresented minorities (URMs).
- Resubmission of unsolicited, unsuccessful RO1 grants is largely determined by the Priority/Overall score, with less likelihood of resubmitting if scores are higher or not discussed. A higher percentage of applications from African Americans are not scored or discussed, and African American applicants resubmit significantly less than other groups.
- PIs who are underrepresented minorities or whose parents have lower educational attainment are associated with poorer review outcomes, as shown by higher (worse) impact scores. She said the finding about parental educational attainment and how it affects outcomes is a new take-home message.
- While the academic background in an applicant’s family is associated with his or her review outcomes, better outcomes are affiliated with White versus Black applicants even within levels of higher parental education.
- Criterion scores are the most important predictors of peer review outcomes. They influence the overall impact score and funding outcomes. The Approach score is the most important determinant of resubmission, and of peer review and funding outcomes. Thus, strategies to improve Approach scores will have the greatest influence on the chain of events.
- While the Resubmission, Impact, and Funding models can describe residual effects of race after controlling for variables, they cannot explain why the score distributions differ by race.

### **Discussion Highlights**

- ***Role of Approach Score:*** Dr. Korn asked if the Approach criterion is responsible for applications not being discussed. Dr. Hann noted many things go into Approach, and some implicit bias, not yet fully understood, may affect scores. Dr. Brinton characterized Approach as the scientific strategy. She noted the wide range of resources at different institutions, which can determine Approach. Dr. Yamamoto said the emphasis on Approach is disappointing and questioned how to change it. He also asked whether there is a big enough pool for a statistically significant assessment about bias in resubmission. Dr. Hann said one method to get reasonably sized groups is to increase the span of time covered by the analysis. Dr. Hollingsworth characterized Approach as an area where communication and grantsmanship are important. He recommended seeing if the deficiencies are in the science or

in the communication and writing. When Dr. Hann said grammar was not the issue, Dr. Hollingsworth suggested communication of the concept may still be significant.

- **Survivor cohort:** Dr. Brinton termed those who have succeeded despite low family educational attainment the “survivor cohort.” Although it is too late to affect parents’ education, she stressed the importance of K-12 education. Even if NIH does not invest in K-12, she stressed NIH can send a strong message.
- **Study section representation:** Dr. Hammond asked about the finding that study section diversity seems not to have a significant impact on scoring. She said even “minimal” significance might make the effort to increase URM representation worth pursuing. Dr. Hann noted there is no one answer, and perhaps a combination of many variables with small effects accounts for the disparity. Dr. Yamamoto said he is concerned about encouraging URMs to join review committees if the messaging is that their participation makes only a “minimal” difference. He said other avenues than peer review should be used for mentoring.
- **Pipeline:** Dr. Essock acknowledged NIH cannot do much about K-12 education, but asked about other ways, in addition to the promising ECR program, to facilitate access. Dr. Hann referred the question to Dr. Nakamura. While he said he had no immediate answer, CSR has taken steps to ensure all scientists have a fair stake in review based on the science. Dr. Nakamura said bias in review cannot be ruled out, and CSR must determine the extent. From the floor, Dr. Swartz reminded CSRAC about three NIH Common Fund initiatives that address diversity: The National Research Mentoring Network, Building Infrastructure Leading to Diversity (BUILD), and Center for Evaluation. Dr. Korn suggested NIH be in contact with the Howard Hughes Medical Institute about their work with undergraduates.
- **Need for fair review:** Dr. Krousel-Wood reiterated the need to guarantee a fair review for all applicants and to move forward with efforts that show they make a difference, rather than spending resources on aspects that will not move toward the long-term goal.

## VIII. Update for CSR Advisory Council

Dr. Nakamura discussed additional issues facing CSR, emphasizing the context that grant success rates are at historically low levels with a steady decrease in constant dollars. About 85,000 applications were received in 2013 compared to 68,000 in 2003. At the same time, other nations are increasing their support for science.

### CSR Workload and Continuous Submission Policies

CSR SROs tend to have a higher workload than their counterparts in the ICs, and the government shutdown and recovery made workloads even tighter. An initial decision to postpone the remaining fall reviews and merge these reviews into the winter review round was reversed after feedback from the community.

The policy regarding continuous submission of applications was refined, to remove the 120-day deadline of review and instead tie reviews to the next most convenient council. This change avoids the large number of small SEPS needed to meet the 120-day deadline while keeping the intent of ensuring reviewers get the earliest possible award decision.

## Additional Analyses

- **Success rates by study section:** OPAE analyzed funding rates by study section. The “outlier” study sections with far greater success than average turn out to receive National Eye Institute funding. NEI has the highest success rates at NIH. Among others, the data might be helpful in understanding how program staff and institutes are interpreting study section scores.
- **Amended applications:** Dr. Nakamura shared data on amended applications after the elimination of the A2. In 2013, among applications reviewed in CSR, 65 percent of the R01 awards went to A1s and 35 percent went to A0s. He said this suggests the “wait your turn” mentality persists.
- **Making awards more quickly:** Some in Congress have asked if awards can be made more quickly, especially for Small Business Innovation Research (SBIR) grants. Although the median date to receive a summary statement for a non-AIDS R01 application is longer, the total time to award is shorter for non-AIDS R01s than for AIDS R01s and SBIRs. The main lag is in the award phase – after the initial peer review have been completed. Figuring out how to bridge this time lag is important. Congress has indicated funding decisions should be made within 365 days for all awards.

## CSRAC Activity

Dr. Nakamura apologized that there was less activity within the Council working groups, but he thanked members who were involved in the IRG evaluations and other activities. He said he would keep Council up to date about efforts to measure quality. A symposium was held that indicated it might be helpful to undertake an exercise in ranking. He will share a sample protocol in which a ranking step would be added after the review step to test whether or not ranking is helpful in making decisions and differentiating among tied applications.

## Discussion Highlights

- **Amended Applications:** Dr. Essock suggested an alternative hypothesis to higher success rates for A1s is that they are improved through feedback from review. Dr. Nakamura agreed this was a good hypothesis to test. Dr. Krousel-Wood noted many A1s might have been funded as A0s in the past, when more funding was available. Dr. Yamamoto suggested coming to a decision to eliminate amendments. Dr. Hann said one idea floated is to keep the A1, but also allow applicants to submit their proposals as new applications.

## IX. Closing Discussion and Next Agenda

The final discussion focused on the role of CSRAC and the direction of NIH related to long-term funding of science.

- **CSRAC Recommendations:** Dr. Yamamoto asked about the status of recommendations and discussion points that CSRAC raised at a previous meeting (December 2012). Dr. Nakamura said there had been little immediate reaction to the CSRAC proposal to treat all new applications as new, but he pointed to Dr. Hann’s comments about the ideas to allow submittal of new applications, the main concern being how the change would affect application totals. The CSRAC proposal to provide longer-term but lower funding for some

PIs did not have support, with concerns raised about how it would work across ICs and whether it would tie up funding. CSRAC had expressed support for editorial board reviews, and Dr. Nakamura noted CSR is about to launch a set of surveys in part to differentiate types of reviews. Another CSRAC proposal had been greater use of the one-year R56. Dr. Nakamura said program staff are reluctant to use award slots for this purpose because it might mean someone else losing multiple years of support and affect the general pool for their institute. Dr. Yamamoto said the perception in the scientific community is that careers are ending at the expense of program portfolios. He also asked how CSRAC could best operate to have an impact.

- ***Short-term versus long-term:*** Dr. Korn said that he believes, despite comments from the leadership to the contrary, that NIH has shifted support for basic science to emphasize impact and more proximate social benefit. He questioned whether “impact” as a criterion score implies short-term benefit and weighs against fundamental research. He urged NIH to push the need for curiosity-driven, basic research to Congress and others, and changing “impact” to a more neutral term might be one way to do that. Dr. Nakamura said he did not see support for changing the term, but CSR actively stresses to study section chairs that a major goal of NIH is to support fundamental biology.
- ***Questions for analysis:*** Dr. Brinton suggested CSRAC know in advance the kinds of questions that CSR plans to address in its analyses.
- ***Improving peer review:*** Acknowledging the topic may have come up prior to his tenure on CSRAC, Dr. Hollingsworth asked for more emphasis on the process of selecting excellent and appropriate reviewers as part of a retrospective analysis. Dr. Nakamura asked for concerns or ideas about improving the feedback loop to oversee reviewers. He noted CSR answers to many different groups within and outside of NIH. Attempts to measure quality are designed to help NIH answer how good is the investment in science. Dr. Yamamoto agreed with the need to wrestle with the question of whether peer review could be improved. However, he stressed that great science means some things will fail. Dr. Korn expressed his concern that the voice for the longer-term benefits of science is missing from the current public debate and that NIH must take a leadership role in making the argument.

With no further comments or questions, Dr. Nakamura thanked CSRAC for their participation. Dr. Krousel-Wood thanked him and CSR staff for their efforts. The meeting adjourned at 3:16 p.m.

We do hereby certify that, to the best of our knowledge, the foregoing minutes of the December 16, 2013, 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.



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Donald Schneider, Ph.D.  
Executive Secretary  
Center for Scientific Review Advisory Council



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Richard Nakamura, Ph.D.  
Chair  
Center for Scientific Review Advisory Council