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Enhancing Peer Review at NIH



<http://enhancing-peer-review.nih.gov/>

NIH Director's Council of Public Representatives 10/26/07

Lawrence A. Tabak, D.D.S., Ph.D.
On behalf of:
ACD WG on Peer Review
SC WG on Peer Review



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**A Self-Study by the NIH
in Partnership with the Scientific Community
to Strengthen Peer Review in
Changing Times**

Principles Behind the Study

- **The increasing breadth, complexity, and interdisciplinary nature of biomedical science are creating new challenges for the system used by NIH to support biomedical and behavioral research**
- **Peer review is a key component of this system**

NIH must:

- **Continue to adapt to rapidly changing fields of science and ever-growing public health challenges**
 - **Work to ensure that the processes used to support science are as efficient and effective as possible for applicants and reviewers alike**
-

The Approach to the Study

- ❑ **NIH is seeking input from the scientific community, including:**
 - **investigators**
 - **scientific societies**
 - **grantee institutions**
 - **voluntary health organizations**
 - ❑ **NIH is seeking input from its own staff**
-

Working Groups

External (ACD WG on Peer Review)

- Keith Yamamoto, Ph.D., UCSF, Co-Chair, ACD, Boundaries Report
- Lawrence Tabak, D.D.S., Ph.D., NIDCR, Co-Chair
- Bruce Alberts, Ph.D., UCSF, Chair, Boundaries Report
- Mary Beckerle, Ph.D., U. Utah, ACD
- David Botstein, Ph.D., Princeton, ACD
- Helen Hobbs, M.D., UTSW, HHMI
- Erich Jarvis, Ph.D., Duke
- Alan Leshner, Ph.D., AAAS, ACD
- Philippa Marrack, Ph.D., Natl. Jewish Med., HHMI, Boundaries Report
- Marjorie Mau, M.S., M.D., U. Hawaii, COPR
- Edward Pugh, Ph.D., U. Penn., PRAC
- Tadataka Yamada, M.D., Gates Foundation, ACD

Ex officio

- Norka Ruiz Bravo, Ph.D., OD/OER
 - Toni Scarpa, M.D., Ph.D., CSR
-

Working Groups

Internal (Steering Committee WG on Peer Review)

- **Jeremy Berg, Ph.D., NIGMS, Co-Chair**
- **Lawrence Tabak, D.D.S., Ph.D., NIDCR, Co-Chair**
- **Marvin Kalt, Ph.D., NIAID**
- **Story Landis, Ph.D., NINDS (Co-chair EAWG)**
- **Roderic Pettigrew, Ph.D., M.D., NIBIB**
- **Norka Ruiz Bravo, Ph.D., OD/OER (Co-chair EAWG)**
- **Toni Scarpa, M.D., Ph.D., CSR**
- **Lana Skirboll, Ph.D., OD/OSP**
- **Brent Stanfield, Ph.D., NIDDK**
- **Jane Steinberg, Ph.D., NIMH**
- **Betty Tai, Ph.D., NIDA**

Ex officio

- **John Bartrum, OD/OB**
 - **Jack Jones, Ph.D., Acting CIO**
 - **Catherine Manzi, OGC**
 - **Jennifer Spaeth, OD**
-

Researcher



Initiates grant proposal:
• New project
• Continuing project

Scientific Peer Review Panel



Scientists evaluate scientific merit of grant proposal



Program Officer



Main contact for applicant
Helps interpret review results



Institute National Advisory Councils



Assess programs
Approve applications
Public members

Grants Management Team Oversight



Institute Director



Makes final decision
Allocates funds
Provides annual justification to Congress

Funds



Congress

Phases for Review

■ Diagnostic Phase

- NIH received strong response to a Request for Information

Information Requested

NIH and the Working Group welcome your comments on these CSR's current activities; however, we would particularly like your opinion, as a reviewer, applicant, or member of the public, on how to enhance the system employed by NIH to support biomedical and behavioral research, including the peer review process. The NIH is especially interested in creative, concrete suggestions to the following questions, for strengthening over the long term any and all aspects of our system for identifying the most meritorious and innovative research for support:

1. Challenges of NIH System of Research Support

Please describe any specific challenges presented by NIH's support of biomedical and behavioral research such as the current array of grant mechanisms, number of grants awarded per investigator, and the duration of grants.

2. Challenges of NIH Peer Review Process

Please describe any specific challenges presented by the current peer review process at NIH.

3. Solutions to Challenges

Please concisely describe specific approaches or concepts that would address any of the above challenges, even if it involves a radical change to the current approach.

4. Core Values of NIH Peer Review Process

Please describe the core values of NIH peer review that must be maintained or enhanced.

5. Peer Review Criteria and Scoring

Are the appropriate criteria (<http://grants.nih.gov/grants/guide/notice-files/NOT-OD-05-002.html>) and scoring procedures (<http://cms.csr.nih.gov/NR/rdonlyres/B2CFE17E-AA1C-46E5-BADB-FDBF2FBBEE80/11892/CSRScoringProcedure090706.pdf>) being used by NIH to evaluate applications during peer review? If not, are there changes in either that you would recommend?

6. Career Pathways

Is the current peer review process for investigators at specific stages in their career appropriate? If not, what changes would you recommend?

Phases for Review

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Phases for Review

■ Diagnostic Phase

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 - **ACD Working Group conducted a series of 5 regional town meetings**
 - **July 30: Washington, DC**
 - **Sep. 12: Chicago**
 - **Oct. 8: New York City**
 - **Oct. 22: Washington, DC**
 - **Oct. 25: San Francisco**
-

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Phases for Review

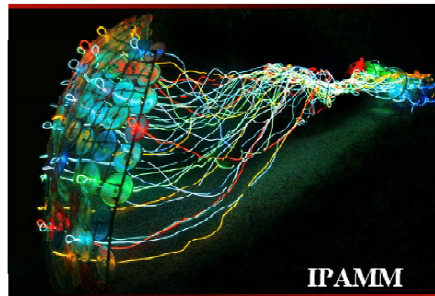
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*Impact of Proposal and Award
Management Mechanisms*

Final Report

August 1, 2007

Phases: Piloting

- **NIH leadership, informed by all input, will determine next steps, including pilots (February 2008)**
 - **Design and initiate pilot(s) and associated evaluation(s) (March 2008)**
-

Phase: Implementation

- **Development of implementation plan**
 - **Briefings for NIH staff**
 - **Briefings for scientific societies, NIH Councils and Committees, trade press, advocacy groups, voluntary organizations**
 - **Legislative briefings**
 - **Expansion of successful pilots**
 - **Development of new NIH Peer Review Policy**
-



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Some Emerging Ideas of Potential Interest to COPR

***Please note: These are not in any priority order. They are presented only to facilitate discussion and feedback and to encourage attendees to think of additional issues**

Some emerging ideas

□ Review Criteria and Focus

- **Many suggestions about how to change review criteria to increase risk taking and/or innovation and/or public health focus**
 - **For example, criteria could be weighted (e.g., public health impact)**
 - **Use matrix scores to evaluate multiple dimensions of application**
 - **Reviewing the project versus the person**
 - **Place less emphasis on methodology and preliminary data**
-

Some emerging ideas (cont.)

- **New models of review**
 - **The “Wisdom of the Crowd”**
 - **More rather than fewer people should review applications**
 - **Establish applicant/reviewer dialogue to correct factual errors during the review in real time**
 - **Different types of review for different types of science**
 - **Clinical research**
 - **Clinical-based research requires involvement of patients or their advocates in the review**
 - **Community-based research**
 - **Community-based research requires involvement of community members in the review**
-

Some emerging ideas (cont.)

- **Maximization of Review(er) Quality**
 - ❑ **Provide in-depth training for reviewers**
 - ❑ **Rating the Reviewers/Scientific Review Administrators**
 - ❑ **Place an ombudsperson on each study section**
 - ❑ **How much “context” should Reviewers be provided (“firewall”)**
 - **Portfolio analysis of the Institute/NIH current investment in area?**
 - **NIH/Institute priorities?**
 - **Should there be a “third” level of review assessing public health and societal impact?**
-

Some emerging ideas (cont.)

■ Scoring

- Use a scoring system that is consistent with the precision of the process
- Provide more useful feedback to applicants
 - Tell applicants, unambiguously, if the application is “NR”--not recommended for revision and resubmission

■ Peer Review Culture

- Do “peers” make the best reviewers?
- How can we re-capture the prestige of being a reviewer?
- “Face-to-face” versus “virtual” dynamics

■ Mechanisms

- Should we reduce the number of mechanisms--too confusing and used for different things by different NIH Institutes
 - Do we need different mechanisms for scientists at different stages of their careers?
 - New investigators--entry into the system
 - “Established” investigators--stability
 - Senior investigators--giving back
 - Make the NIH system more accessible for “non academic” organizations
-

Some emerging ideas (cont.)

- **Other issues related to system used to support research**
 - **Support for individual investigators vs. “top down”/”big” science**
 - **How many grants are “enough” for any single investigator?**
-