

An Overview of Scientific Peer Review at the NIEHS

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Overview of the Scientific Peer Review Process

Division of Receipt and Referral (DRR) at the Center for Scientific Review (CSR)

- ~80,000 unsolicited and solicited grant applications/year
- Assigned to an Institute for primary funding/support
- Assigned to the CSR or to an Institute (IC) for Review
- Compliance with Submission Requirements

Overview of the Scientific Peer Review Process

Center for Scientific Review (CSR)

- Review of grant applications submitted in response to most Parent Program Announcements-PA/PAR/PAS (mostly R01, R03, R21, and Fellowships)
- Integrated Review Groups (IRGs)
- Chartered/Standing Study Sections
- Special Emphasis Panels (SEPs)



Overview of the Scientific Peer Review Process

NIEHS SRB

- Grant applications submitted in response to specific IC mission-related Funding Opportunity Announcements (FOAs/RFAs) – Mostly R01/R21/R33
- Institutional Research Training Grants (T32)
- Center Grants (P30, P50)
- Conferences (R13)
- Superfund P42 and SRP R01
- Cooperative Agreements (U01 and other Us)
- SBIR/STTR
- Time Sensitive (R21)
- Proposals for R&D Contracts
- One Chartered Review Committee - EHSRC
- Many Special Emphasis Panels (SEPs)

Overview of the Scientific Peer Review Process

Pre-Review Meeting

- **Administrative review of all grant applications for overall compliance with NIH and IC submission policies and responsiveness**
- **Recruitment of scientific peer reviewers with:**
 - **demonstrated scientific expertise/research support**
 - **mature judgment**
 - **work effectively/collegial in a group context**

Overview of the Scientific Peer Review Process

Pre-Review Meeting

- **Breadth of perspective**
- **Impartiality**
- **Diversity of sex/gender, race, and ethnicity**
- **Geographic distribution**
- **Specific reviewer assignments**
- **Reviewer Certification of Confidentiality and Conflict of Interest**

Overview of the Scientific Peer Review Process

Pre-Review Meeting:

- Preliminary scores and written critiques
- NIH standard review criteria: Significance, Investigator(s), Innovation, Approach, and Environment
- Preliminary Overall Impact Priority Score
- FOA/RFA-specific, and other review considerations

NIEHS Special Emphasis Panels (SEPs)

- **Mostly RFAs (R03, R21, R01, R25)**
- **Conferences (R13)**
- **Career Development Awards (K series) that are not reviewed in the EHSRC**
- **Time Sensitive R21s**
- **Superfund Hazardous Substance Research and Training Program - SRP (P42) and SRP R01**
- **Research Program-Cooperative Agreements (U01)**
- **Worker Education and Training Program (U45)**
- **Loan Repayment Program (LRP)**
- **SBIR/STTR (R41, R42, R43, R44)**



NIEHS Special Emphasis Panels (SEPs)

- **ONES**
- **Children's Centers**
- **Breast Cancer Centers**
- **SBIR E-Learning for Hazmat and Emergency Response**
- **GeoHealth**
- **MEEED**
- **Autoimmunity**
- **Bio-monitoring SBIR**
- **NIH Summer Research Experience Program**
- **GEI Validation**

NIEHS Special Emphasis Panels (SEPs)

Proposals for R&D Contracts submitted to the Division of Intramural Research (DIR) and to the Division of the National Toxicology Program (DNTP)

Scientific and Technical Peer Review of:

- **Quality Assessment (QA) Support for NTP**
- **Pathology Peer Review and Pathology Support for the DNTP and the DIR**
- **Clinical Support (DIR)**
- **NICEATM**
- **Epidemiology Support for DIR**
- **Evaluation of Toxicity Potential**
- **Among others....**

Review Meeting Formats

Currently used:

- In-Person
- Teleconference
- Internet Assisted Meeting (IAM)

Other Formats:

- Video Assisted Meeting (VAM)
- Editorial Board (Two Stage Review)
- Site Visit
- Reverse Site Visit
- Hybrid

Potential Review Meeting Formats for Large/Complex Grant Applications

Most Common Challenges

- Numerous conflicts, both real and perceived. Conflicts resulting from Letters of Support and membership on EACs (External Advisory Committees)
- Competition from other review meetings, both CSR and other Institutes
- At times, reviewers request a “light” review load
- Often times require multiple days to review as well as larger Review Committees
- Limited review formats

Current and Future Challenges

- **Improving efficiency and quality of peer review by employing new scientific tools**
- **Aligning SEPs with new and evolving fields in EHS**
- **Moving away from the “boutique review” model to reduce the number of reviewers and simplify the process**
- **Reviewer recruitment efficiencies**

Current and Future Challenges

- **Enhancing reviewer training for multiple review formats**
- **Early versus senior investigator bias**
- **Evolving quality of reviewers (monitoring reviewer selection criteria)**
- **Basic versus Clinical versus Translational Research biases**
- **Re-evaluation of the focus on supporting science, not scientists or institutions**

In Summary....and Your Thoughts....

- **Scientific Peer Review at both, the NIH and its Institutes:**
 - **Continuously strives to be more scientific in evaluating approaches to improve the efficiency and the quality of peer review**
 - **Improve review committee, SEP, and study section configurations to evolving fields of science**
 - **Work in partnership with scientific and non-scientific communities in the U.S. and abroad to ascertain critical problems and advance solutions for supporting the best science and approaches**
 - **Continue to refine a culture of peer review that keeps it fair, independent, expert, timely, and effective**



Thank you

Questions/Discussion/Conversation

“The power that drives NIH is found in the collective efforts of people who submit, review, and administer NIH grant applications.”