Seeking bold ideas to enhance NIH peer review

"Fund the best science, by the best scientists, with the least administrative burden…"

An interim report from the ACD Working Group on Peer Review

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ACD WG Activities

ACD WG meeting: June 7, 2007

- Background
- Broad scope of issue-- total system for support and evaluation
- Overview and timing of process-- pilots and policies 1Q08

Data collection: June-October, 2007

- RFI: >2500 responses
- Feedback from deans, professional societies, patient advocates
- Regional meetings: Chicago, New York, San Francisco

ACD WG meeting: November 14, 2007

- Identify significant challenges
- Consider potential solutions
- Discuss most transformational changes
- Follow-up meeting January 3-4, 2008

Interim!

Most significant challenges

- Reaffirm and emphasize core values of review
  - *goal: not merely decision-making, but advancing best science and health*
- Support for new investigators
  - *create an exciting, encouraging environment for talented trainees*
- Reduce administrative burden
  - *for applicants, reviewers, administrators*
- Strengthen review leadership and culture of review
  - *engage top scientists; make esteemed, rewarding experience*

Potential solutions

Reaffirm, emphasize core values of review

- Shorten applications, emphasize ideas and impact
- Study sections as "editorial boards" w/ outside reviewers
- Prebuttal: applicant responds to pre-meeting assessment
- Two R01 tracks: innovation (99%) or transformation (1%)
- Increased emphasis on quality of PI
- Increase value associated with team science
- Option for accomplishment-based renewal
- Eliminate mentoring function from merit review
- Reduce number of mechanisms
- Strive for trans-NIH consistency

"Editorial Board" model for peer review

Two levels of merit review:

- mail review by external technical experts, as needed
- study section assesses proposals together with mail reviews
- one page applicant prebuttal to one page pre-meeting review form
- study section meets, discusses, prioritizes applications
- applicants receive all reviews plus summary statement

Features and details

- elevates review discussions to larger issues
- study sections maintain chartered size *and* technical coverage
- prebuttal clarifies, corrects trivial problems with proposals, reviews
- incentive: extend member's grants over term of service

Two R01 "tracks"; PI selects

Recognizes two important types of research:

Innovative	new original inventive pioneering advances/shifts paradigm evolutionary
Transformative	revolutionary creates new field synthesizes new paradigm

Innovative R01s

99% of R01's
Project-focused, 7 page proposal; 5 yr award
Explicit focus on impact and innovation, not preliminary results
Increased focus on investigator

Proposal
Question/issue to be approached (w/ Background): 1 page
Specific aims: 1 page
Impact of achieving aims: 0.5 page
Approaches (w/ progress and preliminary results): 4 pages
Innovation of concept or approach: 0.5 page

Biosketch
Publications, *up to:* 5 most relevant; 5 most significant; 5 most recent
Qualifications of investigator for this proposal: 0.5 page

Study section -based review

Transformative R01s

1% of R01s; replaces (adapted from) NDPA
Investigator-focused, 3-5 page essay
Ten year awards; few reporting requirements

Essay
Explicit focus on revolutionary concepts and approaches
Evidence that investigator is explorer, discoverer

Nonpanel-based review
Candidates are ranked, *independently,* by email
Finalists are interviewed

Changes in triage and prioritization

Triage:

- single criterion: Impact
- no amendments permitted; clear message to applicant

Prioritization: Ranking not scoring

- rank applications using Ken Dill approach:
  each reviewer ranks only top 10, with 1 point for 10th, 2 for 9th, 9 for 2nd, 12 for best (2 bonus points); below 10th are unranked (all 0 points)
- no clustering, no blackballing
- can advocate for best application with bonus points
- no requirement to know the "scoring culture" of study section

Potential solutions

Support for new investigators

- Shorten applications, emphasize ideas and impact
- Increased emphasis on quality of PI
- Fund at high rate
- Review separately by generalists (as with fellowships)
- Increase value associated with team science

Potential solutions

Reduce administrative burden

- Shorten applications, emphasize ideas and impact
- Study sections as "editorial boards" w/ outside reviewers
- Impact as sole criterion for triage
- Prebuttal: applicant responds to pre-meeting assessment
- Rank, instead of score, applications
- Option for accomplishment-based renewal
- Eliminate mentoring function from merit review
- Increase value associated with team science
- Reduce number of mechanisms
- Minimum percent PI effort per grant (*e.g.*, 25%)

Potential solutions

Strengthen review leadership, culture of review

- Reaffirm and emphasize core value of review
- Reduce administrative burden
- Explicit training (grading?) of ss chairs and members
- Incentivize membership; require participation if invited
- Increase flexibility for attendance and grant load

Altered review mechanics enhances process and culture

- Editorial board: *core study section focuses on ideas and impact*
- Short application: *permits 20 reviews/member; 4 reviewers/application; 5 primaries/member (20 person study section reviews 100 applications)*
- Prebuttal: *applicant receives one page "pre-meeting review summary form"; can submit one page "prebuttal" prior ot meeting*
- Reviews: *one page max; merit only, no mentoring*
- Discussion: *primary reviewer leads, presenting summary of all reviews and prebuttal*

Most transformational changes

- Shorten applications, emphasize ideas and impact
- Impact as sole criterion for triage
- Two R01 tracks: innovation (99%) or transformation (1%)
- Rank, instead of score, applications
- Study sections as "editorial boards" w/ outside reviewers
- Prebuttal: applicant responds to pre-meeting assessment
- Increased emphasis on quality of PI
- Review new investigators separately, by generalists