

# The Grant Review Process

## A Comparison Between NIH and AOTF

- Scott Campbell, PhD
- AOTF Board Meeting
- September 16, 2017

# Scientific Peer Review

*“To maintain our edge . . . we've got to protect our rigorous peer review system and ensure that we only fund proposals that promise the biggest bang for taxpayer dollars . . . that's what's going to maintain our standards of scientific excellence for years to come.”*

Remarks by President Barack Obama on the 150th Anniversary of the National Academy of Sciences, April 29, 2013

# First Level of Review

## NIH

- Carried out by a Scientific Review Group (SRG) composed primarily of non-federal scientists who have expertise in relevant scientific disciplines and current research areas.
- Initial peer review meetings are administered by either the Center for Scientific Review (CSR) or one of the NIH ICs with funding authority as specified in the funding opportunity announcement (FOA).

## AOTF

- Carried out by a Scientific Review Group (SRG) composed primarily of non-federal scientists who have expertise in relevant scientific disciplines and current research areas.

# First Level of Review

## NIH

- Each SRG is led by a Scientific Review Officer (SRO). The SRO is an NIH extramural staff scientist and the designated federal official responsible for ensuring that each application receives an objective and fair initial peer review, and that all applicable laws, regulations, and policies are followed.

## AOTF

- The SRG is led by a Scientific Programs Officer (SPO). The SPO is an AOTF staff member who ensures that each application receives an objective and fair initial peer review, and that all applicable Foundation policies and guidelines are followed.

# First Level of Review

## NIH

### SRO:

- Analyzes the content of each application, and check for completeness.
- Documents and manage conflicts of interest.
- Recruits qualified reviewers based on scientific and technical qualifications and other considerations, including:
  - Authority in their scientific field
  - Dedication to high quality, fair, and objective reviews
  - Ability to work collegially in a group setting
  - Experience in research grant review
  - Balanced representation

## AOTF

### SPO:

- Analyzes the content of each application, and check for completeness.
- Documents and manage conflicts of interest.
- Recruits qualified reviewers, in collaboration with SRG Chair, based on scientific and technical qualifications and other considerations, including:
  - Authority in their scientific field
  - Dedication to high quality, fair, and objective reviews
  - Ability to work collegially in a group setting
  - Experience in research grant review
  - Balanced representation

# First Level of Review

## NIH

SRO:

- Assigns applications to reviewers for critique preparation and assignment of individual criterion scores.
- Attends and oversees administrative and regulatory aspects of peer review meetings.
- Prepares summary statements for all applications reviewed.

## AOTF

SPO:

- Assigns applications to reviewers for critique preparation and assignment of initial impact scores.
- Attends and oversee aspects of SRG peer review call.
- Prepares summary statements for all applications reviewed.

# First Level of Review

## NIH

SRG members:

### Chair

- Serves as moderator of the discussion of scientific and technical merit of the applications under review.
- Also serves as a peer reviewer for the meeting.

## AOTF

SRG members:

### Chair

- Serves as moderator of the discussion of scientific and technical merit of the applications under review.
- Also serves as a peer reviewer for the meeting.

# First Level of Review

## NIH

SRG members:

### Reviewers

- Declare Conflicts of Interest with specific applications following NIH guidance.
- Receive access to the grant applications approximately six weeks prior to the peer review meeting.
- Ensure they maintain the confidentiality of peer review.
- Prepare a written critique for each application assigned, based on review criteria and judgment of merit.
- Assign a numerical score to each scored review criterion.

## AOTF

SRG members:

### Reviewers

- Declare Conflicts of Interest.
- Receive access to the grant applications approximately eight weeks prior to the SRG peer review call.
- Ensure they maintain the confidentiality of peer review.
- Prepare a written critique for each application assigned, based on review criteria and judgment of merit.
- Assign a numerical score.



# First Level of Review

## NIH

SRG members:

### Reviewers

- Make recommendations concerning the scientific and technical merit of applications under review, in the form of final written comments and numerical scores.
- Make recommendations concerning protections for human subjects; inclusion of women, minorities, and children in clinical research; welfare of vertebrate animals; and other areas as applicable for the application.
- Make recommendations concerning appropriateness of budget requests.

## AOTF

SRG members:

### Reviewers

- Make recommendations concerning the scientific and technical merit of applications under review, in the form of final written comments and numerical scores.
- Make recommendations concerning protections for human subjects; inclusion of women, minorities, and children in clinical research; welfare of vertebrate animals; and other areas as applicable for the application.
- Make recommendations concerning appropriateness of budget requests.

# First Level of Review

## NIH

Applicants:

- Must maintain the integrity of the peer review process by not contacting reviewers to influence the outcome of the review; not sending information directly to a reviewer; and not accessing information related to the review. There are consequences to any of these actions.

## AOTF

Applicants:

- Must maintain the integrity of the peer review process. We do not at present publicly list the members of our SRG.

# First Level of Review

## NIH

Peer Review Criteria/Considerations:

- Reviewers will provide an overall impact score to reflect their assessment of the likelihood for the project to exert a sustained, powerful influence on the research field(s) involved, in consideration of the following review criteria, and additional review criteria:

## AOTF

Peer Review Criteria/Considerations:

- Reviewers will provide an overall impact score (preliminary score) to reflect their assessment of the likelihood for the project to exert a sustained, powerful influence on the research field(s) involved, in consideration of the following review criteria, and additional review criteria:

# First Level of Review

## NIH

### Peer Review Criteria/Considerations:

- Scored Review Criteria
  - Significance
  - Investigator(s)
  - Innovation
  - Approach
  - Environment
- Additional Review Criteria
  - Protections for Human Subjects
  - Inclusion of Women, Minorities, and Children
  - Vertebrate Animals
  - Biohazards
  - Resubmission
  - Renewal/Revision

## AOTF

### Peer Review Criteria/Considerations:

- Scored Review Criteria
  - Significance
  - Investigator(s)
  - Innovation
  - Approach
  - Environment
- Additional Review Criteria
  - Protections for Human Subjects
  - Inclusion of Women, Minorities, and Children
  - Vertebrate Animals

# First Level of Review

## NIH

### Scoring:

- The NIH utilizes a 9-point rating scale (1 = exceptional; 9 = poor) for all applications; the same scale is used for overall impact scores and for criterion scores.
- Before the SRG meeting, each reviewer assigned to an application gives a separate score for each of (at least) five review criteria.

## AOTF

### Scoring:

- The AOTF utilizes a 9-point rating scale (1 = exceptional; 9 = poor) for all applications; the same scale is used for overall impact scores.

# First Level of Review

## NIH

### Scoring:

- In addition, each reviewer assigned to an application gives a preliminary overall impact score for that application. In many review meetings, the preliminary scores are used to determine which applications will be discussed in full at the meeting. For each application that is discussed at the meeting, a final impact score is given by each eligible committee member (without conflicts of interest) including the assigned reviewers.

## AOTF

### Scoring:

- Each reviewer assigned to an application gives a preliminary overall impact score for that application. The preliminary scores are used to determine which applications will be discussed on the SRG peer review call. For each application that is discussed on the call, a final impact score is given by each eligible committee member (without conflicts of interest) including the assigned reviewers.

# First Level of Review

## NIH

### Scoring:

- The final overall impact score for each discussed application is determined by calculating the mean score from all the eligible members' final impact scores, and multiplying the average by 10; the final overall impact score is reported on the summary statement. Thus, the final overall impact scores range from 10 (high impact) through 90 (low impact).

## AOTF

### Scoring:

- The final overall impact score for each discussed application is determined by calculating the mean score from all the eligible members' final impact score (1 high impact through 9 low impact); the final overall impact score is reported on the summary statement.

# First Level of Review

## NIH

### Percentile:

- A percentile is the approximate percentage of applications that received a better overall impact score from the study section during the past year.
- For applications reviewed in ad hoc study sections, a different base may be used to calculate percentiles.
- All percentiles are reported as whole numbers.
- Only a subset of all applications receive percentiles. The types of applications that are percentiled vary across different NIH Institutes and Centers.
- The summary statement will identify the base that was used to determine the percentile.

## AOTF

### Percentile:

- The AOTF does not use a percentile system.



# Second Level of Review

## NIH

Advisory Council/Board:

- The Advisory Council/Board of the potential awarding IC performs the second level of review.
- Advisory Councils/Boards are composed of scientists from the extramural research community and public representatives.
- Members are chosen by the respective IC and are approved by the Department of Health and Human Services. For certain committees, members are appointed by the President of the United States.

## AOTF

Advisory Council/Board:

- The AOTF does not do a second level of review.

# Second Level of Review

## NIH

### Advisory Council/Board:

- NIH program staff examine applications and consider the overall impact scores, percentile rankings and the summary statements in light of the IC's priorities.
- Program staff provide a grant-funding plan to the Advisory Board/Council.
- Council members conduct a Special Council Review of grant applications from investigators who currently receive \$1 million or more in direct costs of NIH funding to support Research Project Grants.
- The Advisory Council/Board also considers the IC's goals and needs and advises the IC Director concerning funding decisions.
- The IC Director makes final funding decisions based on staff and Advisory Council/Board advice.

## AOTF

### Advisory Council/Board:

- The AOTF does not do a second level of review.