Navigate the Grant Application Process: the Nuts and Bolts of Peer Review at NIH

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NIH-Center for Scientific Review

The National Institutes of Health… turning discovery into health

- NIH is the largest single public funder of biomedical research in the world
- Much of the biomedical research in the United States is supported by the Federal Government, primarily the NIH

Your application could be funded by one of 24 NIH Institutes or Centers (ICs)
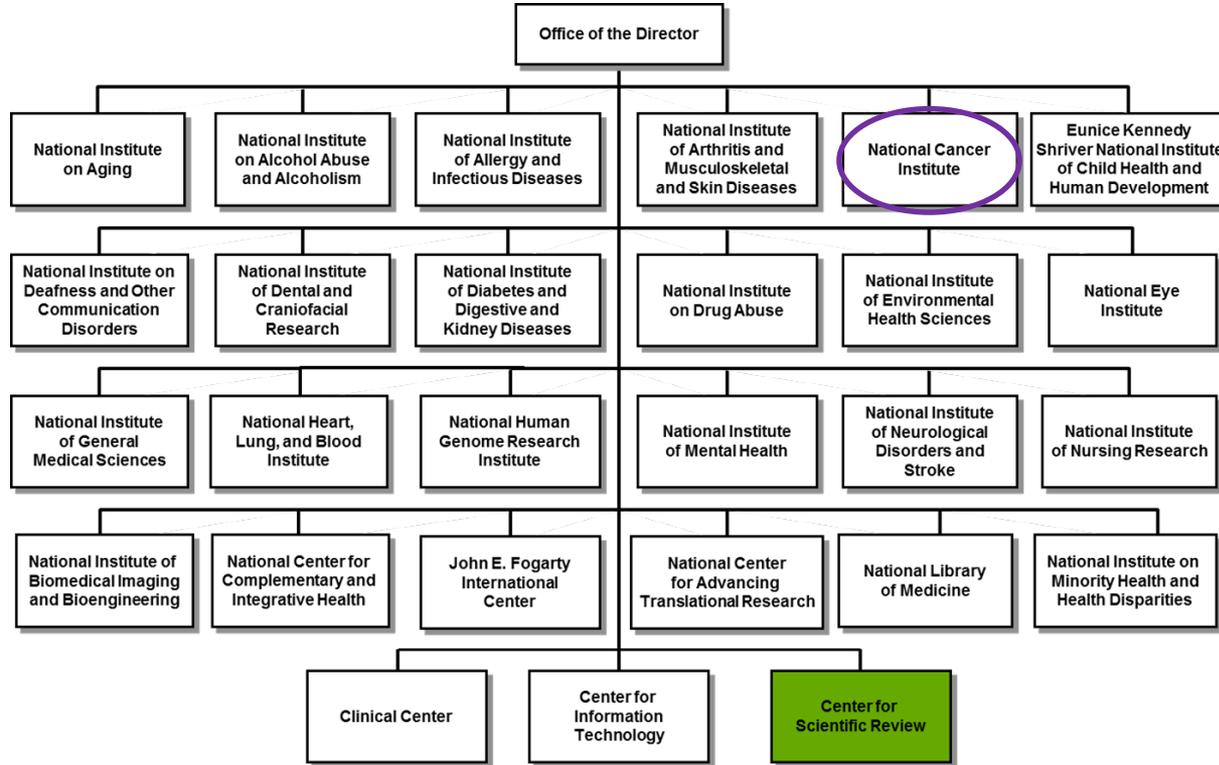
The Gateway for NIH Grant Applications:

The Center for Scientific Review

- **Receives all NIH grant applications**

- **Assigns applications to one or more NIH Institutes or Centers (**i.e. potential funding component)

- **Assigns applications to review groups at CSR or at NIH Institutes**

- **Conducts initial scientific merit review of most NIH** research applications - ~75% of NIH grant applications = >60,000 applications/year

Review and Funding of NIH Grant Applications

Center for Scientific Review
Division of Receipt and Referral

Assigns to Institute(s) and Review Group	2 weeks

Level I Review: Study Section

Recruits and Assigns Reviewers	2-4 weeks
Reviews for Scientific Merit	4-6 weeks
Meets	1-2 days
Releases Score	~3 days
Produces Summary Statement	~ 30 days

Scientific Review Officer (SRO)

Level II Review: Institute or Center

Evaluates Relevance to Research Priorities	2-4 Months
Council Recommends Action	
Decision	

Program Officials-Funding Institute

How NIH lets you know what it wants to support - FOAs

Funding Opportunity Announcements (FOAs)

- **Program Announcements (PA)** Identifies priority areas and/or funding mechanisms for an area.
  - **PAR:** a PA with special receipt, referral and/or review considerations.
  - **PAS:** a PA with set-aside funds.

- **Request for Applications (RFA):** Identifies a focused area where NIH award grants with set aside funds.

- **Request for Proposal (RFP):** Solicits contract proposals, usually with one receipt date.

- **Notices of Special Interest (NOSI):** Simplified notices of specific research interests.

- **Notice (NOT):** Announces policy and procedures, changes to earlier FOAs and general info

- **Subscribe to the NIH Guide Notice**: all important announcements made here = NIH's primary means of communicating to researchers

  https://grants.nih.gov/funding/about-nih-guide-to-grants-and-contracts.htm

How can investigators find FOAs?

NIH GRANTS & FUNDING
NIH Central Resource for Grants and Funding Information

NIH Guide for Grants and Contracts

https://grants.nih.gov/funding/searchguide/index.html

Talk to a Program Officer

- They can tell you whether your research fits the institute's priorities.

- They can help you identify funding opportunities.

- They can help you figure out a study section to suggest for the review.

- They can offer advice if you need to resubmit your application after the initial review.

How can you find a program officer?

NIH RePORTER: https://projectreporter.nih.gov/reporter.cfm

- Input your abstract/aims
- **Matchmaker** Search returns:
  – List of institutes
  – List of funded grants
  – Link to **program officials**
  – Study section that reviewed "similar" funded projects

Help your application get to the right study section
http://www.csr.nih.gov

Key Word **Search**

Assisted Referral Tool **Search**

Output from the Assisted Referral Tool

If you've identified a potential funding institute and study section, how do you let us know? Use the Assignment Request Form (ARF)

The ARF form replaces many functions of the cover letter.

PHS Assignment Request Form

OMB Number: 0925-0001
Expiration Date: 2/28/2023

Funding Opportunity Number:

Funding Opportunity Title:

Awarding Component Assignment Suggestions *(optional)*

If you have a suggestion for an awarding component (e.g., NIH Institute/Center) assignment, use the link below to identify the appropriate short abbreviation (e.g., "NCI" for National Cancer Institute) and enter it below in the boxes for "Suggested Awarding Components". All suggestions will be considered; however, not all assignment suggestions can be honored.

Information about Awarding Component can be found here: https://grants.nih.gov/grants/phs_assignment_information.htm#AwardingComponents

Suggest IC assignment ➡ Suggested Awarding Components:

Study Section Assignment Suggestions *(optional)*

If you have a suggestion for a study section assignment, use the link below to identify a study section(s). Enter the short abbreviation for that study section in the boxes for "Suggested Study Sections." Remove all hyphens, parentheses, and spaces. All suggestions will be considered; however, not all assignment suggestions can be honored.

For example, enter "CAMP" if you wish to suggest assignment to the NIH Cancer Molecular Pathobiology study section, or "ZRG1HDMR" if you wish to suggest assignment to the NIH Healthcare Delivery and Methodologies SBIR/STTR panel for informatics.

Information about Study Sections can be found here: https://grants.nih.gov/grants/phs_assignment_information.htm#StudySection

Suggest review group assignment ➡ Suggested Study Sections:
Each entry is limited to 20 characters

Rationale for assignment suggestions *(optional)*   *Entry is limited to 1000 characters*

List individuals who should not review your application and why *(optional)*   *Entry is limited to 1000 characters*

Identify (potential) conflict(s) ➡

Identify scientific areas of expertise needed to review your application *(optional)*
Note: *Do not provide names of individuals*

Suggest expertise needed to evaluate the application
Never recommend reviewers! ➡ Expertise:
Each entry is limited to 40 characters

A window to your application: eRA Commons

eRA Commons is an online interface where an applicant can:

- Check submitted grant application for errors and warnings and view final image
- **If you cannot see your application in eRA Commons, neither can we.**
- Track review assignment, view review outcomes (score, summary statements), find contact info for scientific review officers (SRO) and program officers (PO)
- Update Personal Profile to ensure relevant eligibility (e.g Early Stage Investigator) is in place
- Submit pre-award information (just in time)
- View Notice of Award and other key documents

And much more!

    https://commons.era.nih.gov/commons/

CSR's Division of Receipt and Referral

Determines if Your Application Is

- On time
- Formatted correctly
- Complete
- Compliant with NIH policy

Assigns Your Application to

- Institute(s) or Center for funding consideration
- Review group at CSR or at an IC review Branch

Assignment to CSR Study Sections

Within an IRG, applications are assigned to:

Standing Study Sections
- When subject matter of application matches the referral guidelines for the study section

Special Emphasis Panels (SEPs)
- When the subject matter does not fit into any study section
- When assignment of an application to the most appropriate study section creates a conflict of interest
- When certain types of grants are sought (e.g., fellowships, SBIRs)

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Your Scientific Review Officer

Designated Federal Official with overall responsibility for the review process

- Doctoral level scientist with expertise related to science reviewed in their study section

- Recruits reviewers and assigns applications

- Manages the meeting and conflicts

- Prepares summary statements

- Provides information to NIH Institutes and Centers

The SRO Select Reviewers Who Are Recognized Authorities in their Field

- Doctoral degree or equivalent

- Demonstrated scientific expertise/research support

- Mature judgment and breadth of perspective

- Work effectively in a group context

- Impartiality

- Inclusion of women and minority scientists

- Geographic distribution

The SRO Selects a Chair Among the Panel Who...

- Has a particularly strong scientific and NIH funding track record

- Is a leader in her or his specialty

- Has an especially broad perspective

- Communicates particularly well

- Has a particularly strong reputation for impartiality

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Before the Study Section Meeting

Each application is assigned to 3 or more reviewers 5-6 weeks in advance

Reviewers Assess Each Application by Providing:

- Preliminary Overall Impact score

- Criterion scores for each of the 5 core review criteria

- Comment on appropriateness of your budget

- A written critique

Confidentiality

- Review materials and proceedings of review meetings represent confidential information for reviewers and NIH staff.

- At the end of each meeting, reviewers must destroy all review-related material.

- Reviewers should not discuss review proceedings with anyone except the SRO.

- Questions concerning review proceedings should be referred to the SRO.

- Applicants should never communicate directly with any members of the study section about an application.

- Statute of confidentiality is life long.

Reviewer Conflicts of Interest (COI)

What Constitutes a Reviewer COI?

- Institutional
- Family member/close friend
- Collaborator/Key Personnel
- Longstanding scientific disagreement
- Personal bias

http://grants.nih.gov/grants/peer/peer_coi.htm

What Happens at the Review Meeting?

At the Meeting

Clustering of Review

- ESI/NI R01s & some types of applications (e.g., R21, R03) are often reviewed in clusters

Order of Review

- Applications to be discussed are reviewed in random order within each cluster.

Not Discussed Applications

- About half the applications will be discussed
- Applications unanimously judged by the review committee to be in the lower half are not discussed

Role of Study Section Chair

- Partners with the Scientific Review Officer to conduct the meeting

- Scientific moderator who manages discussions at the meeting, e.g., timeliness and thoroughness

- Ensures all study section member opinions are given careful consideration

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At the Meeting: Application Discussion

- Any member in conflict with an application leaves the room

- Reviewer 1 introduces the application and presents critique

- Reviewers 2 and 3 highlight new issues and areas that significantly impact scores

- All present members are invited to join the discussion and then vote on the final overall impact score

Scoring Overall Impact

Overall Impact:
The likelihood for a project to exert a <u>sustained</u>, <u>powerful</u> influence on research field(s) involved

Overall Impact	High	Medium	Low
Score	1 2 3	4 5 6	7 8 9
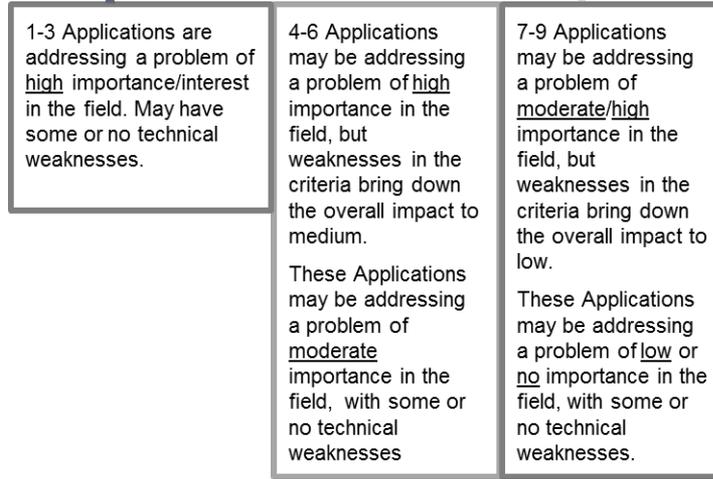
Evaluating Overall Impact:
Consider the 5 criteria: significance, investigator, innovation, approach, environment (weighted based on reviewer's judgment) and other score influences, e.g. human subjects

1-3 Applications are addressing a problem of <u>high</u> importance/interest in the field. May have some or no technical weaknesses.

4-6 Applications may be addressing a problem of <u>high</u> importance in the field, but weaknesses in the criteria bring down the overall impact to medium.

These Applications may be addressing a problem of <u>moderate</u> importance in the field, with some or no technical weaknesses

7-9 Applications may be addressing a problem of <u>moderate</u>/<u>high</u> importance in the field, but weaknesses in the criteria bring down the overall impact to low.

These Applications may be addressing a problem of <u>low</u> or <u>no</u> importance in the field, with some or no technical weaknesses.

5 is a good medium-impact application

Review Criteria

5 Scored Review Criteria

    – **Significance**

    – **Investigator(s)**

    – **Innovation**

    – **Approach**

    – **Environment**

Each scored from 1-9

Overall Impact

Assessment of the likelihood for the project to *exert a sustained, powerful influence on the research field(s) involved*

Scored from 1-9

Additional Scorable Review Criteria in Assessing Overall Impact

- Protections of human subjects
- Inclusion plans for sex/gender, race/ethnicity, and age of human subjects across the lifespan
- Appropriate use of vertebrate animals
- Management of biohazards

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Fellowship Review Criteria:

Overall Impact

Assessment of the likelihood that the fellowship will enhance the applicant's potential for, and commitment to, an independent, productive research career in a health-related field.

Core Review Criteria

1. Fellowship Applicant
2. Sponsors, Collaborators, and Consultants
3. Research Training Plan
4. Training Potential
5. Institutional Environment & Commitment to Training

After Your Review

Your SRO

- Release scores within 3 business days

- Prepares summary statements within 30 days

- Provides information to NIH Institutes and Centers

Check the Status of Your Application in NIH eRA Commons

Your Summary Statement

- Scores for each review criterion
- Critiques from assigned reviewers
- Administrative notes if any

If your application is discussed, you also will receive:

- An overall impact/priority score and percentile ranking
- A summary of review discussion

Questions?
Your program officer has the prime responsibility to answer questions about your review and preparing a new application.

Summary Statement

Program Officer

Impact/Priority Score 10-90 range

Percentile in whole numbers

Indicator for Early Stage Investigators/New Investigator eligibility

SUMMARY STATEMENT
(Privileged Communication)

PROGRAM CONTACT:
Austin Yang
301.496.9350
yangj13@mail.nih.gov

Release Date: 02/05/2019
Revised Date:

Application Number: 1 R01 AG

Principal Investigator

Applicant Organization:

Review Group: CMND
Cellular and Molecular Biology of Neurodegeneration Study Section

Meeting Date: 01/31/2019
Council: MAY 2019
Requested Start: 07/01/2019

RFA/PA: PA18-484
PCC: 3BSETAY

Project Title:

SRG Action: Impact Score:34   Percentile:13
Next Steps: Visit https://grants.nih.gov/grants/next_steps.htm
Human Subjects: 10-No human subjects involved
Animal Subjects: 30-Vertebrate animals involved - no SRG concerns noted

Project Year	Direct Costs Requested	Estimated Total Cost
1	349,997	564,629
2	350,802	565,928
3	361,871	583,785
4	387,212	624,666
5	384,834	620,830
TOTAL	1,834,716	2,959,839

ADMINISTRATIVE BUDGET NOTE: The budget shown is the requested budget and has not been adjusted to reflect any recommendations made by reviewers. If an award is planned, the costs will be calculated by Institute grants management staff based on the recommendations outlined below in the COMMITTEE BUDGET RECOMMENDATIONS section.

EARLY STAGE INVESTIGATOR
NEW INVESTIGATOR

U.S. Department of Health & Human Services

NIH Center for Scientific Review

Jumpstart Your Career:
Serve a on review panel under **CSR's Early Career Reviewer Program**

https://public.csr.nih.gov/ForReviewers/BecomeAReviewer/ECR

Early Career Reviewer Program Goals

- Train and educate qualified scientists to become critical and well-trained reviewers
- Expose investigators to NIH peer review experience to help make them more competitive as applicants
- Enrich the existing pool of NIH reviewers

Qualifications for the Early Career Reviewer Program

Employment

- You have at least **2 years experience as a full-time faculty member** (assistant professor or equivalent)

Grant & Review History

- You have not served on an NIH study section (except mail reviewer).
- You have not held an R01 or R01-equivalent grant as a PI/PD. You must have submitted a NIH grant proposal as a PI and received the associated summary statement (any grant mechanism except fellowships)

Research

- You have evidence of an active, independent research program.
- You have at least 2 "senior" authored (first, last, or corresp. author) research publication in a peer-reviewed journal – 1 since doctoral degree, 1 in the last 2 yrs.

https://public.csr.nih.gov/ForReviewers/BecomeAReviewer/ECR

Resources: Who should you talk to? When?

Before you submit

Program officer -> Institute priorities, FOAs..

Scientific Review Officer -> inquiries about study section

After you submit and before the review – Your Scientific Review Officer

After the review – your Program Officer

If you have trouble finding these contacts, email CSR – we'll put you in touch with the right people: communications@csr.nih.gov
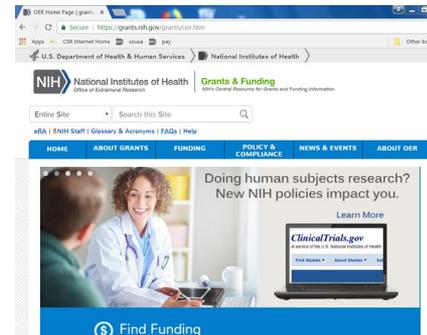
NIH Center for Scientific Review

Key NIH Review and Grants Web Sites

NIH Center for Scientific Review

http://www.csr.nih.gov

NIH Office of Extramural Research

http://grants.nih.gov/

How can you learn more about the review process?

https://public.csr.nih.gov

For Applicants

Application Process

CSR does not award funding but instead handles review of proposals. Please visit the NIH for an overview of the grant process or view our video What Happens to Your Grant Application.

Planning & Writing

Guidance to assist you in planning and preparing a proposal.

Application Deadlines

Standard receipt dates for grant proposals

Submission & Assignment

How proposals are assigned to a review group

Initial Review, Results, & Appeals

What happens in the review process?

Frequently Asked Questions (FAQs)

Top 10 and Top 100 Peer Review Q&As for NIH Applicants

For Reviewers

Become a Reviewer

We welcome researchers who volunteer to serve on our peer review groups. Explore the ways you can do this.
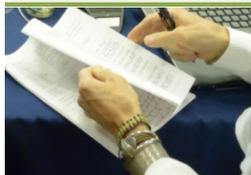
Meeting Overview

Explore orientation materials and resources to get you started.

Guidelines & Templates

Learn about review criteria, scoring and possible conflict of interest information.

Tools & Technology

Looking for guidance on the technology we use? Explore our online tutorials and tools.

Travel & Reimbursement

Explore all you need to know to about getting reimbursed for travel and

Frequently Asked Questions (FAQs)

Top Peer Review Q&As for NIH Reviewers

Question?