

Deciphering the NINDS Grant Life Cycle: Review process, Funding, and Diversity Initiatives

Review process at NIH

Natalia Strunnikova, PhD, MPH
Scientific review officer, NINDS, NIH
strunnikovan@nih.ninds

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NIH Peer Review Mission



Purpose: To ensure that NIH grant applications receive fair, independent, expert, and timely reviews –free from inappropriate influences –so NIH can fund the most promising research.

The First NIH Study Section

1946



An NIH Study Section Today

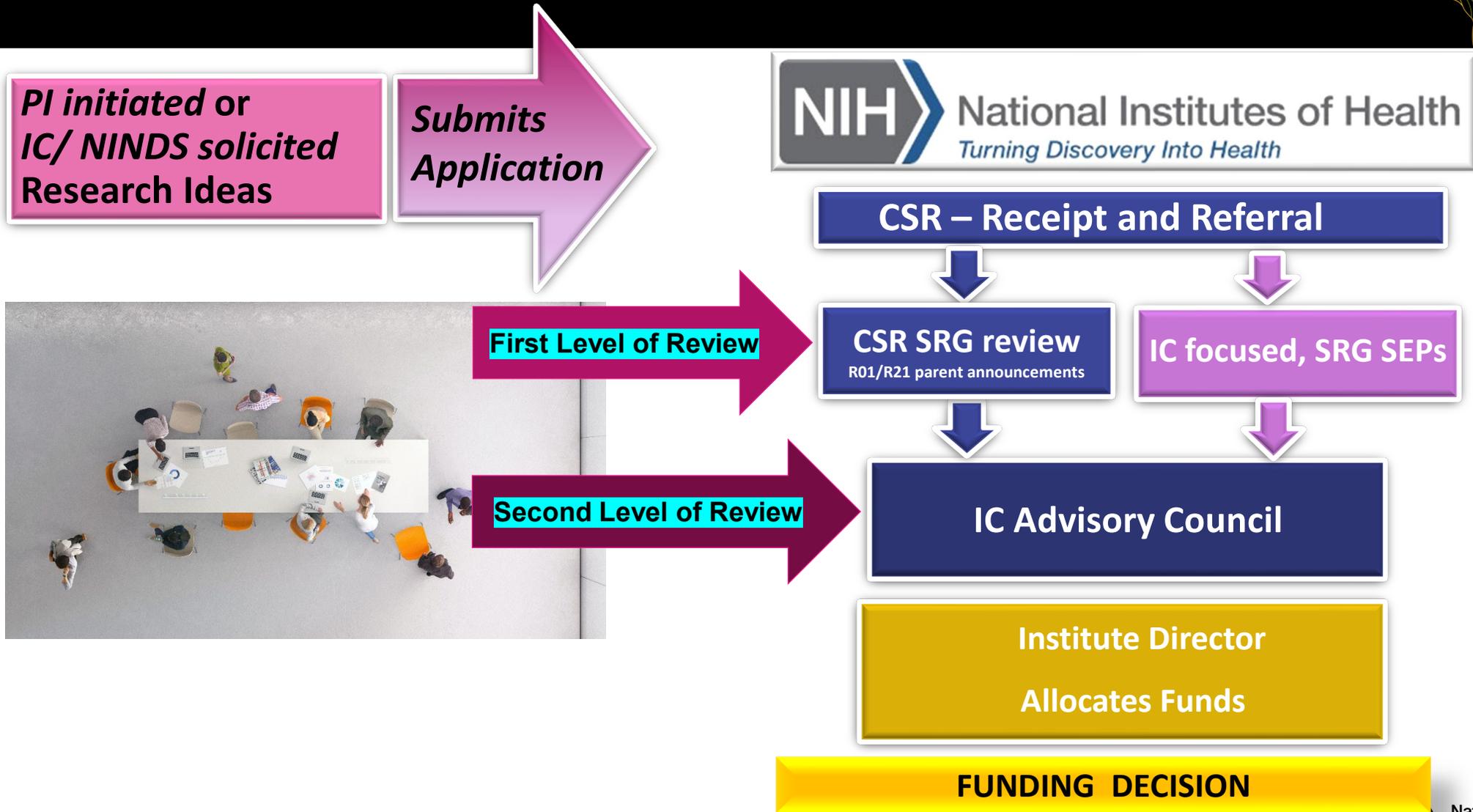
2015



Grant Life Cycle: Review



NIH Grant Application Process



Review Panels: Standing Study Sections vs Special Emphasis Panels



- Review activities of the **Center for Scientific Review (CSR)** and **Institutes/Centers (ICs)** are organized into **Review Branches (RBs)** that include multiple **Study Sections** organized around different scientific area. Applications are assigned either to CSR or IC's RB, and then to a specific study section for evaluation of scientific merit. List of the CSR Study sections could be found here: <https://public.csr.nih.gov/StudySections/StandingStudySections>
- Reviews of most investigator-initiated research applications including R01, R03, R21, R15, and some Ks and Fs occur in study sections with both **regular and temporary members**. CSR Study Sections' rosters can be found here <https://www.csr.nih.gov/RevPanelsAndDates/RevPanels.aspx>
- Other one-time or recurring **Special Emphasis Panels (SEPs)** are held to review applications on special topics and members conflict applications. They include only **temporary members** **and** is based on expertise needed for each meeting.

NINDS Scientific Review Branch (SRB)



SRB Clusters:

- Translational
- Clinical
- Career Development/Training & Diversity
- Basic Neuroscience

NINDS Chartered SRG Committees:

- *Neurological Sciences and Disorders (NSDs)*: NSD-A, NSD-B, NSDC, NSD-K
- *Neurological Sciences and Training (NST)*: NST-1, NST-2, NST-3, NST-4

Each SRG meets 3 times a year; branch runs 85-100 SEPs per year

Neurotrauma related NINDS Study Section is NSD-A

SRO: Natalia Strunnikova

NSD-A: Reviews a variety Neurotrauma Related Translational proposals (TBI, SCI, Stroke, Pain, Epilepsy, Glioma)

Roles of Scientific Review Officer (SRO)



SRO oversees the first level of scientific review

- Organizes and manages the review meeting
- Recruits' reviewers, assigns applications, manages Conflict of Interest (COI)
- Ensures the integrity of the review
- Issues scores and Summary Statements
- Interacts with grant applicants and reviewers
- Interacts with: Program staff, Committee management, Grants management
- Represent Institute at council meetings



Pre-Meeting

- Discussion during FOA development or any special announcement & their review criteria
- Role of pre-meeting teleconferences
- Handling of post-submission and appendix materials*
- Timely communication to SRO about IC's funding decision of concurrent grants in review#



General

- SROs communicating to POs:
 - CSR or IC specific review guidelines and reviewer selection
 - Factors involved in meeting date, and venue selection
 - What can or can not be shared with POs.
- POs communicating SROs:
 - Specific points to consider during review
 - Reviewers name suggestion
- Alternative review formats, FOAM



Meeting

- SRO is the point person
 - Efficient way to apply specific review criteria
 - Calibration of the reviewers and weighting of the weaknesses
 - Implementation of rigor and reproducibility criteria
- Role of the PO during the meeting



Post-Meeting

- SRO-PO discussion on Reviewer feedback for future slate nomination or ad hoc reviewer (or any special issue) #
- Discussion on appeals
- Summary statements release timeline*
- Post-meeting editing of the critiques to reflect the final scoring*
- Feedback regarding FOA review criteria*



CSR Specific
*IC Specific

NIH Grant Review Process Highlights



Discussion Flow at the Meeting



| | |
|--|---|
| 1. Assigned Reviewers | Announce preliminary scores |
| 2. Assigned Reviewers (3-6, based on expertise needed) | <ul style="list-style-type: none">• Reviewer 1 briefly introduces the application• All reviewers present score-driving strengths and weaknesses |
| 3. Entire Panel | Discussion <ul style="list-style-type: none">• Focus on score-driving issues• Address apparent discrepancy between score and comments• Unassigned members need to understand BOTH strengths and weaknesses to decide on their final scores |
| 4. Chair | Summarizes the discussion |
| 5. Assigned Reviewers | Address additional review criteria: (These <u>issues are factored into</u> a final score) |
| 6. Assigned Reviewers | State final scores |
| 7. Entire Panel | Enter final scores: Average of these scores is Overall Impact score |
| 8. Assigned Reviewers | Address additional review considerations: (These issues <u>are NOT factored into</u> a final score) |

Application Review Criteria (Research grants)

(e.g., R01/R21/R61 etc.)



| | |
|-------------------------------------|---|
| 1. Overall Impact | Overall impact score <u>Based on scored review criteria and additional review criteria</u> |
| 2. Scored Review Criteria | Criterion scores for Significance, Investigator(s), Innovation, Approach, Environment <u>Affects the overall impact score</u> |
| 3. Additional Review Criteria | Evaluate the additional items as applicable (study timeline, milestone, commercialization plan, protection of human subjects, and vertebrate animals, biohazard) <u>Affects the overall impact score but no separate scores</u> |
| 4. Additional Review Considerations | Consider the items (select agents, authentication, budget...) <u>Does not affect overall impact scores and no separate scores</u> |

Discussion: Scored Review Criteria



| Strength | Score | Descriptor | Additional Guidance on Strengths/Weaknesses |
|----------|-------|--------------|---|
| High | 1 | Exceptional | Exceptionally strong with essentially no weaknesses |
| | 2 | Outstanding | Extremely strong with negligible weaknesses |
| | 3 | Excellent | Very strong with only some minor weaknesses |
| Medium | 4 | Very Good | Strong but with numerous minor weaknesses |
| | 5 | Good | Strong but with at least one moderate weakness |
| | 6 | Satisfactory | Some strengths but also some moderate weaknesses |
| Low | 7 | Fair | Some strengths but with at least one major weakness |
| | 8 | Marginal | A few strengths and a few major weaknesses |
| | 9 | Poor | Very few strengths and numerous major weaknesses |

Interpreting data: Scoring, Ranking, Payline



A summary statement includes reviewers' critiques of the application and numerical scores for each of review criteria.

Impact Score

The impact score is assigned by reviewers to indicate the scientific and technical merit of an application considering each of five scored criteria: significance, investigator, innovation, approach, and environment, along with protection of human subjects and vertebrate animal care and welfare. Impact scores range between 1 and 9 (application with substantial weakness).

Raw overall impact score averaged and rounded mathematically to one decimal place and that number is multiplied by 10 to yield an overall impact score.

Percentile Rank

The percentile rank is created for many CSR study sections and is based on a ranking of the impact scores assigned by an SRG. The percentile rank is normally calculated by ordering the impact score of a particular application against the impact scores of all applications reviewed in the current and the preceding two review rounds. An application that was ranked in the 5th percentile is considered more meritorious than 95% of the applications reviewed by that committee.

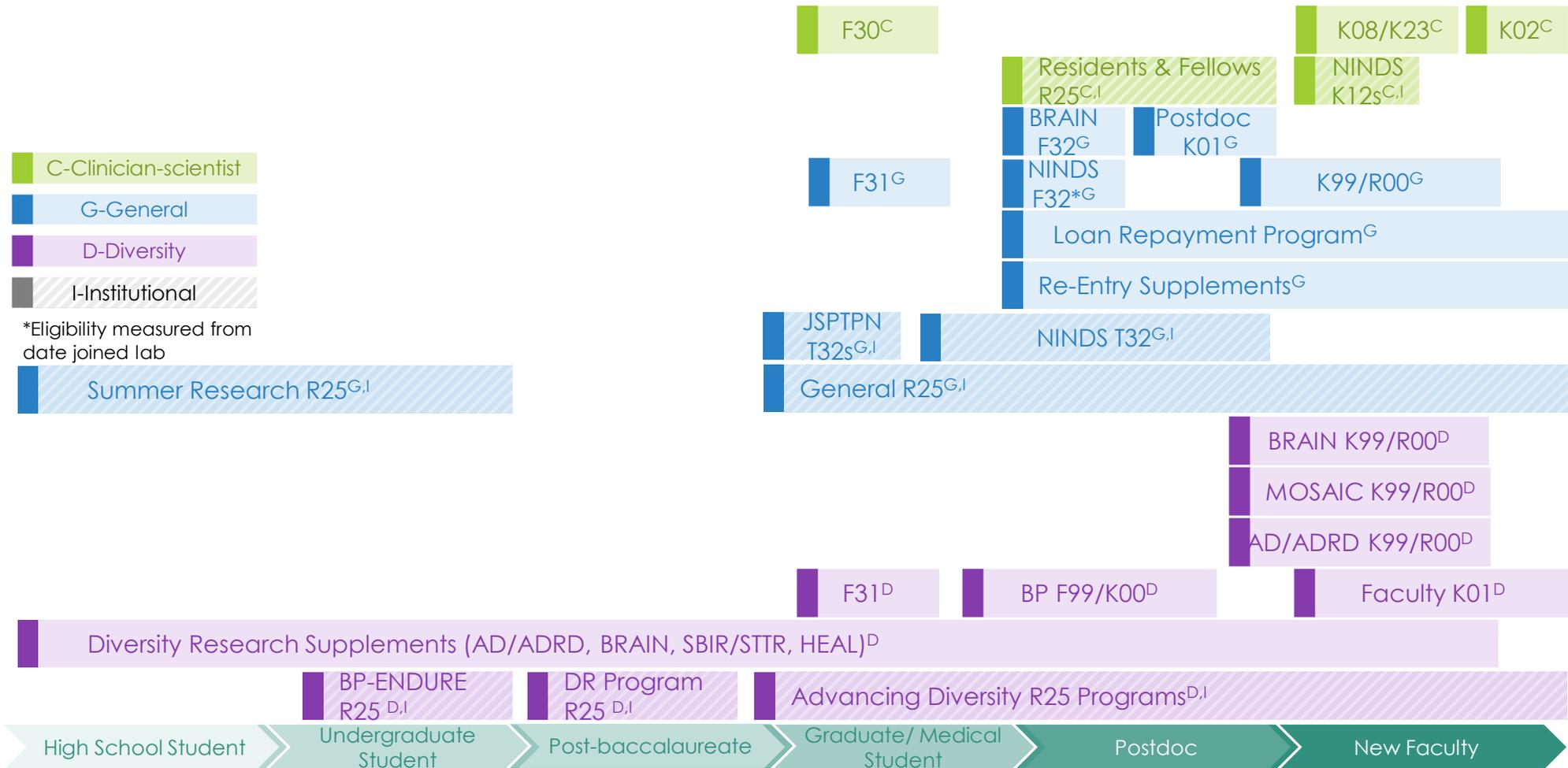
Grants reviewed in NINDS SRB are not percentiled.

Payline

Many NIH institutes calculate a percentile rank up to which nearly all R01 applications can be funded. For grant applications that do not receive percentile ranks, the payline may be expressed as an impact score.

NINDS training related grants that are reviewed in-house are not percentiled and there is no payline.

NINDS Extramural Training and Career Development Programs



Scored Review Criteria (Fellowships and Career Development/Transition Award) (F- and K-series)



| F-series (e. g., F30, F31, F32) | K-series (e. g., K99/R00) |
|---|--|
| 1. Fellowship Applicant | 1. Candidate |
| 2. Sponsors, Collaborators, and Consultant | 2. Career Development Plan/Career Goals and Objectives |
| 3. Research Training Plan | 3. Research Plan |
| 4. Training Potential | 4. Mentor(s), Co-Mentor(s), Consultant(s), Collaborator(s) |
| 5. Institutional Environment & Commitment to Training | 5. Environment & Institutional Commitment to the Candidate |

NINDS Diversity Initiatives



Programs to enhance diversity focus on underrepresented racial/ethnic groups, individuals with disabilities, and individuals from disadvantaged backgrounds, or institutions primarily serving underrepresented groups.

Predocctoral Awards (F-series) :

- Individual NRSA (F31) : [PA-21-052](#)
- NIH Blueprint and BRAIN Initiative D-SPAN Award (F99/K00): [RFA-NS-21-012](#)

Postdoctoral Awards (K99/R00):

- AD/ADRD: [PAR-22-022](#)
- MOSAIC: [PAR-21-271](#); [PAR-21-272](#); [PAR-21-273](#)
- BRAIN Initiative: [RFA-NS-23-331](#); [RFA-NS-23-330](#)

Junior Faculty Awards (K01):

- NINDS Faculty Development Award [PAR-21-234](#); [PAR-21-153](#)

Apply to these if you qualify!!!!!!

Important reminders!!!!!!



- **Investigators are encouraged to serve on review panels**
 - **CSR Early Career Reviewer Program (ECR)**
<https://public.csr.nih.gov/ForReviewers/BecomeAReviewer/ECR/BecomeanEarlyCareerReviewer>

Thank you!!!!!!



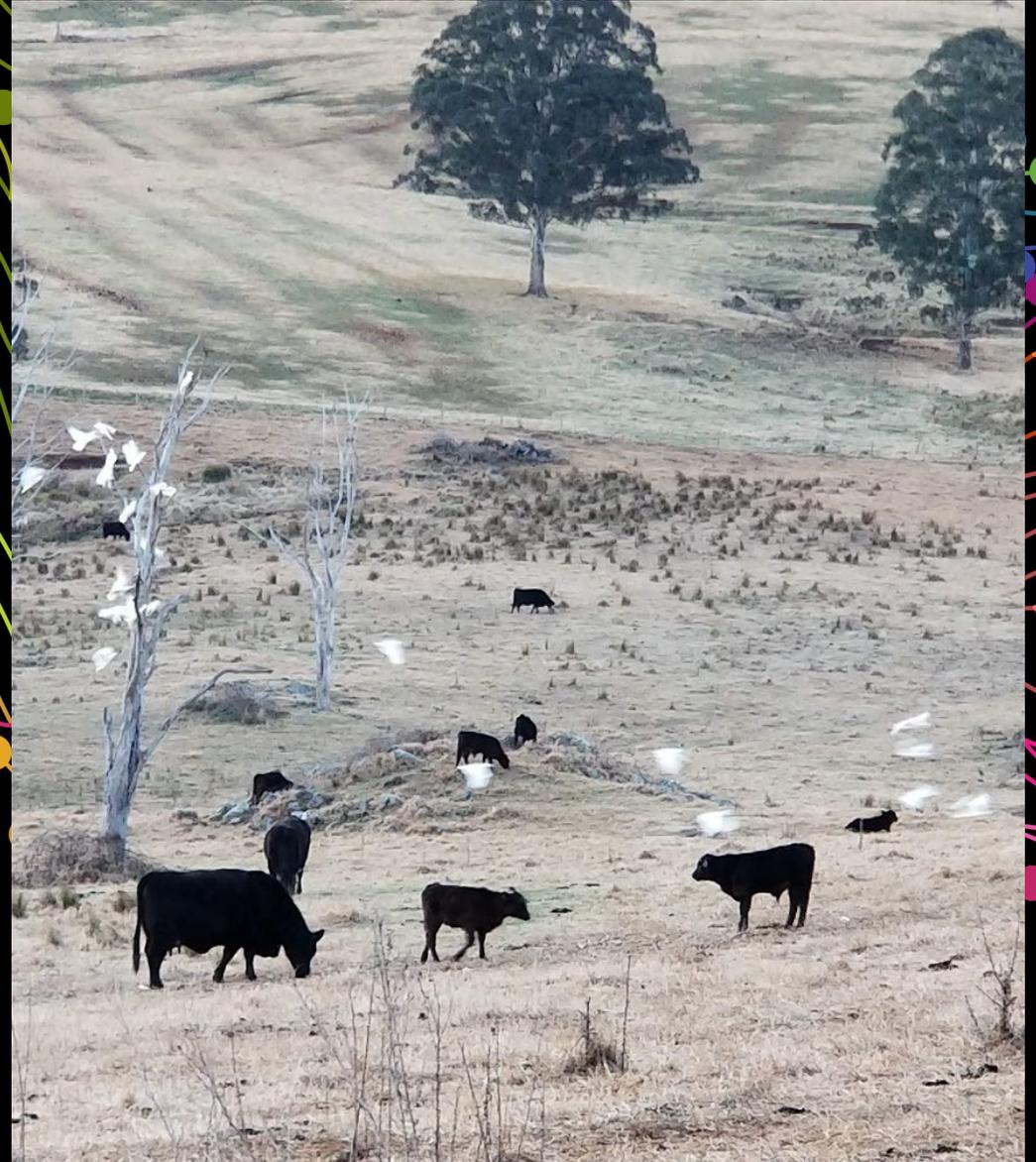
email me:

Natysastrun@gmail.com

Or speak to us at the Review Table :

DeAnna Adkins (Training Study Section)

Abhi Subedi (Translational Cluster)



Useful Resources



- Applicant Resources: (also Staff FAQs)
 - <https://public.csr.nih.gov/FAQs/ApplicantsFAQs>
 - https://grants.nih.gov/grants/frequent_questions.htm
- What is a conflict of interest?
 - <http://nih-extramural-intranet.od.nih.gov/d/nih/policies/coi.htm>
- Appeals
 - <http://grants.nih.gov/grants/guide/notice-files/not-od-11-064.html>

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Useful Resources



- Submission instructions:

- PHS 398 -- <http://grants.nih.gov/grants/funding/phs398/phs398.html>
- SF424 -- <http://grants.nih.gov/grants/funding/424/index.htm>

Due Dates & Submission Policies: <http://grants.nih.gov/grants/dates.htm>

- Late submissions
- “Continuous” submission for appointed study section members

- Referral Guidelines:

<http://share.csr.nih.gov/PeerReview/Applications/Pages/ReferralGuidelinesFundingComponents.aspx>



Discussion Flow Chart



| | |
|--|--|
| 1. Chair | Announces the application |
| 2. Conflicts | Leave the room |
| 3. Assigned Reviewers & Discussants | State their preliminary overall impact scores |
| 4. Reviewer 1 | Briefly introduces the application to orient the panel by focusing on: <ul style="list-style-type: none">○ Proposed research program○ Score-driving strengths and weaknesses |
| 5. Reviewers 2 – 3 & Discussants | State score-driving strengths and weaknesses <ul style="list-style-type: none">○ Avoid any points addressed by previous reviewers |
| 6. Entire Panel | Discussion <ul style="list-style-type: none">○ Focus on score-driving issues○ Address apparent discrepancy between score and comments○ Unassigned members need to understand BOTH strengths and weaknesses to decide on their final scores |

Discussion Flow Chart



| | |
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| 7. Chair | Summarizes the discussion |
| 8. Assigned Reviewers | Address additional review criteria <ul style="list-style-type: none">○ Human subjects; Inclusion plans; vertebrate animals; biohazards○ UG3/UH3 & U18: Study Timeline; Milestone Plan○ U44: Study Timeline; Milestone plan; Commercialization plan (Intellectual Property); Phase I/Phase II fast-track application questions○ Note that these issues <u>are factored into</u> a final score |
| 9. Assigned Reviewers | State their final scores |
| 10. Entire Panel | Final scores <ul style="list-style-type: none">○ Both write on paper and enter into eRA Commons IAR |
| 11. Assigned Reviewers | Address additional review considerations <ul style="list-style-type: none">○ Foreign component; select agents; resource sharing plans; resource authentication; budget○ UG3/UH3 & U18: Intellectual property○ These issues <u>are NOT factored into</u> a final score |

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SRO: Conflict of Interests at the Meeting



Situation: Grant Reviews



Proposed reviewer **may not** be on the study section if :

- The reviewer is named on the application in a major professional role
- The reviewer is a member of an NIH Advisory Council
- The reviewer (or close family member) would receive a direct financial benefit if the application is funded



Proposed reviewer **may be** on the study section but **may not** review certain applications and **must leave the room when:**

- The PI or others on the application with a major role are from the reviewer's institution or institutional component (e.g., department)
- Within the past three years, the reviewer has been a collaborator or has had any other professional relationship (e.g., served as a mentor) with any person on the application who has a major role
- The application includes a letter of support or reference letter from the reviewer
- The reviewer serves as a member of the advisory board for the project under review
- The reviewer has an indirect financial interest from the applicant institution or PD/PI of over \$10,000 in honoraria, stocks, and fees during the course of the last year or during the project period



Proposed reviewer **may be** on the study section and **may** review specific applications without a waiver if: (not considered COIs)

- An application originates from an institution where the reviewer has collaborators, but the reviewer's collaborators are not listed on the application
- The reviewer has an indirect financial interest of less than \$10,000
- The reviewer freely donates reagents or other materials to the proposed project, and these reagents or materials would also be available to other researchers
- The reviewer, as well as a person with a major role on the proposed project, contributes data, reagents, specimens, etc., to the same repository or database
- The reviewer is a member of a research network that involves a person with a major role on the proposed project
- The reviewer is a co-author of a non-research publication (e.g., review, commentary) or a mega-multi-authored publication with a person with a major role on the proposed project.

Note: A Federal employee serving as an NIH peer reviewer is responsible for obtaining any clearance required by his employing institute, agency, or office.

