TEXAS
The University of Texas at Austin

NIH Funding Opportunities

for Statisticians and Biostatisticians

Catherine (Kate) Calder

Department of Statistics and Data Sciences
University of Texas at Austin

JSM Funding Opportunities Panel

August 6, 2023

DISCLAIMER: I do not represent the NIH. All comments/advice are from me as an individual.

NATIONAL INSTITUTES OF HEALTH (NIH)

- NIH is the US government agency responsible for biomedical and public health research
- Annual budget: $45 billion (2022)
- 27 institutes and centers, including the National Cancer Institute (NCI), National Institute on Aging (NIA), National Library of Medicine (NLM), etc.
- NIH funds both intramural research ($\sim$10%) and extramural research (>80%)
- NIH institutes vary in size and extramural research budget
- Institutes employ program officers, scientists who manage portfolios of funded extramural grants

TYPES OF NIH GRANTS/"MECHANISMS"

- Research grants (R series)

  R01: Research Project Grant Program

  - support discrete research projects over a 3-5 year period
  - funding amount $<$ \$500K/year (without prior permission)

  R21: Exploratory/Developmental Research Grant Award

  - support exploratory and developmental research for up to two years
  - total funding is usually $<$ \$275K
  - preliminary data is not required

TYPES OF NIH GRANTS/"MECHANISMS" CONT.

- Career development grants (K series)

  K01: Mentored Research Scientist Career Development Award

  - supports postdoctoral or early career scientists to advance research and obtain additional experience

- Research training and fellowships (T&F series)

- Program project/center grants (P series)

NIH GUIDE ANNOUNCEMENTS

- Program announcements (PA)
  - identifies areas of increased priority and/or emphasis on particular funding mechanisms for a specific area of science
  * most R01 and R21 applications are to the "parent" PA and are due on the standard receipt dates (varies by mechanism)
- Requests for application (RFA)
  - identifies a more narrowly defined area for which one or more NIH institutes have set aside funds for awarding grants
- Request for proposals (RFP)
  - requests contract proposals
- Notices (NOT)
  - announces policy and procedures

NIH GRANT REVIEW

- Most proposals are initially reviewed by the Center for Scientific Review (CSR)
- Secondary review is conducted by the possible funding institute, some of which have published paylines (may differ by career stage or newness to NIH funding)
- CSR review is done in study sections which meet 3 times per year for 2-3 days
- Some study section members are standing members and others are ad hoc members $\rightarrow$ membership is public information
- Applicants can suggest a specific study section review their proposal, but CSR makes the final assignment

NIH GRANT REVIEW CONT.

- Study sections that review *many* statistics/biostatistics proposals:

  Analytics and Statistics for Population Research Panel A (ASPA)

  - Reviews applications that seek to develop, improve or innovate data extraction or preparation, analytic approaches, or research designs to advance studies of human population health that emphasize biological or biomedical data. Applications that address software development are reviewed in other study sections

  Analytics and Statistics for Population Research Panel B(ASPB)

  - Reviews applications that seek to develop, improve or innovate data integration, study designs, statistical and modeling approaches for human population studies of observational and spatial-temporal data such as clinical, behavioral, environmental, or social data to advance understanding of health-related outcomes. Applications that primarily focus on developing applied analytical methodology and validate their findings with disease, condition or exposure specific data are reviewed in ASPB. Applications that combine the development of applied analytical methodology with the application of the new methodology to drive the epidemiology, behavioral or social science field forward are reviewed in the study sections that cover those exposures, diseases or conditions. Applications that address software development are reviewed in other study sections.

REVIEW CRITERIA

Overall Impact:
The likelihood that a project will have a sustained and powerful influence on science (and/or clinical practice and/or technological developments?)

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)

e.g. Applications are addressing a problem of high importance in the field. May have some or no technical weaknesses.

e.g. Applications may be addressing a problem of high importance in the field, but weaknesses in the criteria bring down the overall impact to medium.

e.g. Applications may be addressing a problem of moderate importance in the field, with some or no technical weaknesses

e.g. Applications may be addressing a problem of moderate/high importance in the field, but weaknesses in the criteria bring down the overall impact to low.

e.g. Applications may be addressing a problem of low or no importance in the field, with some or no technical weaknesses.

5 is a good medium-impact application, and the entire scale (1-9) should always be considered.

12/13/2012

(as of 2012 - be sure to check for updates)

REVIEW OUTCOMES

- Proposals are read by three or more study section members, who assign a score (1-9) to each review criteria (Significance, Investigator, Innovation, Approach, and Environment) and a preliminary overall impact score (1-9)
- Proposals in approximately the top 50% by preliminary score are "discussed" and the remaining are returned as "not discussed"
- Study sections discuss proposals and vote on a final score, which determines the proposal's percentile
- Institutes consider final scores and percentiles (when available) in making funding decisions

SOME PERSONAL ADVICE

- Reviewers are not necessarily experts in your area $\rightarrow$
  - situate your ideas within the appropriate scientific literature
  - provide compelling evidence that the investigative team has a concrete plan to and the necessary skills to accomplish the proposed project's specific aims
- Emphasize the potential for impact on human health, not only impact on the field of statistics/biostatistics
- Not all ideas in a proposal need to be innovative, but state clearly which ideas are innovative
- "Grantsmanship" is NOT a review criterion, but it can be helpful to look at colleagues'/mentors' funded grants, get feedback on your work, and revise/rewrite to improve clarity and conciseness

SOME PERSONAL ADVICE CONT.

- Try not to get too discouraged by a "not discussed" outcome... most proposals are not funded
- Resubmit unfunded proposals, considering reviewer advice
- If possible, propose work that you are really excited to do

FINAL COMMENTS

- Consider applying for the NIH's Early Career Reviewer Program

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

- Check out the ASA Committee on Funded Research's (CFR) website

  `https://www.amstat.org/your-career/external-funding-sources`