

## **Uncovering the Scientific Review Process at the National Institutes of Health**

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### **Long Abstract for Proposed Poster**

The receipt, referral, and peer review process for grant applications submitted to the National Institutes of Health (NIH) can seem like a black box. This poster will provide an overview of the NIH and the Institutes and Centers (ICs) that may be of particular interest to population scientists and demographers, a cursory description of grant application preparation and deadlines, and the scientific peer-review process, explaining with detail the components of review. The 4 key learning objectives of this poster are to: (1) introduce the Center for Scientific Review (CSR) and its components, (2) elucidate how an applicant can learn the scored review criteria and meet those objectives, (3) detail the peer review process, including study sections, reviewers, and the role of the Scientific Review Officer (SRO), and (4) explain what comprises a summary statement and how to read and interpret reviewer comments.

The National Institutes of Health's (NIH) mission is "to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce illness and disability." Much of this broad health-related mission is carried out through investigator-initiated research supported by the 27 NIH Institutes and Centers. Each Institute and Center has its own Mission, most of which are disease-focused. Two exceptions of interest to many population scientists and demographers are NICHD and the National Institute on Aging (NIA). NICHD's mission is "to enhance lives throughout all stages of human development, from preconception through adulthood, improving the health of children, adults, families, communities, and populations." NIA "seeks to understand the nature of aging and the aging process, and diseases and conditions associated with growing older, in order to extend the healthy, active years of life." The National Institute for Minority Health and Health Disparities (NIMHD) has also broadened its portfolio of social and behavioral research in recent years.

The Center for Scientific Review (CSR)<sup>1</sup> is the gateway for NIH grant applications and their review for scientific merit. Within CSR, the Division of Receipt and Referral (DRR) is the gateway for applications to the NIH. DRR reviews incoming applications for completeness and assigns applications to specific study sections, also known as Scientific Review Groups (SRG), that have the expertise to evaluate the scientific and technical merit of applications.

CSR seeks to ensure that NIH grant applications receive fair, independent, expert, and timely reviews so that the NIH can fund the most promising and scientifically rigorous research. Scientific peer-review groups or study sections, that evaluate over 70% of the research grant

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<sup>1</sup> <https://grants.nih.gov/grants/receipt-referral.htm>

applications received by NIH, are organized by scientific discipline. The two CSR integrated review groups (IRG) that review a large number of population and demographic research are the Healthcare Delivery and Methodologies and the Population Sciences and Epidemiology. Within these IRGs, study sections that review population and demographic research applications include the Health Disparities and Equity Promotion (HDEP), and the Social Sciences and Population Studies A & B (SSPA & SSPB). Applicants are encouraged to view the rosters of study sections as part of preparing their applications to get a sense of the relevant expertise available.

The remaining 30% of applications are reviewed by study sections convened by staff within ICs. Each IC has an internal scientific review branch. The role of these branches varies but typically facilitate reviews for IC-specific Research Funding Opportunity Announcements, training applications, and other types of applications. NIA and NICHD have study sections organized specifically to review population and demographic research and social and behavioral science applications<sup>2</sup>. The poster will describe methods available to applicants to request specific study sections for their applications and how to determine which study section may be most appropriate<sup>3</sup>.

Understanding the scored review criteria that will be used to evaluate your proposal is important for preparing a successful grant application. Review criteria vary based on the type of application being considered (e.g., research, training, career development). The 5 review criteria for research applications include: significance, innovation, investigator, approach, and environment. The poster will highlight where to find these criteria within funding opportunity announcements and how to use review criteria for shaping applications. The poster will also explain the difference between the scored review criteria and overall impact score.

There are two levels of review for grant applications submitted to the NIH. Peer review is the first step in the NIH application review process, where targeted panels of scientifically appropriate experts assign scores of overall scientific merit. The poster will describe how peer-reviewers are selected and the balance of diversity and scientific expertise necessary for a scientific review panel. Additionally, the poster will explain how scores are generated and the areas on which an application are evaluated. Most applicants are familiar with the role of program officers, but many do not know the role of the SRO. The SRO identifies scientific peer reviewers, assigns applications for review, runs the study sections, ensures a fair and competent review for each application, and works with the applicants from time of submission through review. This will be detailed on the poster.

After peer review, a summary statement of the review will be available via eRA Commons. It will include the written critiques provided by the assigned reviewers, the SRO's summary of the discussion, scores for each review criterion, and administrative notes of special consideration. The second level of application review process is conducted at the Institute level, where funding decisions are made. Each NIH Institute has an Advisory Council that provides the second level of

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<sup>2</sup> <https://www.nia.nih.gov/research/scientific-review> and <https://www.nichd.nih.gov/about/org/der/srb>

<sup>3</sup> <https://art.csr.nih.gov/ART/>

review for applications. This review aims to ensure that applications were reviewed fairly, not to re-review their scientific impact. Funding decisions are based on the following: scientific and technical merit of the proposed project as determined by scientific peer review; availability of funds; and relevance of the proposed project to program priorities. Final funding decisions are made by the Institute directors, with input from program directors.

Applicants who have their applications recommended for funding have a new challenge: managing their award.