Reviewer Guidance on Rigor and Transparency: Research Project Grant and Mentored Career Development Applications

The goal of this initiative is to enhance reproducibility of research through rigor and transparency. Several years ago, NIH updated application instructions and review language for research grant (NOT-OD-16-011) and mentored career development award (NOT-OD-16-012) applications. Recently, NIH further clarified the language to replace the term "scientific premise" with the term "rigor of the prior research" for applications submitted for due dates of January 25, 2019 and beyond (NOT-OD-18-228 and NOT-OD-18-229). In addition, applicants will describe plans to address any weaknesses in the rigor of prior research within the Research Strategy and reviewers will assess this plan. Implementation of rigor and

transparency for individual fellowship, institutional career development, and institutional training grant applications will be announced in advance, on a different timeline that allows for training in rigor and transparency to be developed (NOT-OD-16-034).

The four areas of the cu rrent rigor and transparency initiative:

- The Rigor of the Prior Research
- Scientific Rigor
- Consideration of Sex and Other Biological Variables
- Authentication of Key Biological and/or Chemical Resources

You may submit your comments/questions about the NIH policy to reproducibility@nih.gov

Additional information on Rigor and Transparency can be found on the NIH website.

OGCA website: www.uaf.edu/ogca

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The four areas of the current rigor and transparency initiative are explained below.

- The rigor of the prior research concerns the quality and strength of the research being cited by the applicant as crucial to support the application; this is distinct from the hypothesis or justification

  o The applicant should discuss the strengths and weaknesses of the prior research used to support the application and describe how the proposed research will address weaknesses or gaps identified by the applicant. This may include the applicant's own preliminary data, data published by the applicant, or data published by others. The NIH expects this consideration to include attention to the rigor of the proposed project is rigorous

- o Reviewers will assess the applicant's plans to address relevant biological variables, such as sex, as part of the Approach (or Research Plan) criterion score and the overall impact score, and comment on the adequacy of those plans in their written critiques and in meeting discussions.
    - Reviewers will assess information according to the section where it is included in the application.
    - See additional reviewer guidance for evaluating sex as a biological variable: https://grants.nih.gov/grants/peer/guidelines_general/SABV_Decision_Tree_for_Reviewers.pdf

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- Nature Commentary: [Policy: NIH to balance sex in cell and animal studies](#) Clayton & Collins, 05/14/2014
- Science Editorial: [Journals Unite for Reproducibility](#)