

**Genetics Society of America Response to NIH Request for Information
Optimizing Funding Policies and Other Strategies to Improve the
Impact and Sustainability of Biomedical Research**

[Request for Information \(NOT-OD-15-084\)](#) • [Response Form](#)

Submitted May 17, 2015

Responses are limited to 500 words per topic. All responses must be submitted by May 17, 2015.

Comment 1: Key issues that currently limit the impact of NIH's funding for biomedical research and challenge the sustainability of the biomedical research enterprise. We welcome responses that explain why these issues are of high importance.

The Genetics Society of America (GSA), a professional scientific society with more than 5,000 members worldwide, surveyed our membership about the challenges related to enhancing the impact and sustainability of the biomedical research enterprise.

The single most pervasive theme among the responses was the need for NIH to communicate to Congress that past investments have worked, that the pace of discovery and its translation has never been better, and that model organism research remains a foundation of the biomedical research enterprise. Disease genes that are new to biology are being identified on a weekly basis, but without a robust investment in the highly efficient model organism approaches to these genes, progress will be slowed. Return on NIH investment in the Mendelian disease discovery program and The Cancer Genome Atlas is unsustainable without leveraging orthology and the principle of evolution as manifest in model organism research.

The other major theme to emerge was the need to reduce the feast-or-famine nature of funding. There was interest in the potential of NIGMS' Maximizing Investigators' Research Award (MIRA) mechanism to address these challenges by providing a greater degree of consistency of funding.

Our members also offered nuanced critiques on NIH support for big science projects. The take-home message was that big science projects with clearly articulated goals—like the Human Genome Project or The Cancer Genome Atlas project—were appreciated. In contrast, others with less defined goals—such as ENCODE and some large systems biology grants—were judged not to be cost-effective even by those who have received funding from them. GSA argues that NIH should prioritize funding for investigator-initiated research, especially R01 and similar research project grants.

Comment 2: Ideas about adjusting current funding policies to ensure both continued impact and sustainability of the NIH-supported research enterprise. We welcome responses that point to specific strengths or weaknesses in current policies and suggest how we can build on or improve them.

The Genetics Society of America (GSA) believes in the importance of providing greater funding stability and in the prioritization of investigator-initiated research. As such, we recommend efforts to limit support for big science projects, focusing only on those with clearly defined goals.

Two other suggestions emerged from a survey of our membership: (1) Bridge funding mechanisms have been successful and need to be expanded given current success rates; (2) Flexibility in carry-forward beyond the current 25% limit should be allowed so that investigators can help buffer funding challenges. Unexpected changes in personnel produce unexpected episodic unexpended funds, and greater flexibility would help.

We would also stress the value of NIH supporting as much research as possible. For example, our community is familiar with the NIGMS study indicating that, on average, productivity of labs reaches a maximum at \$750,000 direct costs per year. The compelling suggestions that follow are that study sections be allowed to take a grant's budget into account in scoring an application and be able to consider the other funding available to a PI. In difficult times, the need for transparency is great.

In addition, GSA members would be appreciative if NIH could re-establish a scoring system that provides reviewers a larger number of scores to discriminate among the best applications.

Comment 3: Ideas for new policies, strategies, and other approaches that would increase the impact and sustainability of NIH-funded biomedical research.

The Genetics Society of America (GSA) believes that the language used in the debate over “substantial funding of excellence versus some funding for breadth” is inaccurate and obfuscates reality. First, almost no one who has served on a study section believes that applications on one side of the payline are accurately distinguished from those just over the line, yet careers flourish or perish on such distinctions. Second, we know of no credible claim that tomorrow's breakthroughs can be reliably predicted in advance. Hence, future breakthroughs depend upon placing a wider range of bets today. Obviously, for more PIs to have some support, some well-funded PIs will have to have less support; it is better for some labs to be a little smaller than to force others to shut down their research program entirely.

We are further concerned that many institutions have diminished support for their own researchers, such that NIH is asked to provide most or all of the salary for its investigators. GSA encourages NIH to work toward reducing the level of PI salary that can be charged to grants.

We stress the importance of high quality study sections that engage the most thoughtful members of the scientific community. Study sections work best when there is the depth of experience needed to evaluate the context of the proposed research and the potential for success and transformative impact. One suggestion for recruiting more experienced people to do a second, or multiple, round(s) of service on study sections is to empower NIH to offer continued funding to experienced reviewers at their current funding level for the duration of their service on study section.

Finally, we point out the interesting experiment of funding programs that focus on the qualification of the investigator and an entire research program, rather than only evaluating the merit of a specific research proposal (e.g., NIGMS MIRA program, NCI Outstanding Investigator Award, NIH Director's Pioneer Award). We believe in the value of articulating a detailed, coherent plan of attack on a well-conceived research problem, no matter one's track record. Despite this belief, the benefits of these funding mechanisms regarding programmatic flexibility as well as addressing the feast-or-famine issues justify trying the experiment.

Comment 4: Any other issues that respondents feel are relevant.

The Genetics Society of America (GSA) emphasizes the challenge many of our members face in peer review, because of the absence of a study section focused on genetics. Molecular Genetics A and B (MGA and MGB) lack consistent expertise in and appreciation for research in model organisms, even though the efficiency of model organism research makes it the most sustainable and impactful investment the NIH makes. We need a study section that better evaluates the full cross-section of research in genetics.

The new NIH biosketch format drew criticism from our members due to its potential to obfuscate judgments on a PI's impact. While the motivation for the new format has merit, the shortage of substantive data in favor of a PI's self-stated accomplishments suggests that the change does not help study sections judge the likely impact of a proposal.



ABOUT GSA: Founded in 1931, the [Genetics Society of America](http://www.genetics-gsa.org) (GSA) is a professional scientific society with more than 5,000 members worldwide working to deepen our understanding of the living world by advancing the field of genetics, from the molecular to the population level. GSA promotes research and fosters communication through a number of GSA-sponsored conferences including regular meetings that focus on particular model organisms. GSA publishes two peer-edited scholarly journals: [GENETICS](#), which has published high quality original research across the breadth of the field since 1916, and [G3: Genes|Genomes|Genetics](#), an open-access journal launched in 2011 to disseminate high quality foundational research in genetics and genomics. The Society also has a deep commitment to education and fostering the next generation of scholars in the field. For more information about GSA, please visit www.genetics-gsa.org. Also follow GSA on Facebook at facebook.com/GeneticsGSA and on Twitter [@GeneticsGSA](https://twitter.com/GeneticsGSA).