



Response to NIH RFI "Optimizing Funding Policies and Other Strategies"

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ABSTRACT

This document contains comments to be submitted to the NIH's RFI, NOT-OD-15-084, "Optimizing Funding Policies and Other Strategies to Improve the Impact and Sustainability of Biomedical Research."

READ REVIEWS

WRITE A REVIEW

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Below are my comments to be submitted to the NIH's RFI, NOT-OD-15-084, "Optimizing Funding Policies and Other Strategies to Improve the Impact and Sustainability of Biomedical Research." Comments are due on May 17th and can be submitted on the web at <http://grants.nih.gov/grants/rfi/rfi.cfm?ID=42>.

Thanks to Gary McDowell, Vaibhav Pai, Kearney Gunsalus, and Jonathan Jackson for helpful comments and discussions.

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 current hypercompetitive environment is severely inhibiting the NIH's mission to seek fundamental knowledge about living systems. Instead, it makes science a less attractive career for bright young people, encourages practices that damage research reproducibility, and stifles creativity and risk-taking. To effectively pursue its mission, the NIH must alleviate this competition by making adjustments to the structure of the workforce and individual laboratories.

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.

REDUCING COMPETITION FOR GRANTS

Low current funding rates require PIs to spend a large fraction of their time writing grants, diverting time that could be used for other research activities. In order to better allocate limited funds, the NIH must take into account both the number of personnel in a lab and the total amount of funding it receives. The productivity of a PI should be evaluated adjusting for both of these factors.

Furthermore, the total amount of NIH funds allocated to any individual investigator should be limited by

default, as data show that smaller labs are most efficient.
(<http://www.nature.com/news/2010/101116/full/468356a.html>)

Where possible, guidelines for grant submission should be simplified to reduce administrative burden.

MAKING SCIENCE AN ATTRACTIVE CAREER CHOICE

The biomedical research workforce is made up primarily of trainees. While a trainee workforce provides cost-effective labor, it also obfuscates the mission of the NIH (which focuses on research, not training), creates a conflict between the interests of the laborers and the interests of PIs (in terms of the balance between repetitive research tasks and professional development activities), and ultimately dissuades bright young people from a career in science (as a result of poor job prospects).

In order to create a sustainable research enterprise, a career in science must be stable enough to encourage bright, ambitious students to choose research over other professions that are currently far more lucrative. To do this, the NIH must act to reform the structure of the workforce. Since much data is lacking, this first requires an analysis of the labor market both in and out of academia to be undertaken, and I applaud existing efforts of the NIH in this regard. Next, the NIH should encourage a stable workforce structure (with fewer temporary workers and more positions appropriate for later career stages) by establishing funding mechanisms to support permanent scientist positions and restricting graduate student and postdoc numbers.

In addition to replacing some trainee positions with jobs that provide appropriate compensation and benefits for scientific workers, the existing training positions must be altered to maximize the benefit to the trainee and to society. Implicit in calling this work "training" is the assumption that the experience will benefit postdocs and students in the future. There is little evidence to support this, especially as an increasing percentage of trainees go on to non-research-related careers, and as the unemployment rate of recent biomedical PhD holders has reached 4.7% (page 48 in <http://www.faseb.org/Portals/2/PDFs/opa/2015/Sustaining%20Discovery%20Report%20Final.p\ndf>), above the national average for BS holders.

For example, in order to ensure that graduate students and postdocs have the autonomy to pursue professional development opportunities and creative research projects, they should not be treated as their PI's technicians. The current system of paying trainees from research grants effectively renders students and postdocs inexpensive labor for PIs who have no extrinsic incentive to provide their professional development. To avoid this, all postdocs and graduate students should be supported on training grants and fellowships.

COMMENT 3

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

The NIH should continue to invest in shared research facilities and public repositories (such as preprint servers, plasmid and cell banks, etc) to maximize efficient use of research funds. Incentives to encourage publication of negative results should be explored. Furthermore, the NIH should institute a cap on the APCs that can be paid to any publisher in order to prevent the waste of public funds on an inefficient publishing system. (<http://svpow.com/2012/01/13/the-obscene-profits-of-commercial-scholarly-publishers/>)

COMMENT 4

Any other issues that respondents feel are relevant.

N/A