MERCATUS CENTER
George Mason University

RESEARCH SUMMARY

Rewarding Merit and Increasing Fairness in the Federal Research Grants System via Lottery

Federal agencies have a duty to maximize returns on the tax dollars invested when they fund scientific research. In principle this should mean awarding research grants to the most meritorious projects; in practice factors other than merit, such as an applicant's prior history and reputation, play a significant role. In "A Lottery for the Republic of Science: Chance, Merit, and Fairness in the Process of Awarding Research Grants," Walter D. Valdivia proposes formally introducing chance into the selection of grants in a way that would improve the current process.

DEFECTS OF THE CURRENT SYSTEM FOR AWARDING RESEARCH GRANTS

The current process of awarding research grants depends on the peer review process. Federal agencies ask scientists to review projects proposed by other scientists seeking funding; these reviews aim to identify and measure merit. This peer review system is the strength of the award selection process, but it also has inherent limitations.

- Award decisions are skewed by a number of factors, including the prestige of the research team, its prior history of awards, its institutional affiliation, sociodemographic factors, and sheer luck.
- Even if *bias* can be mitigated, *chance* seems to be inescapable. Projects are a form of learned speculation; in other words, *if* one tests a theory with given methods, *then* one can learn useful things. Therefore, there are legitimate reasons for experts to disagree about the merit of particular projects. This situation is reflected in peer review and influences funding decisions.

THE ADVANTAGES OF FORMALIZING "CHANCE" IN THE PROCESS

Valdivia builds on an existing proposal by microbiologists Ferric Fang and Arturo Casadevall, which calls for implementing a two-stage modified lottery in the grant selection process:

1) Meritorious projects are first identified using peer review. This filter will distribute recognition to a larger pool of high-quality proposals.
2) Once this pool of proposals has been selected, grants are awarded by lottery. Formally introducing chance into the grant selection process may mitigate the influence of prestige, personal favor, and unconscious bias.

A modified lottery would also reduce the costs of a selection process that currently entails convening panels of experts for long deliberations. The savings could be productively redirected to increase research funding.

KEY TAKEAWAY

Every time Congress, scientists, and professional organizations call for more money for science, they should have to answer this question: How well is the current award selection process working?

Using a modified lottery for research grant selection seems counterintuitive, but it would be an improvement on the current system. Formally recognizing the role of chance could produce better science, encourage more young researchers, and improve the overall fairness of the system.