

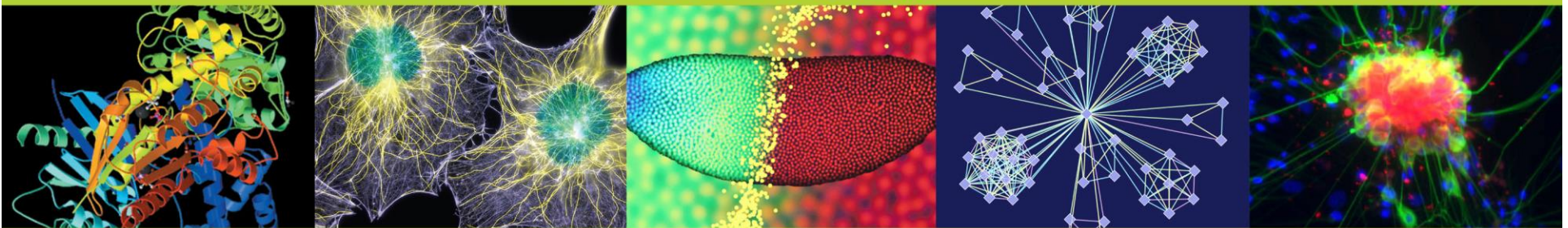


National Institute of
General Medical Sciences



Developing a More Productive, Efficient and Sustainable Biomedical Research Enterprise

Jon Lorsch



NIGMS Mission

- Promote fundamental research on living systems to lay the foundation for advances in disease diagnosis, treatment and prevention.
- Enable the development of the best trained, most innovative and productive biomedical research workforce possible.



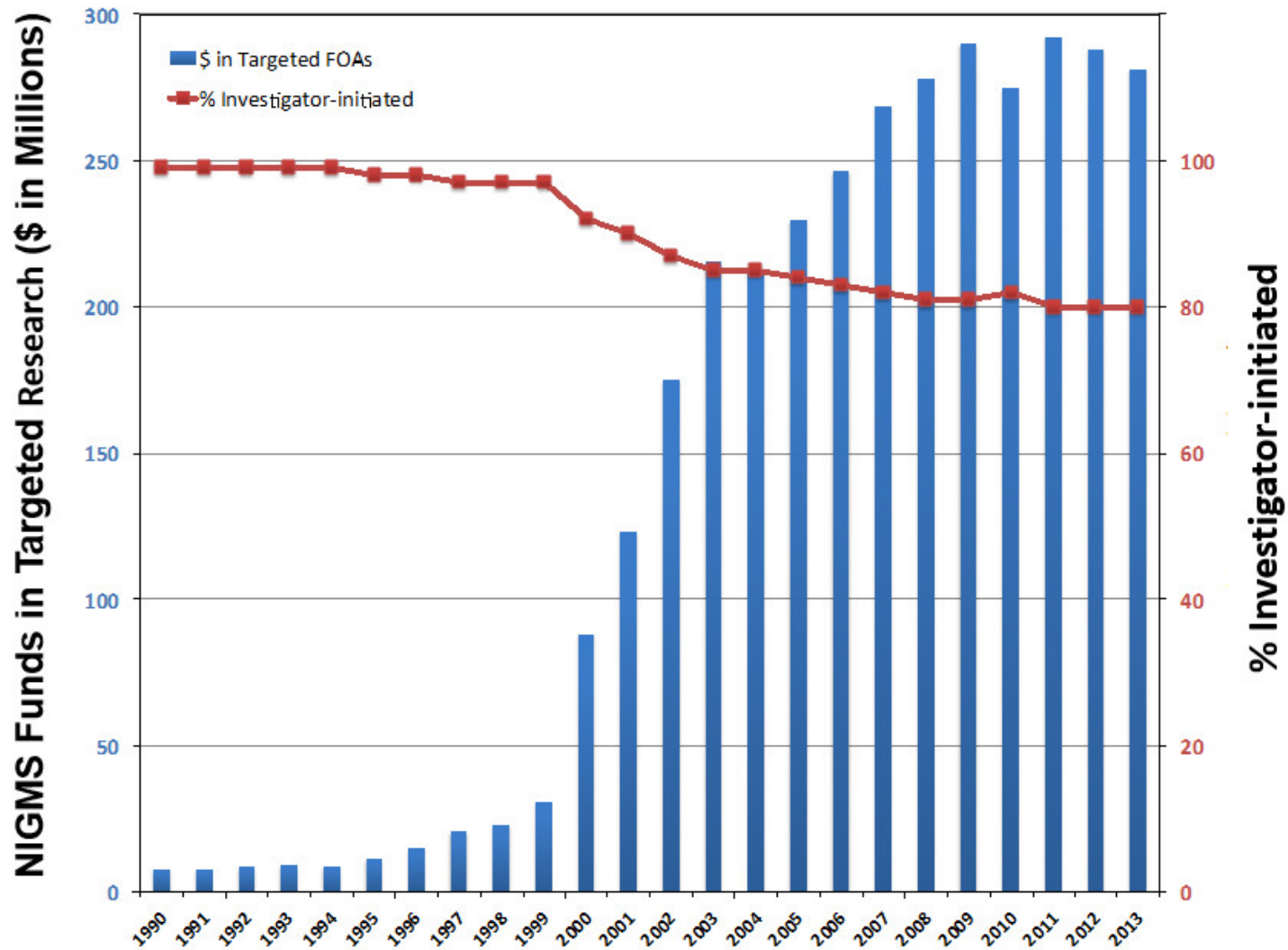
National Institute of
General Medical Sciences

Basic Discoveries for Better Health

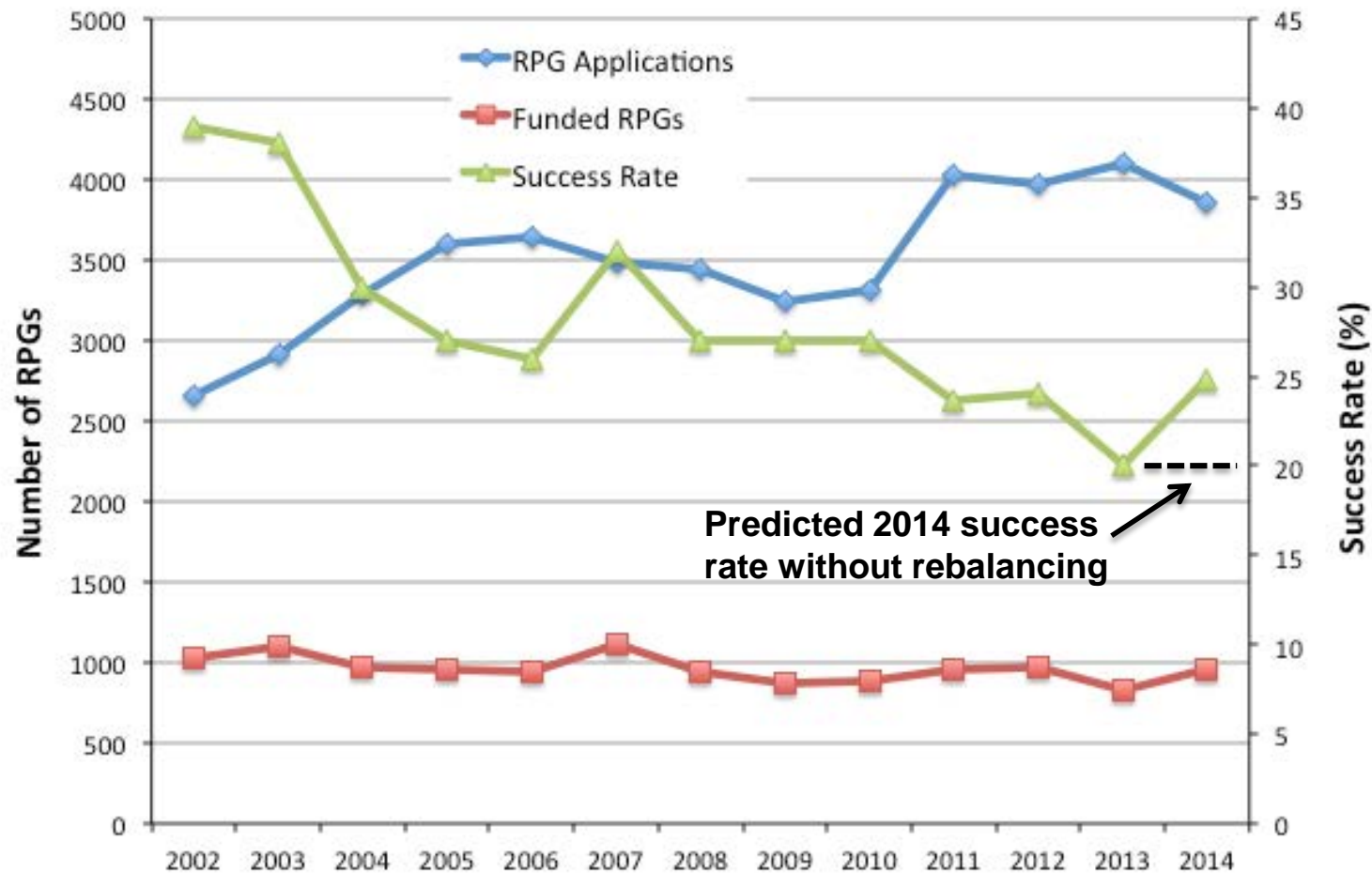
National Institute of General Medical Sciences 5-Year Strategic Plan

March 2015

A Major Strategic Goal for NIGMS Is to Refocus Our Portfolio on Investigator-Initiated Research



Portfolio Rebalancing Contributed to a Jump in Success Rate in FY 2014



**Early career
investigators**

Reproducibility

Peer review

Diversifying Research

**Distribution
of funding**

Size of workforce

Efficiency

**Academic
business model**

**Promoting
creativity and
innovation**

**Stability and
sustainability**

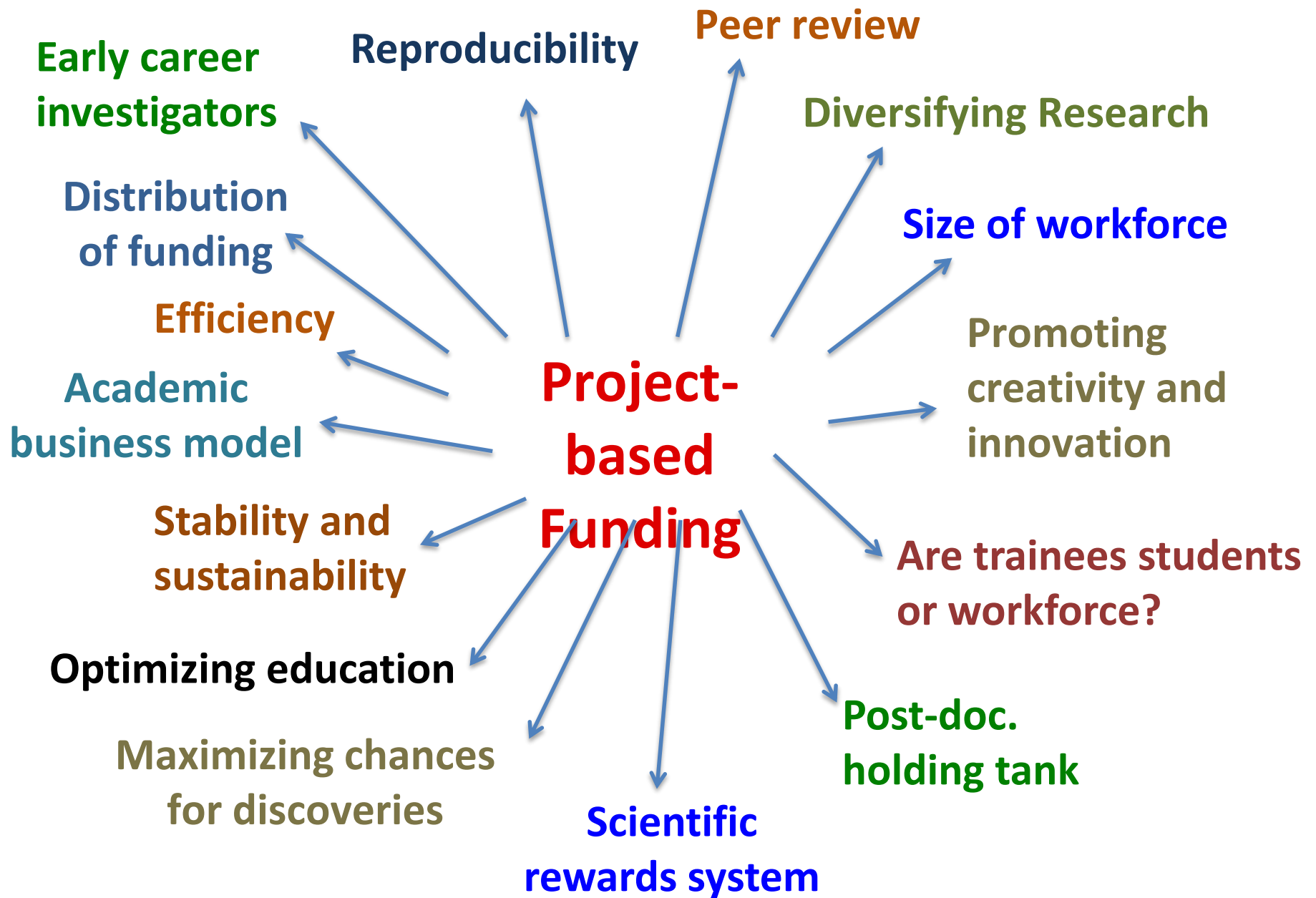
**Are trainees students
or workforce?**

Optimizing education

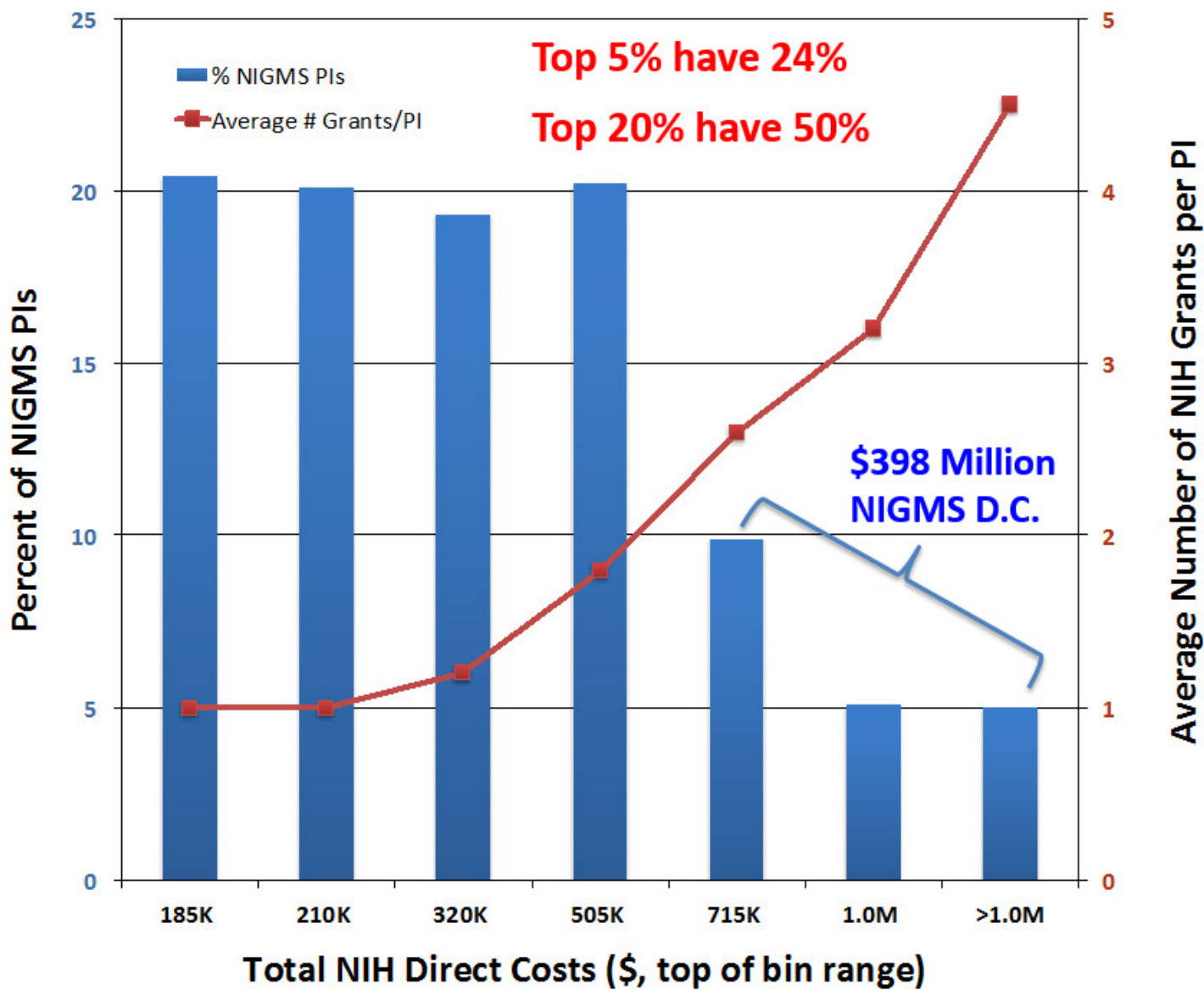
**Maximizing chances
for discoveries**

**Post-doc.
holding tank**

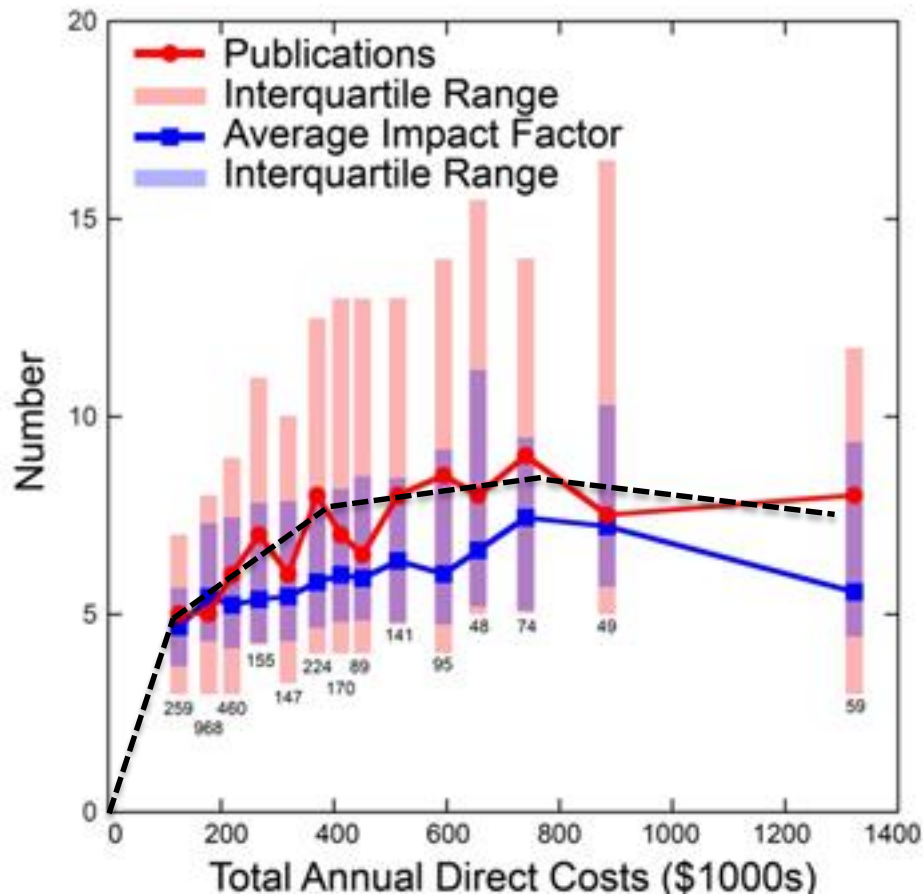
**Scientific
rewards system**



Distribution of NIGMS Grantees' Total NIH Direct Costs



Maximizing the Return on Our Investment of Taxpayer Dollars

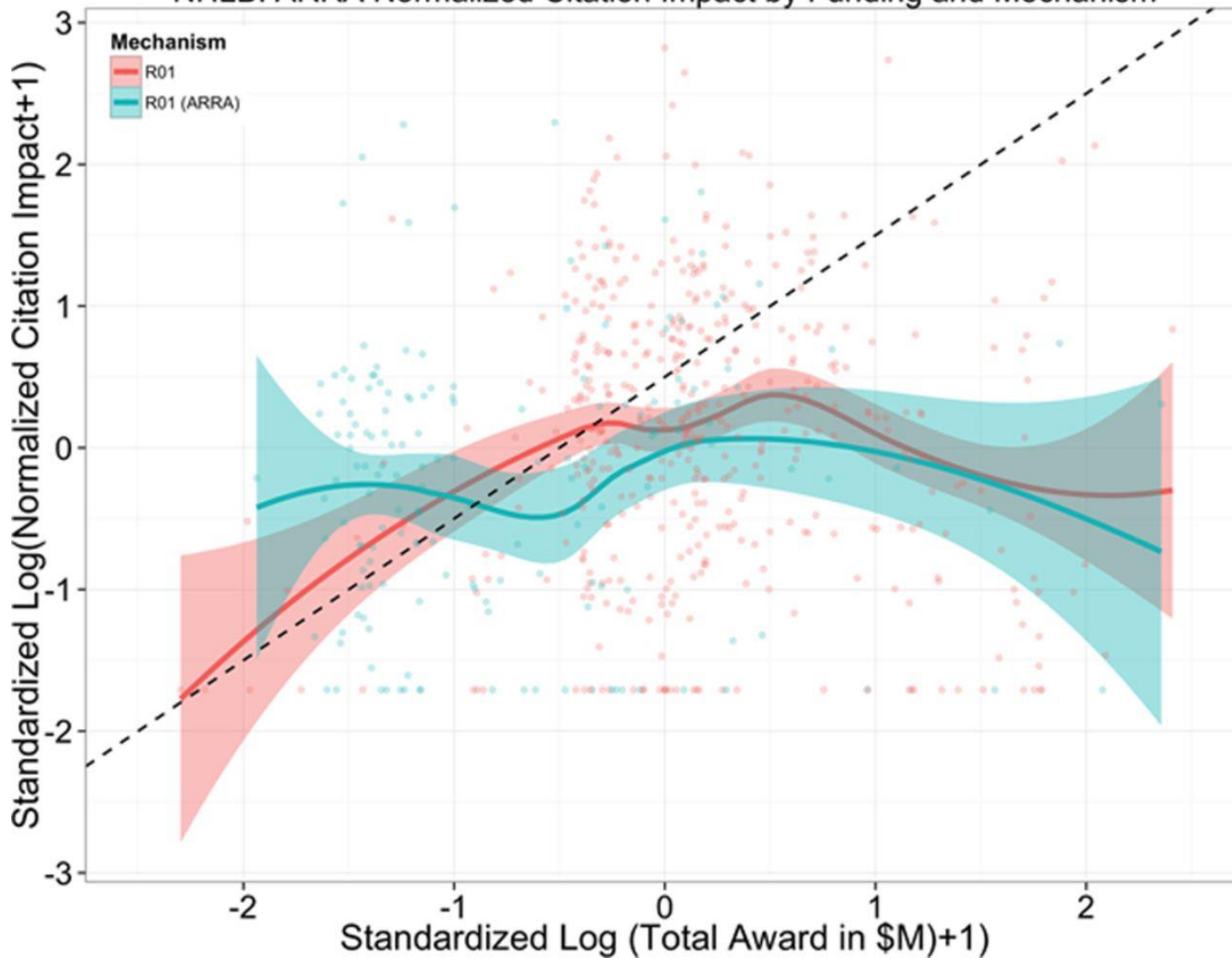


Another R01 to someone who already has \$400K d.c. buys the taxpayers 1 extra paper

An R01 to a new PI or someone who will otherwise have nothing buys the taxpayers 5 papers

➡ 4 paper difference in yield

NHLBI ARRA Normalized Citation Impact by Funding and Mechanism



What should our metric for funding be?

of Grants Awarded

What should our metric for funding be?

of Grants ~~X~~ Awarded

of Investigators Supported

Funding Research *Programs* instead of Individual *Projects*

- Increase the **stability of funding** to enhance investigators' willingness to take on ambitious scientific projects and to approach problems creatively.
- Increase **flexibility** for investigators to follow important new research directions as opportunities arise.
- Improve the **distribution of funding** among investigators to increase overall scientific productivity and the chances for important breakthroughs.
- Reduce the time spent by researchers **writing grant applications**, allowing them to spend more time conducting research.
- Reduce the time spent on **reviewing grant applications**.

Maximizing Investigators' Research Award (MIRA)

- One NIGMS research grant per PI – R35
- Bigger and longer (5 years) than current R01 averages
- Direct cost range up to \$750K
- Not tied to specific aims
- Review based on track record and overall research ideas
 - Includes consideration of service & contributions to workforce development
- Budget could be modulated based on competing review in order to avoid abrupt termination of research groups
- Separate panels and modified review considerations for early-stage investigators

Initial Implementation Plan

- Need to generate a moderate number of applications to test the MIRA application and review concepts.
- Applications from NIGMS established PIs with either ≥ 2 NIGMS R01s or 1 NIGMS R01 for $\geq \$400K$ d.c.
- Applications from New Investigators.
- Separate FOAs, review panels, and review criteria for established PIs and New Investigators.
- If pilot phase is successful, expand the program to include all PIs working on questions relevant to NIGMS' mission.

Questions or Comments?

