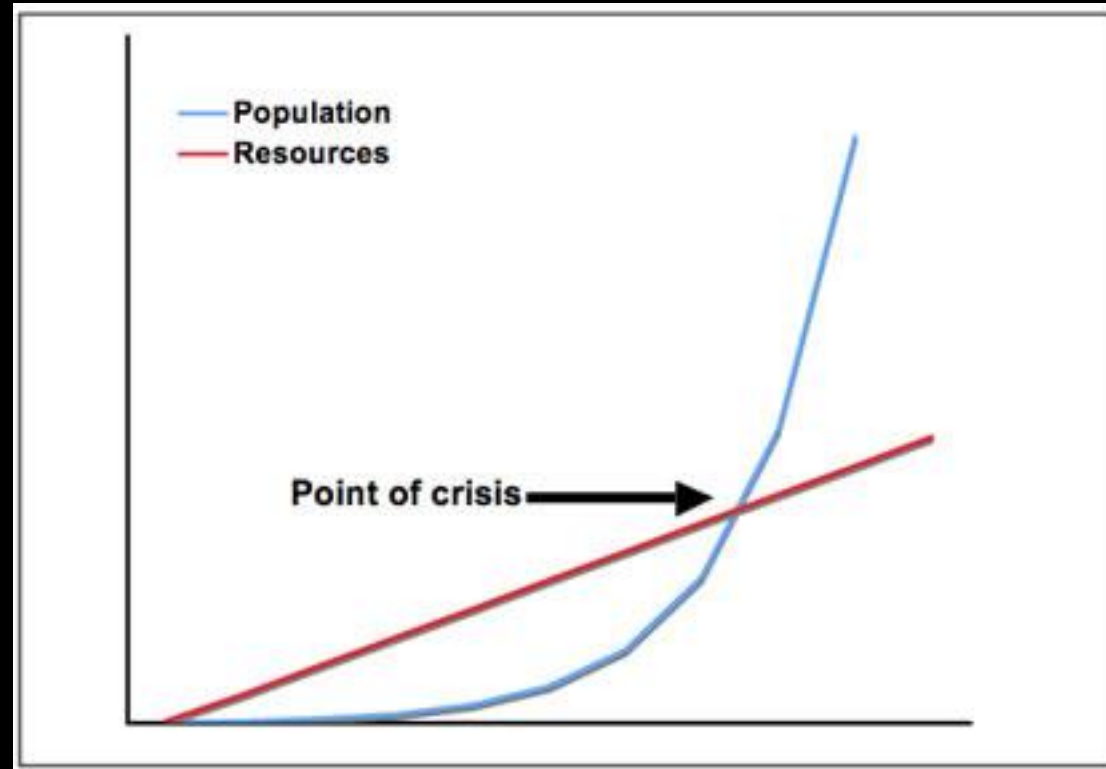


Expanding the role of Staff Scientists
In Biomedical Research

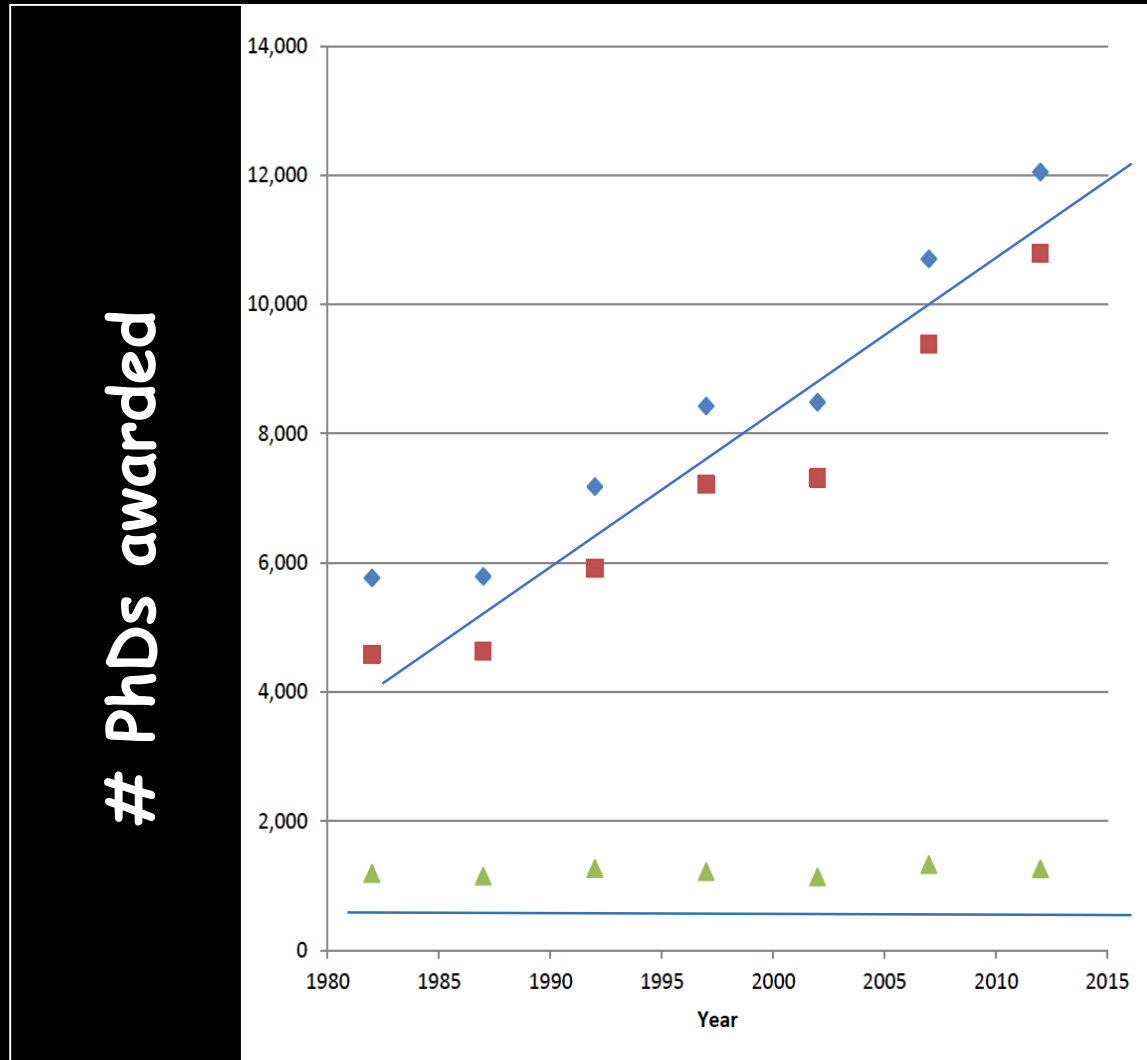
The Malthusian Dilemma in Biomedical Research



Thomas
Malthus
1766-1834



The Supply side - a 46% increase in production of new Ph.D. scientists

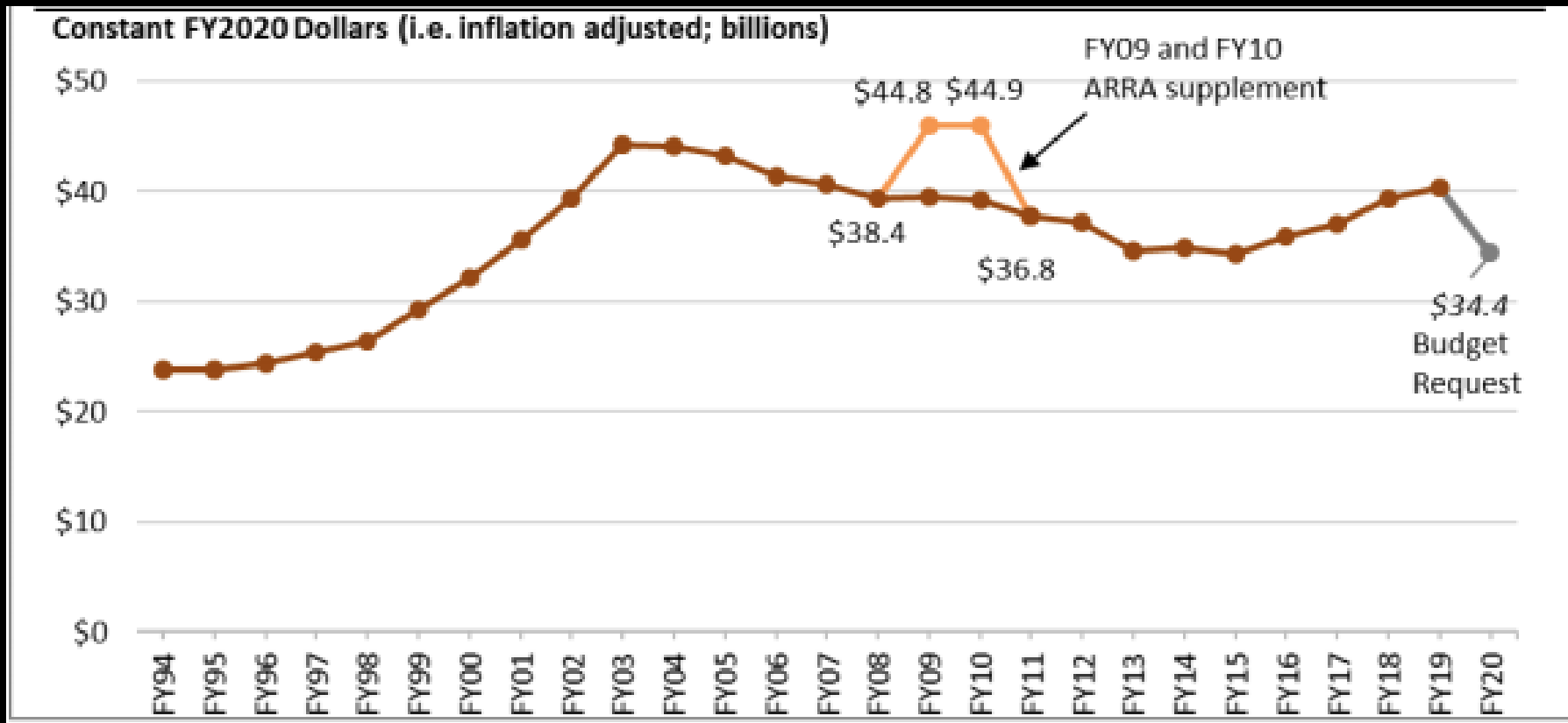


Total Life Sciences

Biomedical Sciences

Agriculture &
natural sciences

The Demand Side - The NIH Budget has been in decline or flat since 2003



The Malthusian dilemma is particularly acute for trainees

A Bulging Training Pipeline

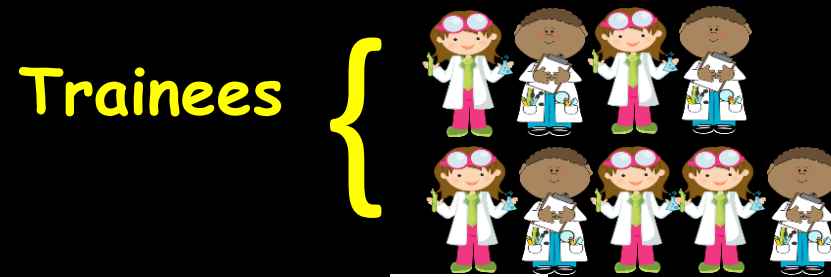


1970s and 80s



2019

The Malthusian Laboratory

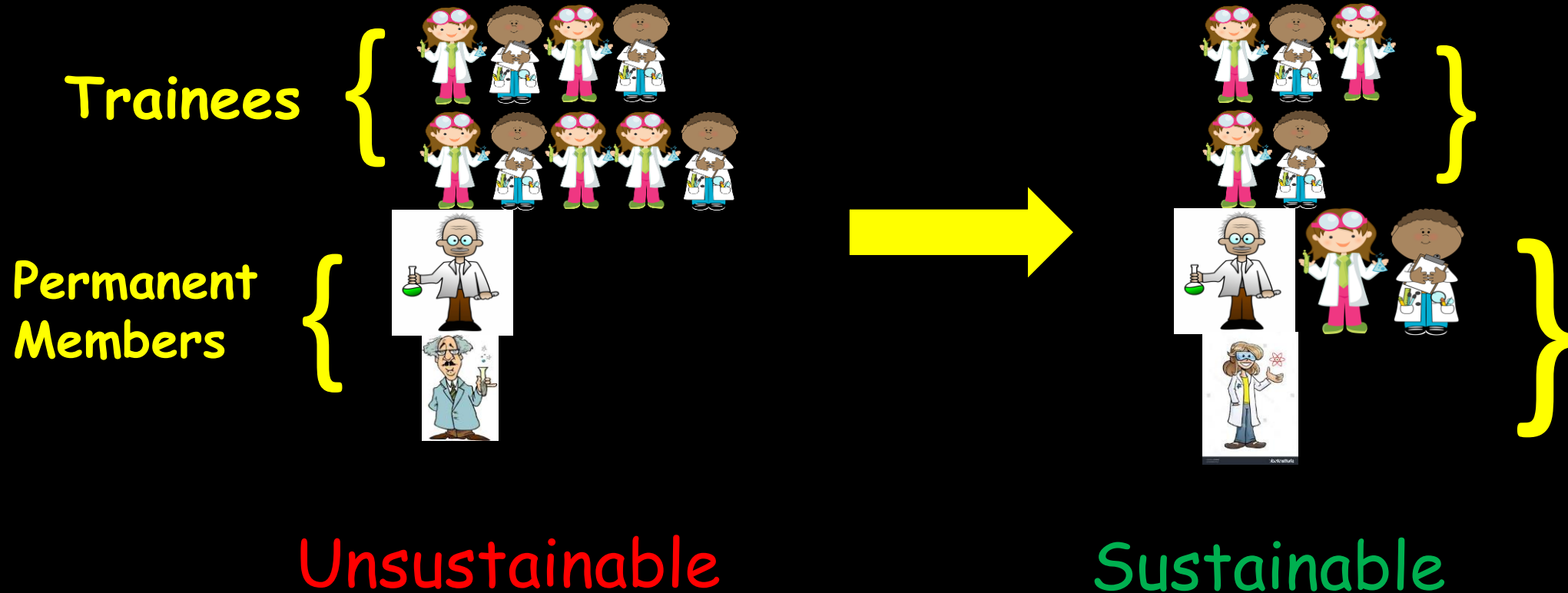


Permanent
Members {

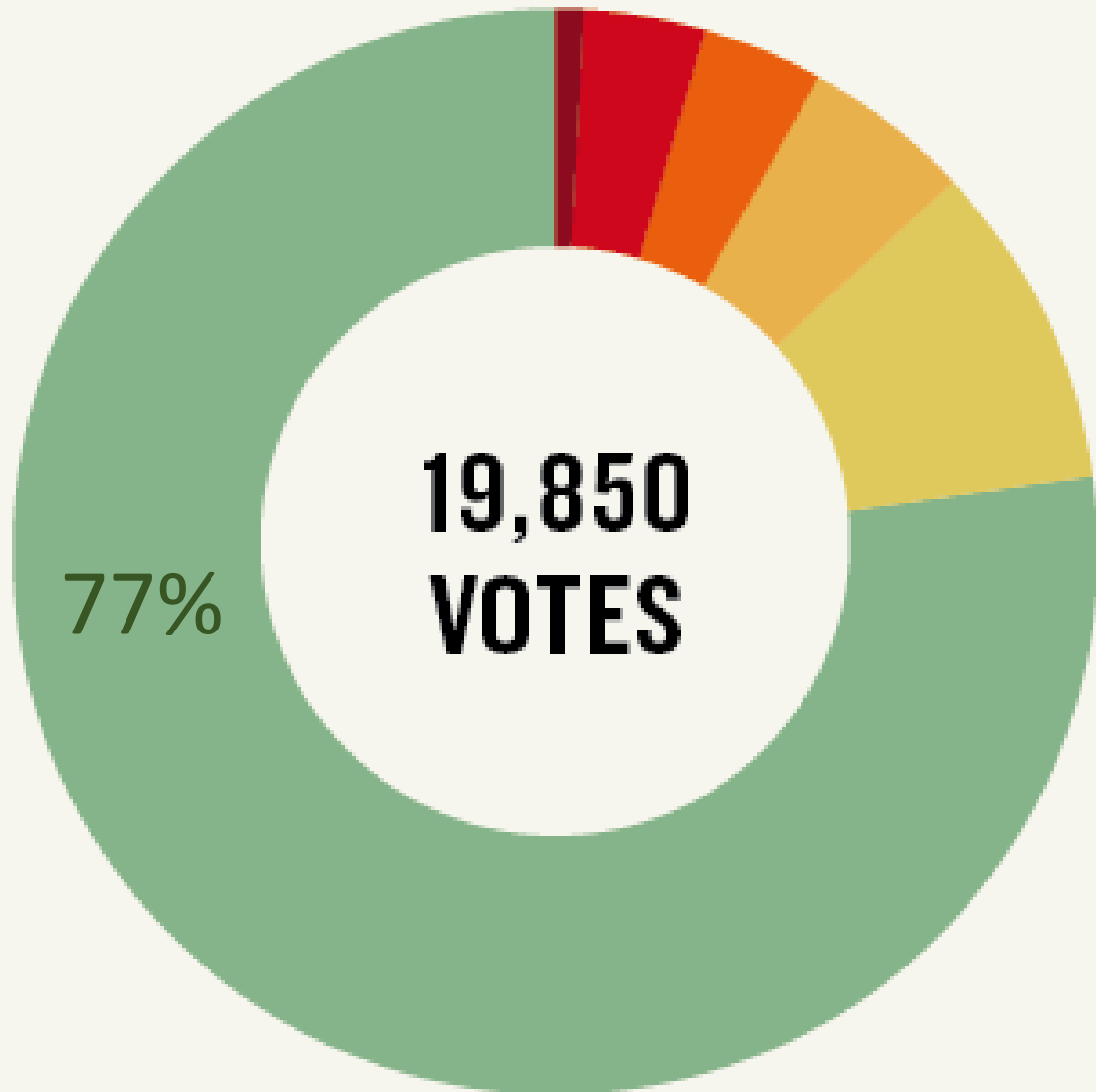


Unsustainable

Changing the Malthusian Laboratory



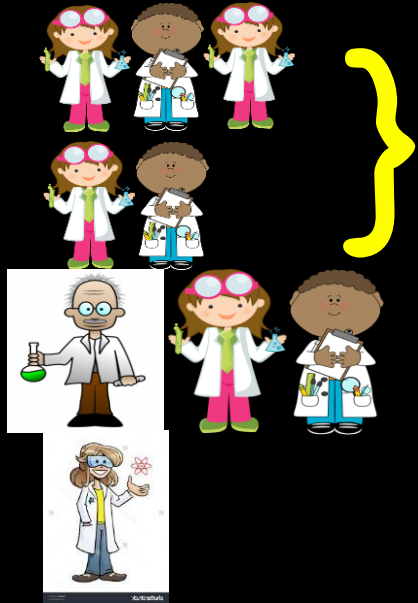
Poll question: some say that there are too many postdocs and too few permanent academic positions. What do you think is the best solution?



- Create more staff scientist positions (15,265)
- Pay postdocs more (1,943)
- Reduce the number of postdoc positions (989)
- Strictly limit the postdoc term to 5 years or less (714)
- Other (732)
- The situation is fine as it is (171)

Direct Strategy to Address the Malthusian Dilemma by changing the ratio of trainees to professional staff scientists

1. Greater participation of professional scientists as individual laboratory members



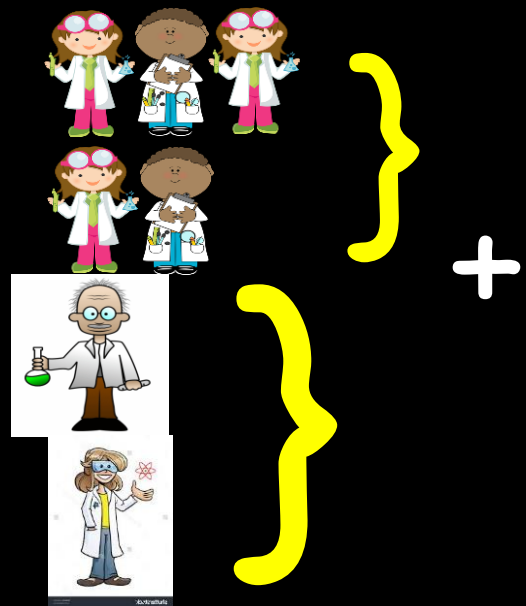
Pros: More stability in the laboratory; greater expertise; more effective oversight of new graduate students and fellows; sharing administrative duties with PI; willing to Take on high risk projects

Cons: Grants don't cover higher salaries required of a professional scientist; professional scientists won't be willing to work as hard; less creative than graduate Students; no employment security

Sustainable

Indirect strategy to address the Malthusian Dilemma by changing the ratio of trainees to professional staff scientists

2. Greater adoption of "innovation platforms", overseen by professional Scientists, to conduct experiments in collaboration with PIs



Sustainable

Indirect strategy to address the Malthusian Dilemma by changing the ratio of trainees to professional staff scientists

2. Greater adoption of "innovation platforms", overseen by Professional scientists, to conduct experiments in collaboration with PIs

Pros: Access to technology that cannot be housed in individual labs; staff focused on improving technology and providing expert advice and collaboration; with more experiments conducted on platforms; need for labor in individual labs declines

Cons/Requirements: Funding models need to be developed - fee for service; underwriting by institutions; career paths for scientists in platforms;

National Cancer Institute Research Specialist Award (R50)

“encourage the development of stable research career opportunities for exceptional scientists who want to continue to do research”



Harold
Varmus



The R50 award supports staff researchers, core facility managers, and data scientists with up to 5 years of salary support and annual travel funds for cancer research conferences and trainings. The recognition and funding of the R50 aims to attract and maintain important research specialists who are essential for NCI-funded research programs. Currently, over 50 research specialists receive R50 funding.

“The [R50 award] travel stipend enables me to host training workshops outside the Broad Institute on using our software to study cancer biology.” Brian Haas, M.S., senior computational biologist, Broad Institute

“With the salary support from the R50, I’ve been able to concentrate on the technical work at my facility and developing new methods in metabolomics for the cancer research community.” Wenyun Lu, Ph.D., the technical director of the Regional Metabolomics Core at Princeton University