

This is the response of Gary McDowell, PhD, of Lightoller LLC, to the [National Institutes of Health Request for Information \(RFI\): Re-envisioning U.S. Postdoctoral Research Training and Career Progression within the Biomedical Research Enterprise](#). Responses were provided to the following prompts and were limited to 300 word responses to each prompt.

“Perspectives on the roles and responsibilities of the academic postdoc (e.g., what the postdoctoral position means to you, how you view it).”

The postdoc is a temporary position in academia where an experienced and qualified researcher carries out research labor under the guise of being a “trainee”. They are, in effect, “gig-economy” staff scientists.

U.S. biomedical academia is heavily dependent on postdocs to carry out the bulk of its research labor. This labor is needed to sustain the careers and finances of faculty, the finances of research institutions, and to justify funding NIH with taxpayer money to advance research into human disease. Any diminution in their workload or number will affect how productive faculty, institutions and NIH appear to those who pay them.

Postdocs are trainees when it suits PIs, universities and funding agencies, and are staff when it suits these organizations. Most postdoc advocacy in recent decades has focused on clawing back the benefits for postdocs that come with those designations. The need for postdocs to unionize and redress the power imbalance is self-evident.

“Post-postdocs” should also be included in this definition. Due to efforts to restrict the length of time that people are perceived to be in postdoc positions, many institutions have required postdocs to transition into roles with new titles after 5 years. Some postdocs receive better compensation and benefits; but for some, the only change they notice is a change in their title. Regardless, for most their function does not change: they are still in a position providing labor for someone else. This diminishes the responsibility and prestige of true staff scientist roles, which are fewer in number.

Most current faculty became faculty because their postdoc was the point at which they were most successful and so the status quo is heavily defended by survivorship bias.

“Fundamental issues and challenges inhibiting recruitment, retention, and overall quality of life of postdoctoral trainees in academic research.”

In 1969, “The Invisible Postdoc” states that $\frac{1}{3}$ of postdocs were actually faculty on sabbatical, learning a technique in a new lab. “Learning a new technique” today has become a key justification for the postdoc. These and other shifting goalposts from faculty who would not be competitive nowadays on their own pre-faculty credentials contribute to the understanding that the postdoc is an exploitative role.

Across race, gender and ethnicity, the defining factor in people deciding to stay in academia is an alignment with one’s values, as shown a decade ago by Gibbs and Griffin. It’s worth reflecting on this and the struggle to do - and be recognized for - more outward-facing, work, or educational activities. NIH suggests that part of the reason black researchers are receiving less funding is affected by their interest in clinical research into population- and community-level interventions, which are less likely to be funded. Conversely, supporting the IRACDA program has been a great success story of NIH’s diversity efforts by giving value and support - and ultimately a reason to stay in academia - to people who are interested in teaching.

Many academics perpetuate a culture of martyrdom, whereby they insist that they have had a very hard time, and have suffered greatly, in their noble cause for science. It is therefore expected that one should suffer for academia, and the more suffering one can claim, the more worthy one is of academic success.

This “suffering” is very subjective, and conveniently ignores both survivorship bias and the shifting goalposts over time for who secures a faculty position. Plenty of people experienced just as many hardships during their academic training, and left academia because there aren’t enough faculty positions for all the smart people who could fill them, and they didn’t have the luck or pedigree of those who did.

“Existing NIH policies, programs, or resources that could be modified, expanded, or improved to enhance the postdoctoral training ecosystem and academic research career pathways.”

NIH should increase the Ruth L. Kirschstein National Research Service Award (NRSA) starting salary for new postdoctoral researchers to \$63,300 (in 2023 dollars), with annual adjustments for inflation and for cost-of-living increases tied to the Personal Consumption Expenditure Index. The NIH can make use of the General Schedule to determine regional adjustments. This would bring postdoc compensation policies into line with NIH's Interest in Diversity Notice that has a substantial focus on financially-disadvantaged groups.

NIH and its various institutions have the ability to open any and all career development (K) awards to foreign researchers. Similarly, NIH can work with the Department of Health and Human Services to amend the code of Federal regulations to allow foreigners onto NRSA training mechanisms.

NIH can follow the lead of federal agencies such as NASA and ensure that all NRSA award recipients receive benefits, and refuse to give awards to universities who strip postdocs of these benefits.

Numerous comments have surfaced that the postdoc is like medical residency. It isn't, but to realize this, NIH could: cap the time funded for training; cap the number of postdocs it funds; and ensure postdocs are practically guaranteed a faculty job at the end. The postdoc and residency will therefore be more comparable.

NIH should bring in its work on peer-review and research evaluation to ask what, in a defined time period, are reasonable expectations and accurate articulations of success for a postdoc. This would divorce the length of the postdoc from factors that are outwith their control - for example, the growing inefficiency of scientific magazine publishers, or rodent breeding cycles.

“Proven or promising external resources or approaches that could inform NIH’s efforts to enhance the postdoctoral training ecosystem (e.g., improving postdoctoral recruitment, training, working environment, mentoring, job satisfaction).”

A Congressionally-mandated report developed recommendations around this exact issue, which were given to NIH in 2018. The report can be found at:

<https://nap.nationalacademies.org/catalog/25008/the-next-generation-of-biomedical-and-behavioral-sciences-researchers-breaking>

Industry seems to be capitalizing on taking the postdoc model, but providing them training, appropriate benefits, and compensation. This might be worth a try.

Numerous institutions and funding organizations are realizing the necessity of raising postdoc salaries. NIH is in danger of being behind, whereas it was at the forefront of this effort in 2016.

DORA is looking into ways to diversify research evaluation. Postdoc length is being affected purely by a focus on publishing articles in magazines, there is a clear need to establish other ways to evaluate the postdoc. In particular, graduate students, and increasingly undergraduate students, are being evaluated in terms of journal publications, so NIH needs to justify why the taxpayer is funding yet another period of “training” that appears to just be more research labor with no discernable training outcomes.

Funding agencies in countries such as the UK have mandates to allow trainees time to leave the lab for professional development training. NIH could include such a mandate, or at the very least reduce paperwork that acts as a barrier to trainees getting training. For example, such policies from the UK’s Medical Research Council (and at the University of Cambridge) allowed me to undertake pedagogical training during my PhD, and obtain an education credential and membership of the Higher Education Academy. When I was a postdoc at Harvard Medical School, to accept a teaching fellowship position at Harvard College my PI had to fill out paperwork to explain to NIH why I, as a “trainee” on an RPG, wouldn’t be spending all my time at the bench.