Science Advancement & Outreach
A DIVISION OF PETA

1536 16th St. N.W., Washington, DC 20036

National Institutes of Health Request for Information on Re-envisioning U.S. Postdoctoral Research Training and Career Progression within the Biomedical Research Enterprise

Notice number: NOT-OD-24-150

Submitted online: https://rfi.grants.nih.gov/?s=6660cc1aa1264f88920cf122

October 21, 2024

Recommendation 1.3. Limit the total number of years a person can be supported by NIH funds in a postdoctoral position to no more than 5 years.

Describe any potential benefits, opportunities, challenges and/or consequences to the postdoctoral workforce or the extramural research community if NIH were to limit total years of NIH-supported funding support for postdoctoral scholars; Please describe any existing NIH or extramural institutional policies that could pose challenges for the implementation of a policy to limit aggregate NIH funding support for postdoctoral scholars.

Postdoctoral fellows often spend more than five years in academia before transitioning to other careers, with approximately 19% spending more than 6 years and 40% struggling with salary dissatisfaction (https://www.nature.com/articles/d41586-023-03163-7). Addressing these challenges requires systemic change and engagement of the NIH and institutions to create more supportive environments, better compensation, structured pathways to diverse career opportunities beyond academia, and training in the skills necessary to contribute to the future of their own field, such as the use of non-animal research methods.

If the NIH limits support to five years, it should allow flexibility for projects that require more time to yield results. This policy change must be accompanied by broader structural reforms within academia, including salaries and benefits on par with staff positions.

Institutions with fewer resources or those serving underrepresented populations often rely on NIH funding to support their postdocs. Implementing a funding cap could disproportionately affect these institutions, hindering their ability to attract and retain talent and widening existing disparities. For multi-year

projects, imposing a funding cap could require research teams to hire and train new personnel mid-project, which could be time-consuming and impact the quality of the research.

Please describe any key NIH or extramural institutional policies, process or resources that should be developed, improved or expanded to address any potential challenges associated with limiting aggregate funding support for postdoctoral scholars. What mechanisms should be put into place by extramural institutions to support transitions for postdoctoral scholars nearing the end of the five-year period?

To address these challenges, NIH and extramural institutions should prioritize the enhancement of career development programs and skill development in reputable and burgeoning areas, such as non-animal methods, to help postdocs prepare for the future of their fields and a wide range of career opportunities.

Many academic research programs are still heavily animal-based, despite the well-known problems with translation and replicability of animal research. Many researchers trained in the use of animal models lack the time, funding, or institutional support to receive training in emerging, human-relevant research technologies. The postdoctoral training period is an ideal period during a scientist's career to familiarize themselves with new and/or unfamiliar technologies so they can keep pace with pivotal developments and redirect their research as needed.

In addition, the NIH can establish transition grants so that postdocs can move into their next roles without funding gaps and introduce mechanisms for postdocs to allocate part of their time to career development in industry or other sectors. Extramural institutions could require and regularly update individual development plans, establish dedicated offices and program focused on postdoc transitions, offer small grants to assist with additional training or certifications, create networking and advisory boards, and leverage alumni networks.

Recommendation 2.2 Revise the K99/R00 mechanism to focus on ideas and creativity over productivity.

How should the K99/R00 mechanism and review criteria be revised to better emphasize creative ideas and innovation over research productivity? What specific criteria or metrics should be used to evaluate creativity and potential impact of applicants' research proposals? Provide input on key NIH and extramural institutional policies, processes or resources that may need to be developed or revised to ensure that changes to K99/R00 program eligibility do not negatively impact access to these awards to a broader range of postdoctoral scholars.

To better emphasize creative ideas and innovation over research productivity in the K99/R00 mechanism, review criteria should prioritize the originality and potential real-world impact of the proposed research. This can be achieved by incorporating non-traditional metrics, interdisciplinary collaborations, and the integration of modern research approaches with high translational potential—like in silico modeling and organ-on-a-chip systems—compared to traditional animal-based methods. These innovative approaches may not always result in immediate publications, due to animal methods bias in publishing (https://doi.org/10.14573/altex.2210212), but hold immense long-term potential to transform biomedical research and are evolving at a fast pace.

NIH must ensure that grant reviewers have expertise in non-animal methods and are not unnecessarily biased in favor of animal research. The Center for Scientific Review should conduct internal studies assessing the presence and impact of animal methods bias. Study sections should be diversified to include experts in non-animal research, ensuring fair evaluation of cutting-edge, human-relevant proposals, as the lack of knowledge in this area could inadvertently disadvantage some applicants.

Recommendation 4. Promote training and professional development of postdoctoral scholars and their mentors.

Provide suggestions/strategies for how NIH and extramural institutions can ensure that career and professional development training becomes an integrated and measured component of the postdoctoral experience. What policies and resources should institutions establish to ensure equitable access to career and professional development training for all postdoctoral scholars? How can institutions address barriers to participation, such as limited availability of training programs or conflicts with research obligations?

Integrating career and professional development training into the postdoctoral experience is crucial for preparing scholars for diverse career paths both within and beyond academia. However, as identified by the Advisory Committee to the Director Postdoctoral Working Group, postdocs often forgo such training due to the extensive hours spent on bench and hands-on experiments. This situation underscores the urgent need for structured career development opportunities to be formally integrated into postdoctoral training. Institutions should implement policies requiring that a portion a postdoc’s effort be devoted to career and professional development. The NIH could collaborate with research institutions to establish dedicated funds for training programs focused on new methodologies, particularly in the first and final years of the postdoctoral fellowship. For example, specialized training in cutting-edge non-animal methods during the first year could drive innovation and enhance the U.S.'s international research

competitiveness, while supplemental certifications earned by the end of the fellowship could improve qualifications for future job markets.

To ensure effective implementation, the NIH should set clear guidelines on the minimum number of weekly hours required for these activities, preventing conflicts with research responsibilities and ensuring adherence by both mentors and postdocs.

What specific skills and competencies are essential for individuals serving in the mentor role for postdoctoral scholars? How should institutions require and support mentor training to ensure the effective mentorship of postdoctoral scholars? Describe any necessary resources required by investigators and institutions to support the implementation of required training opportunities for mentors. Are there opportunities for collaboration between institutions, funding agencies, and professional organizations to enhance career and professional development opportunities for postdoctoral scholars? How can partnerships with industry, government agencies, and non-profit organizations contribute to the enrichment of postdoctoral training experiences?

Mentors should complete instruction programs that equip them with skills such as effective communication, active listening, constructive feedback, conflict resolution, project management, as well as completing new technologies training. These programs should be regularly updated to incorporate burgeoning technologies that can equip their trainees for productive and successful careers. The NIH should take steps to ensure that animal methods bias is not affecting postdoctoral training and that mentors are open to and knowledgeable about non-animal research.

To facilitate this, collaborations with industry, government agencies, and non-profit organizations can play a crucial role in enhancing mentor proficiency and postdoctoral career development. In the Netherlands, the Transition Programme for Innovation without the use of animals collaborates with various stakeholders to advance animal-free innovations across different research fields (https://www.animalfreeinnovationtpi.nl/about-tpi). The European Commission's Joint Research Centre offers training on non-animal approaches (https://joint-research-centre.ec.europa.eu/events/jrc-summer-school-non-animal-approaches-science-2023-05-23_en), while organizations like the PETA Science Consortium International e.V. (https://www.thepsci.eu/training/) and the Physicians Committee for Responsible Medicine (https://www.pcrm.org/ethical-science) provide valuable online resources for new technologies as well as grants for young researchers to attend conferences to present their work. The NIH could draw inspiration from these initiatives to foster similar partnerships, enriching postdoctoral training and supporting smoother transitions into stable, and satisfactory careers.