



# Future of Research

Future of Research advocates for training early career researchers to be successful in independent research careers, and the long-term sustainment of such careers. As an organization, we provide opportunities for and encourage early career researchers to speak up about issues they have experienced within the scientific system, while also collecting and analyzing data to identify ways the system should change to better fit their career preparation needs.

The Next Generation Researchers Initiative study by the National Academies of Sciences, Engineering and Medicine, brings much of our own concerns to light in terms of the barriers encountered by researchers when transitioning into independent research careers. One of the biggest barriers is the lack of career guidance and support needed to prepare them for successfully transitioning into a variety of research intensive roles within and outside of academia. The Committee could make a positive impact by gathering data on what researchers in these fields need (including longitudinal studies) and encouraging universities and research institutes to implement career development programs to help them in this transition.

More broadly exposing early career researchers to multiple types of research experiences could be achieved by internships and other programs at the university level, enabling them to become better prepared for research intensive careers. We recommend the Committee discuss how mentors can encourage trainees to participate in these programs and support them in their goals to pursue research both within and outside of academia.

One issue is the lack of incentives for mentors to encourage researchers to engage in internships and other similar programs. We recommend the Committee address how these activities can be incorporated as a mandatory part of training researchers at the university level, potentially via providing specific funding for these types of activities. In addition, the Committee should consider how the system can reward mentors engaged in these activities by utilizing them as criteria for promotion and grants or through changes in graduate program curriculum. This measure would provide early career researchers with a more well-rounded research experience and improved career preparation. In addition to focusing on graduate students and

postdocs, a reliance on staff scientists may also benefit those who desire a career at the bench by having funding mechanisms already in place.

We applaud the Committee for highlighting the need to provide more information to early career researchers about potential fellowships and traineeships which they may be eligible for, as well as assess their level of competitiveness. We consider this lack of information to be a large barrier in preparing them for independent research careers. Mentors and university administrators should be required to discuss these fellowships and traineeships with university researchers, and train them in aspects of eligibility and budgets as well. This recommendation is particularly important for researchers who are in the process of transitioning, or who have already successfully transitioned, into independent research careers and are working to obtain funding for those first few critical years of their laboratory. This goal would also require improved training for early career researchers in terms of writing grants and publications.

The Committee should also keep in mind the particular hurdles faced by international researchers in terms of participating in fellowships and traineeships, whether relating to funding eligibility, visa hurdles, language barriers and other additional hurdles to those faced by U.S. scientists. Considering these aspects is important especially as international researchers make up a large portion of the biomedical workforce in the U.S., and their contributions are significant to the advancement of the U.S. biomedical research enterprise.

Overall, various stakeholders working together can help early career researchers transition into independent research careers. This is a critical point in thinking about general cultural changes in science, where the researcher is part of larger ecosystem and multiple groups feed into ensuring and can benefit from their success. Helping researchers succeed will enrich the entire scientific enterprise as a whole and ensure its existence as sustained by the best and brightest minds in the future.

Future of Research acknowledges the particular importance of discussing barriers to changing the research enterprise to allow for better preparation of scientists for any future career. We also encourage scientists to respond to this call for action and make their voices heard in terms of what they would need to overcome these barriers and achieve desired career goals, both within and outside of academia.