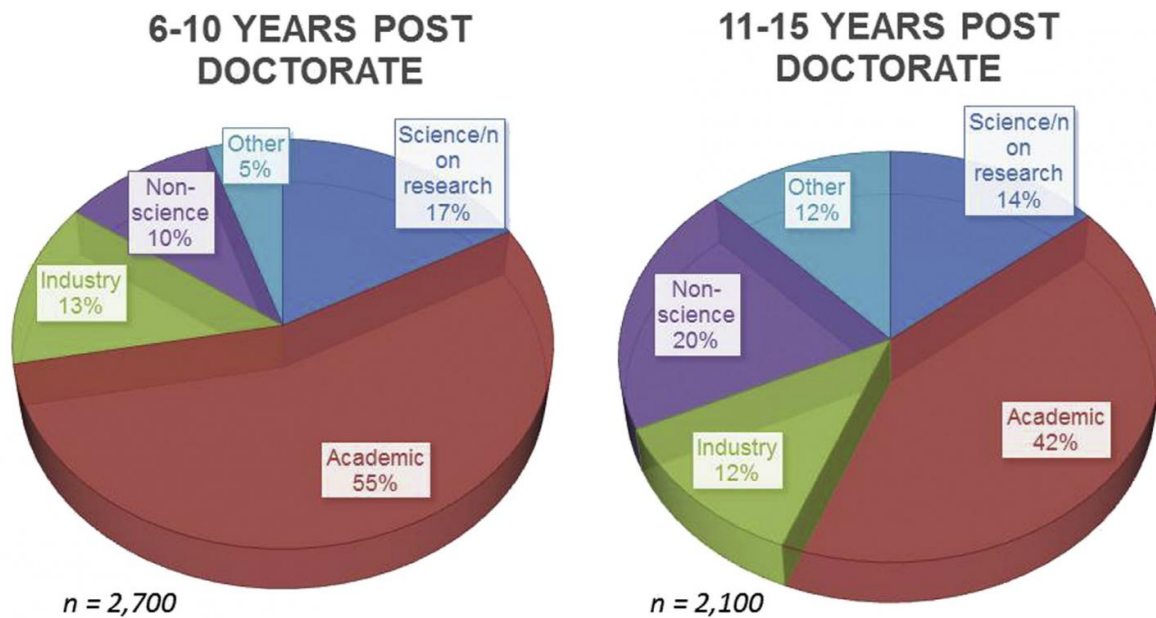



# A vision for revamping neuroscience education

June 1 2016

## Career Choices of *Neuroscience* PhDs



Data provided by the **NSF National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2013**  
<http://www.nsf.gov/statistics/srvydoctoratework/#sd&tools&micro&profiles&tabs-1>

 • Academic is restricted only to higher education and includes faculty who only teach (do not perform research)  
 • Non-science includes K-12 teaching  
 • Other includes government research and unemployed

This infographic shows the career choices of neuroscience PhDs 6-10 years postdoctorate and 11-15 years postdoctorate. Credit: Akil *et al.*/Neuron 2016

The expanding scope and growing number of tools used for neuroscience

is moving beyond what is taught in traditional graduate programs even as nations around the world make neuroscience a research priority, say leaders in American neuroscience education, funding, and policy. In a Perspective paper published June 1, 2016 in *Neuron*, the authors call for reinvestment in neuroscience graduate and post-graduate training to meet the challenges of this new era in brain science—such as creating programs to broaden student experiences across disciplines and reimagining scientific staff positions.

"These are exciting times of tremendous growth that offer us an excellent opportunity to reflect on and strengthen graduate training in the neurosciences and render it more aligned with what's lying ahead," says co-author Edda "Floh" Thiels, PhD, Program Director of the National Science Foundation. "We love our field, we love neuroscience, and we would like to have the strongest cadre of individuals join the enterprise of advancing our understanding of the brain and addressing disease."

The Perspective paper originated from a 2014 workshop at the Forum on Neuroscience and Nervous System Disorders of the National Academies of Sciences, Engineering, and Medicine on how to develop the next generation of scientists. The participants, who represented a range of voices in the community, went over the skills that neuroscientists need today to adjust to the explosive growth in neurotechnologies and neuroscience applications that is changing the landscape of occupational opportunities for neuroscience PhDs—such as deeper quantitative and analytical skills, training in data science, theory, and computational approaches—and how current neuroscience programs could be revised to ensure students receive integrative multi—and transdisciplinary training for careers in- and outside of academia.

As laid out in the communication, the authors found value in creating two major types of training programs: those that extend on traditional neuroscience training programs, deepening training in key areas, and

those that aim to engage and train students with backgrounds in other disciplines (like engineering, physical and mathematical sciences, etc.) in neuroscience.

"There are many smart people who run interesting graduate programs who are trying to confront the fact that neuroscience is very broad; we're just starting a conversation to take all of these efforts to the next level and be more systematic about the exchange of ideas," says co-author Huda Akil, PhD, a professor of neurosciences at the University of Michigan and past president of the Society for Neuroscience. "We also need to find new funding, not necessarily from the government, but other potential partners."

"Patient organizations play a unique role in that we can provide funding and resources for [training](#)," said Todd Sherer, PhD, CEO of The Michael J. Fox Foundation and an author on the paper. "In addition, we hire enterprising neuroscientists to manage our research portfolios and to broker collaborations that aim to solve field-wide challenges."

The goal of the *Neuron* paper is to start a discussion among the various stakeholders involved in neuroscience education, from graduate program directors and educational branches of funding agencies, to higher education administrators and, most importantly, the students and trainees who will be the future of neuroscience.

"It's a great moment for [neuroscience](#), intellectually, politically, and in terms of talent pool," says Akil. "The task before us is to ensure that this great combination of opportunity and talent is not wasted. As educators, we need to structure the programs to ensure that we simultaneously convey the breadth of options and prepare our students to take full advantage of them."

**More information:** *Neuron*, Akil et al: "Neuroscience Training for the

21st Century" [DOI: 10.1016/j.neuron.2016.05.030](https://doi.org/10.1016/j.neuron.2016.05.030) ,  
[www.cell.com/neuron/fulltext/S0896-6273\(16\)30209-4](http://www.cell.com/neuron/fulltext/S0896-6273(16)30209-4)

Provided by Cell Press

Citation: A vision for revamping neuroscience education (2016, June 1) retrieved 24 April 2024  
from <https://medicalxpress.com/news/2016-06-vision-revamping-neuroscience.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.