

# A handful of universities seem to control flow of ideas, people in academia

September 21 2022

---



Credit: Pixabay/CC0 Public Domain

Just five U.S. universities have trained 1-in-8 tenure-track faculty members serving at the nation's institutions of higher learning, according to new University of Colorado Boulder research.

The study, published Sept. 21 in the journal *Nature*, takes the most exhaustive look yet at the structure of the American professoriate—capturing data on nearly 300,000 tenure-track faculty

(including where they received their own graduate degrees) at more than 10,000 university departments at 368 Ph.D.-granting institutions from 2011 to 2020.

The study reveals that in all fields of academia, most professors come from a small number of institutions.

"We all know that academic pedigree is important—it's the first thing professors put in their bios—but it's hard to measure just how extreme the inequalities are in higher education until you actually analyze the data," said Daniel Larremore, a co-author of the new study and assistant professor at the BioFrontiers Institute.

Take the five schools producing the most U.S. professors: the University of California, Berkeley; Harvard University; University of Michigan; Stanford University; and University of Wisconsin-Madison. These institutions, Larremore and his colleagues calculated, trained more U.S. faculty than all universities outside of the U.S. combined. Across academia, 80% of tenure-track faculty earned their doctorate degrees at just 20.4% of the nation's universities.

The team's findings also paint a potentially dim picture of trends in diversity across U.S. universities. The group discovered, for example, that while women faculty members are becoming more common in a wide range of academic departments, those gains may soon plateau.

"We should not expect to see gender parity in academia, unless further initiatives and changes in hiring practices are made," said Hunter Wapman, lead author of the paper and a doctoral student in the Department of Computer Science.

Larremore (who earned his own doctorate in Applied Mathematics from CU Boulder in 2012) added that he hopes U.S. universities will see the

results as a wake-up call: "Quantifying and shedding light on these trends will help us change the system."

## **Academic hierarchies**

To inform that long process, Wapman, Larremore and their colleagues drew on data from the Academic Analytics Research Center to build a network of the flows of people between universities.

Co-authors on the study included Sam Zhang, doctoral student in applied mathematics at CU Boulder, and Aaron Clauset, professor of computer science.

"We might see that Aaron Clauset works in the Department of Computer Science at CU Boulder," Wapman said. "We also see where he got his Ph.D.—in this case, the University of New Mexico."

That datapoint creates a connection between CU Boulder and UNM like a spoke in a bicycle wheel, just one of hundreds of thousands in the team's network. ([Explore](#) interactive visualizations of the researchers' findings.)

By investigating that network, the team discovered that in the hallowed halls of academia, some halls are more hallowed than others: Academics who earned their degrees at less prestigious schools rarely got jobs at more prestigious institutions.

In computer science, for example, only 12% of faculty were able to get jobs at universities more prestigious than where they went to school—a number that plummeted to 6% in economics.

## **Leaving the field**

Those strict hierarchies also extend beyond the hiring process, Larremore added. Academics who got their graduate degrees from less prestigious schools also seemed to leave the field a lot more often than their counterparts from more elite institutions. So did professors trained outside the U.S., U.K. and Canada, or professors who worked at their doctoral alma mater.

"Many inequalities in the system are rooted in hiring, but they're exacerbated by attrition," he said.

The group found that women faculty are becoming more common in a wide range of university departments. Schools, however, aren't hiring more women than they did a decade ago—men in academia are merely growing older, on average, and retiring more often.

Larremore, Wapman, and their colleagues aren't sure yet how universities might use their findings. In a system where only a minority of universities train the vast majority of academics, it's harder for new ideas and research to emerge and spread from less prominent institutions. On the other hand, the researchers note, those same, prominent institutions may also have an outsized ability to address the inequalities of academia's past.

"Inequalities in academia have effects that we don't always observe," Wapman said. "There's recent research showing that [faculty](#) tend to study topics related to their identities. If we are interested in solving the problems that real people face, we should want to have diverse body of academics."

**More information:** Daniel Larremore, Quantifying hierarchy and dynamics in US faculty members hiring and retention, *Nature* (2022).

[DOI: 10.1038/s41586-022-05222-x](https://doi.org/10.1038/s41586-022-05222-x).

[www.nature.com/articles/s41586-022-05222-x](https://www.nature.com/articles/s41586-022-05222-x)

Provided by University of Colorado at Boulder

Citation: A handful of universities seem to control flow of ideas, people in academia (2022, September 21) retrieved 26 April 2024 from <https://phys.org/news/2022-09-universities-ideas-people-academia.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.