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HIGHER ED

A Glut Of Ph.D.s Means Long Odds Of Getting Jobs

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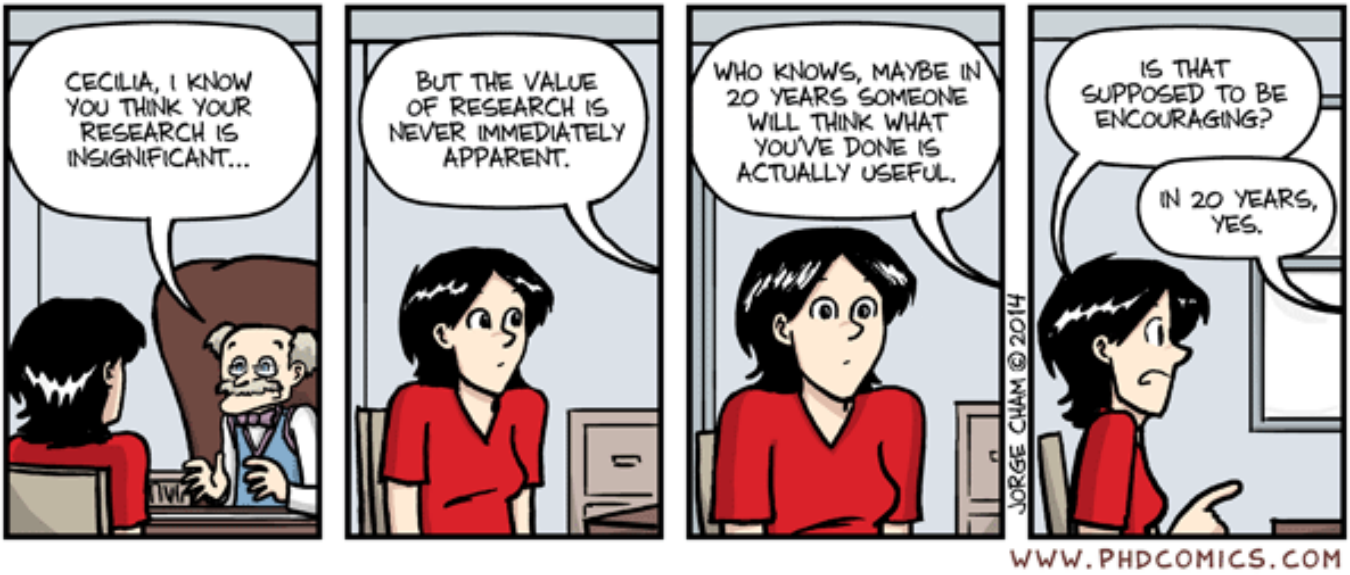
FROM THE HECHINGER REPORT



Jorge Cham is the creator of PHD Comics and received his doctorate in mechanical engineering at Stanford University. PHD (Piled Higher and Deeper) is a comic strip about life (or the lack thereof) in academia. See more of his work at www.phdcomics.com.

Jorge Cham/PHD Comics

This week marked National Adjunct Walkout Day, a protest to gain better working conditions for part-time college instructors. Why are college professors from San Jose State University to the City University of New York taking to the streets like fast-food workers?

They say they have something in common.

Adjuncts and other nontenured faculty now make up three-quarters of college and university teachers. As this shift has taken place, there have been growing complaints that they work for lower wages than their tenured counterparts, and and that they lack access to health care and other benefits.

Colleges and universities control both the supply of college teachers and the demand for them. In many fields, from the humanities to the sciences, universities are accepting far more Ph.D. students than there are tenure-track openings. The universities get cheap labor in the form of graduate teaching and research assistants.

The research equivalent of adjuncts are the postdocs, who work in labs. The growing numbers of Ph.D.s end up fighting for a dwindling number of permanent jobs.

Long Odds

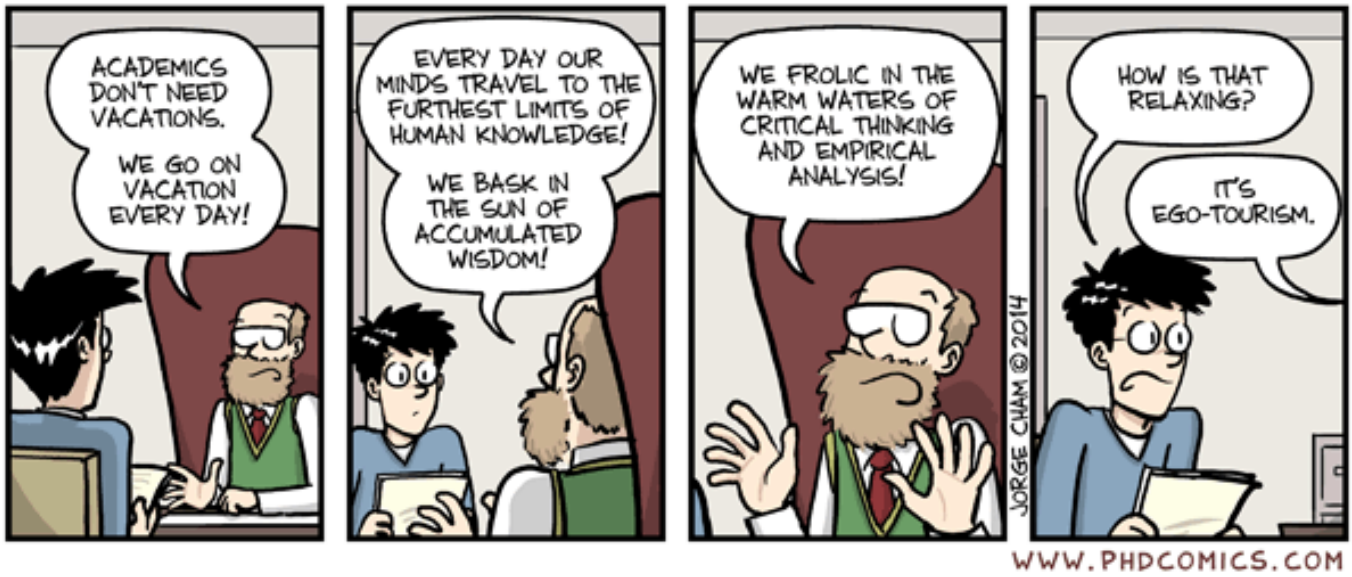
Gary McDowell spent four years working toward a Ph.D. in oncology after earning undergraduate and master's degrees in chemistry at the University of Cambridge. Since then, he's toiled for four years as a postdoctoral fellow in research labs, first at Harvard and Boston Children's Hospital, and now at Tufts.

Even with credentials such as these, however, McDowell and postdocs like him earn low salaries and face long odds that they'll ever get the jobs they really want.

Despite all the seeming demand for experts in the sciences, cuts in research spending and belt-tightening at universities mean that only one in five Ph.D.s in science, engineering and health end up with faculty teaching or research positions within five years of completing their degrees, according to the National Science Foundation.

Top Ph.D. graduates in some fields, like engineering, can be snapped up by private industry. But it varies by discipline.

In the case of biology Ph.D.s like McDowell, only 1 in 10 will snag an academic job. Many of the rest are drifting into other fields. And critics say the squeeze may be affecting the quality of scientific research and the nation's international economic competitiveness.



Jorge Cham/PhD Comics

Yet universities have continued to churn out Ph.D.s who, as postdocs, provide cheap labor for the campus labs that draw much-needed research funding, but are given little help in moving on to jobs in which they can teach or run their own labs.

The result? Biomedical postdocs — according to the National Institutes of Health, there may be as many as 68,000 of them — are clogging a job market that almost certainly can't absorb them all.

"All we're expected to do is research," said McDowell. "We're not even trained properly to become academics. We're not taught how to manage a lab, or to mentor people. We have a whole lot of people who are trained for nothing, really, and they get so far, then they realize they have to look for jobs outside academia."

This backup comes at a time when China, India and other economic competitors are pouring money and people into science.

A new report issued by the National Academy of Sciences and other groups recommend that universities and other institutions address it by reducing the number of postdocs they produce, raising starting salaries to a minimum of $50,000 and limiting postdoctoral service to a maximum of five years.

The document also calls on universities to tell their graduate students about the state of the job market and help them train for, and enter, alternative careers in such areas

as science writing, science policy and consulting.

For the second year in a row, the National Institutes of Health is providing grants of up to $250,000 to universities that agree to provide biomedical Ph.D.s with training in nonacademic fields. The University of Chicago, for example, used the money to run a conference on careers in science communication.

The existing postdoc system "has created expectations for academic career advancement that in many — perhaps most — cases cannot be met," said Gregory Petsko, professor of neurology and neuroscience at Weill Cornell Medical College, and chair of the committee that authored the National Academy of Sciences report.

"Competition is so high that many bright people may take more financially secure jobs," said Kristin Krukenberg, a postdoc at Harvard. "They may see the job numbers and decide to become a banker or go down an entirely different path."

Effects On Quality?

It may also be affecting the quality of postdocs' research, said McDowell, who cites a recent bioethics report from the United Kingdom that shows a significant number of scientists have considered changing research data to get published in the kind of journals that can help them land jobs.

"The number of papers being retracted is increasing every year," he said, "and the reason is that when you're applying in a hypercompetitive environment for a faculty job, you have to publish in high-impact journals like *Nature* or *Science*."

Now some postdocs, including Krukenberg and McDowell, have taken matters into their own hands. They've formed an organization called Future of Research to pressure universities to tell grad students about their prospects for jobs and the track records of previous Ph.D.s, and to give them training in nonacademic careers.

Producing good scientists for academia as well as for industry is key to America's global competitiveness, said Petsko.

"We live in a complicated, technologically sophisticated, rapidly changing world, and I

can't think of better preparation for that world than the kind of discipline in analysis, planning, and decision-making that you get from a good Ph.D. program," he said. "It's great preparation for just about any field — politics, policy — you name it."

But not just to work forever in another person's lab, McDowell said.

Had he known the job situation from the start, he still would have pursued a Ph.D. in science, he said, but might have used it for a career in science policy or another field.

As for Krukenberg, she still hopes for a permanent academic position, and started applying for the first time in the fall.

Fifty applications later, she's still awaiting her fate.

If she doesn't hear back soon, Krukenberg said, "I'll have to start thinking about what else I'm qualified to do."

This story was produced by The Hechinger Report, *a nonprofit, independent news organization focused on inequality and innovation in education. Read more about higher education here.*

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