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Study finds top male scientists tilt toward hiring men

By [Carolyn Y. Johnson](#) | GLOBE STAFF JULY 01, 2014

A provocative study released Monday provides a crucial clue to the obstacles women face in reaching the top echelons of science: Academic laboratories run by the nation's elite male life-sciences researchers more often hire other men for coveted training positions.

Overall at the top US research institutions, male professors employed 11 percent fewer female graduate students and 22 percent fewer female postdoctoral researchers than do women professors.

The gender gap was even more pronounced among prominent and influential male faculty who had won major recognition, including the Nobel Prize. In the labs of male scientists funded by the prestigious Howard Hughes Medical Institute, for example, 31 percent of post doctoral researchers were women, compared with 48 percent in the labs of female Hughes-funded researchers.

Laboratories in biology-related departments at the Massachusetts Institute of Technology, Harvard University, and Harvard Medical School were included in the study, conducted by an MIT graduate student and a software engineer from Twitter.

Although the data were not broken down individually, the authors said the overall trend was consistent across institutions.

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Graphic: Gender gap in elite research laboratories

The findings may help explain why women remain poorly represented in leadership positions in the life sciences, even as the proportion of female graduate students in biology has climbed to about half.

“Out of those very wealthy, very productive labs, it’s easier for someone” to advance, said Nancy Hopkins, a professor emerita at MIT who ran an elite lab before retiring. “Their chances of doing very visible research at the cutting edge of their field is higher.”

Hopkins was not involved in the study, but was a major force at MIT for improving its support of women in science. She said the paper puts a new issue on the table that institutions are now obligated to examine closely, especially because scientific research is largely supported by federal funds.

The study, published in the [Proceedings of the National Academy of Sciences](#), started as a side project for Jason Sheltzer, a graduate student in cancer biology at MIT’s Koch Institute for Integrative Cancer Research, and his collaborator and partner, Joan Smith, a software engineer at Twitter. When a female friend went to work in a physics laboratory that had never had a female graduate student in its two-decade history, they began to wonder whether there was a gender gap at the laboratories that act as feeders, catapulting scientists into independent research careers at leading institutions.

Sheltzer and Smith analyzed more than 2,000 laboratories from biology-related departments at 24 of the top-ranked research institutions in the United States as rated by US News & World Report. They classified elite laboratories as ones headed by researchers who have won honors such as the Nobel Prize, membership in the National Academy of Sciences, or funding from the Howard Hughes institute, a nonprofit that provides open-ended support for a very select group of investigators. Then they counted up postdoctoral and graduate students working in the labs.

They found that male professors overall were more likely to have labs that skewed male. They employed 36 percent female postdoctorals, compared with 46 percent in labs run by women, and 47 percent female graduate students versus 53 percent in women-led labs. In laboratories run by Nobel laureates, there were 24 percent female postdoctorals and 36 percent female graduate students.

Sheltzer said the study “suggests there is room for elite male faculty who are at the top of their fields to do more to recruit young, talented female scientists to their labs.”

Elite scientists of both genders applauded the work, but acknowledged it would be difficult to pinpoint a single cause for the depressing trend. Several elite male scientists speculated that women scientists might prefer women mentors, for example, or wondered whether after scientists win major recognition, they simply get more male applicants.

Jack Szostak, a Nobel laureate in the genetics department at Harvard Medical School, said that earlier in his career, his laboratory was made up of about half men and half women. Now, his lab is about 80 percent male and the vast majority of applications to his lab are from men. He said he always thought the shift occurred because his laboratory began to focus more on chemistry, which tends to have more men.

“I think that it takes both encouragement and confidence to apply to the so-called elite labs,” Szostak wrote in an e-mail. “It’s certainly possible that women receive less encouragement to do so than men.”

He and other scientists said that collecting and analyzing data about which labs graduate students apply to join and which ones they actually do join would be illuminating and help guide efforts to fix the problem.

“I think studies like this are important and offer the opportunity for further examination of and possibly novel approaches to solving an extremely important question,” H. Robert Horvitz, a Nobel laureate and biology professor at MIT, wrote in an e-mail. His laboratory is made up of approximately two-thirds male trainees.

Hopkins, the retired MIT professor, said careful study will be needed to chronicle whether discrimination or other factors lead to the imbalance. She said that when she switched her laboratory’s focus from studying tumor viruses to zebrafish, she suddenly found the number of male applicants far outnumbered the females, leading to a more male-dominated lab for a time.

Ben Barres, chairman of the neurobiology department at Stanford University, attended MIT as an undergraduate four decades ago. Barres is a transgendered person who was then known as Barbara and said that while equally talented male colleagues had no trouble finding labs to work in, he was repeatedly rejected.

“Men are well-meaning, most of them, but they really haven’t experienced the kind of pervasive discrimination that women experience their entire lives that would lead them to say anything other than that” women are choosing not to work in their labs, Barres said.

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