

## Where the Women Are: Biology

By CHRISTOPHER DREW, November 4, 2011

INCREASING the number of women in science and technology has been an important goal for universities and industries, and substantial progress has surely been made. More women than ever major in so-called STEM fields.

Still, women earn only 17 to 18 percent of the bachelor's degrees in engineering and computer science, and just over 40 percent in the physical sciences and math. Where are the women? Clustered in the life sciences. About 58 percent of all bachelor's, master's and doctorates in biology are awarded to women. But except for medical students, salary prospects are lower in biology, and research jobs, the most coveted of pursuits, hard to come by.

"Women historically have been interested in subjects that were less math intensive and that had goals of helping people, and biology and the medical sciences have both of those," says Paula E. Stephan, an economist at Georgia State University whose new book, "How Economics Shapes Science," will be published soon by Harvard University Press. Young women, she says, don't realize they are limiting their pay and job options by flocking to the same field.

More than 86,000 biology majors graduate each year, to compete for entry-level positions in research, environmental monitoring, health care and teaching. Salaries start at \$40,000 to \$50,000 a year, college placement offices say, compared with \$55,000 to \$65,000 for graduates in computer fields and engineering.

Spending six or more years to earn a doctorate doesn't pay off, either. There is such a glut of biology Ph.D.'s that only 14 percent find tenure-track academic jobs within six years.

Younger Ph.D.'s face the biggest problems. Many entered graduate school when federal financing for health research surged a decade ago. But most of the money to fight cancer and search for other breakthroughs went to established researchers. At

the same time, in the face of financial realities, universities are clamping down on tenure-track spots in all fields. As a result, many new Ph.D.'s are stuck in one postdoctoral research job after another, helping run laboratories set up by senior scientists, waiting to see if they can win permanent academic appointment.

Starting pay is low, \$37,000 to \$40,000, and more than a third of biologists are still working in these and other non-tenure track jobs six years after receiving their Ph.D.'s. Others teach at community colleges or high schools, jobs that would not have required as much training, or work for industry or the government.

Federal, state and local agencies employ 40 percent of biologists at all degree levels, and they are tightening their budgets. The pharmaceutical industry has laid off 300,000 workers over the last decade, and is outsourcing basic research jobs to India and China.

But there's cheerful news: biotechnology companies, which fueled much of the growth in jobs in recent decades, are still expanding, albeit at a more moderate pace. The Bureau of Labor Statistics also suggests that growth in health and environmental technologies will offset some of the cuts. And women in biology can take solace in knowing they make more than humanities majors, who are lucky to start in the mid-30s.