



## WOMEN IN SCIENCE

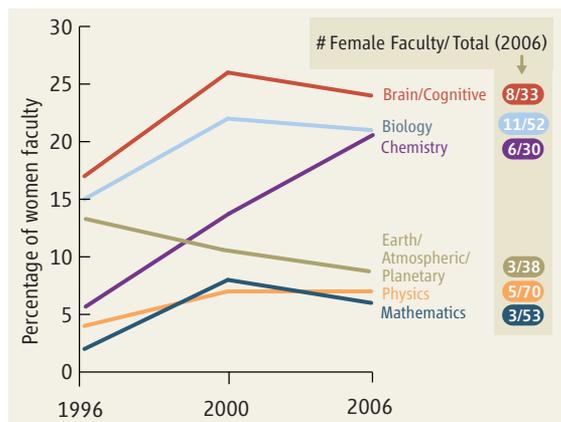
## Progress on Hiring Women Science Faculty Members Stalls at MIT

The number of women faculty members at the Massachusetts Institute of Technology (MIT) in Cambridge has declined or remained flat in five of its six science departments since 2000, whereas the number of women in other areas, such as engineering and architecture, increased significantly during the same period, according to a report released last week. The findings, say academics researching the issue, underscore the difficulty in removing obstacles for female scientists, despite high-level attention by some deans and administrators.

MIT kicked off a nationwide debate in 1999 following publication of a study highly critical of the university's treatment of women scientists (*Science*, 12 November 1999, p. 1272). That study prompted a host of personnel and policy changes at MIT and also led other research institutions across the country to examine their own policies. So when MIT biologist Nancy Hopkins, who chaired the committee that produced that initial report, compiled

the most recent statistics, "I couldn't believe my eyes; I dropped my pencil," she says.

In a paper in MIT's most recent faculty newsletter, Hopkins tracks a spike in the hiring of women scientists at MIT between 1996,



**Sliding scale.** After rising in the late 1990s, the number of women in most MIT science departments dropped.

when the initial findings of her committee were presented to then-dean of science Robert Birgeneau, and 2000, when Birgeneau resigned. From 2000 to 2006, however, the percentage of women increased only in the chemistry department. In biology, brain and cognitive sciences, and earth, atmospheric, and planetary sciences, the percentage decreased, although in physics it remained flat. The story is radically different, however, in the engineering department and in the school of architecture and planning, where the number of women nearly doubled in the past 5 years.

Birgeneau's successor, Robert Silbey, says he agrees with Hopkins that MIT has "failed to sustain that initial push," which brought 13 new faculty members into the sciences between 1996 and 2000. "And I'm not happy about it." But he notes that a dozen women scientists were hired between 2000 and 2005, only one less than during Birgeneau's watch. The decreases within departments, Silbey says, are largely due to female faculty members leaving after failing to win tenure or for

## SCIENCE POLICY

## NSF Begins a Push to Measure Societal Impacts of Research

When politicians talk about getting a big bang for the buck out of public investments in research, they assume it's possible to measure the bang. Last year, U.S. presidential science adviser John Marburger disclosed a dirty little secret: We don't know nearly enough about the innovation process to measure the impact of past R&D investments, much less predict which areas of research will result in the largest payoff to society (*Science*, 29 April 2005, p. 617). He challenged social scientists to do better.

Next month, the National Science Foundation (NSF) will invite the community to pick up the gauntlet. A Dear Colleague letter from David Lightfoot, head of NSF's social, behavioral, and economic sciences (SBE) directorate, will describe an initiative tentatively dubbed "the science of science policy." NSF is also holding three workshops for researchers to lay the intellectual foundations for the initiative. By fall, NSF hopes to have \$6.8 million from Congress as a down payment on what Lightfoot envisions as "a significant program"

that would eventually support a half-dozen large research centers at U.S. universities and scores of individual grants.

In its 2007 budget request, released in February, NSF says the initiative will give policymakers the ability to "reliably evaluate returns received from past R&D investments and to forecast likely returns from future investments." Lightfoot cautions against expecting too much precision. "One shouldn't overstate this goal," he says. "Nobody is under the illusion that we're going to be able to hand these decisions over to the computers." But he believes that it should be possible to develop "a more evidence-based understanding of what happens to our R&D investments."

NSF officials have outlined a series of steps toward that goal. On 17 to 18 May, some two dozen cognitive scientists, social psychologists, and engineers will discuss the roots of individual and group creativity and innovation in science. On 1 to 2 June, a second workshop will explore the organizational components—how cultural, political, demo-

graphic, economic, and scientific patterns affect the creation and application of knowledge. In July, an international group of experts will suggest ways to improve existing surveys that measure various indicators of a nation's technological prowess, from publications to public understanding of science.

If the funding materializes, Lightfoot foresees a collection of interdisciplinary research centers, focused either on a particular discipline or an important technology. "To date, the criteria most commonly used—citation analysis or other bibliometrics—are science-neutral and field-independent," he says. "That strikes me as a mistake and a significant limitation. Chemistry and archaeology have different scientific cultures, and those differences affect innovation."

Lightfoot is in the process of hiring someone to coordinate the initiative within SBE and across NSF. The White House is also forming an interagency task force to oversee the initiative.

—JEFFREY MERVIS

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