

Scientists for a New Age

There's a growing need for scientists who are as comfortable in the boardroom as they are in the laboratory, and this new breed of thinkers won't need doctorates, according to a new [report](#) released by the National Research Council Friday.

The report calls for the creation of more professionally oriented master's degree programs that would give students broad-based science knowledge and a dash of business and communications skills to boot.

While some professionally oriented master's degree programs already exist in the natural sciences, these degrees are still viewed as suspect in some quarters. The Ph.D. has long been the gold standard for scientists, and a master's is therefore viewed as either a "stepping stone" toward a doctorate or a "consolation prize" for those who don't make it to the finish line, the report notes.

Mary Clutter, who helped craft the report, says she entered the process as a skeptic.

"I was thinking about these programs sort of as training for plumbers," said Clutter, former assistant director of biological sciences for the National Science Foundation.

But Clutter, a classically trained scientist, said she came to believe that there is an important and emerging sector of the work force that needs so-called "T-shaped" people. The term refers to those with deep knowledge of a discipline, as well as the broad knowledge needed to thrive and communicate in the worlds of nonprofits, business and government.

Master's Degree Production Booming

Master's level education is a growth area in higher education. In 2004-5, nearly 575,000 master's degrees were awarded across the U.S., an increase of almost 150 percent from 1970-71, the report notes. The growth rate for master's degrees more than doubled the growth rate for bachelor's degrees and research doctorates during the same time span.

If there has been a boom in master's degree production, however, it hasn't happened in the sciences. More than half of master's degrees awarded in 2004-5 were in the fields of business, education, management, marketing and personal and culinary services, according to the report. In contrast, just 3 percent of such degrees came from biological sciences, physical sciences and mathematics combined.

Unveiling the report at the National Academy of Sciences building Friday, the authors cited the [America COMPETES Act](#) of 2007, saying the legislation authorizes Congress to appropriate money for the creation of new science-based master's programs. Furthermore, the authors called on federal agencies to subsidize need-based scholarships for the programs.

Will Students Pay?

Unlike most Ph.D. programs in the sciences, tuition is typically not waived in master's programs. Brad Wible, who works on competitiveness issues for the American Association for the Advancement of Science, said it might be a hard sell to ask students to go into debt for a master's program when they could be paid to earn a Ph.D.

"It's easier said than done," Wible said after Friday's meeting.

The report, however, suggests students might be lured by the quick salary boosts they're likely to receive after completing science-oriented master's programs. Indeed, the median salaries of master's degree recipients tend to exceed those of Ph.D. recipients in the first one to five years after the degree is conferred, according to the report.

There are already 125 [professional science master's programs](#) across 60 universities in the U.S. The movement began in 1997, when the Sloan Foundation gave grants to 14 research universities to help found the programs.

Rita Colwell, who chaired the committee that produced the report, hailed the creation of more master's programs as a necessary step toward making the U.S. more competitive worldwide. Colwell, who is a distinguished professor at both the University of Maryland at College Park and Johns Hopkins University's School of Public Health, equated the current global competition with the space race of the 1950s.

"We have what I would call a silent Sputnik," she said.

— Jack Stripling