the nine sugar units found in mammals, says Seeberger. And most of the others are expected to follow quickly. Still, Seeberger acknowledges that the new synthesizer won't be able to provide all possible oligosaccharides, because the group has yet to find the chemistry that allows sugar bonds to form in certain orientations. "That's something we are addressing right now," he says.

Another hitch, Wong notes, is that the strategy requires that a wide variety of sugars with different arrangements of protecting groups be made in advance to serve as the building blocks for oligosaccharide assembly. And for now that must still be done by hand, using slow conventional chemistry. Although that's true, Seeberger notes, this used to be the case for peptide and nucleic acid building blocks, which became commercially available reagents as the machines grew in popularity. Seeberger and Plante say they plan to start a company this summer to commercialize their automated synthesizer and supply many of the needed reagents. **–ROBERT F. SERVICE**

WOMEN IN SCIENCE

College Heads Pledge To Remove Barriers

BOSTON—The leaders of nine top U.S. research universities this week pledged to smash the glass ceiling that hinders women from advancing at their institutions. Meeting on Monday at the Massachusetts Institute of Technology (MIT), the all-male group stopped short of setting a specific agenda but acknowledged that women face greater obstacles in climbing the academic ladder. "It's momentous just to get these nine together," says Patricia Jones, a biologist and vice provost at Stanford University in Menlo Park, California, who attended the meeting. "Count me as a happy camper," adds Stanford economist and participant Myra Strober.

Hosted by MIT president Charles Vest, this week's meeting grew out of a 1999 internal report that found the small number of MIT women science faculty members had consistently less lab space, recognition, and leadership responsibilities than their male counterparts (*Science*, 26 March 1999, p. 1992). In a one-page statement, the presidents agreed that barriers exist, that more data are needed, and that they would work together to improve the situation. The discussions ranged from offering child care at academic conferences to monitoring the progress of young faculty and guarding against gender imbalances in hiring and promotions. Following the MIT model, a number of schools are putting together their own reports. Attending the meeting were the presidents, chancellors, or other senior administrators of Harvard, Princeton, Stanford, and Yale universities, the universities of California–Berkeley, Michigan, and Pennsylvania, the California Institute of Technology, and MIT.

A major focus was on quantifying the problem (see table). Shirley Malcom, education chief for the American Association for the Advancement of Science (AAAS, which publishes *Science*), laid out the issue in the day-long, closed-door meeting. "You don't collect what you don't want to know, and you can't make progress to a goal without measuring it," she told *Science*. Vest says that although the group did not endorse a collective approach to data gathering, participants agreed to find ways to fill in the gap. Such details likely will be discussed at a second meeting tentatively slated for 2002.

Financial backing for the meeting came from the Ford Foundation and an anonymous donor, each of whom gave MIT $500,000 last spring to address the issue of women and minorities in academic science. "They encouraged us to reach out," says Nancy Hopkins, an MIT biologist and a leader of the MIT study effort. MIT is chipping in a similar amount.

In California, meanwhile, state legislators planned a 5-hour hearing this week on equity and retention of female faculty members in the University of California (UC) system, the nation's largest. The hearing stems from concerns by UC faculty members that the recent abandonment of state affirmative action policies aimed at increasing the number of minority students and faculty members is also eroding the hiring of women.

At UC Davis, for example, 37 out of 44 professors hired in 1999 were male. And the percentage of women hired in the overall UC system has declined from 36% in 1996—when the policies were still in place—to about 24% in 2000. "The situation is now critical," says California Senator Jackie Speier (D), who was to chair the hearing. A state audit of UC's hiring policies is due out next month. **–ANDREW LAWLER**

TOUGH TREK FOR WOMEN CHEMISTS

University	Full professor	Associate professor	Assistant professor
Berkeley	*38/3	4/1	9/1
Caltech	20/2	3/0	4/1
Harvard	16/1	0/0	4/0
MIT	21/3	2/0	6/1
Michigan	26/1	5/2	7/1
Penn	22/2	5/0	4/1
Princeton	21/0	2/1	2/0
Stanford	18/1	3/0	4/0
Yale	18/1	1/0	4/1
TOTAL	200/14	25/4	44/6
Percentage	7%	16%	14%

* All ratios indicate total/women professors.

No entrance. Women chemists are filling the first rung at top schools at rates far below their share—31%—of the Ph.D. pool.

SOURCE: *CHEMICAL AND ENGINEERING NEWS*, 2000 SURVEY

MICROBIOLOGY

Bakers' Yeast Blooms Into Biofilms

Standing alone, fungal and bacterial pathogens are relatively easy prey for antimicrobial drugs. But many of these germs cling together in resilient sheets and globs called biofilms that resist traditional chemical attack. Recently, microbiologists have been getting a fix on what causes bacterial microfilms to form—information that provides potential new targets for infection-fighting drugs (*Science*, 21 May 1999, p. 1302). But lack of a good model system has made fungal biofilms—which frequently contaminate medical devices, cause chronic vaginal infections, and lead to life-threatening systemic infections in people with hobbled immune systems—harder to study. New results should change that.

On page 878, Todd Reynolds and Gerald Fink of the Whitehead Institute for Biomedical Research at the Massachusetts Institute of Technology report that they've coaxed a harmless fungus, bakers' yeast, to form a biofilm. Because bakers' yeast is so well studied—its entire genome has already been sequenced—researchers predict that this new biofilm model will expose vulnerabilities that can be targeted in other, pathogenic fungi. The work "expands [the study of biofilms] with a wonderful, genetically tractable organism," says microbiologist Roberto Kolter of Harvard Medical School in Boston.

Bakers' yeast occasionally forms a film on the surface of sherry, Reynolds says, but it doesn't naturally congregate into a form that fits the operational definition of a biofilm: simply, a film that sticks to plastic. To induce bakers' yeast to do this, the researchers tested several strains and tweaked the yeast's nutrients until they hit on a combination that produces a robust biofilm. The bakers' yeast built the largest biofilms and stuck most stubbornly to plastic when it was fed low concentrations of glucose, suggesting that lean times spur the yeast to change form. Once initiated, the yeast biofilm