February 16, 2012

**Gender Equity on Science Faculties Might Have to Wait a Century, Study Finds**

*By Robin Wilson*

It could take nearly 100 years before half of all professors in science and engineering are female, according to an article out on Friday in the journal *Science*.

The assertion is shocking because people in academe have been working for decades to increase the number of women in those fields. The article says it will take so long for universities to attain equal numbers of women and men even though the proportion of women being hired in science, technology, engineering, and mathematics—the so-called STEM fields—is on the rise and even though, once women are hired, their rate of advancement is the same as for men.

One reason for the lag is that the proportion of women among those being hired is still low. "In the last four years we're seeing 27 percent of new hires in science and engineering are women," said Cheryl Geisler, dean of the faculty of communication, art, and technology at Simon Fraser University, in Canada, and a co-author of the article. "It was 25 percent earlier in the decade, so it's just been creeping up."

At that rate, it may be 2050 before 50 percent of new hires in science and engineering are female, said Deborah A. Kaminski, a professor of mechanical engineering at Rensselaer Polytechnic Institute and Ms. Geisler's co-author. And even after one-half of all faculty members hired are women, "it will likely take at least another 40 years before the actual population of science, engineering, and mathematics professors is 50 percent women," says a news release on the article, titled "Survival Analysis of Faculty Retention in Science and Engineering by Gender."

A separate article in *American Scientist*, meanwhile, says the proportion of female professors entering math-intensive fields like chemistry, computer science, engineering, and physics is low not because of gender bias in hiring or because women are less
proficient at math than men are, but because many women who want to become mothers are simply uninterested in pursuing academic careers in those fields.

**Huge Leakage Rate**

The *Science* article is based on a study in which Ms. Kaminski and Ms. Geisler tracked the progress of 2,966 assistant professors hired since 1990 in science and engineering at 14 major research universities. They found that male and female faculty members are retained at the same rate. But over all, their study found, professors stay at a university for a median of just 11 years.

"This means that if you hire 100 assistant professors tomorrow, in 11 years only 50 of them will still be at your school," said Ms. Kaminski. "This leakage rate is huge and should be a big red flag to everyone in higher education." The departure of professors comes at a large cost to higher education, the article says, because universities spend so much money on start-up packages for professors in science and engineering. It can cost as much as $1.5-million to replace one.

The study does not focus on why professors leave after a median of 11 years, but Ms. Geisler said they may either fail to earn tenure or move to other universities for a variety of reasons, including higher salaries. The study did find that, of those professors in the study who were hired from 1990 to 2002, two-thirds earned tenure at the same institution.

The other article, in the March-April issue of *American Scientist*, is called "When Scientists Choose Motherhood," and was written by Wendy M. Williams, a professor of human development at Cornell University, and Stephen J. Ceci, a professor of developmental psychology there. The two have created the Cornell Institute for Women in Science.

Their article was based on their own research and on findings from other studies. "The effect of children on women's academic careers is so remarkable that it eclipses other factors in contributing to women's underrepresentation in academic science," says the article. It acknowledges that universities have already taken some steps to make it easier for academic women to have children and to hang on to their university jobs. But it says institutions should explore other options, including instituting part-time tenure-track positions, providing postdoc assistance to cover lab work when female professors are on family leave, and "adjusting the length of time allocated for work on grants to accommodate child rearing."
Still beats me. Why is "equal outcome" rather than "equal opportunity" used to measure equality of rights? Of course I know the answer: the "outcome" is much easier to measure for a bureaucrat who knows how to calculate percents and much easier to report to a politician for the same reason.

Equal opportunity is more than just opening the door and saying, "have at it". The nature and degree of opportunity depends on preparation, background, working conditions, social norms, and lots more. We're only able to measure it indirectly—that is, by outcomes.

I notice a priceless contradiction between the last two sentences. Equal opportunity is so much of this and that and therefore we measure it "indirectly", by just one number.

I understand opening the field to all possible qualified candidates, but isn't applying a percentage to the applications closing the field to some qualified candidates? If the population of women in America is x%, should the ratio of politicians, teachers and dogatchers also be x%?

Why is gender percentages an issue? Can people just be people?

This is a bizarre interpretation: WHEREAS Motherhood is a principle factor leading to non-equal gender balance; and WHEREAS we observe very low upward trending of %women; THEREFORE, we extrapolate this data to conclude that it will take 100 years to achieve gender equity. Huh? And what happened to motherhood as a factor?
My alternate prediction: we will obtain 50:50 gender balance in engineering the same year that 50% of elementary education, nursing and vet med graduates are men.