Q&A: Rebecca Wright Outlines How Universities Can Champion Women in STEM

Barnard College's incoming computer science director explains how bringing more women into science and technology roles starts with dedicated university programs and engaged campus communities.

by Eli Zimmerman

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The gender divide remains pervasive in science, technology, engineering and math professions, but proactive colleges are working to bridge the gap.

Just 25 percent of information and communications technology professionals and **24 percent of engineering professionals** in developed countries are women, according to a 2018 report from the Organization for Economic Co-Operation and Development.

The divide is even starker in higher education, according to a 2017 report from the United Nations Educational, Scientific and Cultural Organization.

In universities around the world, women make up **3 percent** of information and communications technology majors, **5 percent** of natural sciences, mathematics and statistics majors, and **8 percent** of manufacturing and construction majors.

In an interview with *EdTech*, Rebecca Wright, the new computer science director of [Barnard College](#), explains how institutions can bring more women into STEM.

EDTECH: While you were at Rutgers, you developed a computer science program developed specifically for women. What was the goal of this program and how did it develop?

WRIGHT: This will be the third year of the [Douglass-SAS-DIMACS Computer Science Living-Learning Community](#) program.

We provide first-year, undergraduate women who **intend to major in computer science** with a number of benefits through a living-learning program.

The program includes academic support, mentoring from peers, **faculty and staff, social and community-building activities, professional development**, and industry connections.
The goal is to help female students persist with computer science and to enhance their feeling of belonging in a male-dominated program. We also want them to feel like they have a network of support that they can draw on.

We have actually been evaluating the program somewhat rigorously to try and make sure everything is working well and to help us figure out what changes to make. Every year, in addition to the cohort of students in the program, we **recruit a cohort comparison group of women** — first-year students at Rutgers that have said they intend to major in computer science.

We survey both groups at the beginning and end of each year, and we are finding that students are reporting the program really makes a difference. There were some concerning results as well. Through the survey, we found **instances of decreasing confidence** throughout students' first years in both groups.

For women in computing, and tech in general, there are lower levels of confidence and senses of belonging, regardless of grade level. Our hope is that having this kind of community will help counter that.

EDTECH: Right now, what are some the major barriers to STEM gender equity in higher education?

WRIGHT: I think it is still really systemic, starting from the very beginning. The way that genders and different career paths are portrayed, there is still a **pervasive assumption that that STEM fields** are going to be more appropriate or more attractive for boys.

This is reflected in what female students' teachers and guidance counselors steer them toward.

For example, maybe there is a computer science elective in high school, and the boys tend to be more steered to that. You see this displayed in terms of the gender breakdown of who takes the computer science AP exam or who comes to an undergraduate program with existing expertise or experience.

Coming in with that previous experience can **directly impact academic performance** throughout a student's college career.

Also, the extent to which we can highlight role models, both realistic role models as well as aspirational ones, should be more of a primary focus. Highlighting the few female CEOs and **very prominent women out there in tech is very important**, but also it is crucial to have female mentors students can interact with face to face.

Having female computer science graduate students or professors giving advice can help younger students see that is possible for them too. It does not just have to be women, either. Bringing in male allies and incorporating them in various ways into those programs can help.

EDTECH: How can gender equity help with innovation in STEM?

WRIGHT: First of all, there is a serious shortage of trained computing professionals. If half of the population is not included, we are never going to make the kind of progress we need to fill that gap.

Research has also clearly shown that diverse teams produce better results. Diverse teams are **more likely to find differences of opinions or expectations** on what a system should do and how it should work.

This gives teams a higher chance of identifying issues early on, instead of waiting until their product is out in the world to discover there are **whole populations that were not even considered** during the planning stages.

EDTECH: How would you advise universities to approach their hiring processes to give women more of a chance to fill faculty and leadership roles?

WRIGHT: There has certainly been a lot of demonstration that during the hiring process, especially by a committee, there are **biases at various points in that decision-making**. Overall, I think there is a growing understanding that there are processes that can help ensure universities solicit a diverse group of candidates and that those candidates are evaluated fairly.

The [National Center for Women and Information Technology](#) has information on how to construct job advertisements in a way that is more gender-neutral.

There are also various kinds of anti-bias training that can improve hiring processes. For example, **using a structured rubric** rather than a general sense of "is this person going to fit here" can help negate some of the biases that may happen.

EDTECH: How can male faculty members and administrators be allies in the fight for gender equity in STEM?

WRIGHT: The first thing they can do is speak up and make it be known that they are in favor of these efforts. They can also volunteer their time.

This i**dea that the burden of addressing gender equity should to fall on women is not true**. Having these allies not just express their desire to see a more diverse population, but also put their time in can really affect change. For example, right now the graduate student adviser for the Rutgers program is a male and he has been a fantastic mentor.

There is always a question of if there is **only room for one mentor, do you want to put a male in that role for a bunch of women?** Because to some, that can seem like it is defeating the purpose.

But it is important to understand that over the course a student's experience or a person's career, they are going to have many mentors, and having **some of them be male and some be female makes a lot more sense**.

If you are a male mentor, just make sure you are not being assertive and communicating that "as a man, I know all the answers." Overall though, I think if male faculty members can come at this issue with openness, they can be very effective.