



Amira Badreldin, a third-year electrical engineering, biomedical options student, solders components for the UBC BEST Music to Movement Twist module's circuit. Gender diversity in traditionally male-dominated careers is considered vital for the province's economic success. JENNIFER GAUTHIER

# More women in STEM the root of economic future

## CAREERS

### Diversity needed in areas dominated mostly by men

Stephanie Orford

No matter how you slice it, there aren't enough women working in science, technology, engineering and math in Vancouver right now.

B.C.'s economy is only expected to increase in the next 10 years, particularly in natural resources. The need for more workers in STEM careers is real. Yet Vancouver seems stumped on getting women into those careers.

"What's happening in Van-

couver is pretty representative of what's happening elsewhere: we don't have a significant number of women working in the STEM (science, technology, engineering and math) fields," says Sheryl Staub-French, Goldcorp Chair for Women in Engineering and associate professor for civil engineering at UBC. "It's been a problem for many years and it hasn't changed much, for decades."

If Vancouver of the future is going to have more women in STEM careers, the city is going to have to collectively get better at a few things. Each discipline has its own challenges attracting, graduating, employing and retaining women.

"In engineering, the biggest issue is that a lot of people don't know what engineering is, and they have a lot of misperceptions about engineering is," says Staub-French. "A lot

## + THE CURRENT SITUATION

- Only 19 per cent of students enrolled in engineering in Canada are women
- Girls with higher math marks in high school are less likely to go into a

STEM career than boys with lower marks

- The median salary of women 25-34 in STEM careers is more than \$9,000 less than that of men in Canada

of people think it's dirty or there's big machinery. They don't know that there's so much you can do with it."

Her team holds outreach events to break this misperceptions.

"If you look at a lot of the problems we're looking at in the world, we need engineers to help solve them," she says.

Educational institutions can play a large role in informing young women that a career in STEM is accessible and relevant

to them. That includes elementary schools and high schools, which can be doing more to help girls learn about what jobs in STEM are really like, such as presenting role models of women in those professions, and showing girls how they can get into the STEM fields.

Vancouver employers can make working environments equal opportunity for men and women by fostering gender-equal pay, work environments, and company policies that

work well for women as well as they do for men.

"Having gender diversity in your organization is a smart thing: increased innovation, stronger financial performance, improved governance with women on boards, and greater return on your human resource investment," Staub-French says.

For her program, outreach seems to be working. The percentage of female engineering students at UBC has increased to 30 per cent from 18 per cent over the past six years since the outreach began.

When every person has the opportunity to explore all of their interests in STEM, regardless of their gender, great things will happen, Staub-French says.

"I think we would be so much more efficient at solving a lot of our problems."

## SCIENCE

### City a 'hub' for research

How do we feed the projected population in 2050 of 10 billion people? How do we adapt to climate change? How do we develop sustainable energy resources? How do we keep the population healthy?

These four questions with what drives scientific research around the world in the next 50 years, says Alan Winter, CEO of Genome B.C.

"Metro Vancouver really is a hub for life sciences research," says Winter, citing major research centres including UBC's Centre for Drug Research and Development, the Michael Smith Labs at UBC, the Lung Centre and BC Cancer Research Centre at Vancouver General Hospital, the B.C. Centre for Excellence in HIV/AIDS at St. Paul's Hospital, the BC Centre for Disease Control, and the Centre for Brain Health, among many others.

In the coming decades, Winter sees more synergy between research groups in B.C., and further developments in areas where B.C. researchers are leading the pack.

Computer simulation of biological systems is an opportunity that Vancouver's established biotech labs and growing tech community are well poised to collaborate on. For instance, right now drug development takes years and hundreds of millions of dollars of trials, but in the future, the early stages of that could be done much quicker and more cheaply via computer.

"In 50 years we'll see truly personalized medicine," Winter says. Microscopic sensors will travel in our bloodstreams, providing real-time health diagnostics. We'll have organs grown just for us from our DNA, and we'll be able to get gene therapy to treat genetic diseases and reduce the effects of environmental triggers that can cause cancer.

"There's got to be a willingness to say Vancouver is more than a resort," says Winter. "We need to create wealth and provide jobs for young people and show them this vision of an exciting future working in these fields."

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