

Catherine Mulligan

Introduction to Geotechnique?

I came into the geoenvironmental field relatively late in my career. My BEng and MEng degrees were both in chemical engineering. I became interested in the geoenvironmental side of things while I was working on a research project for SNC-Lavalin that involved the remediation of a contaminated site in the Toronto Harbour. I continued working with SNC-Lavalin while pursuing my PhD at McGill in civil/geoenvironmental engineering

Other women in your classes?

In my undergraduate program, in chemical engineering, approximately 25% of the students were women. The percentage of women in civil engineering was less.

Difficulty getting your first job?

No, I started to work with the National Research Council several months after I graduated with my MEng. While working at SNC-Lavalin, I also worked on my PhD. Shortly after finishing my PhD, I started as an Assistant Professor at Concordia.

Career focus?

My PhD thesis was on the use of biosurfactants (biological compounds that reduce the surface tension of a liquid) for the removal of heavy metals from contaminated soil and sediments. Since then, the focus of my career has been mainly environmental aspects of remediation of soil, sediments and mining residues.

I was very fortunate to be on the 'ground-floor' of this field of research and, over the past 20 years, I have been able to see the results of this research applied in Canada and abroad. Besides Canada, my research has taken me to Japan, China, and many other countries. I have supervised or co-supervised more than 80 MEng, MAsC, and PhD graduate students.

Recently, I established the Concordia Institute of Water, Energy and Sustainable Systems (CIWESS), and I am currently the Director. Its mandate is to train students in sustainable development practices and to promote research into new systems, technologies and solutions for water, energy and resource conservation. In addition to the technical side of things, CIWESS trains students in the social and economic aspects, including how to communicate and other professional skills through internships.

Education

- 1980 DEC (Diplôme d'études collégiales) from Marianopolis College, Montreal; Pure and Applied Sciences
- 1983 BEng from McGill University; Chemical Engineering
- 1985 MEng from McGill University; Chemical Engineering
- 1998 PhD from McGill University; Civil/ Geoenvironmental Engineering.

Employment

- 1985-1988 very briefly with CIL Inc., and then with the National Research Council (Biotechnology Research Institute) as a research associate
- 1989-1999 SNC Research Corp. (a division of SNC-Lavalin) as a research engineer.
- 1999-present Concordia University, Dept. of Building, Civil and Environmental Engineering, where I am a Professor, a Research Chair in Geoenvironmental Engineering and the Director of the Concordia Institute for Water, Energy and Sustainable Systems. From 2008-2015, I was also Associate Dean of Graduate Studies and Research.

Notable Achievements

- 2003 and 2005 Petro-Canada Young Innovator Award
- 2010 CGS Stermac Award
- 2013 Concordia Sustainability Champion Award
- 2014 ASTM Editorial Award
- 2017 CIM Woman of Innovation
- I am a fellow of the CSCE and the EIC, and this year was awarded EIC's John B. Sterling Medal for leadership and distinguished service at the national level

Involvement with CGS and other organizations?

I am a CGS member, and a member of the CGS Geoenvironmental Division (from 2006) and the CGS Sustainable Geotechnics Committee (from 2015). I served as Chair of the Geoenvironmental Division from 2006-2010. I was CGS VP Communications and the CGS representative to the Canadian Society for Civil Engineers (CSCE) from 2013-2016 and in 2018.

I am also a member of the CSCE, past chair of its Sustainable Development Committee and current Chair of its Environmental Division. Over the years, I have been on numerous conference organizing committees for the CGS (e.g., Technical Chair for GeoMontreal 2013) and the CSCE. Recently, I was co-Chair for the Environmental Specialty Conference held at the 2018 CSCE Annual meeting. I am also involved in a number of US and International societies and committees.

Who were your mentors?

My MEng supervisor was David Cooper, my PhD supervisor was Dr. Raymond Yong. Dr. Yong, with whom I have co-authored many papers and several books, has been, and still is a continuing mentor for me.

On being a woman in a man-dominated profession?

The geoenvironmental field is not as man-dominated as the more traditional geotechnical fields. I find that I work very well with all colleagues, men and women. Because of my position at Concordia, I probably attract more female undergraduate and graduate students than some male colleagues do.

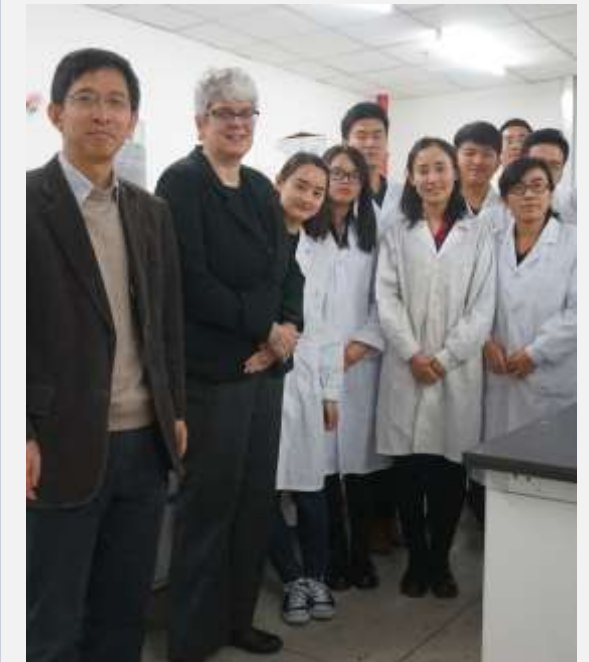
Advice to other women?

This advice equally applies to men and women. There are many skills besides technical skills that are required to be a good engineer. For example, you have to be able to communicate to, and work with, a variety of different stakeholders.

There may be life challenges along the way, but keep at it. When things do become challenging, just wait a little while and things will get better. That's my mantra.

Be strong, be confident, be persistent, be positive; and believe in your abilities. Work hard and focus. Do what you have to do to get the job done.

Photographs



Catherine with Chinese colleagues in 2016



Catherine in 2009 as Associate Dean Research and Graduate Studies