

Tri-Mentorship: A Model of Success in Manitoba

A review of the 2017/18 CIPWIE Mentorship Program

CIPWIE

The Committee for Increasing the Participation of Women in Engineering (CIPWIE) is committed to assisting Engineers Geoscientists Manitoba in achieving the 30 by 30 goal set by Engineers Canada and to supporting the needs of Manitoba's female engineering cohort. The CIPWIE Mentorship Program supports women during their engineering education and as they progress through their careers. Participants are engaged in a formal mentoring relationship with opportunities to ask questions about the profession and share insights into what it's like to be an Engineer. The Mentorship Program aims to increase the retention of Manitoba's female engineering talent, while also increasing diversity in the engineering profession.



"Mentorship is a valuable part of a career, and I want to encourage other females to stay engaged in the engineering industry."

CIPWIE Mentor

Why Mentor Women Engineers?

The 30 by 30 goal is Engineers Canada's commitment to raise the percentage of newly licensed engineers that are women to 30% by the year 2030. This national goal has been endorsed by all 12 Canadian engineering regulatory bodies (including Engineers Geoscientists Manitoba), and many engineering schools (including the Faculty of Engineering at the University of Manitoba).

In 2016, 15.1% of newly licensed engineers in Manitoba were female – a long way off from the target of 30% [1]. Currently, the percentage of female students enrolled at the University of Manitoba in undergraduate engineering programs sits at approximately 24.2% [2], while the percentage of female professional engineers is approximately 10.1% [3]. This data shows that while there is still work to do to increase the recruitment of females into engineering education programs, there is also a strong need to support women during their engineering education and as they progress through their careers in order to strengthen retention.

Through CIPWIE meetings involving female engineers from a variety of industry sectors, we identified mentorship as a valuable tool to help address the female engineering retention issue and move Manitoba towards achieving the 30 by 30 goal. Mentorship has long been known as an effective way to support skill development and learning, and can lead to increase career satisfaction and retention. Successful mentoring relationships can also extend well beyond knowledge transfer and develop into life-long relationships that are mutually beneficial to all involved [4].

While mentorship programs do exist within Manitoba's engineering industry, there were no programs offered specifically for women in engineering or that span all engineering disciplines or industry sectors. To this end, the CIPWIE Mentorship Program was developed in 2015/16. Since then, the program has grown from an initial cohort of 70 participants to 121 participants in the 2017/18 offering. To date, nearly 300 women have participated in the CIPWIE Mentorship Program!



The Numbers: Women in Engineering in Manitoba

*based on 2016 data



Engineering Students



Newly Registered
Engineers



Overall P.Eng.
Pool

Program Goals

The overall goal of the CIPWIE Mentorship program is to build a community of women in engineering in Manitoba.

For the **Student**, the program provided:

- Insight into what it's like to be a working engineer/geoscientist
- An understanding of specific engineering disciplines
- An opportunity to network with female engineers

For the **Protégée**, the program provided:

- Insight into what it's like to be a working professional engineer/geoscientist
- Experience in mentoring, coaching, and developing interpersonal relationships
- The opportunity to be a role model
- An opportunity to network with other female engineers/geoscientists

For the **Mentor**, the program provided:

- An opportunity to share their passion for their chosen field
- Experience in mentoring, coaching, and developing interpersonal relationships
- The opportunity to be a role model
- A medium for influencing the future of the profession

"There are so many different paths which one can take in this field and I would love to have the chance to learn from someone who has gone through it."

2nd Year Computer Engineering Student



The CIPWIE Mentorship Program

Building a community of women in engineering in Manitoba.

Program Structure

The program aimed to match one Mentor with one Protégée and up to two Students in a tri-mentorship team. The program included an orientation session and four formal mentorship events held between October and March. In addition to the formal events, participants were expected to be in contact with their team at least once per month. This informal interaction was to be student-driven to provide an opportunity for students to develop their networking and communication skills.

The Mentors

The program was open to female Professional members who had a willingness to embrace the role of mentor. 36 Mentors were part of the 2017/18 program, including three P. Geo.'s.

"Mentorship is very important me and I've had a great experience as a past mentor. Making connections with and supporting other women in the industry helps us all to become more successful."

CIPWIE Mentor

More than half the Mentors had at least 5 years of experience as a professional and came from a variety of disciplines, including Mechanical (35.3%), Civil (29.4%), Biosystems (14.7%), Electrical (8.8%), Geology (5.9%), and Industrial (5.9%).

The Protégées

The program was open to female interns (EIT's and GIT's) who had a willingness to embrace the role of both mentor and mentee. The 2017/18 program included 29 Protégées (with one GIT).

"As an EIT, I appreciate that I am paired with both a P.Eng. and a student. And I like how the events are fun, not just your typical networking event"

CIPWIE Protégée

Intern participants came from seven disciplines, including; Civil (40.7%), Electrical (18.5%), Mechanical (14.8%), Biosystems (11.1%), Computer (7.4%), Geology (3.7%), and Chemical (3.7%).

The Students

The program was open to female undergraduate engineering students in at least their 2nd year of study (in which discipline selection occurs, which allows for better mentorship team matching). 56 Students were included in the 2017/18 offering, including two from Geology. All engineering disciplines and year of study were well represented in the Student cohort. When students were asked in the registration survey why they were applying to be part of the program, 69% indicated that they were "unsure, that's why I'm applying to the Program!". This further demonstrates the need for a program that exposes women to the various career options within the engineering profession and highlights the existing shortage of female role models.



Events

The 2017-18 CIPWIE Mentorship Program included four formal events. Event #1, held in mid-October 2017 was the kick-off event in which teams met face-to-face for the first time. The event consisted of a team icebreaker and design challenge, and completion of a Mentorship Agreement outlining the teams ground rules, goals, and expectations for the the mentoring relationship. The event ended with time for networking.

Due to the large size of the group (121 participants), Event #2 was broken out into three separate industry tours held during consecutive weeks in November. Teams (or individuals) could sign up to attend tours of the

University of Manitoba's Central Energy Plan, the Composites Innovation Centre, or Winnipeg's Southwest Rapid Transit Project at Stadium Station (Investor's Group Field). Each tour included a technical briefing, highlighting the engineering associated with the venue, and time for networking.

The third event provided an opportunity for participants to learn about Unconscious Bias in an interactive session facilitated by Dr. Indra Kalinovich, EIT. Participants were provided with some examples of unconscious or implicit biases and, in groups, discussed measures that could be put in place in their

workplace or institution to mitigate the effects of these biases. The event also provided an opportunity for networking.

The final event, held in late March 2018 allowed participants to explore their creative side by painting rustic wood signs with inspirational quotes. This fun, wrap-up event allowed for ample networking in a relaxed environment.

At all events, held from approximately 5:30-8:30 pm to accommodate work and school schedules, food and refreshments were served, which constituted the majority of the program's budget.

MENTORSHIP MATCHING

Mentorship matching is a vital component to the success of a mentoring relationship. To ensure the highest possibility of compatible mentorship teams, Students, Protegees, and Mentors were matched based on the following parameters:

- Technical area of interest (i.e. engineering discipline)
- Career path (eg. technical, construction, project management, academia, etc.)
- Extra-curricular activities

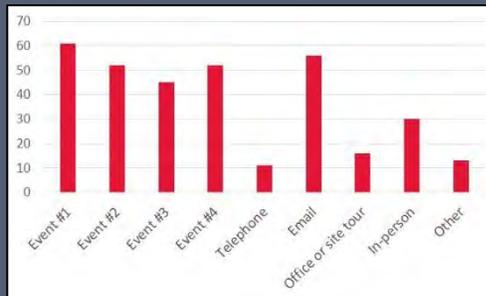
During the matching process 32 Mentorship Teams were formed consisting of 3-5 members with at least one from each category.

Feedback

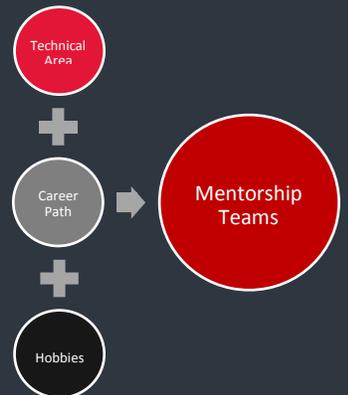
Program participants were given the opportunity to provide ongoing feedback and recommendations for the Mentorship Program via electronic surveys administered after each event and at the end of the program.

Some of the feedback gathered includes:

- 76% of participants rated the compatibility of their mentorship team as 4 or 5 out of 5.
- 83% indicated they would reapply to the Program in future years
- 63% said they were 'definitely' or 'likely' to stay in contact with their mentorship team
- the frequency of contact between Students and their mentors averaged once per month (beyond formal events)



Types of Interaction between Mentorship Teams





2017/18 CIPWIE Mentorship Program Coordinators:

Ali Campbell, EIT (left)
Kathryn Atamanchuk, P.Eng. (middle)
Morgann Becket, EIT (right)
Missing: Danielle-Magda Salem, P.Eng.

"I really enjoy being able to speak freely with women in the engineering field about issues that we face as women in a male dominated industry."

CIPWIE Mentorship Program Participant

Lessons Learned and Recommendations

- **Expanded Mentorship Handbook with suggestions for informal mentorship activities.**

We found that some teams (and students in particular) struggled to find ideas for 'conversation starters' with their team, or team activities that could be undertaken between formal events. The Mentorship Handbook provided to participants will be updated to include this type of information.

- **Additional events or optional 'meet-ups'.**

Feedback from participants indicated that many would like opportunities to meet up with their teams, and other teams, more frequently than just at the four formal events. For the 2018/19 offering of the program, we plan to incorporate at least two optional 'meet-up' type events.

- **More time for networking.**

Participants consistently indicated that networking was one of the most valuable parts of the Program. Efforts will be made to incorporate more time for networking opportunities in future offerings of the program.

- **Additional developmental support for students.**

It was noted by both the Program coordinators and the more senior Mentors in the program that students would benefit from additional support with regards to professionalism (eg. answering emails in a timely and professional manner, RSVP'ing to events, networking skills, etc.). Additional supports for students will be included in the updated Mentorship Handbook.

Acknowledgements

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OF MANITOBA
Faculty of Engineering



References

[1] 30 by 30. (2018, August 10). Retrieved from <https://engineerscanada.ca/diversity/women-in-engineering/30-by-30>

[2] Undergraduate Students by Program or Area of Study, Full/Part Status, and Gender, Fall Term 2017 (2018, August 10). Retrieved from <http://umanitoba.ca/admin/oia/students/3503.html#UndergraduateStudents>

[3] Unpublished data obtained from Engineers Geoscientists Manitoba on April 20, 2017

[4] Michael Garringer, Patti MacRae, and Susan Weinberger. *Going the Distance: A Guide to Building Lasting Relationships in Mentoring Programs*. Folsom, CA: Dennis Wakeland, 2005, 51 pp.