

Graduate-Undergraduate Mentorship in Mathematics: Free Coffee!

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The situation: our perspective

Lack of community in the department:

- Little mingling between graduate and undergraduate students
- Made worse by COVID
- Loss of potential mentorship relationships, which benefit both graduate and undergraduate students

Loss of resources in the department:

- Graduate students have information that is useful to undergraduates. (e.g. the process of applying to grad school, thoughts on work life balance, a sense of life as a mathematician)

The situation: student perspective

Leaky pipeline among traditionally under-represented groups:

- For example, about **52-70%** of women and non-binary students leave the program before graduation compared to only **32%** of men

Lack of community among mathematics students:

- Students point to lack of **social support**
- Lack of sense of **belonging**
- Students note the importance of **role models**

What we did

We organised coffee chats matching 2 graduate with 2 undergraduate students

- The graduate mentors did this as part of a TAship

We advertised these to first- and second-year students via email, Piazza, and classroom visits

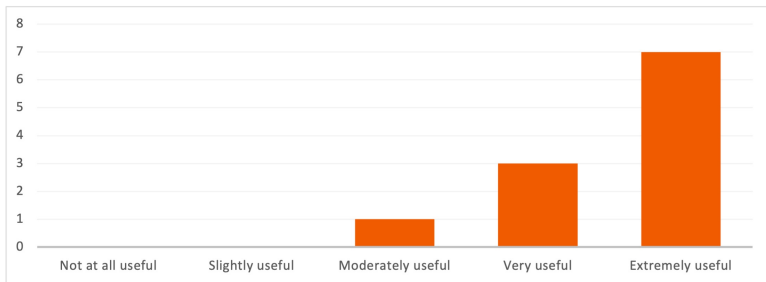
We met with a gender-diverse group of 15 students:

- 6 first-years, 8 second-years, and 1 third-year;
- 7 math or combined math, 1 statistics, 1 BA, 2 BASc, and 4 BSc

We spent approximately \$165 on coffee and treats

Survey responses from undergraduate students

How useful to you were the grad-undergrad coffee chats?



What the students said about their experience

Most **interesting** conversational topics:

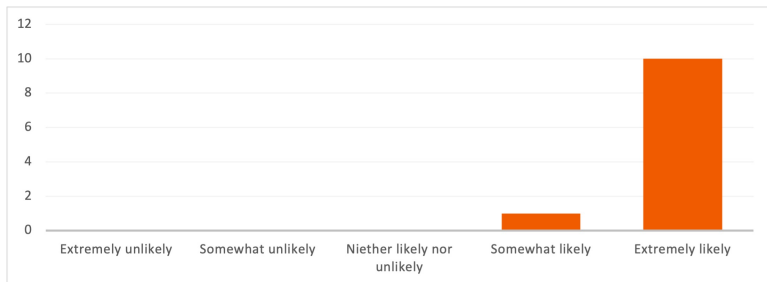
- **Collaboration** in mathematics
- **Work-life balance** in mathematics and graduate school
- **Personal experience** of the mentors
- Mentors' **research** and how to get involved in undergraduate research

What was most **useful**:

*"It's **unlikely** that I would have been able to have these conversations with grad students [...] without it being **facilitated** through these talks. I also feel as if I can reach out to them now if I have questions or want to meet up again, which is a super helpful **resource**."*

Survey responses from undergraduate students

How likely are you to participate in more mentoring activities?



Summary of personal reflections

Mentors wrote personal reflections on their experience:

- “The meetings quickly became a **proper conversation** rather than an interview”
- “Students had questions regarding [...] what **life is like** as a grad student, being a **woman in math**, if we have time for activities **outside of math**”
- “A lot of the students thought that my work was mostly **individual** work”
 - “It was interesting to hear a student say: ‘I guess I should try to **work more with others**’ ”
- “I was able to learn a lot more about [my **fellow mentors**]”

What we would do differently

Start **earlier** in the semester and invite **upper-year** students

Give students **conversation prompts** ahead of time

Plan **follow-up** meetings (not necessarily for coffee)

Have mentors keep a **record** of conversation topics

Suggestions or ideas?

Leave us a note :)