Women+ in Computer Science Orientation
We acknowledge that the University of Waterloo is located on the traditional territory of the Neutral, Anishnaabeg and Haudenosaunee people. The University of Waterloo is situated on the Haldimand Tract, the land granted in legally binding tready to the Six Nations that includes six miles on each side of the Grand River
<table>
<thead>
<tr>
<th>Time</th>
<th>Name</th>
<th>Position/Year</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:30</td>
<td>Jo Atlee</td>
<td>Prof/Director of WiCS</td>
<td>Women in Computer Science</td>
</tr>
<tr>
<td>2:50</td>
<td>Chunxin Zheng</td>
<td>2nd-year Computer Science</td>
<td>Challenging Yourself</td>
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<tr>
<td>3:00</td>
<td>Emily Zhang</td>
<td>2nd-year Computing Science</td>
<td>Time Management + Notion + Google Calendar</td>
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<tr>
<td>3:10</td>
<td>Areena Akhter</td>
<td>5th-year Computer Science</td>
<td>Health (balancing, mental health, community)</td>
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<tr>
<td>3:25</td>
<td>Skylar Ji</td>
<td>2nd-year Computer Science</td>
<td>Navigating Transportation in Waterloo</td>
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<tr>
<td>3:35</td>
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<td></td>
<td>Q&amp;A</td>
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<td>3:45</td>
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<td></td>
<td>Snack Break!</td>
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<tr>
<td>Time</td>
<td>Name</td>
<td>Year and Major</td>
<td>Topic</td>
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<tr>
<td>4:15</td>
<td>Amanda Bishop</td>
<td>4th-year Software Engineering</td>
<td>How to Get Your First Co-op</td>
</tr>
<tr>
<td>4:25</td>
<td>Dora Su</td>
<td>4th-year Computer Science</td>
<td>How to Succeed in Co-op</td>
</tr>
<tr>
<td>4:35</td>
<td>Ashnoor Kaur Randhawa</td>
<td>2nd-year Computer Science</td>
<td>How to Build a Good Resume</td>
</tr>
<tr>
<td>4:55</td>
<td>Nina Tan</td>
<td>4th-year Computer Science</td>
<td>Networking</td>
</tr>
<tr>
<td>5:05</td>
<td>Rebecca Zhou</td>
<td>3rd-year Computer Science</td>
<td>Little WiCS</td>
</tr>
<tr>
<td>5:15</td>
<td>Grace Feng</td>
<td>3rd-year Computer Science</td>
<td>What I wish I knew in First Year</td>
</tr>
<tr>
<td>5:25</td>
<td>Maryam Afshar, Claudia McComb</td>
<td>3rd-year CS, 2nd-year Math/CS</td>
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<tr>
<td>5:35</td>
<td>Q&amp;A</td>
<td></td>
<td></td>
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<tr>
<td>5:45</td>
<td>Dinner!</td>
<td></td>
<td>Panel: What I Wish I Knew in First Year</td>
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What is WiCS?

WiCS exists to advance gender equity in computing by advocating for and supporting women, trans, gender-fluid, gender-queer, and non-binary students enrolled in computer science and related programs at the University of Waterloo.
## Who is WiCS?

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
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<tbody>
<tr>
<td>Jo Atlee</td>
<td>Director of WiCS</td>
</tr>
<tr>
<td>Edith Law</td>
<td>Co-Chair WiCS Committee</td>
</tr>
<tr>
<td>Valentina Adelola</td>
<td>WiCS Event Coordinator Co-op</td>
</tr>
<tr>
<td>Maryam Afshar</td>
<td>Co-Directors of WiCS Undergraduate Committee</td>
</tr>
<tr>
<td>Claudia McComb</td>
<td>Co-Directors of WiCS Undergraduate Committee</td>
</tr>
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</table>
Women+ in CS at Waterloo

Admissions 2027

• 91 (24.1%) in CS
• 17 (26.6%) in CFM
• 31 (30.7%) in CS/BUS
• 50 (39.4%) in SE
• 28.2% overall

Enrolment

25.7% women
Women in the Tech Industry

https://www.diversityreports.org

~25%
Why So Few Women?

Are men innately better programmers?
Innate Cognitive Differences

difference value \( (d) \)

- Verbal skills \( \text{♀} \) \((d = 0.33)\)
- Writing \( \text{♀} \) \((d = 0.6)\)
- Spatial reasoning \( \text{♂} \) \((d = 0.56-0.90)\)

- \( d = 0.3 \) (small)
- \( d = 0.5 \) (medium)
- \( d \geq 0.8 \) (large)

spatial reasoning does not play much of a role in the math used in computing

program-comprehension activates regions of the brain associated with language

YOUR BRAIN IS WHAT YOU DO WITH IT
Why So Few Women?

Are men innately better programmers?

Are women innately less interested in computing?
WORLD – Women Enrolment in CS

United Nations Educational, Scientific, and Cultural Organization, Statistics 2018
Women in University CS Programs

Percentage of Women Graduating from University CS Programs in the US

- Biological Sciences
- Mathematics / Stats
- Physical Sciences
- Computer Sciences
- Engineering

US National Center for Education Statistics, Statistics 1971-2018
Pre-University CS Experience

• Most students assume that everyone else in the class has more computer experience than they have.

• Pre-university experience is not necessary

VS

playing songs

formal music lessons
Pre-University CS Experience

• Most students assume that everyone else in the class has more computer experience than they have.

• Pre-university experience is not necessary

• Report nearly equal mastery of CS concepts in intro courses

• Have equal GPAs
men’s and women’s experiences are different
Stereotypes and Biases

**Good News**
- Overt gender bias is rare

**Bad news**
- Unconscious or *implicit gender bias* remains widespread
- Women are as guilty of implicit bias as men are!
- Harvard Implicit Bias Test ([implicit.harvard.edu](http://implicit.harvard.edu))
Self-Confidence Gap (Imposter Syndrome)
Letting the Side Down

Women students are less apt to speak out in class for fear that mistakes or dumb questions it will be taken as proof that women can’t do CS
Micro-aggressions

Social exchange in which a member of a dominant culture says or does something, usually without intended malice, that belittles and alienates a member of a marginalized group.

Women just aren’t interested in CS.

Really? You don’t look like a CS major.

Why do you want to hang out with geeks?

Why would you want to study CS?

The guys will be better than you.

You only got into UW CS because you are a girl.

Want me to help you with your CS homework?
Some Sexism

• Undervalued by teammates on course projects

• Undervalued by co-op employers
  – Not given challenging work
  – Assigned quality assurance or technical writing tasks rather than development tasks
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Technical Network

It helps a lot to build a network of technical women

• **UW CS guys are great**
  – They will be your best friends, study partners, project partners
  – But their experiences are not the same as yours

• **Women friends (who aren’t in STEM) are great**
  – But their experiences are not the same as yours
WiCS

“Quit whining. It’s the same distance”

WiCS exists not because women+ students need extra help to succeed in CS.

We exist to help remove, reduce and overcome the extra obstacles that women+ in computing might face.
WiCS

- Orientation
- Resume Critiques
- Technical Interview Prep
- Responding to Everyday Biases
- Panel on Careers in Tech
- Student/Industry Lunch
- Technical Workshops
- Professional-Development Workshops
- Speed Networking/Mentoring
- Speakers from the Trenches

- WiCS Con
- Grace Hopper Celebration
  - post-conference take-aways
- CAN-CWIC Conference
- Women Distinguished Lecturers
What is “Little WiCS”? 

- The undergraduate committee that is student-run!
- Events they regularly host:
  - Beginning-of-term event!
  - Speaker series
  - Mock interviews & resume critiques
  - Panels
  - Discussion circles
  - De-stress events
  - Movie & bonfire night
WiCS Study Room (DC 3150)

Obtain a fob from https://uwaterloo.ca/women-in-computer-science/wics-study-room
Upcoming Events

- Sept. 13, 4:30-5:30  Women in Math (WiM) Welcome Event
- Sept. 15, 9:00-10:30  Breakfast  Hackathon Primer (w/ Citadel Securities)
- Sept. 18, 6:00-7:30  Dinner  Algorithmic Trading (w/ Hudson River Trading)
- Oct. 4, 12:00-1:30  Lunch  Careers in Data Science (w/ OpenText)
- Oct. 18, 5:00-7:00  Dinner  Resume Critique (w/ Google)
- Oct. 27, 3:15-4:30 (online)  Speed Mentoring (w/ Amazon and Bloomberg)
Keep up with WiCS!

• Subscribe to WiCS newsletters: https://lists.uwaterloo.ca/mailman/listinfo/wics-undergrads

• Join the WiCS Discord Server https://discord.com/invite/mHyPD2mXqv

• Follow us on Instagram uwaterloowics

• Read the CS blog http://csatuwaterloo.blogspot.ca/
Parting Words

• Build and use your network of technical women.

• Be yourself. This is what a computer scientist looks like!