Women+ in Computer Science Orientation

WiCS
WOMEN IN COMPUTER SCIENCE

WICS Partners: Google · Wish · Scotiabank · Meta · HRT · amazon · opentext · Bloomberg · splunk> · zynga · FAIRE · shopify · Gem · Deloitte. · MEF Mathematics Endowment Fund · SAP

LAND ACKNOWLEDGEMENT

IMAGE CREDIT: SIX NATIONS COUNCIL

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

UNIVERSITY OF WATERLOO | DAVID R. CHERITON SCHOOL OF COMPUTER SCIENCE

WICS WOMEN IN COMPUTER SCIENCE

Schedule

2:30	**Jo Atlee** Prof/Director of WiCS	**Women in Computer Science**
2:50	**Anneliese Wen** 5th-year Computer Science	**Imposter Syndrome**
3:00	**Khloe Ramdhan** 2nd-year CS/BBA	**Student Portals**
3:10	**Claudia McComb** 2nd-year Computer Science	**Organizing your Term w/Notion**
3:20	**Anjali Gupta** 3rd-year Computer Science	**Side Projects**
3:30	**Yzabelle Perez** 2nd-year Computer Science	**Recovering from Failure**
3:40		**Snack Break!**

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Schedule

4:20	**Dora Su** 3rd-year Computer Science	**How to Get Your First Co-op**
4:40	**Athena Liu** 4th-year Computer Science	**How to Succeed in Co-op**
4:50	**Yi Lin Li** 2nd year BMath/BBA **Shriya Kulkarni** 2nd-year CS	**Mental Health**
5:00	**Chang Liu** 4th-year Computational Math	**Clubs**
5:10	**Kitty Li** 3rd-year Computer Science	**Little WiCS**
5:20	**PANEL**	**What I wish I knew in First Year**
5:50		**Dinner!**

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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.

WICS Partners:

Who is WiCS?

Jo Atlee   Director of WiCS

Stacey Watson   Co-Chair WiCS Committee

Hillary Matt   WiCS Outreach Coordinator

Calahndra Brake   WiCS Event Coordinator Co-op

Priya Saha   WICS Undergrad Committee Directors
Molly Xu

Women+ in CS at Waterloo

Admissions 2022

- 23% in CS
- 24% in CFM
- 50% in CS/BUS
- 29% in SE
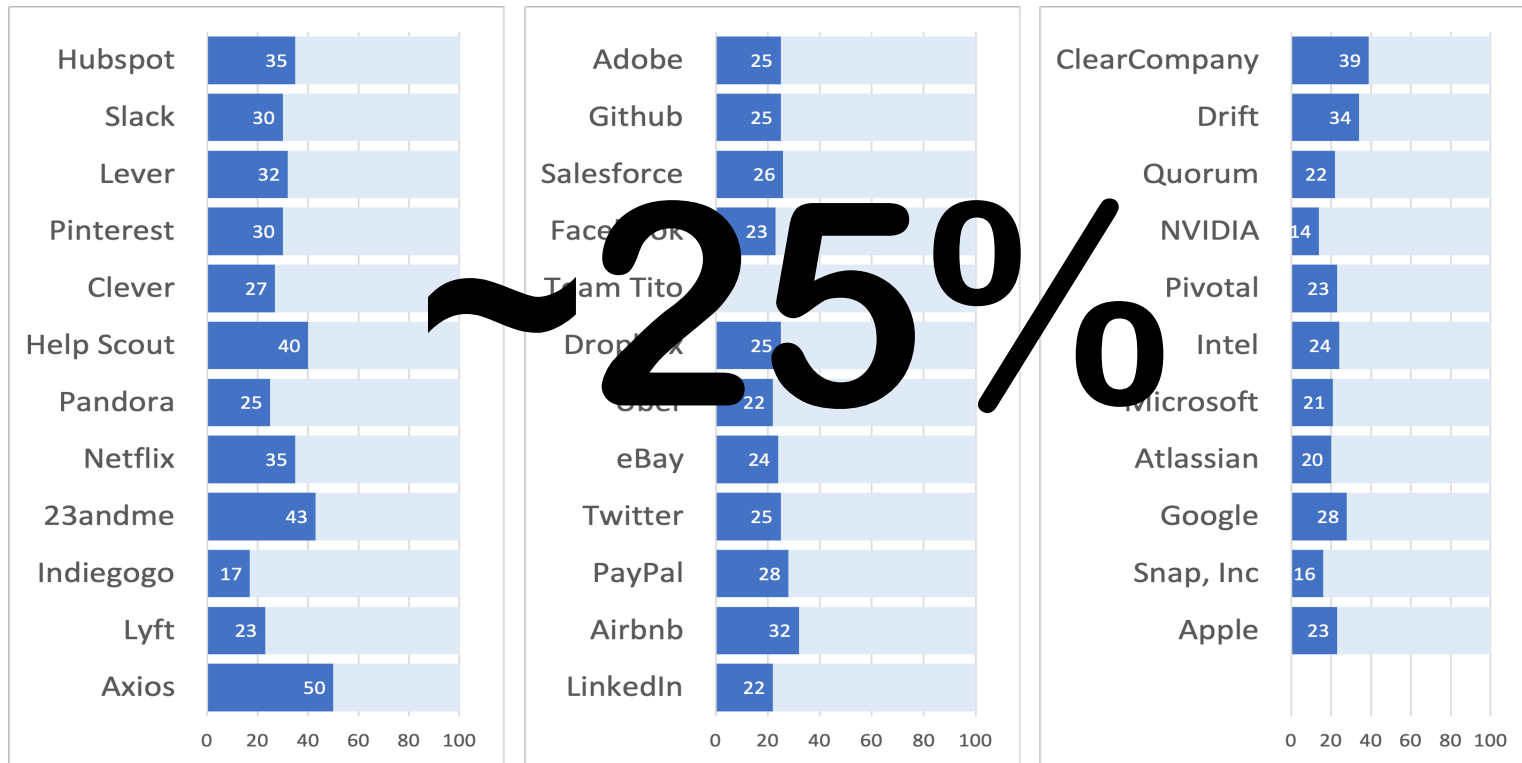- **26.4% overall**

Enrolment

25.9% women
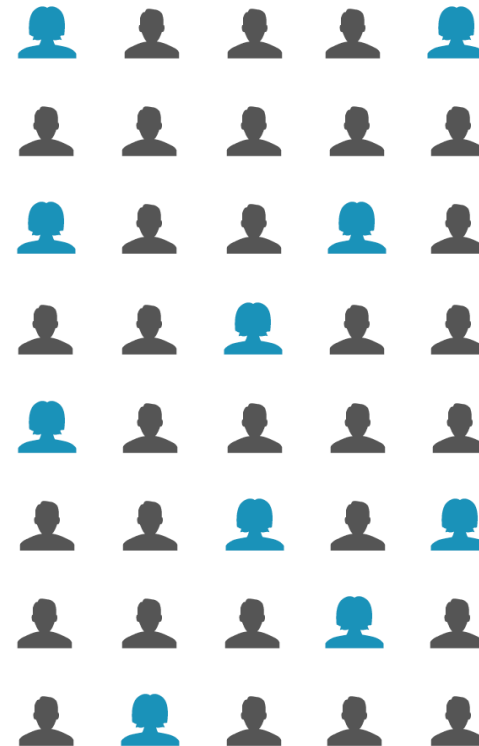
Women in the Tech Industry

Company	%
Hubspot	35
Slack	30
Lever	32
Pinterest	30
Clever	27
Help Scout	40
Pandora	25
Netflix	35
23andme	43
Indiegogo	17
Lyft	23
Axios	50

Company	%
Adobe	25
Github	25
Salesforce	26
Facebook	23
Team Tito	
Dropbox	25
Uber	22
eBay	24
Twitter	25
PayPal	28
Airbnb	32
LinkedIn	22

Company	%
ClearCompany	39
Drift	34
Quorum	22
NVIDIA	14
Pivotal	23
Intel	24
Microsoft	21
Atlassian	20
Google	28
Snap, Inc	16
Apple	23

~25%

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Why So Few Women?

~~Are men innately better programmers?~~

~~Are women innately less interested in computing?~~

Innate Cognitive Differences

PINK BRAIN BLUE BRAIN

How Small Differences Grow into Troublesome Gaps— and What We Can Do About It

LISE ELIOT, Ph.D.

difference value (d)

d=0.3 (small)
d=0.5 (medium)
d≥0.8 (large)

♂ ♀
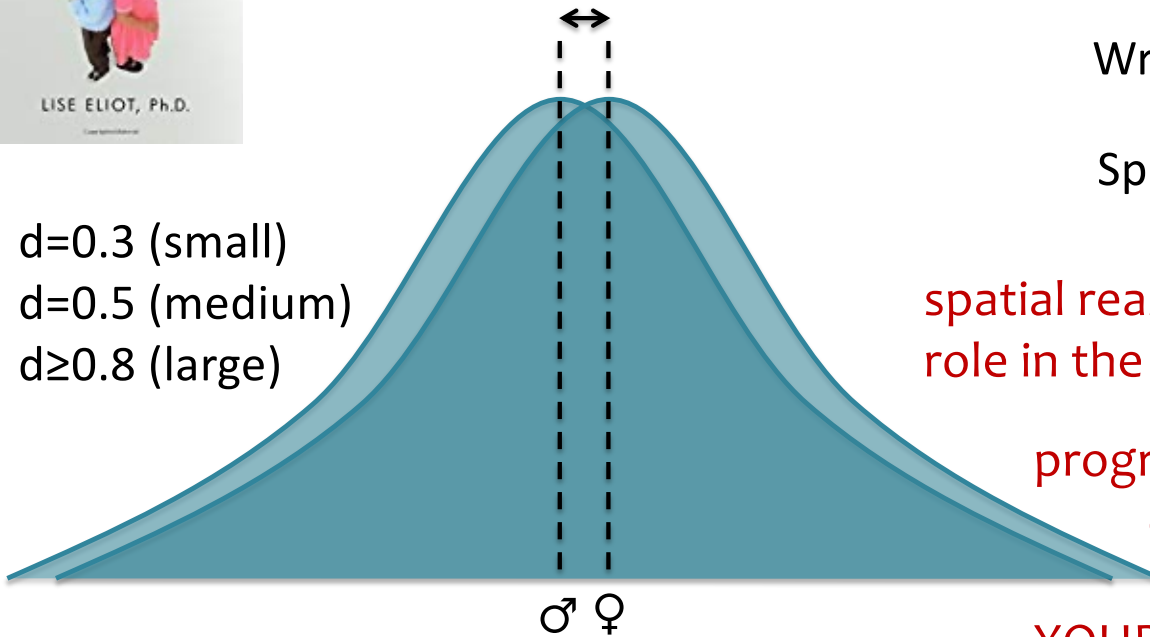
Verbal skills ♀ (d= 0.33)

Writing ♀ (d= 0.6)

Spatial reasoning ♂ (d= 0.56-0.90)

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

WORLD – Women Enrolment in CS

United Nations Educational, Scientific, and Cultural Organization, Statistics 2018

Percentage of Women Enrolled in CS University Programs

Y-axis: 80%, 70%, 60%, 50%, 40%, 30%, 20%, 10%, 0%

Countries (x-axis): Oman, Myanmar, Tunisia, *United Arab Emirates, Qatar, Algeria, India, Saudi Arabia, Malaysia, Albania, Greece, Rwanda, *Bulgaria, Armenia, *South Africa, Mongolia, Sri Lanka, Indonesia, Madagascar, Sweden, Estonia, Canada, Serbia, Turkey, Mexico, Bangladesh, Honduras, El Salvador, Ireland, Iceland, New Zealand, Korea, United States, Grenada, Colombia, Belarus, Denmark, Australia, Poland, Macao SAR, China, Finland, Costa Rica, Italy, Ghana, Germany, France, Portugal, United Kingdom, Norway, Ukraine, Lithuania, Hungary, Slovenia, Czech Republic, Netherlands, Austria, Slovak Republic, Brazil, Chile, Spain, Belgium, Switzerland, Luxembourg

Computing was "Women's Work"

First programmer

Computing was "Women's Work"
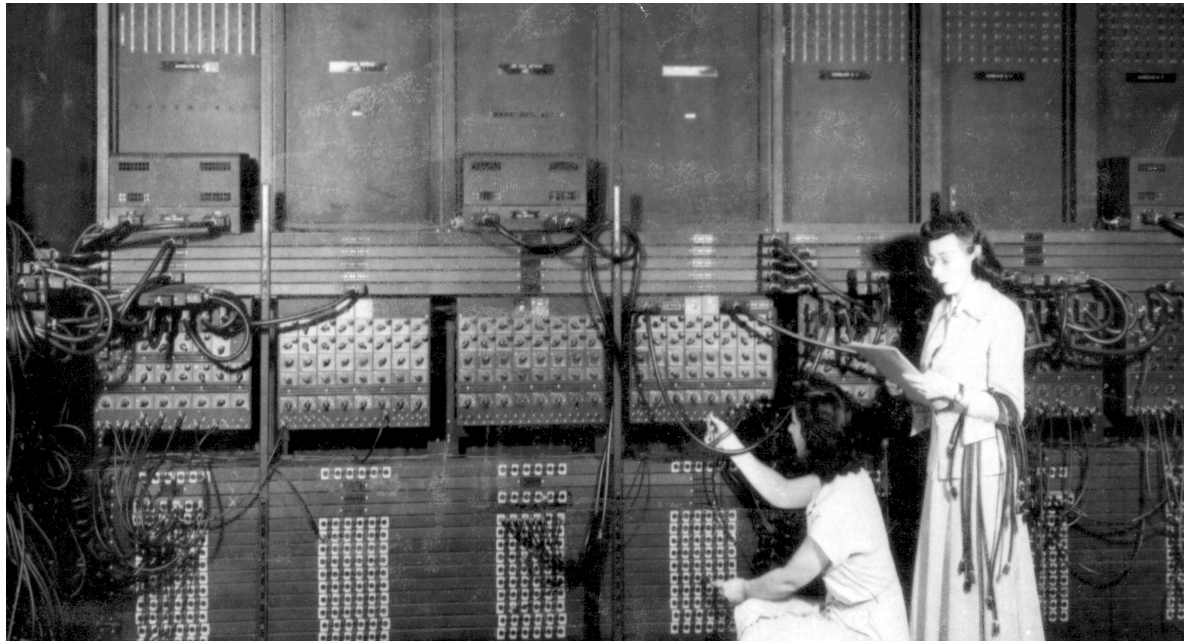
First Programmers

Computing was "Women's Work"

Bletchley Park Codebreakers

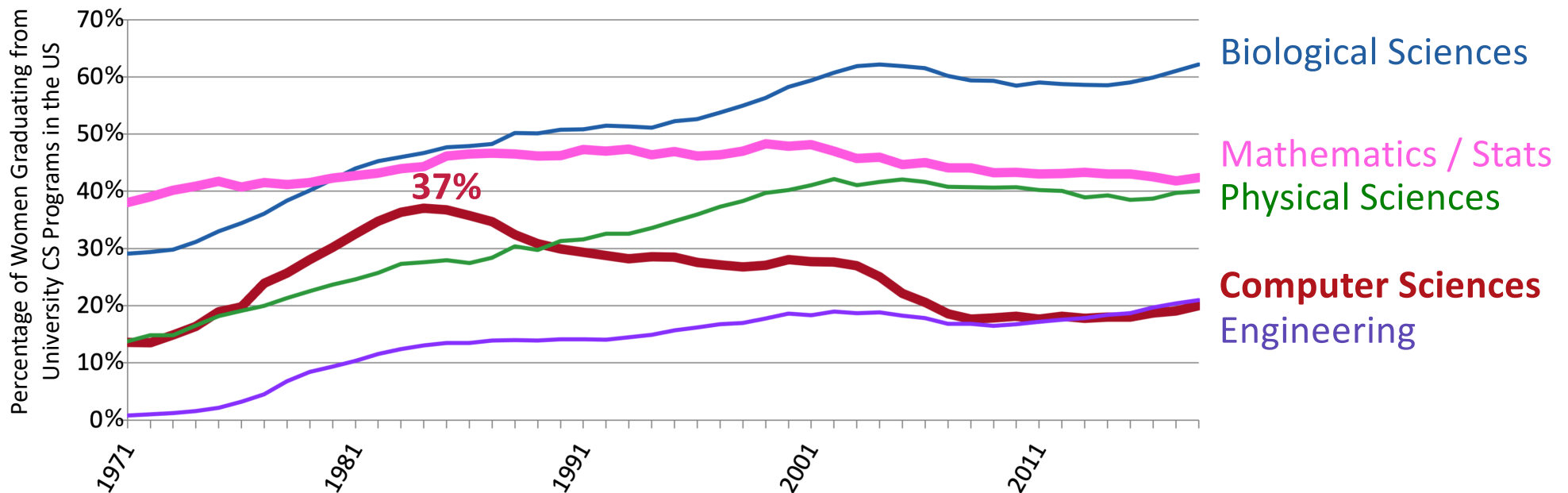# Computing was "Women's Work"

Mary Jackson   Katherine Johnson   Dorothy Vaughan

NASA "computers"

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            Scotiabank. | HRT opentext splunk> | Gem MEF SAP
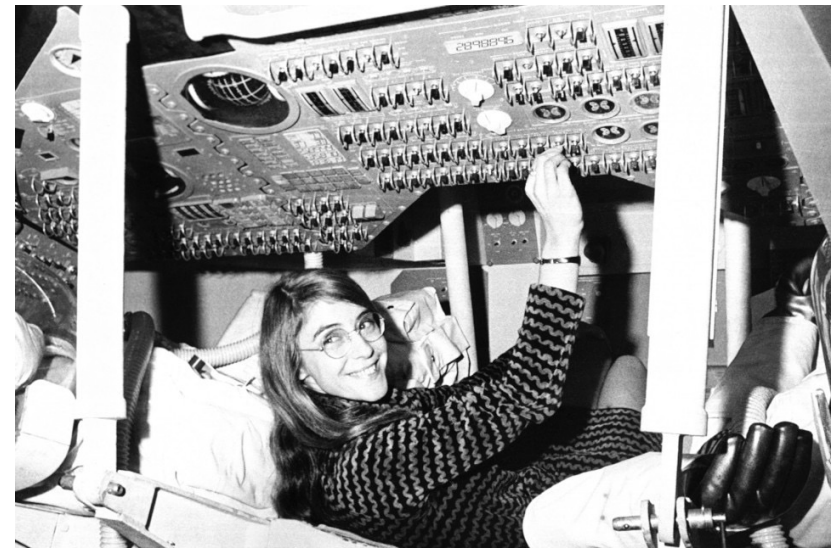
Women in University CS Programs

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
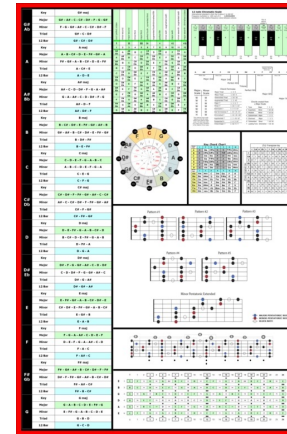
playing songs   formal music lessons

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)

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
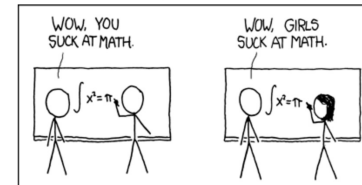
Stereotypes and Biases

Self-Confidence Gap (Imposter Syndrome)

All these people really seem to have it together, and I still have no idea what's going on.
azilliondollarscomics.com

Letting the Side Down

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WOW, YOU SUCK AT MATH.
WOW, GIRLS SUCK AT MATH.

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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
- WiCS Bubbles
- Resume Critiques
- Technical Interview Prep
- Responding to Everyday Biases
- Panel on Careers in Tech
- Student/Industry Lunch
- Technical Workshops
- Professional-Development Workshops

- 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 critiqu
  - Panels
  - Discussion circles
  - De-stress events
  - Movie & bonfire night

WiCS Study Room (DC 3150)

Obtain the passcode from the Little WiCS Office (MC 3029) during their office hours.

Upcoming Events

➡️ Sept. 14, 8:30-10:00 Breakfast. Building your Technical Career (w/ Google)

➡️ Sept. 14, 4:30-6:00   Women in Math (WiM) Welcome Event

➡️ Sept. 15, 4:30-6:00   Women in Tech Panel (w/ Google)

➡️ Sept. 16, 11:30-1:00 Lunch   Women in Tech Panel (w/ Bloomberg)

➡️ Sept. 24, 7:30-10:30pm Play! One-women play about "MIT male math maze"

• Sept. 27, 4:00-5:30 (online)   Mock Interviews (w/ Splunk)

➡️ Sept. 28, 11:30-1:30 Lunch   Women in Leadership (w/ OpenText)

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Scotiabank.   HRT opentext splunk>   Gem MEF SAP

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/

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Parting Words

- Build and use your network of technical women.

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