# Graduate Orientation

Justin Wan, Director of Graduate Studies

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

# Faculty

- Raouf Boutaba, *Director of the School*
- Justin Wan, *Director of Graduate Studies*
- Eric Schost, *Associate Director of Graduate Studies*
- Richard Trefler, *MMath Coursework Advisor*
- Naomi Nishimura, Richard Trefler, *Graduate Advocates*

# Staff

- Denise Shantz, *Graduate Studies Supervisor*
- Paula Roser, *Graduate Coordinator (PhD)*
- Marie Kahkejian, *Graduate Coordinator (Master thesis)*
- Onkar Sehmi, *Graduate Coordinator (Master coursework)*
- Ibelemari Kio, *Graduate Services Assistant*

# Research-based Students

- PhD, MMath – thesis/research paper option
- Your supervisor
  - admitted you to the program
  - provides your research assistantship (RA)
  - guides you in your research
  - helps you with course selection
- Contact your supervisor as soon as possible

# Course-based Students

- MMath – coursework option
- Richard Treffler is your advisor. He can
  - help you with course selection
  - answer questions about your program

# Graduate Courses

- Course numbering
  - CS 100 — 400
  - CS 600
  - CS 700
  - CS 800

# CS 100 – 400

- Undergraduate courses
- Not open to graduate students except as a remedial or extra

# CS 600

- Usually held with a 400-level undergrad course
- [Same classroom], same lectures, but extra work for graduate students

# CS 700

- Standard core grad subjects
- Typically fixed curriculum
- Lecture based
- Assignments/exams/projects

# CS 800

- Research oriented topic courses
- Reading/analysis of 20-40 research papers
- Projects
- May vary offering to offering
- May be able to count two offerings of the same course

# Categories and Areas of Courses

| Category | Area |
|---|---|
| Computing and Technology | Software Engineering |
| | Programming Languages |
| | Hardware and Software Systems |
| Mathematics of Computing | Algorithms and Complexity |
| | Scientific and Symbolic Computing |
| | Computational Statistics |
| | Quantum Information and Computation |
| Applications | Artificial Intelligence |
| | Databases |
| | Graphics and User Interfaces |
| | Bioinformatics |
| | Health Informatics |

# Master's Course Requirements

| Program | Total | 600-level | 800-level | per area |
|---|---|---|---|---|
| Thesis | 4 | ≤ 1 | ≥ 1 | ≤ 2 |
| Research paper | 7 | ≤ 3 | ≥ 2 | ≤ 3 |
| Coursework | 8 | ≤ 3 | ≥ 2 | ≤ 4 |

- Plan to complete at least 2 courses per term (3 for MMath coursework) until course requirements are complete.
- Coursework(Data Science): see details on CS Grad web pages.

# PhD Course Requirements

| Program | Total | 600-level | 800-level |
|---|---|---|---|
| PhD from master's | 4 | ≤ 1 | ≥ 1 |
| PhD from bachelors | 8 | ≤ 3 | ≥ 3 |

# Comprehensive-I Requirements

- For PhD students only
- ***Separate*** from course requirements
- Ensure PhD students have a broad foundation of Computer Science for future research

# Comprehensive-I Requirements

- Coverage of 6 areas, at least 1 from each category.
- E.g.

| Category | Area |
|---|---|
| Computing and Technology | Software Engineering |
| | Programming Languages |
| | Hardware and Software Systems |
| Mathematics of Computing | Algorithms and Complexity |
| | Scientific and Symbolic Computing |
| | Computational Statistics |
| | Quantum Information and Computation |
| Applications | Artificial Intelligence |
| | Databases |
| | Graphics and User Interfaces |
| | Bioinformatics |
| | Health Informatics |

# Comprehensive-I Requirements

- Bad example: missing one category.
- E.g.

| Category | Area |
|---|---|
| Computing and Technology | Software Engineering |
| | Programming Languages |
| | Hardware and Software Systems |
| Mathematics of Computing | Algorithms and Complexity |
| | Scientific and Symbolic Computing |
| | Computational Statistics |
| | Quantum Information and Computation |
| Applications | Artificial Intelligence |
| | Databases |
| | Graphics and User Interfaces |
| | Bioinformatics |
| | Health Informatics |

# Comprehensive-I Requirements

- Bad example: less than 6 areas.
- E.g.

| Category | Area |
|---|---|
| Computing and Technology | Software Engineering |
| | Programming Languages |
| | Hardware and Software Systems |
| Mathematics of Computing | Algorithms and Complexity |
| | Scientific and Symbolic Computing |
| | Computational Statistics |
| | Quantum Information and Computation |
| Applications | Artificial Intelligence |
| | Databases |
| | Graphics and User Interfaces |
| | Bioinformatics |
| | Health Informatics |

# Comprehensive-I Requirements

- The 6 courses used to satisfy the Comp-I requirements must have marks of at least B+ (78% or equivalent).
- Graduate courses or advanced undergrad courses (similar to 400-level courses at Waterloo).
- Undergrad courses at 300-level or below will not be accepted.
- Courses from other universities:
  - Non-UW courses will be evaluated by the Grad Director and Graduate Committee.
  - Submit course syllabus to determine area and eligibility.

# Comprehensive-I Requirements

- Submit the Comp-I report early (preferably by the end of the first month of PhD study)
- Plan your courses carefully so that the Comp-I requirements are satisfied.

# Course Offerings

- Grad course offerings can be found online.
- **Consult** your supervisor/advisor to decide which courses to take.
- Make sure course requirements are satisfied.
- Enrol in CS grad courses online using Quest.
- Drop deadline is **3 weeks** into the term.

# Non-CS Courses

- Need permission of instructor and host department, and recommendation of supervisor.
- To count towards your CS degree:
  - List of approved non-CS courses online
  - Otherwise, prior approval from the Graduate Director (email course outline showing topics covered, reference materials, grading basis, supervisor recommendation)
  - Courses should have “CS content”

# Non-CS Courses (cont.)

- Most courses must be CS courses:
  - MMath thesis: 3 of 4
  - MMath research paper: 5 of 7
  - MMath coursework: 6 of 8
  - PhD from Masters: 3 of 4
  - PhD from Bachelors: 6 of 8

# Teaching Assistantships (TA)

- Only guaranteed for PhD and MMath thesis students
  - Normal load is 4 units per year
  - Max 2 per term
  - Your current assignment (if any) is on Odyssey
- Duties:
  - Set by instructor (or course coordinator)
  - Contact them immediately
- All TAs must attend today's TA Orientation Session!

# Do a Good Job in TA

- Attend TA meetings.
- Being a TA is both a privilege and a responsibility.
- Badly performing TAs will **NOT** get future TAships; thus reduced funding!
- Exceptionally performing TAs may receive a TA award.

# Major Scholarships

- NSERC (Natural Science and Engineering Research Council) Scholarships:
  - Available to Canadian and Permanent Residents only
  - Applications due in October (PhD) and December (Master's)
- OGS (Ontario Graduate Scholarship):
  - Open to all; only small number for international students
  - Applications due in October (international) and February (Canadian/PR)
- You are strongly encouraged to apply for OGS and NSERC if you hold an RA and are eligible (average over 85%)!

# Cheriton Scholarships

- Open to all PhD students within program limits, 80% average.
- 3-5 awarded each term (subject to fund availability).
- $10,000 per year for 2 years.
- Call for nominations near end of each term.

# Running Low on Funds?

- Talk to your supervisor.
- Some funds to help those in genuine distress.

# Questions?

- First, check or post to Piazza:
  - https://piazza.com/uwaterloo.ca/other/scsgrad
- If Piazza doesn't help, send email to:
  - Onkar Sehmih (onkar.singh.sehmi) if you are a coursework master's student
  - Marie Kahkejian (marie.kahkejian) if you are a thesis master's student
  - Paula Roser (paula.roser) if you are a PhD student
  - Ibelemari Kio (cs-gradoffice) for general inquiries

# Still Need Help?

- Send email to:
  - Justin Wan (cs.graddir), if you are a non-coursework student
  - Richard Trefler (trefler), if you are a coursework student
- Desperate? Contact us for an MS Teams call.