



# **Undergraduate Summer Research Workshop 2018**



WURJ: Health and  
Natural Sciences



# Why do summer research?

- Gain practical real-world experience
- Pursue your interests
- Meet amazing people (networking)
- Get paid!



# Typical Responsibilities

## Basic Science Research Student

- Survey literature
- Optimize/perform lab techniques
  - Staining tissues, running gels
- Perform experiments and interpret data
- Completing menial but **very important** jobs
  - Cleaning dishes, making solutions
  - Exposed to mechanisms of research



# Typical Responsibilities

## Clinical/Dry Lab Research Student

- Interviewing patients
- Performing literature reviews
- Conducting chart reviews, statistical analyses
- Validating data and writing code
- Completing ethics proposals



# Finding Research Positions

- Directly contact professors
- Look in your faculty and **other** faculties
- Apply through scholarship and award programs

Work Study

NSERC-USRA

BUSRP

DUROP

And many more...



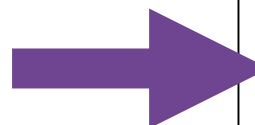
Secret Unlocked

**RESEARCHERS ARE NOT LIMITED  
TO THE PROFESSORS THAT GIVE  
YOUR LECTURES!**



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Research Journal  
Health and Natural Sciences  
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# Where to find research opportunities



List of research  
opportunities:

**ir.lib.uwo.ca/wurjhns**

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## **DUROP** | Dean's Undergraduate Research Opportunities Program

- \$6000 over four months (\$3000 Schulich + \$3000 Supervisor)
- Who can apply:
  - Undergraduate science students
- How to apply:
  - CV + Transcript (unofficial)
  - 300 Word Statement – Why do you wish to pursue this opportunity?
  - 2 reference letters
  - 3 most interested projects/supervisors
- Applications due mid February





## **BUSRP** | Biochemistry Undergraduate Summer Research Program

- \$6000 over 16 week work term (May – August)
- Who can apply:
  - 2nd Years - 85% or above in Biochemistry 2280A
  - 3rd Years - 75% or above in Biochemistry 3381A
- How to apply:
  - Join the OWL BUSRP site (will be available during winter)
  - Fill application form
  - Resume, transcript (unofficial) and a reference letter
- Applications due in early March



## **NSERC** | Natural Science and Engineering Research Council – Grant

- \$4,500 for a full 16-week period (+ min. 25% from supervisor)
- Who can apply:
  - Schulich School of Medicine and Dentistry and Department of Biology
  - Supervisors who currently hold an NSERC grant
  - Heavily based on marks
- How to apply:
  - Complete and submit your application using NSERC's online system
- Each university sets its own deadlines



## P&A

## Physics and Astronomy Summer Research Fellowship

- Awarded to an outstanding first year physics student
- Work with a P&A Faculty member-led research group for 12 weeks
- Must have successfully completed Physics 1301/1401/1501 and be in good standing in Physics 1302/1402/1502 or WSc1001X Physics
- Last year's deadline: March 5 at 5 p.m.

### To Apply:

- Choose from the online list of Undergraduate research projects
- Contact your potential supervisor to discuss working with them
- Submit pdf files of the following to [jennifer.tilston@uwo.ca](mailto:jennifer.tilston@uwo.ca):
  - An academic Letter of Recommendation
  - One-page personal statement on your long-term goals and your interest in research participation



# Bone and Joint Institute: Summer Research Studentship

- Musculoskeletal research
- Students participate in lunch and learn sessions, present results at summer research symposium
- 14-week program
- Deadline typically in **March** of each year



# Volunteering

- Great way to get started with research if you are not eligible for work study
- Much easier to apply for paid opportunities in the following year
- Volunteer EARLY!



# GTA Opportunities

SickKids



- SickKids Summer Research Program
- D+H Summer Student Research Program at Sunnybrook Research Institute
- Various U of T department summer programs
  - Ex. LMP Summer Undergraduate Research Program

St. Michael's

WCHI

- Keenan Research Summer Student Program
- Summer Student Program at Women's College Research Institute
- Ward Summer Student Program at Bloorview Research Institute

Bloorview  
RESEARCH INSTITUTE



## **AMGEN** | AMGEN Scholars Canada Program

- An Undergraduate Summer Research Program in Science and Biotechnology
- Program dates: June 3 – August 9, 2019
- Deadline for application: February 1, 2019
- Eligibility:
  - Canadian citizens or Canadian permanent residents;
  - Undergraduates enrolled in accredited Canadian four-year universities
  - Undergraduate students who have not completed their bachelor's degree (or its equivalent) prior to participating in the program
  - A cumulative GPA of 3.2 or above
  - An interest in pursuing a Ph.D.



# BC Opportunities



- **BC Children's Hospital Research Institute: Summer Student Research Program**
  - 12 week program with 2 components: individual research project and research education program
  - You must contact a potential supervisor before applying



- **TRIUMF Summer Student Program**
  - Jobs offered reflect the broad range of lab research: particle and nuclear physics, material and molecular science, accelerator science, nuclear medicine, plus engineering and computing
  - Summer jobs will be posted in mid-January





# Calgary Opportunities



UNIVERSITY OF  
CALGARY



Alberta Children's Hospital

- **Program for Undergraduate Research Experience (PURE)**
  - Awards available for 16, 12, or 8 weeks to complete research between May and August
- **W21C Initiative Summer Studentship**
  - Interdisciplinary summer studentships under a PI at the University of Calgary from May to August
- **University of Calgary: ACHRI (Alberta Children's Hospital Research Institute) Summer Studentships**
  - Perform research under a full member of the ACHRI and whose program falls under the mandate of ACHRI



# Montreal Opportunities



- **Université de Montréal – IRIC Next Generation Awards Program**

- For undergraduate students interested in biomedical (cancer and immunology) research
- 12-16 weeks starting in May or June
- Must be enrolled in a full-time undergraduate program and completed at least one year of their program in a field related to life sciences or biomedical research



**IRCM**

INSTITUT DE RECHERCHES  
CLINIQUES DE MONTRÉAL  
AFFILIÉ À L'UNIVERSITÉ DE MONTRÉAL

- **Montreal Clinical Research Institute (IRCM): Undergraduate Summer Internships**

- 12-16 week internship starting in May
- Demonstrate a strong interest in biomedical research
- Have a cumulative average of 3.3 out of 4.3 GPA (77% equivalent)



**APPLY EARLY**



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**ASK YOUR PROFESSOR TO APPLY  
TO A SCHOLARSHIP PROGRAM  
FOR YOU**



# Contacting Potential Supervisors

- Scholarship and grant programs have application instructions
- Best way to contact professors is by email
- **Attach your transcript and CV/resume**
- When sending emails, keep in mind:
  1. Be Humble and Polite (Don't spam them)
  2. Show Interest the Supervisor's Research
  3. Try to Stand Out



# Transcripts and CVs

- First time contacting – attach transcript and CV
  - Unofficial transcript (Student Center)
- CV should include any relevant or irrelevant experiences
  - Did you gain something valuable from the experience?
- How important are my marks and experiences?
  - Depends on what you're applying for
  - NSERC – marks are very important
  - Research at a hospital – experience is important too (volunteer)



# **Cover Letter**

**You should tailor your cover letter to include:**

- Your knowledge of their research work
- A brief description of your research interests and experience and how this ties in with their lab
- Your program, year-of-study and career goals.



# Reference Letter

- Enthusiasm for science
- Aptitude for science
- Interpersonal skills
- Perseverance
- Conscientiousness
- Research participation (if any)





# Be Humble and Polite

- This is your first impression, **make it count**
- Well-written and formal email
- Try to avoid
  - Talking about getting paid or funding opportunities
  - Being too ambitious with your goals
  - Assuming what you'll be doing in the lab
  - Typing the professor's name wrong
  - Writing too much – too much information is a turn-off!



# Show Interest in the Research

- Try your best to understand the supervisor's research focus
- Find out what they are currently studying
- Drop a line or two about **why** you are interested in their research
  - Ask questions!



# Check out our faculty profiles!



## Western Faculty Profile: Dr. John McCormick

Alex Zhou<sup>1</sup>

<sup>1</sup>Faculty of Science, Western University

No conflicts of interest declared.

"As someone who really loves science, if you actually get into the lab and work on something for multiple years, to actually figure things out and how they work ... I find that really satisfying ... to figure out these really complex questions."

While completing his undergraduate degree at Queen's University in the Life Sciences program, Dr. McCormick's journey into microbiology began after his third year as an undergraduate gaining a job with Health Canada in the Bureau of Microbial Hazards in Ottawa. Having sparked his interest in microbiology and bacteriology in particular, he proceeded to do a fourth year Honours thesis project at Queen's in an immunology lab where he worked on natural killer T-cells. Later, he moved to the University of Alberta to do graduate work involving food microbiology, an experience he considered very application driven. However, while there, Dr. McCormick also developed skills mainly pertaining to molecular biology.

After completing his PhD, Dr. McCormick soon moved to North Carolina State University to

complete a post-doctoral research fellowship. Despite having a good scientific environment, the techniques he was using were very similar to what he had already learned in his PhD studies. He later accepted a second post-doctoral fellowship at the University of Minnesota. Here, he developed an aptitude for infectious disease models, an area of research much closer to medical microbiology. This experience expanded his knowledge in immunology and biochemistry. After remaining in this position for three years, Dr. McCormick made the decision to return to Canada. Moving back to London, Ontario in 2001, he was initially recruited by the Lawson Research Health Institute and moved his laboratory to the University of Western Ontario campus in 2006. When asked how he likes London, he casually replies: "We like the city, good school, strong department, all the resource resources you need are here ... haha, and students are good."

Dr. McCormick's laboratory currently investigates the pathogenesis of bacteria that cause very severe disease, as well as their natural life cycle. Detailing further this research focus, he explains:



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**HERE IS SOME ADVICE FROM  
YOUR VERY OWN WESTERN  
UNIVERSITY PROFESSORS!**



# Advice from Professors

- “As an undergraduate student, the best thing to do is to get experience in a lab that they would enjoy being in. There really is no knowing whether or not research is right for someone until they’ve tried, so don’t be afraid to get started.”
- “There is nothing to lose – even if its not a scientific discovery, you are guaranteed to discover more about yourself as a person!”
- Dr. Sibbald remains optimistic, “I love working with students. I love the energy and excitement of new ideas and being able to have the freedom to explore those new ideas.” It remains one of the most satisfying sides of being a professor.
- “Have a willingness to learn and commit to continual learning throughout your position!”



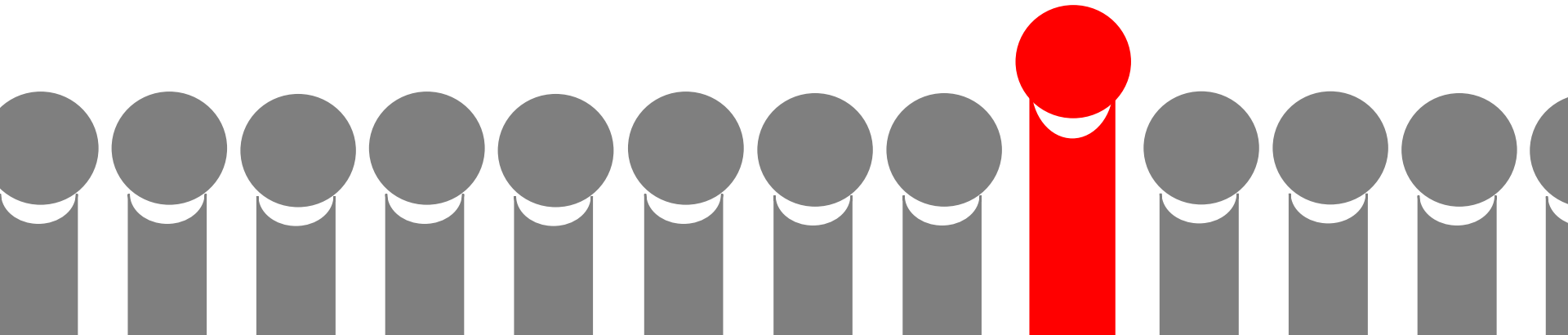
# Advice for Applicants

- Speak with TAs and upper year students who have gained research experience or have participated in the program in the past.
- Ensure your resume, transcript and application form are carefully prepared and up-to-date.
- Identify the area of research you are interested in and focus on faculty in that area.
- When contacting a supervisor, learn about their research, publications and view their website.



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# Try to **stand** out





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**WHEN CONTACTING  
PROFESSORS, ASK TO MEET  
AND DISCUSS OPPORTUNITIES**





# Shadow A Researcher Day

- 2<sup>nd</sup> Semester
- Students shadow a researcher or their graduate students for a day
- Open to all undergraduates
- Application required
- Great networking and learning opportunity



# After You Have Applied

- Will I get a reply right away?
  - Unfortunately... No...
- Continue to communicate with potential supervisors
- What happens if you don't get a research position?
  - Ask if there are volunteer positions available!
- If you are offered an interview:
  - Interview styles
  - Try your best to understand their research
  - Be honest
  - Prepare interesting questions
  - **BE CONFIDENT 😊**



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**Got the position!  
Now what?**



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**GET PUBLISHED**



# What is WURJHNS?

## STUDENT RUN

- A journal created and run by Western students for Western undergraduate students and their research

## PEER REVIEWED

- Articles are reviewed by trained students and **FACULTY** members to ensure scientific integrity in all publications

## OPEN ACCESS

- The WURJHNS is available online and open to anyone and can be found at <http://ir.lib.uwo.ca/wurjhns/>



# Types of Submissions

## We Accept:

- Research Article
- Short Communication
- Mini-Review Article
- Students in the Field Report
- Briefing Notes
- Perspective Article
- Letters to the Editor & Letter in Reply
- Original Course Work
- Evolutionary GEMs approved by Prof Gray

**The FIRST author must be a  
Western undergraduate  
student**

**Articles from Health Sciences  
and Natural Sciences are  
accepted**



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**Thank You!**



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