Undergraduate Summer Research Workshop

Western Undergraduate Research Journal: Health and Natural Sciences
http://ir.lib.uwo.ca/wurjhns/
Outline

- Introductions: WURJHNS team
- BUSRP student presentation
- Why do research?
- What are the typical duties of an undergraduate research assistant?
- An appropriate timeline for applications
- Where to start looking for research positions
Outline

- Contacting potential supervisors
- Transcripts
- Resumes/Cover Letters
- What if you don't get the research position?
The WURJHNS Team

- **Editors-in-Chief**
  - Himanshu Gupta
  - Benjamin Wong

- **Managing Editor**
  - Alice Tan

- **Associate Editor**
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- **Editorial Review Board**
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- **Academic Affairs Coordinators**
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  - Cheryl Yip

- **Second Year Representative**
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- **First Year Representatives**
  - Mo Malik
  - Emmy Sun
The BUSRP Program

You get:

- An opportunity to contribute to research in biochemistry
- Career mentorship
- References for future positions
- A poster presentation at the end of the summer
- A paper?
- Pizza!
Applying to the Program

How to get in:

- It’s an online application process through OWL.
- You submit your resume, an unofficial transcript, a form indicating your research interests, and you get someone to send a reference letter.
- Criteria: 85% or more in Biochem 2280 or in third year.
- Your application is evaluated by people in the biochemistry department and they decide whether to grant you a place in the program or not.
- You are informed whether you get in or not and then you contact faculty for interviews.
- There is a list of participating faculty and you can interview with anyone from that list.
My Experiences

- Got to try out a field of research and a career path and see what it was like
- Got to work with awesome people doing interesting and valuable work
- Gained a lot of computer and lab experience
- Contributed to cancer research and got paid for it
- I have since been an author on three posters and will soon begin writing a paper on my work
*Paclitaxel (Taxol) is a commonly used cancer drug*
Paclitaxel Support Vector Machine Classification

Correct Classification

Incorrect Classification

Incorrect Classification

Correct Classification
Gemcitabine is another commonly used cancer drug.

R squared = 0.99
Why do Research?

- Pursuing an interest and broadening your perspective
- Great learning experiences within an academic setting
- Networking
- Financial reward
What are the Typical Responsibilities?

- Clinical Research Student
  - Pulling research articles
  - Data collection
  - Completing a small personal project
  - Writing small sections of a manuscript
  - Completing ethics proposals

- Completing odd lab jobs
What are the Typical Responsibilities?

- Basic Sciences research student
  - Optimizing and performing lab techniques (histological stains, immunostains)
  - Literature search
  - Performing experiments and interpreting data for various assigned projects
  - Collaborating with technicians in your lab or experts from other labs
  - Contributing to manuscripts
  - Completing odd lab jobs
Research Student Expectations

- Work independently
- Team environment
- Lots of information to take in
  - Publications, terminology, lab techniques
- Manage time effectively
  - Deadlines, multi-tasking
- Seminars, posters, presentations
An Appropriate Timeline

- Some ways to apply to research positions
  - Through a central board that processes applications
  - Directly to the supervisor

- When applying through an administrative body, the timeline and due dates have already been set

- However, when applying to the supervisor directly, a due date is not provided. In this case, an appropriate timeline is necessary.
An Appropriate Timeline

- An appropriate timeline → if you must apply directly to the supervisor
  - The key point here is that you are not the only student applying

  - Typically, supervisors have selected the students they want to interview by mid – late January

  - Once this selection is complete, other emails are generally not considered

  - Responses are not always immediate!
Where to Find Research Positions

- Good places to start looking for research positions:
  - Go to your respective faculties
  - Contact your health practitioner
  - If you are looking for positions outside of the university (i.e. in London hospitals, or in other cities) the internet is the best place to start
  - If this is your first time looking for research positions some keywords to search in Google are:
    - Summer Student Program + (insert city name)
NSERC Grant

- Offered by the Canadian Government for undergraduate students doing research
- Duration of 16 weeks
- Paid position
- Heavily based on Academic standing (marks)
Departments that offer NSERC:
- Schulich School of Medicine and Dentistry
- Health Sciences
- Biology

Application processes between departments DO differ

For more information, please visit your academic counselor
Work Study at UWO

- Funding available to students who demonstrate financial need
- Rate of pay: $10.25/hour
- Number of hours:
  - For school year: 200 hours for 8 months
  - For summer months: 100/200/300 for 4 months
- Apply via Student Services – Financial Aid Profile
WURJ: List of Grants

- List of possible grants/research opportunities that you can apply for
  - Most are summer positions available to undergraduate students

- Has been put together by the members of our Academic Affairs Committee

- Can be found on our website
If you are applying to an administrative body, there are generally instructions explaining the various requirements.

However, if you must contact a supervisor directly (by email is the best way), what do you say?

There are three key things to keep in mind:

- Understand the supervisor’s research description
- Be humble
- Avoid generic emails
Contacting Potential Supervisors

- Understanding the supervisor’s research focus
  - Look for what type of research they do (basic science, clinical and others)
  - Have a good understanding of their research focus
  - This will allow you to understand what they may be looking for in a student
  - You can then tailor your email according to how you can potentially fulfill that need
Sunnybrook Hospital Scientist Profile

- Appointments and Affiliations:
  - Senior scientist, physical sciences - Odette Cancer Research Program, Sunnybrook Research Institute
  - Associate professor, medical biophysics, University of Toronto

- Research Foci:
  - Medical imaging analysis

- Research Summary:
  - Dr. M's group focuses on developing novel medical image analysis techniques with a focus on:
    - Tools to provide diagnostic support to physicians and radiologists: in particular, Dr. M's group is developing a computer-aided detection and diagnosis (CAD) system for breast MRI, which will allow them to detect cancer earlier and with greater specificity

- Selected Publications: see current publications list at PubMed
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Be humble

- The major issue → students have misconceptions about undergraduate research

  - For instance, people send emails about the tasks they wish to achieve in the summer (without necessarily considering what their potential supervisor may need)
  - Also, people send emails about their goals without realizing the amount of time required to complete a study or the limitations of their knowledge
Contacting Potential Supervisors

- Avoid generic emails
  - Avoiding generic emails can be accomplished by including information such as what you hope to get out of the research position
Good day Dr. (include name),

My name is (include name) and I am an undergraduate student at the University of Western Ontario. I found your research description on the SHSC website to be very intriguing. I also took the time to (include anything extra that you have done).

I would greatly appreciate the opportunity to work as your summer student and contribute to any aspect of your research.

(Include how you can potentially fulfill a need in their lab); (Include what you would like to get out of the research position)

Attached are my cover letter, resume, and transcript. Thank you for your consideration and I hope to hear from you soon.

Sincerely,

(include name)
Apart from the short message in your email, you should attach your:

- Unofficial transcript
- Cover letter (if you are able to make one)
- Resume
  - Concise and relevant
Transcripts

- Are my grades high enough?
  - It depends on the research position you are applying for:
    - If you are applying for a university based NSERC research position, marks are important
    - If you are applying to a supervisor in a hospital, however, grades are not the only factor

- When applying, attach a copy of your unofficial transcript (from student center)
Some key points to consider

- Avoid abbreviations
- Include your computer skills
- Include relevant course work or skills obtained
- Everything in your resume does not have to pertain directly to research but be concise

There are online resources available
- Go to https://careercentral.uwo.ca to find workshops
After you have applied

- Will I get a reply right away?
  - If you have applied early enough, you will likely get replies
    - However, not always the case

- If you are offered an interview:
  - Great! We would love to hear about it. At the end of the presentation, we will provide some contact information.
After you have applied

- If you do not receive an interview, there are many other options
  - Part time research positions may be available
  - Volunteer positions in a lab can be obtained
  - Taking courses and participating in activities that can increase your qualifications for a research position
Types of Accepted Submissions

- We Accept:
  - Research Article
  - Short Communication
  - Mini-Review Article
  - Students in the Field Report
  - Briefing Notes
  - Letters to the Editor & Letter in Reply
  - Original Course work

The FIRST author of all manuscripts submitted to WURJHNS must be an undergraduate student at Western.

Articles from Health Sciences and Natural Sciences are accepted for publication.
Research Article

- Describe and report the finding from a complete research project

Short Communication

- Research is still in progress, but an opportunity to present preliminary research results
Mini-Review Article

- Investigates and summarizes the current state of literature about a specific issue and reports the status

Students-in-the-Field Reports

- To encourage students to write about any experience they have had in the area of health and natural sciences bridge the gap between theory and practice
Letters to the Editor

- Provide critical and constructive commentary and/or analysis on a WURJHNS publication, or a health or natural science article published elsewhere

Briefing Notes

- Short, concise policy document that informs decision makers about a current healthcare issue
WURJ: Health and Natural Sciences

- Joining the WURJHNS is:
  - A great way to gain experience:
    - Reviewing articles
    - Presenting at workshops
    - Serving as the editor of a peer-reviewed journal

- An excellent addition to applications for summer research positions, professional school and graduate school

- For more information, visit: http://ir.lib.uwo.ca/wurjhns/
Western Student Research Conference

Saturday, March 21, 2015

Educate. Gain Exposure to multiple disciplines of research.
Empower. Showcase your research.
Inspire. Network with other researchers and professionals.

Submit Your Research Proposal

What can you submit?
Your undergraduate research proposal on any topic from any faculty

When do you need to submit by?
Early-bird Round: Nov 30th (selection preference), Final Round: Dec 30th.
Application available online at: westernsrc.ca

What does my research need to look like? Does it need to be complete?
Your final submission to the conference should be in the form of an oral or poster presentation. Your research proposal does not need to be complete to submit! We just need a basic idea of what you plan to present.
Summary

- Research offers very valuable experience
- Look at things from the perspective of the researcher, be humble, realistic, avoid generic emails
- Apply early!
- Be yourself at the interview
- There are many options if you do not receive a job
Contact Information

WURJHNS – wurjhnsc@uwo.ca

Please email if you have received a job offer, interview or if you have any more comments regarding today's presentation.
Thank you!