

# Biochemistry Undergraduate Research Info Session



*Why should I get involved in research?*

*What can I expect from the Biochemistry research courses?*

*What are some funding opportunities and how do I apply to them?*

*What's the Interdepartmental Honours Immunology program?*

**Have you asked...**

*Why do Honours Biochem?*

*How do I contact Profs for summer research?*

**Well then, this info session is for you.**



# Biochemistry Undergraduate Research Info Session

“How to get involved in research 101” &  
“Biochem Honours or IHI – why/what/when/how?”



# Outline

- Why get involved with research?
- How to find a research position
  - Finding a professor
  - Getting the position
- Funding your research
- Personal Experiences
- Bioc Honors, Fast-Track MsC, IHI, Pizza + Q&A



# Why get involved with research?

- Science is awesome, biochemistry is awesome
- Unique, active learning experiences
  - Lab skills and techniques
  - Critical thinking, problem solving
  - Communication
- “Trial run” for graduate school?
- CV, reference letters

- Who here is  
U1?  
U2?  
U3?  
UwhyamIherestill?



- Who has had  
previous research  
experience?



# Research 101

## Before We Start\*

### 1. Why?

Why do **YOU** want to do research?  
Are you ready to do research?\*

### 2. What?

What do you want to do research on?  
Which prof does that research?

### 3. How?

How to get into the xyz research?

### 4. Where?

Where do I want to take this project to?\*

Find Labs/Research → Apply → SCIENCE!





# How to find a research position: Finding your ♥LOVE♥

## What is your interest?

Pathway/protein

Disease

Technique you'd like to learn?

Do you love protein structure/NMR? Do you hate HOX gene? Do you have a strong passion for breast cancer research? Do you want to learn about something that you never learned? Do you want to learn more about cryo imaging?

Research Opportunities for Science Department

[http://www.mcgill.ca/caps/research-ops?type%5B%5D=caps\\_science\\_profs](http://www.mcgill.ca/caps/research-ops?type%5B%5D=caps_science_profs)

Biochemistry Department Professor List

<https://www.mcgill.ca/biochemistry/about-us/department/faculty-members>



Okay, so you found your true love.. but now what?

# Finding a supervisor

## Start Early!

Yes! You can start applying for winter semester/ summer semester now

- Look for professors whose work you are interested in
  - Website
  - Publications
  - Classes
  - Bring out your inner FBI-ness ;)
- Talk to people in the lab (friends/**TAs\***)
- Talk to friends/ upper years/ BUGS member





Okay you found your love & supervisor now what...

# Applying

- Make yourself an attractive candidate
  - Previous Lab experience? (320,220 counts)
  - Do you have immense knowledge on a specific topic?
  - Any awards?
  - Special Talents?
  - Sell yo self!
- Email
  - Quickest, most convenient, but probably lowest success rate

How to write the actual Email to  
professors to get your ♥**LOVE**♥

# How to find a research position:

## Summer Undergraduate Research Opportunities

 **Glenn Li** <glenn.li@mail.mcgill.ca>  3/2/15   

to sabatini ▾

Hi Dr. Sabatini,

My name is Glenn, and I'm currently a third year biochemistry honours student at McGill University in Montreal, Canada. I'm emailing to inquire about any undergraduate research opportunities you may have in your lab for the coming summer months. There is a grant from McGill that sponsors undergraduate research at international institutions, and I was wondering if you could sponsor my application (<http://www.mcgill.ca/students/international/goabroad/funding/miea>). I'm particularly interested in your research into the mTOR signalling cascade, especially the impact of its dysregulation in cancer.

I currently work in the lab of Dr. Nahum Sonenberg at the Goodman Cancer Research Centre in Montreal. I'm familiar with the mTOR cascade, and have significant experience in many techniques, including the production and purification of recombinant proteins, cell culture, and Western Blot. I'm a very quick learner, an efficient worker, and extremely hardworking.

I've attached my McGill Transcript and CV to the bottom of this email. Thanks for your time, and I look forward to your response.

Sincerely,  
Glenn.

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Sincerely,  
Glenn.



# How to find a research position:

Dear Professor \_\_\_\_\_,

My name is Leo Shen and I am studying biochemistry and computer science at McGill University with a GPA of \_\_ on a 4.0 scale. After reading about your work on the modular structure of PrgK and the techniques that your lab employs, I cannot help but be drawn to your research and inquire about any possible openings for an eager undergraduate like myself during the coming semester.

I would like to become involved in any way possible and would be more than willing to volunteer my time to experience, first-hand, laboratory work in the field of biochemistry and especially cancer research. Thinking about the opportunity to witness and participate in your research is incredibly exciting and I would greatly appreciate any chance to learn.

During my time at McGill, I have been trained in biochemistry and organic chemistry laboratory techniques, been an undergraduate TA for a chemistry course, and been WHMIS certified. My CV, transcript, and cover letter are attached below.

Sincerely,

Leo Shen

# How to find a research position:

Dear Professor \_\_\_\_\_,

My name is Leo Shen and I am studying biochemistry and computer science at McGill University with a GPA of \_\_ on a 4.0 scale. After reading about your work on the modular structure of PrgK and the techniques that your lab employs, I cannot help but be drawn to your research and inquire about any possible openings for an eager undergraduate like myself during the coming semester.

During this past summer, I worked full-time at a biochemistry lab at UBC in Vancouver, thermodynamically characterizing the interactions of an ABC transporter found in the Mycobacterium tuberculosis system through isothermal titration calorimetry. This experience exposed me to the crucial applications of biochemical research in relation to infectious diseases and helped cause your publications resonate with my interests and practical knowledge. I would love to have an opportunity to be a part of your lab, participating and learning.

Attached below, is my CV.

Sincerely,

Leo Shen



# Winter Undergraduate Research Opportunities

So Hyun Nam <so.h.nam@mail.mcgill.ca>

Thu 12/1/2016, 5:56 PM

Alain Nepveu, Dr. ✉

 Reply all | 



CV - So Hyun Nam.pdf



107 KB

[Download](#) [Save to OneDrive - McGill University](#)

Dear Dr. Nepveu,

My name is Esther and I am currently a second-year, U2, biochemistry undergraduate student. I am emailing to inquire about possible volunteer position you may have in your lab beginning this winter semester. I have developed a great interest and passion in research through biochemistry lab courses BIOC 320, 220 and would be more than interested in helping out and being part of your lab.

Over the month or so I got to know your research involving CUX1 gene with DNA repair mechanism through poster fair and articles and I found the mechanism and application of the CUX1 protein to chemotherapeutic treatment fascinating. I am interested in learning more about future role of CUX1 gene in and would be glad to work in your lab gaining further insight in CUX1 protein.

I am motivated, eager to learn and most importantly ready to dedicate my time and energy for this position.

For your convenience, I have attached my CV at the end of the email. Please let me know if there is any other information I can provide. Thank you for your time and I look forward to your response.

Sincerely,  
Esther Nam (So Hyun Nam)



Okay you found your love & supervisor now what...

## Applying

- Make yourself an attractive candidate
  - Previous Lab experience? (320,220 counts) Do you have immense knowledge on a specific topic?
  - Any awards? Special Talents? Sell yo self!
- Email Quickest, most convenient, but probably lowest success rate → DIDN'T WORK
- Seeing the professor in person

How see professors in real life to  
get your ♥LOVE♥



So the prof of your dream is not responding to your emails

## SEEING PROFS IN PERSON

ME WHEN I'M AT **lab** INTERVIEWS.





# Funding your research

- NSERC
- SURA \*
- McGill Integrated Cancer Research Training Program (Summer Studentship)



# Funding your research

- Natural Science and Engineering Research Council
  - Apply with a professor
  - Canadians and Canadian Permanent Residents only
  - \$5625+, 16 weeks
  - Supervisor must hold Active NSERC Grant
  - Can be held in summer, fall, or winter
    - Dates vary depending on the department and university
  - <http://www.mcgill.ca/medresearch/biomedical/nserc/>



# Funding your research

- NSERC
- SURA
  - Pan-McGill SURA for Faculty of Medicine
  - 5600+, 16 weeks
  - Most professors in Biochemistry *should* be available
  - Very limited number of awards
  - <https://www.mcgill.ca/science/research/ours/sura>



# Funding your research

- NSERC
- SURA \*
- McGill Integrated Cancer Research Training Program (Summer Studentship)
  - For the Goodman Cancer Research Centre
  - \$2000, 2 months+
  - CV, 1 page research summary
  - Deadline: March 31st
  - <https://www.mcgill.ca/micrtp/funding>
  - <http://www.mcgillgcrc.com/research/researcher-list>



# Other opportunities

- Other departments, institutions, hospitals
  - Same general guidelines about emailing
- Internationally
- Many structured applications (for example, submit a CV, personal statement)
- [\\*\\*https://www.mcgill.ca/science/research/ours/opportunities](https://www.mcgill.ca/science/research/ours/opportunities)





# Other opportunities

- Other departments, institutions, hospitals
  - Same general guidelines about emailing
  - Eg. Institute of Health and Social Policy for Fall 2017

Funding for both undergraduate and graduate students for training in research on health, equity and policy

Common Threads Through the Commonwealth: \$6000 award

Deadline: April 21

Internship Program: \$2000 award.

Deadline: April 16



# Personal Experience

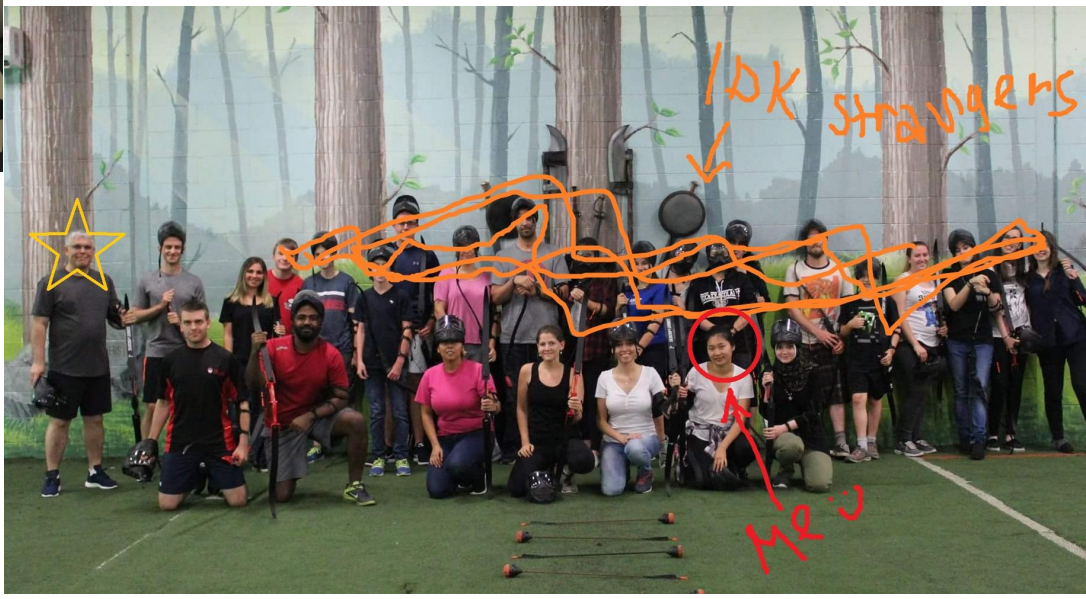
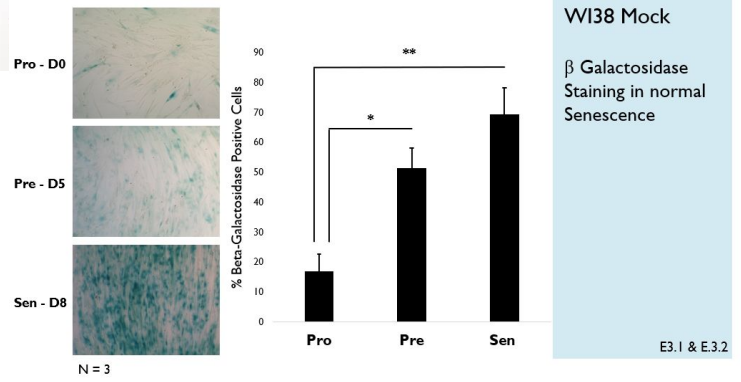


Fri, Aug 11, 4:26 PM

AMAZING  
KNOCKDOWN



Ah sicccckkkk!!!!  
Thanks!!



# RECAP

You can't apply if you don't know what to apply to

- Know your interest & **dinterest**

## Search, Think, Search

- This is not a race (quality over quantity may apply here)
- So many different ways to do research, 396, volunteer, paid work, 462

Sell yourself, believe in yourself

- You may face a lot rejection but **keep going** you will get there

## The road ahead

- You are the captain. Continue the same road or change your path.

can i interest you in some... opportunity for you to meet profs  
and get to know their research?



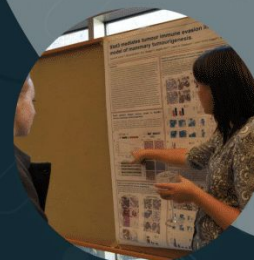


November 25th,  
**SATURDAY**

9:30 AM - 3:30 PM

★ Deadline to Register:  
Sun, November 19th

Biochemistry  
**R**esearch  
**A**wareness  
**D**ay



\$5\* Registration at  
[bugs.sus.mcgill.ca](https://bugs.sus.mcgill.ca)  
or in person  
@ [McMed 510](#)

- ★ *Rapid Fire Presentation*
- ★ *Lunch with BIOC Professors*
- ★ *Poster Fair with Grad Students*



McGill  
Biochemistry  
Department