

# Fall 2021

## BIOLOGICAL SCIENCES SUPERVISED STUDY & DIRECTED RESEARCH INFORMATION SESSION



 This presentation is being recorded. It may be used for departmental promotional materials and/or uploaded to our website.

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# AGENDA

- The Benefits of a Research-Based Learning Experience
- The Available Directed Research & Supervised Study Courses
- The Application Process and Finding a Supervisor
- Recognition and Awards
- Biological Sciences Certificate
- Q & A

# WHY TAKE A DIRECTED RESEARCH and SUPERVISED STUDY COURSE?

- Undergraduate Research Experience is a High Impact Practice
- Enrich your undergraduate experience
- For those pursuing a career in academia, a background in research is vital
- Research can expand your career and academic horizons in new and unexpected directions
- Gain confidence in your ability to contribute to science by learning how to think and work like a scientist

# Directed Research Courses



## Biological Science Program

Course Code and Title	Credit Value	Available Term
<b>BIOB98H3/BIOB99H3</b> - Supervised Introductory Research in Biology	0.5 Half Credit	Any term
<b>BIOC99H3</b> -Biology Team Research	0.5 Half Credit	Any term
<b>BIOD95H3</b> -Supervised Study in Biology	0.5 Half Credit	Any term
<b>BIOD98Y3/BIOD99Y3</b> -Directed Research in Biology	1.0 Credit	Fall/Winter or Summer Alone

## Paramedicine ( Joint with Centennial College)

Course Code and Title	Credit Value	Available Term
<b>BIOD96Y3</b> - Directed Research in Paramedicine	1.0	Fall/Winter

# BIOB98H3/BIOB99H3-Supervised Introductory Research in Biology

- BIOB98/BIOB99 are supervised introductory research experience courses.
- Both BIOB98 and BIOB99 are offered with a credit/no credit grading scheme. No letter or percentage grades are given.
- There is a minimum time commitment of **72** hours over a given term to complete a BIOB98 or BIOB99 course. It is up to you and your potential supervisor to decide on an exact schedule (or to commit to more hours than this).

**Faculty Coordinator: Dr. Marc Cadotte**

## **Examples of BIOB98 Research in the past**

--Phenotypic analysis of transgenic plant lines with Dr. Zhao



# BIOC99H3- Biology Team Research

- This course is meant to provide an introduction to directed research
- A group of 3-5 students work together to develop a research proposal and/or implement a research project under the general guidance of a faculty researcher
- Components of assessment are determined prior to project commencement, but may be based on student contribution over the term and a final written product

**Faculty Coordinator: Dr. Mark Fitzpatrick**



# BIOD95H3

## SUPERVISED STUDY IN BIOLOGY



- Students taking this course engage in intensive examination of a primary literature around a selected topic.
- Extensive independent research is required as well as frequent consultation with a Supervisor
- Students will end the course with a written report modeled on a scientific review article.

**Notes: This is not a research lab or field based course**

**Faculty Coordinators: Dr. Aarthi Ashok & Dr. Ivana Stehlik**

# BIOD96Y- Directed Research in Paramedicine

- This course is designed to permit critical analysis of current topics relevant to the field of Paramedicine.
- Students will work independently but under the supervision of an industry leader, practitioner and/or researcher involved in Paramedicine, who will guide the in-depth study/research. Students must also report to the course instructor and Paramedicine **Program Supervisor: Dr. Shelley Brunt.**





# BIOD98Y/BIOD99Y

## Directed Research in Biology

### BIOD98

- is designed to provide laboratory or field research under the guidance of a faculty member in the Biological Sciences Department.
- Research topics are arranged during initial meetings with the supervisor.
- 10 sessions of group instruction tutorials will form part of the coursework.

### BIOD99

- is intended as a second research experience.
- In order to be eligible for BIOD99Y3, with the same supervisor, the student and the supervisor will have to provide a plan of study that goes beyond the work of BIOD98Y3.
- You must have satisfactorily completed BIOD98 before you are eligible to take BIOD99.

**Faculty Coordinators: Dr. Aarthi Ashok & Dr. Ivana Stehlik**

# TIPS ON FINDING A SUPERVISOR



- Start by browsing the Biological Sciences Faculty [Directory](#) to access individual faculty research labs. This will give you a sense of the type research being done.
- Attend office hours and demonstrate interest in your professors research by familiarizing yourself with their recent publications.
- Speak to your TA and ask if their lab is in need of extra assistance.
- Check the Career Learning Network.
- Check the Departmental Website, Twitter (@UtscBiology) and Instagram (@biosci\_utsc).
- Note: students interested in D95, D98 and D99 are permitted to have an off campus supervisor with permission from Professor Ashok. In such a case, a UTSC Biological Sciences co-supervisor is a requirement.

# Faculty Currently Accepting Research Students

- Professor Yan Wang is looking to supervise one student this coming Winter term for either BIOB98 or BIOD95. He is hoping to work with someone who has interest in focusing on the “Microbiome of mosquitoes or herbivore mammals”.
- Some instructors I heard back from do not have availability to work with students this coming Winter term – Professors Adam Mott, Marc Cadotte, Nicholas Mandrak and Guillaume Filion.
- Reach out to any other faculty members whose research interests align with yours, but do keep in mind many instructors will be looking to talk about courses for Summer 2022 at this point.

# Registration Steps

1. Download and complete the Biological Sciences Departmental Permission form and Registrar's Supervised Study Form on our [website](#).
2. Print your unofficial transcript and academic history off of ACORN and have your supervisor initial it and sign all the necessary portions of your transcript and both documents (BIO Permission Form + Registrar's Office Form).
3. Add the course on Acorn like any other course. Your status will be INTERIM (INT).
4. Email me your completed forms at: [laura.shelly@utoronto.ca](mailto:laura.shelly@utoronto.ca). I will then submit your forms to the Registrar's Office where your status in Acorn will be adjusted to APPROVED (APP).

# Department of Biological Sciences

## Best Undergraduate Research Presentation Award

- Recognizes two or three students with exceptional presentations of their independent research work on BIOD98/99 Presentation day, with a monetary prize.
- Due to the pandemic, this has been put on pause, but hopefully come the Winter term, we will be back to hosting in-person presentations.
- **2019 Winners: Rebekah Kim (Mason Lab)** for her presentation entitled "Time-course of Metabolomic Signature of Stress in the Monster Haglid, (*Cyphoderris monstrosa*), **Myuran Yoganathan (Treanor Lab)** for his presentation entitled Investigating the Mechanism of B Cell Anergy Through Super-Resolution Imaging, and **Thiviya Rajasekar (Harrison Lab)** for her presentation titled "Isolation and Culture of Primary Osteocytes from Long Murine Bones.



# BIOLOGICAL SCIENCES CERTIFICATE

## WHAT IS IT?

- The Biological Sciences Certificate is a designation on your transcript
- It's a way to plan for and develop your research skills
- It's a way to map out what you need to do to get a solid research background

## WHAT IS REQUIRED?

- Enrolment in a Biology or Neuroscience program (major or specialist)
- Consultation with Biology's liaison librarian (to enhance your information literacy skills)
- Completion with an A<sup>-</sup> or better in BIOD98 and at least one other Biology research course (BIOB98, BIOB99, BIOOC99, BIOD99)
- Creation of a final report of your research experience
- The steps can be found on the [website](#).

# HOW DO YOU ACCESS OUR RESEARCH COURSES & CERTIFICATE?

## For course registration (with or without being in the certificate program):

- Find a Biology faculty member willing to supervise your activity in the course
- Request the course in Acorn
- Acquire the correct forms from The Biology Department and/or Registrar's Office
- Complete forms; this includes faculty and biology staff signatures!
- Submit completed forms to myself

## For the certificate:

- Register in a Biology or Neuroscience major or specialist degree
- Request the certificate subject post



## CONTENT OF FINAL RESEARCH REPORT:

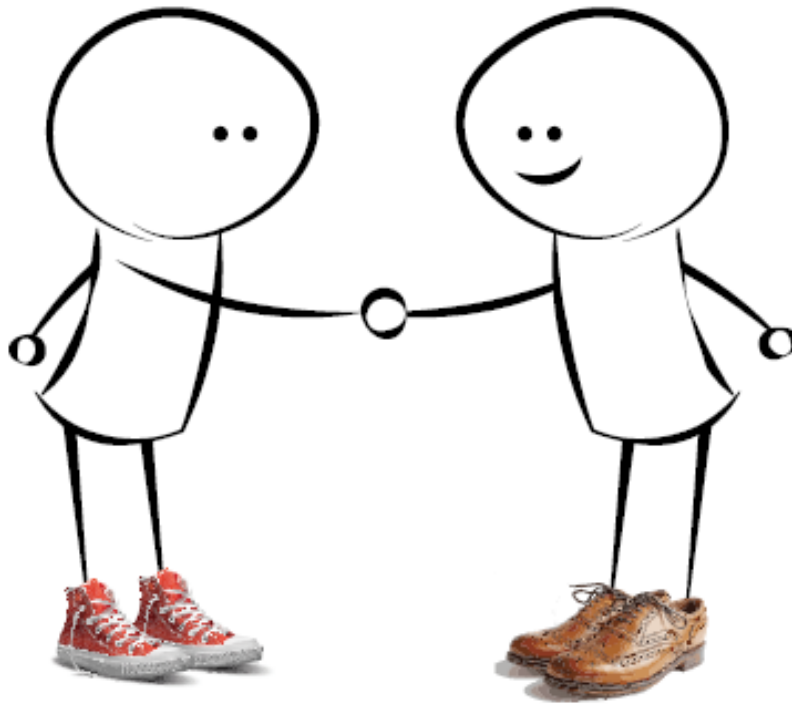
- List name, student number and the program(s) you intend to graduate in.
- List the research courses you have taken and for each, indicate who was the supervising faculty.
- For any BIOB98/99 experiences provide a ~200 word description of the research project that you contributed to and indicate the role(s) you had. Indicate what skills you developed during this time.
- For BIOC99 or BIOD98/99 provide a 500-1000 word summary of the nature of the project, including your role and the conclusions you made in your final report. Also indicate what skills you developed during this time.
- Write a critical reflection of your experiences (200-400 words). What did you learn about yourself, your academic strengths and weaknesses, the kind of work you enjoy most, and any direction this may have given you towards future careers. There are no right/wrong answers here, but it allows you to assess your own growth and development.
- Lastly, if you have any suggestions for general training we could provide to students that would make their research experience better, I would be grateful to receive your ideas.

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Department of Biological Sciences



# Thank You!

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