In light of the ongoing SARS-CoV-2 pandemic, our fourth-year thesis offerings have been modified and adapted to provide you with high-quality alternative to in-person research. Because of the dynamic nature of the current situation, changes to the course outline are possible. These courses will integrate you into the virtual operations of research labs as well as provide you with one-on-one mentorship with research faculty. The overarching objective of this course will be to develop essential research skills beyond proficiency in wet-lab techniques. In the event that McMaster University is in a position to offer an in-person curriculum for Winter 2021, students will have the option of completing a portion of their final term in a laboratory setting.

**COURSE COORDINATORS AND ACADEMIC ASSISTANTS**

BDC Office  
Dr. Andrew McArthur (mcarthua@mcmaster.ca)  
Dr. Nancy McKenzie (sheelenl@mcmaster.ca)  
Administrative Assistant: Michelle Biro (birom@mcmaster.ca)

BBS Office  
Dr. Caitlin Mullarkey (mullarkc@mcmaster.ca)  
Dr. Michelle MacDonald (macdonml@mcmaster.ca)  
Administrative Assistant: Taylor Gauthier (advisor@mcmaster.ca)

Please note that we will use the generic bcthesis@mcmaster.ca e-mail for all thesis communication.

**TEACHING ASSISTANTS**  
TBA

**COURSE DESCRIPTIONS**

**Fall 2020 Term - Scientific Writing and Communication**  
Students will conduct an in-depth research project that demonstrates analysis and integration of the current literature and unpublished findings. The overarching aim of this course will be to hone and develop students scientific writing skills. Faculty research supervisors will mentor and guide students one-on-one through the research process. Students are expected to attend the weekly laboratory group meetings of their mentors to become familiar with the depth and scope of research conducted. Students will additionally participate in tutorials where they will learn fundamental principles of effective scientific writing with practical examples and exercises. In these sessions, students will also engage in peer review by providing feedback to others. At the end of the course students will produce a scholarly paper, which they will have the opportunity to publish in a special edition of the *Catalyst*, a departmental student-run open access journal.

**Time and Place:**  
Mondays: 10:30-11:20 AM (*Virtual Classroom*)  
Wednesdays: 12:30 – 2:30 PM (*Virtual Classroom*)

*Please note the virtual classrooms will take place synchronously on an appropriate web-conferencing platform (Zoom, WebEx, Microsoft Teams etc.)*
Winter 2021 Term - Research Investigation and Critique

Students will engage and develop expertise in scientific inquiry, problem-solving, and critical appraisal. Current biomedical research is explored through a research seminar series. Students will be required to attend weekly seminars and complete assignments related to these presentations. Additionally, students will participate in tutorial sessions that will provide an in-depth examination of advanced techniques, protocol design, data analysis, figure composition and critique of scientific literature.

**Time and Place:**

Mondays: 2:30-4:20 PM (*Virtual Classroom*)

*Please note the virtual classroom will take place synchronously on an appropriate web-conferencing platform (Zoom, WebEx, Microsoft Teams etc.)*

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**COURSE COMPONENTS & ASSESSMENTS**

**TERM 1**

- Mentor Evaluations: 10%
- Scholarly Paper: 30%
- Participation (attendance, completion of in-class work, homework engagement): 20%

**TERM 2**

- Seminar Attendance and Reflections: 15%
- Tutorial Assignments (Data analysis, interpretation, generation of figures): 15%
- Critical Review: 10%

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**ACADEMIC INTEGRITY**

You are expected to exhibit honesty and use ethical behavior in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. **It is your responsibility to understand what constitutes academic dishonesty.**

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behavior can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university. For information on the various types of academic dishonesty please refer to the [Academic Integrity Policy](https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/), located at https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/

The following illustrates only three forms of academic dishonesty:

- plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
- improper collaboration in group work.
- copying or using unauthorized aids in tests and examinations.

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**AUTHENTICITY AND PLAGIARISM DETECTION**

Some
courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty. Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). For more details about McMaster’s use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

Avenue to Learn
In this course we will use Avenue to Learn (A2L). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, usernames for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

Online Proctoring
Some courses may use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

Conduct Expectations
As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the Code of Student Rights & Responsibilities (the “Code”). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, whether in person or online. It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviors that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students’ access to these platforms.

Copyright and Recording
Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, including lectures by University instructors. The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

Assignment Deadlines and Missed or Late Work

All written
work must be submitted on the due date (exclusively through submission folders on Avenue to Learn). It is **YOUR** responsibility to ensure you have uploaded your assignment to the correct folder. Assignments submitted to incorrect folders risk incurring late penalties. Late penalties will not be waived unless your Faculty/Program Office advises the instructor that you have submitted to that office the appropriate documentation to support your inability to submit the work by the due date.

**Requests for Relief for Missed Academic Term Work**
McMaster Student Absence Form (MSAF): In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar “Requests for Relief for Missed Academic Term Work”. It is the prerogative of the Instructor to determine the appropriate relief for missed work. **It is your responsibility to follow up with Dr. Mullarkey immediately about the nature of the accommodation.**

**Academic Accommodation of Students with Disabilities**
Students with disabilities who require academic accommodation must contact Student Accessibility Services (SAS) at 905-525-9140 ext. 28652 or sas@mcmaster.ca to make arrangements with a Program Coordinator. For further information, consult McMaster University’s **Academic Accommodation of Students with Disabilities** policy.

**Academic Accommodation for Religious, Indigenous or Spiritual Observances (RISO)**
Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students should submit their request to their Faculty Office **normally within 10 working days** of the beginning of term in which they anticipate a need for accommodation or to the Registrar’s Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

**Extreme Circumstances**
The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labor disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.