

For 499A (honours thesis) the department will, this year, be offering the usual on campus research thesis, but also 3 separate thesis options that can be completed remotely. All 4 options require a supervisor as per normal, and will all entail the usual written thesis plus oral defence (although this may occur through video-conferencing) next March/April. Synchronous class sessions (in addition to the thesis work) will be held approximately every other week.

Details of the 4 options are:

1. Laboratory based experience (On Campus):

Essentially our current standard practice.

- Students shall identify their supervisors as per usual;
- Supervisors shall be responsible for overseeing laboratory experiments;
- Supervisors shall be responsible for ensuring COVID compliance;
- Examination shall be dissertation and oral presentation.

2. Computational project (Off Campus):

Projects that would be carried out off campus using internet accessible databases or software. Some examples could be:

- (a) molecular modelling or computational simulations
- (b) use of bioinformatics tools to mine/interrogate datasets (e.g. genomic, transcriptomic).
- (c) analysis and interpretation of large publically/institutionally available datasets (e.g. health, nutrition).

- Students shall identify supervisors who have provided projects;
- Supervisors shall be responsible for guidance during the project and in preparing a thesis;
- Examination shall be dissertation and oral presentation.

3. Systematic Reviews with/without meta-analysis (Off Campus):

Projects involving a defined, systematic way of undertaking a comprehensive review of the literature. This approach is used a lot in clinical trials/health science but also in animal experiments.

- Supervisors must have prior experience in the art and philosophy of the systematic review process;
- Supervisors will identify/provide project(s); students will select a supervisor-project;
- Supervisors shall be responsible for guidance during the project and in preparing the thesis/report;
- Examination shall be dissertation and oral presentation.

4. Critical Literature Review and Grant Proposal (Off Campus):

The concept here is that the student would prepare a 10 page critical literature review (i.e. same length as prescribed in our thesis regulations) on a topic of interest suggested by the Supervisor; and the second part of the thesis would consist of a formal type of grant proposal developed by the student with guidance from the supervisor. The grant proposal would be expected to contain reasonably detailed and specific proposals for experiments. The student would be expected to know and understand the rationale for the experiments and the basis for the proposed methodology.

- Students shall identify supervisors who have provided project ideas (and possibly preliminary data);
- Supervisors would be responsible for guiding the student during the project; helping the student to develop the student's experimental ideas into formal proposals; and in preparing a thesis. Supervisors are encouraged to provide students with raw data for analysis that can be included as "preliminary data" in the grant proposal;
- Examination shall be dissertation and oral presentation.

The following faculty have so far indicated a willingness to supervise one or more students in each of the 4 projects. Students are not limited to these faculty, but these are the ones from whom responses have so far been received. Non-lab based options conducted under the supervision of faculty from other departments MUST be pre-approved.

Lab-based - Drs. Berry, Christian, Brunton, Bertolo, Mayengbam, Booth, Park

Computational - Drs. Berry (co-supervision), Christian, Mayengbam, Booth

Systematic review – Drs. Berry (co-supervision), Bertolo, Booth

Critical review + grant proposal – Drs. Berry, Cheema, Park