



BIOS² + Living Data Project Invitation to propose a working group topic

Do you have an exciting question in ecology, evolution or environmental science that would benefit from a sustained collaborative effort? This is an invitation to propose a topic for a synthesis working group. Working groups synthesize existing data and research and/or develop new models or conceptual frameworks. A working group team will deliver novel knowledge products that amplify the impact of existing data.

We invite teams of 2-4 graduate students who have participated in either the Computational Biodiversity Science and Services (BIOS²) or Living Data Project (LDP) NSERC-CREATE training programs to submit proposals for a working group that they will lead. Specifically, applicants can be students at both the M.Sc. and Ph.D. level AND should be either BIOS² Fellows or have taken the LDP modules in scientific collaboration and synthesis statistics at a LDP university (excluding transfer credits).

The working group meeting should involve five 6 to 8-hours days of intense collaboration, either online or in-person. The work-days can be conducted consecutively or spaced over several weeks if online, in the period March to May 2022. The working group must be focused on a challenging and important question in ecology, evolution or environmental science. We welcome both applied and fundamental questions.

The working group proposal should cover the research questions and methodology but should not suggest additional participants who will be part of the final working group. Instead, after selecting the winning proposal, BIOS² will organize an open competition in which graduate students from multiple Canadian universities can apply to participate in the working group. In total, the working group is expected to involve 12 graduate students including the organizers. In addition, BIOS² and LDP will recruit two postdoctoral fellows to mentor and participate in the working group, as well as two researchers (at least one faculty member) who will act as consultants on organizing and facilitating the working group. Both organizations are committed to promoting equity, diversity and inclusion in science, and so the composition of the working group (including organizers) and inclusivity and equity in collaboration methods will be considered at all stages of project and participant selection.

What we will provide

Student-submitted proposals will be evaluated by a selection committee. The winning team will then work with instructional members of BIOS² and LDP to refine the proposal and determine the skillset and conceptual training required by other participants in the working group. Additional graduate student participants will be selected in an open national competition from the eligible pool of LDP and BIOS², and students registered at one of the Canadian Institute of Ecology and Evolution (CIEE) member universities.

The two postdoctoral researchers will help the team develop the schedule for the working group, assist with facilitation and meeting logistics, and organize the digital platforms. The postdoctoral researchers will also be full participants in the working group. They are highly trained in data management and analysis, reproducible research, and inclusive collaboration practice.

Contingent upon the public health recommendation related to the ongoing COVID-19 pandemic, we hope to hold an in-person meeting in spring 2022 (March to May, 2022). Travel, accommodation and meal costs would be covered for all participants, and up to \$1500 to cover publication costs. If an in person meeting is not possible and the working group needs to be held online, we would provide coupons for meal delivery during the working group for all participants and up to \$1500 to cover publication costs.

Responsibilities of research leaders

The team will be responsible for setting the scientific agenda (with guidance from BIOS²/LDP postdoctoral researchers and faculty), defining the initial research question(s), and providing in advance any relevant reading materials and datasets to be analyzed. It will also be responsible – with our mentorship - for facilitating the working group meeting, and creating an open, respectful and inclusive working environment that optimizes the creativity and productivity of the group. Finally, the leading team will be responsible for ensuring any outcomes (e.g. publications, open data sets) of the working group are realized in a timely fashion.

Evaluation criteria

Proposals will be evaluated according to the following criteria:

1. The project is consistent with the goals of BIOS² (quantitative methods applied to biodiversity science).
2. The problem will offer high training potential for the students and postdoctoral fellows
3. The research question can feasibly be answered within an intensive five day working group, and will result in a concrete product or outcome.
4. The data set and management plan is well defined and realistic
5. The researchers are highly qualified to lead the working group, including experience leading research teams and building inclusive collaborations (in person and in a virtual environment).

Evaluation of proposals

The proposals should be sent as a single PDF including a short title and containing the following sections (all mandatory):

(1) (max 200 words) Describe the importance of the research question and why it will be of interest to graduate students in ecology, evolution or environmental science. We seek research questions of high importance to science or society that require the synthesis of existing data or results, or the development of new models or frameworks.

(2) (max 200 words) Demonstrate that the research question can feasibly be answered within an intensive five day working group and will result in a concrete product or outcome. In addition, a one page timeline for five days of meeting, by half-days increments, should be added at the end of the document.

(3) (max 500 words) Describe the data, convincing us that the data are available in a format that is amenable to immediate analysis and are sufficient to answer the question, and the working group organizers are familiar with the data. In your description, include the importance or interest of these data, the amount of information available, and any caveats. This description may be supported by one optional figure or table. If the data are not published, the working group leaders must have written authorization from the data producers to use the data, create derivative products, and archive both the raw and derived data in public repositories.

(4) (max 500 words) Provide a data management plan (DMP) that is realistic and describes the final data product as thoroughly as possible. Address any considerations for file storage (notably space and confidentiality). The Open Science Framework (OSF) and Portage Network offer tools that may help you in developing your DMP.

(5) (max 200 words) Describe the proposed workflow from raw to transformed data and list the main data compilation and analysis tools. This should be in enough detail to facilitate a feasibility analysis.

(6) (max 200 words) Describe how participating graduate students and postdoctoral researchers will benefit from the working group, for example through exposure to non-academic careers, development of new skills, or deeper understanding of ecological and evolutionary theory.

(7) (max 200 words) Describe how you will achieve a working group that is engaged and inclusive . Additionally, (up to 100 words) explain your strategy for collaborating effectively in virtual space, if the working group were to take place virtually.

(8) A CV (maximum 2 pages) for each graduate student lead in the NSF BioSketch format ([link](#)). In your CV, please explain your qualifications to lead the working group, including experience or training in leading research teams and building inclusive collaborations.

Complete applications must be emailed to BIOS² program coordinator Kim Gauthier Schampaert at info.bios2@usherbrooke.ca by **November 30, 2021**.

Additionally, each team members should fill in this form:

<https://forms.office.com/r/Vii7sSNJAZ>

Don't hesitate to ask any question at info.bios2@usherbrooke.ca