

GREAT LAKES RESEARCH CENTER STUDENT RESEARCH GRANTS

Background

The Great Lakes Research Center (GLRC) at Michigan Technological University is a multi-disciplinary collective of researchers collaborating on solutions to grand challenges facing the Great Lakes and freshwater ecosystems globally. The GLRC offers a number of programs to support research growth at Michigan Tech and scientific advancement. Student research grants provide graduate and undergraduate students an opportunity to gain experience in writing competitive proposals and to perform research they would not be able to attempt due to funding limitations. These grants also provide their advisor an opportunity to explore a research idea, resulting in data or information that leads to the development of a proposal to an external sponsor. (Note to advisor – please list GLRC as the Center/Institute in the Cayuse record for proposal to external sponsor.)

Grant Terms

- Open to undergraduate and graduate students in any discipline.
- Student's primary advisor and research must be affiliated with the Great Lakes Research Center (GLRC), see [GLRC Membership list](#). The student's primary advisor must be a PI on a proposal submitted through the GLRC within the last year or have an active award through the GLRC.
- A student is eligible to receive a maximum of one research grant per academic year. Masters and undergraduate students may apply once during their degree program; PhD students may apply twice in subsequent years; and students should not count on continued funding.
- Publications, posters, and presentations resulting from GLRC supported research should formally acknowledge the GLRC, and students should share it with the GLRC as it might be used on social media and/or the displays in the lobby. Please check the GLRC website ([Member Resources](#)) for current media.
- Funded students are expected to participate/volunteer for a least one GLRC activity during the grant period.
- Funding requests up to \$1,000 will be considered. A budget listing anticipated expenditures for supplies, equipment, travel and personnel is required.
- Project duration should not exceed 12 months.
- For PhD applicants, if you were previously awarded a GLRC research seed grant, you must fill out a Progress Report before receiving a subsequent grant.
- All grantees must submit a Final Report within 30 days of grant end date.

Detailed Instructions for Proposal Authors

Your proposal should include or address all of the following evaluation criteria and required components. The proposal text cannot exceed 2 pages (single-spaced, 11-pt font); references, GLRC affiliated advisor statement, and the application form with budget table are not included in this page limit.

Proposal Components

Application Form: Complete the application form found on the GLRC Student Resources webpage. The application form includes signatures, a budget section, and documentation of other funds received through the GLRC (if any).

Title: The title should reflect the subject of the proposal.

Author Names and Affiliations: List the names of the student(s) authoring the proposal and the GLRC affiliated advisor(s) and their department affiliations. Note the academic standing (graduate or undergraduate, year of study) of each student.

Background: (3/4 page maximum) The background section should provide the larger scientific context of the proposed work. It should also be clear how the proposed work fits into this scientific context. Assume your audience is intelligent, but has little direct knowledge about your research topic and why it is important. Introduce your study from a broad context then into a narrower context that will link to the specific questions to be asked or hypotheses to be addressed. These specific questions and hypotheses must be clearly articulated. Relatedness to the GLRC mission should be made clear in this section. Any proposal deemed unrelated to the GLRC will not be funded through this program.

Objectives: (1-3 sentences) If the work is part of a larger project, summarize the broader objectives of that project. Also state the specific objectives for the work to be carried out by the funds requested in your proposal. It should be clear that your request is for important additional work. These objectives should clearly arise from the background provided.

Methods: (3/4 page maximum) The link between the objectives and methods should be clear. The proposed methods should be appropriate for testing the hypotheses or answering the questions defined above. They should briefly but clearly define the study sites, sampling and analytical techniques, and data analysis approaches to be used. If there are important measurements or analyses related to your research request that are being addressed by a larger project, please briefly describe them and the fact that they are being supported by the larger project. It is understood that \$1,000 will only fund a small amount of work, but it needs to be clear how it fits in to the larger scheme of some projects. Your methods should primarily describe how the GLRC funds will be used, but background on other activities occurring at the study location can help reviewers as they assess your specific request. The methods should include a timeline for field measurement, lab and data analysis, and writing/presentation activities. The details of methods should not be included but cited. Enough information about

the methods should be provided so that reviewers outside the field can at least develop a conceptual picture of the how the work will be carried out and contribute to achieving the objective(s).

Budget and Specification of how GLRC funds will be used: (1/2 page maximum) The budget should be appropriate for the costs of the proposed work. If the proposed work will require more funds than available from the GLRC grant, state other sources of funding available, or how the work will be scaled back if other funding is not obtained. Please note the minimum hourly wage for students is \$15.

GLRC Member Advisor Statement (to be written by the advisor): Include as a separate page a 250 (maximum) word statement describing how this research will be incorporated into future research proposals listing specific funding opportunities (if known). Please list the GLRC as the Center/Institute in the Cayuse record when a proposal is submitted to an external sponsor.

Additional Reminders

For PhD applicants, if you were previously awarded a GLRC research seed grant, you must fill out a Progress Report before receiving a subsequent grant. All grantees are required to submit a Final Report within 30-day of the grant end date.

GLRC Research Grant Progress Report Guidelines

(2-page maximum) Include the title of previous project, student and advisor names, date of award, summary of project goals, project results and interpretation (minimum 1 page).

Final Report

(1-page maximum) Include the title of the project, student and advisor names and academic department(s), date of award, summary of grant expenditures, summary of the project results, list of any products developed, and next steps for the GLRC affiliated advisor.

Evaluation Guide for Proposals

GLRC student research grants are competitive. The grants will be judged on the following criteria: scientific merit, quality of writing, and format. Successful applicants will collaborate with their GLRC affiliated primary advisor to better understand how their seed research will support future proposal development, awarded research, and the GLRC mission. If the research is unrelated to the GLRC, or not enabling specific future proposals, then it will not be funded through this program. Feedback will be given for all proposals that are reviewed or deemed inappropriate for GLRC consideration. Students who apply once and are declined funding may re-apply in the next term. Undergraduate applicants will be judged separately from graduate applicants; all criteria will be identical, but graduate proposals are expected to be of higher

quality. Review panelists will be asked to consider the evaluation criteria and questions below during the assessment of each proposal.

Evaluation Criteria

Scientific Merit: The proposed work should make a novel contribution to knowledge or understanding and its scientific merit should be clear to the reviewer, who may not have expertise in your field. Careful attention to the required proposal components described above for each proposal section will help achieve this goal.

Quality of Writing: The proposal should be clearly written, including well-organized sections using proper grammar and spelling.

Format: The proposal format should be simple and readable. Margins set at 1-inch, an 11-point Arial or Calibri font, and single-spaced. Spaces before/after headings and between paragraphs are optional.

Questions to Guide Section Content Development and Review

Background: Does the background section provide the larger scientific context of the proposed work? Is it clear how the proposed work fits into this scientific context? Are complementary studies adequately (but briefly) described? Does the applicant clearly describe how this research is related to the GLRC and will impact the submission of a sponsored project proposal by a GLRC faculty member?

Objectives: If the work is part of a larger project, is it clear what the broader objectives are? Are the specific objectives for the work to be carried out in this proposal clearly stated? Are they in line with the background?

Methods: Is the link between hypotheses/questions and methods clear? Are the proposed methods appropriate for testing the hypotheses or answering the questions defined above? Do they adequately define the study sites, sampling and analytical techniques to be used? Is sufficient information on other ongoing work at the sites given, where relevant? Are the methods for analyzing the results presented and appropriate?

Budget and specification of how GLRC funds will be used: Is the budget appropriate to cover the costs of the proposed work? If not, are other sources of funding for the work specified? Is it clear how the work can be re-scaled if other needed funding cannot be obtained?

Quality of Summary Report for previously funded research (if applicable): Does the summary report indicate that the funds were used for GLRC-related research? Did they accomplish the work that was proposed?