Background and Requirements

The Great Lakes Research Center (GLRC) at Michigan Technological University is pleased to announce a special research funding opportunity sponsored by the Clarke and Nancy Borgeson GLRC Endowment Fund. The GLRC will award one $2,000 or two $1,000 grants in research funding.

The awarded proposal(s) must advance GLRC research and further the GLRC mission of delivering interdisciplinary water research and outreach to the community and our partners around the Great Lakes. The grant(s) needs to integrate educational and research pursuits while supporting the GLRC vision of inspiring and advancing knowledge and innovation in interdisciplinary science, engineering, technology and policy.

This is an early-career opportunity open to Tenure-Track GLRC affiliated faculty and early-career GLRC research scientists (first 4 years) and their students. The grant is intended to help early career faculty and researchers advance their research by generating preliminary data for proposals and disseminating their work.

Advisor (faculty or research scientist) and student must closely collaborate on this research, and develop a plan to support this requirement.

Tenure-Track GLRC affiliated faculty, early-career GLRC research scientists, undergraduate, and graduate students from underrepresented groups in the Science, Engineering, and Health fields such as women, ethnic and racial minorities, members of the LGBTQIA+ community, and individuals with disabilities, are strongly encouraged to apply. The GLRC is committed to Diversity, Equity, Inclusion, and a Sense of Belonging for everyone as part of the Michigan Tech CommUNITY.

The grant(s) will help students and their advisors gain experience in writing competitive proposals and attain early-stage, exploratory research.
Additional Grant Terms

• Publications, posters, and presentations resulting from GLRC supported research should formally acknowledge the GLRC. Please contact the GLRC for the proper acknowledgment.
• Funded students are expected to participate/volunteer for a least one GLRC activity during the grant period.
• For PhD applicants, if you were previously awarded a GLRC student research 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, advisor and student collaboration plan, advisor statement, and the application form with budget table are not included in this page limit.

Proposal Components

Application Form: Complete the Borgeson Endowment Student Research Grant 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 the student.

Background: (1-2 paragraphs) 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.

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: (1-2 paragraphs) 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/$2000 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 paragraphs) 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.

**Advisor and Student Collaboration Statement (to be written jointly by the advisor and student):** Include as a separate page, a 250 (maximum) word statement containing a description of the advisor and student collaboration and work plan. Include steps to increase communication and knowledge sharing; integrate work activities, and facilitate problem solving.

**Advisor Research Statement:** Include as a separate page, a 250 (maximum) word statement containing information on the following:

- How this research will further the advisor’s tenure pursuit or research career.
- How this research will be incorporated into future research proposals listing specific funding opportunities (if known).

**Additional Reminders**

For PhD applicants, if you were previously awarded a GLRC Student Research 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

The proposals will be judged by a panel of three GLRC members on the following criteria: scientific merit, collaboration between advisor and student, quality of writing, and format. Successful applicants will understand how their seed research will support future proposal development and awarded research. Feedback will be given for all proposals that are reviewed or deemed inappropriate for GLRC consideration. 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.

Collaboration between Advisor and Student: The proposal should include a description of the collaboration plan the advisor and student developed jointly, and demonstrate a strong commitment to working together throughout the research project.

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.

The following questions are provided 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 will impact the submission of a sponsored project proposal by a GLRC faculty member or research scientist?

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?
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?

**Collaboration between Advisor and Student:** Will the work plan increase communication and knowledge sharing between the advisor and student? Is there an integration of distinct work activities? Will the work plan facilitate innovative problem solving and boost productivity? Will advisor and student provide joint project status updates?

**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?