Great Lakes Observing System
Request for Proposals for Smart Great Lakes Mini-Grant Program

Program Overview and Goals

The Smart Great Lakes Mini-Grants program intends to advance: 1) the development and deployment of smart technologies to improve the monitoring of the ecological health of the Great Lakes, 2) the effective management of data, and 3) the creation of information tools that serve stakeholders' needs.

The program will support projects ranging from $20,000 up to $150,000 USD. Through this solicitation GLOS expects to fund about ten to fifteen projects, most of them around the average range of $50,000 USD. The awards will be made in April 2021, and projects will run for twelve months starting in May 2021.

GLOS would like to support work that 1) improves Great Lakes observations, data management and/or information delivery, 2) contributes to the development of GLOS information technology platform to better address local, state, provincial, and/or regional Great Lakes information needs, and/or 3) helps advance real-time use and management of the lakes.

Organizational Background

GLOS' mission is to provide end-to-end data services that support science, policy, management, and industry in the Great Lakes.

In 2019, GLOS laid out its new *Smart Great Lakes vision* in *GLOS 2020-2025 Strategic Plan*. The plan recognizes that innovations in water monitoring technology paired with advanced capabilities to manage and analyze big data can generate on-demand and more accurate information that leads to better decision-making. Since 2019, GLOS has been working with partners around the region to build a smart technology-based ecosystem that provides stakeholders with the information and tools needed to improve the use and management of the lakes. Integral components of this ecosystem are:

- *The Smart Great Lakes Initiative (SGLi)*, a binational, collaborative effort, launched by GLOS in October 2019,
- *Seagull*, GLOS' next generation cloud-based information technology platform, and
- The Great Lakes observational network, comprised of both real-time and delayed mode observing and monitoring assets.

The SGLi includes private industry, state, provincial, federal, tribal, academic, and non-profit partners, and stakeholders. Its goal is to help identify and meet the information needs of the region's policy makers, municipal and natural resource managers, and recreational users, among others.

Seagull connects smart devices, technology, and information services with stakeholders. It will be launched in 2021 to serve the region's data aggregation and information needs for Great Lakes use and management.

Areas of Interest

GLOS is soliciting proposals that address one or more of the following areas of interest:

- Maintenance and/or upgrades of existing observing assets to be deployed during the 2021 field season in the Great Lakes.
- Expansion of the Great Lakes observing network by deploying new observing assets in areas that are currently poorly observed, where data is wanted to serve stakeholders' needs.
- Consistent with *Lakebed 2030*, work towards mapping the 95% of the Great Lakes that remain unmapped as of 2019.
- Development and/or testing of new innovative observing technologies, or data analytic tools that can help our understanding of the Great Lakes and serve stakeholders needs.
- Development and/or improvement of numerical models used to provide decision-making information in the Great Lakes region.
- Development and/or improvement of data management workflows and frameworks using cloud based technologies to handle data ingestion, storage, transformation and dissemination.

GLOS will also accept proposals for projects and pilot projects that address other observing and information challenges ranging from addressing specific technological observing issues to more general lake management challenges, including information and data gaps.

Some examples of potential projects are included below for illustration purposes only:

- Deploying observing assets to support under-ice physical and biochemical observations year-round at a location that could help inform numerical simulations.
- Performing intercomparison field tests of low-cost biogeochemical sensors.
- Developing/testing remote sensing techniques to distinguish Harmful Algal Bloom (HAB) species predominant in the Great Lakes.
- Implementing data assimilation techniques into numerical models to improve the Great Lakes forecasting system.
- Using machine learning techniques to enhance Great Lakes numerical model simulations, or the automated quality control of observing data.
- Developing frameworks for efficient storage and processing of oceanographic multidimensional datasets on cloud.
- Developing and testing cloud based IOT frameworks for ingestion and processing of continuous streaming data from the observing assets in real time.

Eligibility and Additional Considerations

GLOS can support funding of governmental agencies, non-profit organizations, academic institutions, and for-profit organizations. No awards will be made for projects that duplicate or significantly overlap existing programs.

Proposals can be submitted by one or more applicants, but at least one of the applicants must be a permanent employee of the organization that will receive the award.

Successful applicants will:

- Collaborate with GLOS team members to ensure adequate data transfer to the GLOS IT platform of any outcomes, data, tools, and/or other pertinent information produced with the support of the award,
- Allow access throughout the project to pertinent information and data, and
- Disclose in writing equipment purchases of more than $5,000.

Salary support will only be considered if adequately justified. Cost-sharing and/or in-kind contributions are highly encouraged but not required. GLOS reserves the right to negotiate the budget of successful projects.

Proposal Evaluation Criteria

Proposals will be reviewed by GLOS staff based on the following review criteria:

- Relevance to GLOS' Smart Great Lakes vision.
- Merit of the proposed work to produce Great Lakes information, data, and/or products that respond to stakeholders' needs and improve the use and/or management of the lakes.
- Focus and/or impact of project within binational Great Lakes watershed, with priority on the Great Lakes proper and/or the lakes' connecting channels
- Feasibility, clarity, and scientific soundness of the proposed plan, including long-term sustainability of projects where applicable.
- Applicants' demonstrated technical expertise.
- Project teams' engagement of adequate organizations, stakeholders, and resources to accomplish the proposed outcomes.
- Budget appropriateness and cost efficiency.

Mini-Grant Project Timeline

- January 6, 2021:   RFP release date
- March 12, 2021:   Proposal submissions due
- April 2, 2021:   Announcement of awards
- May 14, 2021:   Project start date
- November 15, 2021: Progress report due
- May 16, 2022:   Project end date
- June 16, 2022:   Final report due

Mini-Grant Proposal Format:

Proposals must include the following sections, and they should adhere to the page limits indicated below for each section. Use 12-point font, and 1" margins throughout.

- Title Page (one page)
  - Project title
  - Applicants' names, roles, affiliation information, emails, and phone numbers
  - Amount requested
  - Institutional signature(s)
- Project Description (up to six pages)
  - Summary (<200 words; it will be included in GLOS website)
  - Project Background, Purpose, and Objectives
  - Project Approach, Methods, Deliverables, and Outcomes
  - Timeframe
- Personnel (one page)
  - Include a detailed description of the role of each applicant
  - In multi-organizational proposal include an explanation of the nature of the collaboration
- Budget ([refer to this budget template](); will automatically download)
- Budget justification (up to one page)
  - Justify clearly and in detail applicants' requests for salaries, fees, travel, and any equipment procurement.
  - Explain any cost-sharing, and detail any in-kind contributions
- Personnel CV(s)
  - Include up to two-page CV(s) for each applicant
- References
- Letter(s) of support
  - Required only if applicant(s) proposes to make use of facilities, personnel, or other resources external to their organizations.

Submittal of Proposals

Proposal submittal should be sent electronically as a single PDF attachment to minigrants-2021rfp@glos.org. Proposals are due by March 12, 2021 5:00pm eastern time.

Reporting Requirements

Successful applicants will be required to submit a progress report six months after the start of the project, and a final report at the end of the project. Selected award recipients will also be asked to present their findings in one or more GLOS-led webinar(s).

Contact Information

Please reach out via email with any questions or to discuss concerns.

Email: minigrants-2021rfp@glos.org