

PROJECT ANNOUNCEMENT

**US Army Corps of Engineers (USACE)
Engineer Research and Development Center (ERDC)**

Title: Developing Generalizable Approach for Coupled CyanoHAB Predictive Models

Announcement Type: Initial Announcement

Funding Opportunity Number: W81EWF-23-SOI-0021

Assistance Listing Number: 12.630

Date Issued: 20 June 2023

Key Dates: Phase I announcement will be open to receive statements of interest continuously until 1:00 Central Time (CT), 20 July 2023, at which point all statements of interest must be received.

If invited to Phase II, full proposal applications will be due at 1:00 Central Time (CT), 07 August 2023.

Estimated Award Ceiling: \$250,000

Estimated Total Program Funding: \$250,000 total over 1.5 years

Agency Contact: Stacy Thurman, Stacy.D.Thurman@usace.army.mil

I. Program Description

A. Short Description of Funding Opportunity

ERDC seeks application to support generalization of coupled watershed and hydraulic models capable of predicting cyanobacteria Harmful Algal Blooms (HABs) in freshwater systems.

B. Background

Aquatic nuisance species, including harmful algae, impact freshwater lakes and reservoirs, infrastructure, operations, and associated resources across the Nation. HABs have resulted in recreational closures, public health concerns, and billions of dollars in economic impacts. HABs are increasing in frequency and duration, resulting in environmental, socio-economic, and human/wildlife health concerns. To stop the spread of HABs, innovative, cost-effective, and scalable technologies for early HAB detection, prediction, and management are needed. Researchers in Florida have developed and demonstrated an ecohydrologic modeling approach for Florida's Lake Okeechobee (Lake O), which is capable of simulating nutrient loadings into Lake O from the watershed and then growth of harmful cyanobacteria within Lake O. This research will leverage the existing coupled watershed and hydrodynamic modeling capable of simulating growth of cyanobacteria in Lake O and develop code, input file templates, and other materials required to make the coupled watershed/hydrodynamic modeling approach developed for Lake O generalizable for streamlined application of the approach to other freshwater lakes, reservoirs or riverine systems across the Nation.

C. Program Description/Objective: (brief description of the anticipated work)

This project will establish an interdisciplinary collaboration between USACE and a partner to accomplish numbered objectives below. Successful proposals will also (a) clearly identify question(s) the proposed project will seek to answer (i.e., project technical objectives); (b) clearly describe the tasks and data required to answer those question(s) (i.e., data quality objectives); and (c) describe envisioned project deliverables by task. Proposals that demonstrate intent to maximize use of existing federal and state HAB programs, activities, and data are encouraged. Successful proposals will identify quantitative and qualitative success criteria for each project task.

This project will:

- 1) Develop code (open source), input file templates, and all other materials required to make the coupled watershed/hydrodynamic modeling approach developed for Lake O generalizable for streamlined application at other fresh waterbodies for the purposes of simulating watershed processes and nutrient loadings into freshwaters and cyanobacteria Harmful Algal Bloom (cyanoHAB) dynamics in receiving waters.
- 2) Demonstrate the generalizable framework for application at water resource development project or waterbody that is currently the focus of a USACE-sponsored HAB research project and document findings in a case study report. The field site should be identified in the pre-proposal submitted in response to this funding opportunity announcement.
- 3) Complete a draft case study report summarizing the generalized modeling approach in a step-by-step tutorial water managers (not modeling experts) can utilize to apply the modeling approach at their sites. Includes all files, user guides, and instructions required for successful application – as well as lessons learned and frequently asked questions (FAQ) sections.
- 4) Complete a final case study report incorporating feedback from non-expert beta testers of the generalizable framework.
- 5) A fact sheet, quarterly progress reports, draft and final case study reports with associated electronic files, and a presentation at the yearly In-Progress Review are required.

6)

D. Public Benefit

Harmful algal blooms (HABs) are occurring with greater frequency in lakes, reservoirs, and rivers across the Nation, resulting in public health concerns and billions of dollars in economic impacts. The proposed research will create a simplified modeling approach water managers can utilize to predict cyanoHABs in freshwaters and account for watershed processes in doing so. Creating generalizable cyanoHAB predictive models and a case study that documents its use will benefit the public by 1) making complex models more accessible and applicable to field sites of interest where cyanoHAB prediction is needed to support proactive cyanoHAB risk management, and 2) generating a case study with step-by-step instructions, which will explain the science and modeling methods in simple terms thereby increasing transparency and promoting public engagement in cyanoHAB prediction tools.

E. Authorization: 10 USC 4001

F. Legal Requirements

Each Cooperative Agreement awarded under this announcement will be governed by 2 CFR 200, “Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards”, 2 CFR 1100 Subchapter D—Administrative Requirements Terms and Conditions for Cost-Type Grants and Cooperative Agreements to Nonprofit and Governmental Entities and the DoD research general terms and conditions located at <https://www.nre.navy.mil/work-with-us/manage-your-award/manage-grant-award/grants-terms-conditions>.

G. Program-Specific Requirements

Appendix C to Part 1122—Terms and Conditions for NP Article III, “National Policy Requirements Concerning Live Organisms”

A DoD Component must use the following wording for NP Article III of its general terms and conditions in accordance with the provisions of Subpart B of this part.

NP Article III. National policy requirements concerning live organisms. (December 2014)

Section A. Cross-cutting requirements concerning live organisms.

1. Human subjects.

a. You must protect the rights and welfare of individuals who participate as human subjects in research under this award and comply with the requirements at 32 CFR part 219, DoD Instruction (DoDI) 3216.02, 10 U.S.C. 980, and when applicable, Food and Drug Administration (FDA) regulations.

b. You must not begin performance of research involving human subjects, also known as human subjects research (HSR), that is covered under 32 CFR part 219, or that meets exemption criteria under 32 CFR 219.101(b), until you receive a formal notification of approval from a DoD Human Research Protection Official (HRPO). Approval to perform HSR under this award is received after the HRPO has performed a review of your documentation of planned HSR activities and has officially furnished a concurrence with your determination as presented in the documentation.

- c. In order for the HRPO to accomplish this concurrence review, you must provide sufficient documentation to enable his or her assessment as follows:
 - i. If the HSR meets an exemption criterion under 32 CFR 219.101(b), the documentation must include a citation of the exemption category under 32 CFR 219.101(b) and a rationale statement.
 - ii. If your activity is determined as “nonexempt research involving human subjects”, the documentation must include:
 - (A) Assurance of Compliance (*i.e.*, Department of Health and Human Services Office for Human Research Protections (OHRP) Federalwide Assurance (FWA)) appropriate for the scope of work or program plan; and
 - (B) Institutional Review Board (IRB) approval, as well as all documentation reviewed by the IRB to make their determination.
- d. The HRPO retains final judgment on what activities constitute HSR, whether an exempt category applies, whether the risk determination is appropriate, and whether the planned HSR activities comply with the requirements in paragraph 1.a of this section.
- e. You must notify the HRPO immediately of any suspensions or terminations of the Assurance of Compliance.
- f. DoD staff, consultants, and advisory groups may independently review and inspect your research and research procedures involving human subjects and, based on such findings, DoD may prohibit research that presents unacceptable hazards or otherwise fails to comply with DoD requirements.
- g. Definitions for terms used in paragraph 1 of this article are found in DoDI 3216.02.

2. *Animals.*

- a. Prior to initiating any animal work under the award, you must:
 - i. Register your research, development, test, and evaluation or training facility with the Secretary of Agriculture in accordance with 7 U.S.C. 2136 and 9 CFR 2.30, unless otherwise exempt from this requirement by meeting the conditions in 7 U.S.C. 2136 and 9 CFR parts 1–4 for the duration of the activity.
 - ii. Have your proposed animal use approved in accordance with Department of Defense Instruction (DoDI) 3216.01, Use of Animals in DoD Programs by a DoD Component Headquarters Oversight Office.
 - iii. Furnish evidence of such registration and approval to the grants officer.
- b. You must make the animals on which the research is being conducted, and all premises, facilities, vehicles, equipment, and records that support animal care and use available during business hours and at other times mutually agreeable to you, the United States Department of Agriculture Office of Animal and Plant Health Inspection Service (USDA/APHIS) representative, personnel representing the DoD component oversight offices, as well as the grants officer, to ascertain that you are compliant with 7 U.S.C. 2131 *et seq.*, 9 CFR parts 1–4, and DoDI 3216.01.
- c. Your care and use of animals must conform with the pertinent laws of the United

States, regulations of the Department of Agriculture, and regulations, policies, and procedures of the Department of Defense (see 7 U.S.C. 2131 *et seq.*, 9 CFR parts 1–4, and DoDI 3216.01).

d. You must acquire animals in accordance with DoDI 3216.01.

3. *Use of Remedies.*

Failure to comply with the applicable requirements in paragraphs 1–2 of this section may result in the DoD Component’s use of remedies, *e.g.*, wholly or partially terminating or suspending the award, temporarily withholding payment under the award pending correction of the deficiency, or disallowing all or part of the cost of the activity or action (including the federal share and any required cost sharing or matching) that is not in compliance. See OAR Article III.

II. Federal Award Information

The following information applies to awards issued under this announcement:

- This is a one-time initiative
- The Government anticipates 1 Federal awards from this announcement, but reserves the right to award more or less
- The total amount of funding expected to be awarded through this announcement is \$250,000
- The expected total award amount of \$250,000 will result in a project with an anticipated period of performance of 1.5 years
- Award(s) from this announcement will be Cooperative Agreement(s)
- The anticipated period of performance is 18 months.
- Applications for renewal or supplementation of existing projects are eligible to compete with applications for new Federal awards
- The government reserves the right to accept only portions of an application and to negotiate with potential awardees
- Government’s substantial involvement includes 1) cooperation in questionnaire development, review and recommendations of topics, and gathering of data from Districts/Divisions as needed; 2) review HAB event reporting template; 3) technical review of publications and presentations, dissemination of the results of the publications.

III. Eligibility Information

A. Eligible Applicants

This opportunity is restricted to non-federal partners of the Gulf Coast Cooperative Ecosystems Studies Unit (CESU).

Disclosures of current and pending support made in this application may render an applicant ineligible for funding. Prior to award and throughout the period of performance, ERDC may continue to request updated continuing and pending support information, which will be reviewed and may result in discontinuation of funding.

Religious organizations are entitled to compete on equal footing with secular organizations for Federal financial assistance as described in E.O. 13798, “Promoting Free Speech and Religious Liberty.”

B. Cost Sharing or Matching

This action will be 100% funded by USACE.

C. Conflict of Interest

a) General Requirement for Disclosure

You and your organization must disclose any potential or actual scientific or nonscientific conflict of interest(s) to us. You must also disclose any potential or actual conflict(s) of interest for any identified sub recipient you include in your application. We may have to ask you more questions if we need more information.

At our discretion, we may ask you for a conflict-of-interest mitigation plan after you submit your application. Your plan is subject to our approval.

b) Scientific Conflict of Interest

Scientific collaborations on research and development projects are generally the result of close collaboration prior to the submission of applications for support. Accordingly, these collaborations should be considered when considering potential conflicts of interest. The potential conflict is mitigated by the disclosure of these collaborations, and the list of current and pending support you provide for senior and key researchers. Therefore, you must include in your list of current and pending support for all collaborators, even if they did not formally provide support.

D. Other

a) Licensure or Certification

You must include the Acknowledgment of Support and Disclaimer on all materials created or produced under our awards. This language may be found in the Terms and Conditions included in the award documents.

E. Certifications, representations, and assurances

1. To apply for grants and other funding opportunities the applicant entity must have an active registration in the System for Award Management (SAM). Applications will not be accepted through Grants.gov or other methods unless the entity is registered in SAM. Registration in SAM now includes the acceptance of Certifications and Assurances. See

<https://www.grants.gov/web/grants/grantors/grantor-standard-language.html>
for details on how to register in SAM, and Grants.gov

2. The Federal Assistance Certifications Report is an attestation that the entity will abide by the requirements of the various laws and regulations; therefore, as applicable, you are still required to submit any documentation, including the SF-LLL Disclosure of Lobbying Activities (if award value exceeds \$100,000.00), and, if applicable, informing DoD of unpaid delinquent tax liability or a felony conviction under any Federal law.
3. Certification Regarding Disclosure of Funding Sources. By checking "I Agree" on the SF 424 (R&R) block 17 you agree to abide by the following statement: "By signing this application, I certify the proposing entity is in compliance with Section 223(a) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 which requires that: (a) the PI and other key personnel certify that the current and pending support provided on the proposal is current, accurate and complete; (B) agree to update such disclosure at the request of the agency prior to the award of support and at any subsequent time the agency determines appropriate during the term of the award; and (c) the PI and other key personnel have been made aware of the requirements under Section 223(a)(1) of this Act. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. code, Title 218, Section 1001)."

IV. Application and Submission Information (2 Phase Process)

A. Phase I: Submission of Statement of Interest (SOI)

1. Materials Requested for Statement of Interest/Qualifications:

a. Please provide the following via e-mail attachment to: Stacy Thurman, Stacy.D.Thurman@usace.army.mil (Maximum length: 2 pages, single-spaced 12 pt. font).

i. Name, Organization and Contact Information

ii. Brief Statement of Qualifications (including):

- Biographical Sketch,
- Relevant past projects and clients with brief descriptions of these projects,
- Staff, faculty or students available to work on this project and their areas of expertise,
- Any brief description of capabilities to successfully complete the project you may wish to add (e.g. equipment, laboratory facilities, greenhouse facilities, field facilities, etc.).

Note: A proposed budget is NOT requested at this time.

The administrative point of contact is Stacy Thurman, Stacy.D.Thurman@usace.army.mil

2. ERDC will only accept SOIs submitted on or before 20 July 2023, 1:00 Central Time (CT).

Based on a review of the Statements of Interest received, an investigator or investigators will be invited to move to Phase II which is to prepare a full study proposal. Statements will be evaluated based on the investigator's specific experience and capabilities in areas related to the study requirements.

B. Phase II (if invited): Submission of Full Application Package

1. Address to Request Application Package

The complete funding opportunity announcement, application forms, and instructions are available for download at Grants.gov.

The administrative point of contact is Stacy Thurman, Stacy.D.Thurman@usace.army.mil.

2. Content and Form of Application Submission

All mandatory forms and any applicable optional forms must be completed in accordance with the instructions on the forms and the additional instructions below.

- a. SF 424 R&R - Application for Federal Assistance
- b. Full Technical Proposal – Discussion of the nature and scope of the research and technical approach. Additional information on prior work in this area, descriptions of available equipment, data and facilities, and resumes of personnel who will be participating in this effort should also be included.
- c. Cost Proposal/Budget – Clear, concise, and accurate cost proposals reflect the offeror's financial plan for accomplishing the effort contained in the technical proposal. As part of its cost proposal, the offeror shall submit a full budget in sufficient detail so that a reasonableness determination can be made. A recommended template will be included in the invitation to Phase II. The SF 424 Research & Related Budget Form can be used as a guide but is required if the sub-recipient uses it. The cost breakdown should include the following, if applicable:
 1. Direct Labor: Direct labor should be detailed by level of effort (i.e. numbers of hours, etc.) of each labor category and the applicable labor rate. The source of labor rates shall be identified and verified. If rates are estimated, please provide the historical based used and clearly identify all escalation applied to derive the proposed rates.
 2. Fringe Benefit Rates: The source of fringe benefit rate shall be identified and verified.
 3. Travel: Travel costs must include a purpose and breakdown per trip to

- include destination, number of travelers, and duration.
- 4. Materials/Equipment: List all material/equipment items by type and kind with associated costs and advise if the costs are based on vendor quotes and/or engineering estimates; provide copies of vendor quotes and/or catalog pricing data.
- 5. Subrecipient costs: Submit all subrecipient proposals and analyses. Provide the method of selection used to determine the subrecipient.
- 6. Tuition: Provide details and verification for any tuition amounts proposed.
- 7. Indirect Costs: Currently the negotiated indirect rate for awards through the CESU is 17.5%.
- 8. Any other proposed costs: The source should be identified and verified.

d. R&R Senior/Key Person Profile

- 1. Biographical Sketch
- 2. Disclosure of Current and Pending Support:
 - i. A list of all current projects the individual is working on, in addition to any future support the individual has applied to receive, regardless of the source.
 - ii. Title and objectives of the other research projects.
 - iii. The percentage per year to be devoted to the other projects.
 - iv. The total amount of support the individual is receiving in connection to each of the other research projects or will receive if other applications are awarded.
 - v. Name and address of the agencies and/or other parties supporting the other research projects.
 - vi. Period of performance for the other research projects.

e. SF-LLL Disclosure of Lobbying Activities (if award value exceeds \$100,000.00)

f. Data Management Plan:

A data management plan is a document that describes which data generated through the course of the proposed research will be shared and preserved, how it will be done, or explains why data sharing or preservation is not possible or scientifically appropriate, or why the costs of sharing or preservation are incommensurate with the value of doing so. See also: DoD Instruction 3200.12.

<https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/320012p.pdf?ver=2019-04-30-073122-220>

Data management plans are generally 2 pages in length, and must include the following considerations:

- (1) The types of data, software, and other materials to be produced.
- (2) How the data will be acquired.
- (3) Time and location of data acquisition, if scientifically pertinent.

- (4) How the data will be processed.
- (5) The file formats and the naming conventions that will be used.
- (6) A description of the quality assurance and quality control measures during collection, analysis, and processing.
- (7) A description of dataset origin when existing data resources are used.
- (8) A description of the standards to be used for data and metadata format and content.
- (9) Appropriate timeframe for preservation.
- (10) The plan may consider the balance between the relative value of data preservation and other factors such as the associated cost and administrative burden. The plan will provide a justification for such decisions.
- (11) A statement that the data cannot be made available to the public when there are national security or controlled unclassified information concerns (e.g., “This data cannot be cleared for public release in accordance with the requirements in DoD Directive 5230.09.”)

3. ERDC will only accept full application packages submitted on or before 07 August 2023, 1:00 Central Time (CT).

4. Submission Instructions

Choose **ONE** of the following submission methods:

a. E-mail:

Format all documents to print on Letter (8 ½ x 11”) paper. E-mail proposal to Stacy Thurman, Stacy.D.Thurman@usace.army.mil.

b. Grants.gov: <https://www.grants.gov/>:

Applicants are not required to submit proposals through Grants.gov. However, if applications are submitted via the internet, applicants are responsible for ensuring that their Grants.gov proposal submission is received in its entirety.

All applicants choosing to use Grants.gov to submit proposals must be registered and have an account with Grants.gov. It may take up to three weeks to complete Grants.gov registration. For more information on registration, go to <https://www.grants.gov/web/grants/applicants.html>.

Organizations must have a Unique Entity Identifier (UEI) and active System for Award Management (SAM) registration to apply for Federal financial assistance.

C. Application Withdrawal:

An applicant may withdraw an application at any time before award by written notice via email. Notice of withdrawal shall be sent to the agency point of contact identified in this announcement, and are effective upon receipt.

D. Funding Restrictions

Per 2 CFR § 200.216, funds may not be used to procure telecommunications equipment or video surveillance services or equipment produced by

- Huawei Technologies Company,
- ZTE Corporation Hytera Communications Corporation,
- Hangzhou Hikvision Digital Technology Company,
- Dahua Technology Company
- any subsidiary or affiliate of such entities

Funds from an award may not be used to attain fee or profit.

V. Application Review Information

A. Selection Criteria

Applications will be evaluated using the following criteria, listed in descending order of importance:

- Technical merits of the proposed research and development; and
- Potential relationship of the proposed research and development to Department of Defense missions
- Any other criteria

B. Review and Selection Process:

Each application will be reviewed based on the selection criteria above rather than against other applications submitted under this Announcement.

Based on the Peer or Scientific Review, proposals will be categorized as Selectable or Not Selectable (see definitions below). The selection of the source for award will be based on the Peer or Scientific Review, as well as importance to agency programs and funding availability.

- i. Selectable: Proposals are recommended for acceptance if sufficient funding is available.
- ii. Not Selectable: Even if sufficient funding existed, the proposal should not be funded.

Note: The Government reserves the right to award some, all, or none of proposals. When the Government elects to award only a part of a proposal, the selected part may be categorized as Selectable, though the proposal as a whole may not merit such a categorization.

In addition to the technical/program review, the DoD performs a budget review and a risk review as directed by 2 CFR 200.206, including a review of the Federal Awardee Performance and Integrity Information System (FAPIIS). Applicants may review information in FAPIIS and comment on any information entered into that system. Comments made by applicants will be taken into account in addition to other information in considering applicants' integrity, business ethics, and record of performance.

VI. Federal Award Administration Information

The notification e-mail regarding a selection is not authorization to commit or expend DoD funds. A DoD grants officer is the only person authorized to obligate and approve the use of federal funds. This authorization is in the form of a signed Notice of Award. Applicants whose applications are recommended will be contacted by a DoD grants officer to discuss any additional information required for award. This may include representations and certifications, revised budgets or budget explanations, or other information as applicable to the proposed award. The award start date will be determined at this time.

VII. Reporting Requirements

The terms and conditions of the award will provide the specifics on how to submit the reports and any required sections for those reports.

In accordance with 2 CFR 200.328 (Financial Reporting) and 2 CFR 200.329 (Program Performance)

Report	Requirements/Form	Frequency	Means of Submission
ERDC Progress Report		Progress during the period covered by the corresponding SF 270 via email submission	E-mail
Research Performance Progress Reports (Interim and Final)	OMB Control Number: 0704-0527	Annually	E-mail
Financial Report	SF 425	Quarterly	E-mail
Payment Report	SF 270	Monthly	E-mail
Closeout Report	See OAR Article VI of DoD R&D General Terms and Conditions	Once	E-mail

Awardees will need to comply with the reporting requirements in 2 CFR 170: Reporting Subaward and Executive Compensation Information.

The terms and conditions of the award will provide the specifics on how to submit the reports and any required sections for those reports.

VIII. Federal Contacts

Questions should be directed to:

Stacy Thurman
Grant Specialist
Stacy.D.Thurman@usace.army.mil

Chelsea Whitten
Grants Officer
Chelsea.M.Whitten@usace.army.mil

Questions regarding Grants.gov should be directed to: the toll-free number 1-800-518-4726 and email at support@grants.gov.

IX. Other Information

The Federal government is not obligated to make any Federal award as a result of the announcement. Only grants officers can bind the Federal government to the expenditure of fund.

Applicants are advised to monitor Grants.gov for potential amendments to this Notice of Funding Opportunity. You can also elect to be automatically notified by Grants.gov whenever there is a change to the opportunity.

Applications must not include any information that has been identified as classified national security information under authorities established in Executive Order 12958, Classified National Security Information.