

NOAA Funding Opportunity

NOAA-NOS-NCCOS-2023-2007530

National Competitive Harmful Algal Bloom Programs: PCMHAB and MERHAB

Maggie Broadwater, Marc Suddleson, Brittany King
NOAA NCCOS Competitive Research Program (CRP)



Agenda

- Background
 - NCCOS Competitive Research Program
 - National Competitive HAB Programs
 - Mandates and Justification
- PCMHAB Program Priorities
- MERHAB Program Priorities
- Diversity, Equity and Inclusion
- Award Information
- Eligibility
- Letter of Intent
- Full Proposal
- Evaluation Criteria
- Final Advice
- **Q&A with program managers**



NCCOS Competitive Research Program

- NCCOS CRP supports the development of actionable information and tools that improve how the nation protects, manages, and conserves ocean and coastal ecosystems
 - **Harmful algal blooms**
 - Hypoxia
 - Ocean acidification
 - Sea-level rise
 - Mesophotic coral ecosystems
 - Ecosystem-based management
- **Objective**: Produce **actionable information** and **user-driven products** that enable resource managers to **assess management and policy strategies**, and to **improve understanding** of threats to ecosystems and communities
- **Collaborative research process** – resource managers, planners, policymakers, and impacted communities are **partners** or **advisors** on research projects
- Research outcomes must benefit management

National Competitive HAB Programs

- **Harmful algal blooms* (HABs)** are marine and freshwater phytoplankton[†] that have proliferated to high[‡] concentrations, resulting in nuisance conditions or harmful impacts on marine and aquatic ecosystems, coastal communities, and human health through the production of toxic compounds or other biological, chemical, and physical impacts of the algae outbreak
- **Objective**: Address HAB occurrence and impacts on coastal ecosystems, public health, and the economy
- NCCOS CRP funds HAB research to advance a holistic ecosystem understanding, enhance mitigation capacity, develop and advance control strategies, and support better measures of socioeconomic impacts

* Consistent with HABHRCA 2017, 33 U.S.C. §4008(3)

[†] Includes microalgae, cyanobacteria, or macroalgae

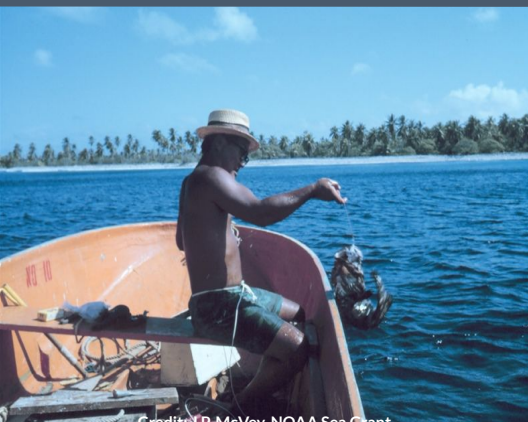
[‡] In relation to baseline or abundances observed during non-bloom or non-nuisance conditions, or in the absence of harmful impacts

Legislative Mandates and Executive Justification

- Under the Harmful Algal Bloom and Hypoxia Research and Control Act (HABHRCA 2017), NCCOS CRP aims to
 - advance a holistic ecosystem understanding of HABs critical for improved prediction
 - enhance HAB mitigation capacity through improved observing and detection, early warning and forecasting, and approaches that reduce or eliminate toxic and non-toxic effects
 - develop and advance HAB control strategies
 - support better measures of the social and economic impacts of HABs
- NCCOS CRP's National Competitive HAB Programs also advance DOC and NOAA initiatives
 - Blue economy
 - Ecological forecasting
 - Safe seafood
 - National HAB Observing Network (NHABON)

PCMHAB: Prevention, Control & Mitigation

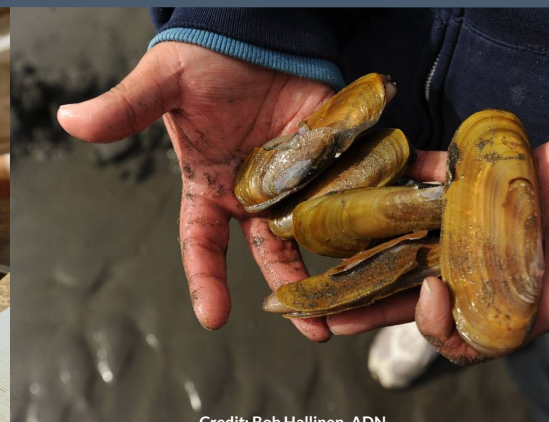
- The PCMHAB program transitions promising technologies and strategies for preventing, controlling, or mitigating HABs and their impacts from development through demonstration and technology transfer for field application by end-users.
- This funding opportunity will focus on mitigation by requesting proposals for the development, demonstration, and transfer of methods to end-users for detecting or monitoring HAB toxins in molluscan shellfish and other seafood to protect public health.



Credit: J.P. McVey, NOAA Sea Grant



Credit: Fore Street, Portland, ME



Credit: Bob Hallinen, ADN



Credit: NOAA

PCM HAB Program Priorities

- Proposed projects must include the development, validation, implementation, or transfer of fast, accurate, cost-effective, and fit-for-purpose methods to detect HAB toxins in seafood
 - Laboratory assays and analytical methods for regulatory applications
 - Technologies that advance the detection of HAB toxins in seafood in remote or field settings
- Goals:
 - Increase availability of a wider range of methods for toxin detection in commercial, recreational, and subsistence seafood products, and
 - reduce the incidence of illnesses associated with noncommercial seafood consumption

PCMHAB Program Priorities: Toxin detection

- Toxins produced by cyanobacterial HABs in coastal waters or the Great Lakes
- Toxins produced by marine HABs that cause any of the 6 poisoning syndromes that can occur in the US from consuming fish and fishery products
 - Amnesic shellfish poisoning (ASP)
 - Azaspiracid shellfish poisoning (AZP)
 - Ciguatera poisoning (CP)
 - Diarrhetic shellfish poisoning (DSP)
 - Neurotoxic shellfish poisoning (NSP)
 - Paralytic shellfish poisoning (PSP)

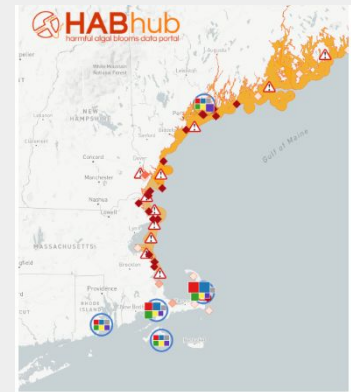
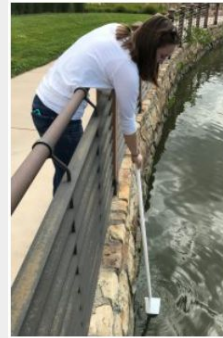
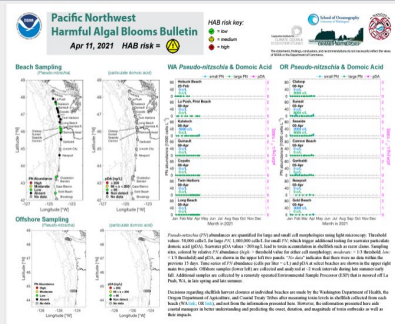
PCMHAB Program Priorities: Key references

- National Shellfish Sanitation Program (NSSP) [Guide for the Control of Molluscan Shellfish](#) 2019 Revision (24)
- Interstate Shellfish Sanitation Conference [Priorities to Improve Shellfish Monitoring for Harmful Algal Bloom Toxins](#) (25)
- US FDA's [Fish and Fishery Products Hazards and Controls Guidance](#). June 2022 Edition (26)
- Langlois & Morton 2018. Marine biotoxin and harmful algae monitoring and management. In: Harmful algal blooms: A compendium desk reference. (27)
- [Dillon et al. 2021. Current Trends and Challenges for Rapid SMART Diagnostics at Point-of-Site Testing for Marine Toxins. Sensors, 21, 2499](#) (30)

MERHAB - Monitoring and Event Response

The Monitoring and Event Response for Harmful Algal Blooms (MERHAB) Research Program builds capacity along our coasts for enhanced HAB monitoring and response.

This helps NOAA and state partners identify when beaches, shellfisheries, marine animals and ecosystems are at risk from harmful algae, and supports informed decisions that protect public health and safeguard our coastal economies.



MERHAB Program Priorities

Proposals advance at least one of the following MERHAB priorities:

- Mitigate HAB impacts by incorporating proven research products into monitoring applications and advocating for their adoption into routine operation;
- Support validation of HAB applications, comparison to existing technologies, and training needed to effectively utilize and support their adoption; and,
- Demonstrate the value of using HAB technologies to increase utility of enhanced monitoring and regional observing systems for HAB early warning and forecasting.

MERHAB Program Priorities - Cont.

Proposals must also advance at least one of these MERHAB focus areas:

- Address management concerns associated with emerging ecosystem and public health threats associated with multiple HAB toxins, including cyanotoxins, in coastal waters;
- Enhance regional HAB observing capabilities and foster the National HAB Observing Network (NHABON) to support early warning, forecasting, and ecological research to better assess climate change impacts on HABs. Efforts will further NCCOS-IOOS collaboration and leverage capabilities of IOOS Regional Associations;
- Expand monitoring to minimize HAB-related disruptions to wild and farmed seafood production, coastal tourism and recreation, Great Lakes drinking source waters, and healthy coastal ecosystems; and,
- Support communities impacted by HABs that depend on coastal resources for subsistence and cultural use.

MERHAB Program Priorities: Key references

- NCCOS and US IOOS 2020. [Framework for the National Harmful Algal Bloom Observing Network: A Workshop Report](#) (20)
- NOAA Office of Aquaculture Fact Sheet 2022. [Harmful Algal Bloom Impacts on Aquaculture](#) (23)
- Howard et al. 2022. [Integrative monitoring strategy for marine and freshwater harmful algal blooms and toxins across the freshwater-to-marine continuum](#). Integrated Environmental Assessment and Management (31)
- Preece et al. 2017. [A review of microcystin detections estuarine and marine waters—Environmental implications and human health risk](#). Harmful Algae (32)

Diversity, and Inclusion

Diversity is the mixture of the unique attributes that shape an individual's identity which they bring into the workplace to help NOAA accomplish its goals

- Demographic diversity (e.g., race, gender, sexual orientation)
- Experiential diversity (e.g., affinities, hobbies, and abilities)
- Cognitive diversity (e.g., sensory processing and problem solving)

Inclusion is a culture that values the unique attributes of all team members.

- An inclusive environment is respectful, collaborative, supportive, and allows for equal access.
- Inclusion requires active and intentional engagement on the part of everyone and provides a feeling of belonging.

Equity

Equity is the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment

NOAA encourages applicants and awardees to support the principles of diversity, equity, and inclusion when writing their proposals and performing their work.

NOFO Language

PCMHAB (page 12)

Address specific needs of resource managers or stakeholder communities that are vulnerable to cultural or subsistence impacts from HAB events.

MERHAB (page 14)

Support communities impacted by HABs that depend on coastal resources for subsistence and cultural use.

Statement of Diversity and Inclusion

In this section, describe how well the proposed activity incorporates the principles of diversity, equity, and inclusion.

Examples could include, but are not limited to:

- broadening the participation of underrepresented groups
- partnering with underserved communities to ensure relevant science, services and tools reach decision-makers
- partnering with minority serving institutions or programs that promote diversity in science, technology, engineering, and mathematics (STEM)
- having a diverse project team or, if applicable, a project advisory committee across several factors (e.g., sectors, age, career stage, gender, ethnicity, disability, geography, etc.);
- encouraging diverse perspectives from project team members and partners; and or fostering an inclusive environment that empowers and engages all team members

Award Information & Funding Availability

\$2.8 million anticipated in FY23

(pending NCCOS Competitive Research appropriations)

PCMHAB - up to \$500K

- 2 to 4 targeted projects
- 1 to 2 years
- Targeted projects only
\$125,000-\$250,000 per year
(\$500,000 project max)

MERHAB - up to \$2.3 million

- 6 to 9 projects
- 3 to 5 years
- Targeted projects
 - \$200,000-\$300,000 per year
- Regional projects
 - \$500,000-\$600,000 per year

Eligibility

U.S. institutions of higher education, non-profits, state, local, and Indian Tribal Governments, U.S. territories, and for-profit organizations

Federal applicants are eligible (*NCCOS researchers cannot be the lead PI)

No cost sharing or matching requirements

NOAA supports cultural and gender diversity and encourages women and minority individuals and groups to submit applications

Applications involving historically black colleges and universities, Hispanic serving institutions, tribal colleges and universities, and institutions that work in underserved areas are encouraged

A Letter of Intent (LOI) **MUST** be submitted for a full proposal to be considered

Required Letter of Intent (LOI)

1. Tentative project title,
2. Identify lead and provide contact info for all PIs,
3. Approximate cost of the project,
4. Statement of the problem and its management relevance,
5. Brief summary of work to be completed, methodology to be used, and plan for transitioning results to management application.

Applicant(s) who do not submit an LOI will not be eligible to submit a proposal.

CRP managers will review each LOI to determine if the proposed ideas are responsive to either PCMHAB or MERHAB Program goals.

**LOIs must be submitted to
nccos.grant.awards@noaa.gov
by 11:59 pm Eastern Time on
November 08, 2022**

**Responses emailed ~2 weeks
after LOI deadline.**

**Full proposals encouraged only
for LOIs deemed relevant.**

Full Proposal

1. Standard Form(SF)-424
2. Summary Title Page
3. Abstract
4. Project Description
 - a. Proposed Research
 - b. Application to Management
 - c. Data Management Plan
 - d. Statement of Diversity and Inclusion
5. References cited.
6. Milestone Chart
7. Biographical Sketch
8. Current & Pending Support
9. List of Permits
10. Accomplishments from Prior Federal Support
11. Budget Narrative
12. CD-511
13. SF-424B
14. SF-424A
15. Collaborator List - Alphabetized

**Full proposals must be
submitted to grants.gov by
11:59 pm Eastern Time on
January 31, 2023**

Proposal Evaluation Criteria

1. Importance and/or relevance and applicability to program priorities (35%)
2. Technical/scientific merit (35%)
3. Overall qualifications of applicants (15%)
 - a. Capability of the investigator and collaborators to complete the proposed work (10%)
 - b. Statement of Diversity and Inclusion (5%)
4. Project costs (10%)
5. Outreach and education (5%)

Final Advice

Read the NOFO, read the NOFO, read the NOFO - focus on Program Priorities (Section I. B.)

Submit your LOI by email by the deadline, **November 08, 2022**

Call the Program Managers or the Grants Manager if you have any questions, especially on:

- Applicability of topic to program goals
- Appropriateness of region
- Eligibility of applicant or institution
- Preparing the budget, budget narrative or any other federal forms.

Submit the proposal through Grants online BEFORE the deadline, **January 31, 2023**

If you are not submitting a proposal and have related expertise, please consider serving as a reviewer.

Questions?

NOAA-NOS-NCCOS-2023-2007530

Letters of Intent due 11:59 p.m. Eastern Time on November 08, 2022

Send to nccos.grant.awards@noaa.gov

Full Proposals due 11:59 p.m. Eastern Time on January 31, 2023

Submit on grants.gov

Forms & example application package:

<https://coastalscience.noaa.gov/about/funding-opportunities/application-forms/>

Send additional questions to Program Managers:

Maggie Broadwater at maggie.broadwater@noaa.gov

Marc Suddleson at marc.suddleson@noaa.gov

Felix Martinez at felix.martinez@noaa.gov

CRP Team



Marc Suddleson
MERHAB
Program Manager



Maggie Broadwater
ECOHAB
Program Manager



Felix Martinez
PCMHAB
Program Manager



Quay Dortch
NCCOS Senior
HAB Scientist



Brittany King
Environmental Justice
Specialist