

Request for Qualifications:**TECHNICAL SUPPORT FOR DEVELOPING AND FIELD TESTING IN SITU BIOASSAYS IN THE SURFACE
MIXING LAYER OF MARINE WATERS AT OIL SPILL SITES****Issue Date: October 1, 2018****Due Date: October 22, 2018**

The University of New Hampshire (UNH) Coastal Response Research Center (CRRC) is soliciting proposals for Technical Support for developing and field testing in situ bioassays in the surface mixing layer of marine waters at oil spill sites as identified in the Project Scope of Work herein. Any Proposer wishing to submit a proposal must comply with the requirements contained in this Request for Qualifications (RFQ). Any interpretations, corrections or changes to this RFQ will be made as addenda. Addenda will be posted and available on the CRRC website.

The purpose of this project is to provide technically sound, science-based support to the CRRC as part of its Five-Year Grant from NOAA's Office of Response and Restoration (ORR).

A RFQ process will be used to select the successful Proposer that will be issued a subaward under UNH's prime award. The selection process will consist of two phases. During Phase 1, Proposers will submit qualifications to be considered; specifically addressing their ability to meet the technical requirements listed in this RFQ (e.g., documented experience with using bioassays for oil toxicity testing, a working prototype for in situ toxicity testing in the marine mixed surface layer). Only those Proposers that respond to Phase 1 on or before the October 22, 2018 deadline and meet the qualifications criteria will be included in Phase 2 of the selection process. The Phase 1 pre-qualification step will streamline the process, insuring that only those Proposers that have the unique and specific technical expertise/equipment/experience required for this project are considered. Phase 2 will evaluate the ability of each of the Proposers pre-qualified in Phase 1 to perform the work detailed in this RFQ document within the available time and budget.

1. BACKGROUND

Oil spills may cause injuries to organisms that are exposed to dissolved oil chemicals and particulate oil in the surface mixing layer of the water column. Neutrally or positively buoyant early life stages of fish and invertebrates are particularly susceptible to oil exposure and sensitive to injury. Furthermore, toxic

effects from oil exposure are potentiated by co-exposure to UV and visible radiation, especially in translucent early life stages of aquatic organisms. In the past, injury assessments for water column habitat and resources have been based on data that document PAH concentrations in water samples collected in the surface mixing layer under or near floating oil compared with toxicity thresholds determined in the laboratory. The importance of toxicity associated with surface oil sheens mixing into the upper water column impacting abundant early life stages of fish and invertebrates was a significant scientific finding during the Deepwater Horizon Natural Resource Damage Assessment case and it has since played a role in other injury assessments. However, there are uncertainties about how representative laboratory toxicity tests are of exposure conditions in the surface mixing layer. Development of a field based toxicity assay that could be deployed in situ to assess oil exposure and resulting injury to early life stages of fish or invertebrates would provide insights about toxicity in the water column under surface slicks/sheens, as well as laboratory toxicity testing conditions. Furthermore, findings from this assay development could result in deployable field-based toxicity testing methods that could be used at spills and hazardous waste sites to support water column injury assessment.

The primary objective of this project is to field test an in situ bioassay that evaluates the toxicity of spilled oil to organisms in marine waters. Bioassays should be designed to be exposed to the surface mixing layer of the water column immediately below an oil slick/sheen and may include tools to quantify oil chemical exposures, UV exposure, or other environmental parameters relevant to oil toxicity. Bioassays that utilize early life stages of fish or invertebrates are preferred, and the species should be appropriate for open-water, near-surface deployment. Fish or invertebrates that are indigenous to the area where the bioassay is being tested and species of concern for oil spills are preferred. The ability to reliably obtain and deploy early life stages of the chosen test species for this project and possible future applications must be considered. The proposed in situ testing location must have reliably present surface oil slicks and sheens that can be identified, accessed, and characterized (e.g., oil type, extent, thickness). A chronic oil release site in the Gulf of Mexico (MC20 site) meets these criteria and provides an opportunity to test in situ exposure and injury tool arrays using pelagic species from that region. Other testing regions and species (e.g., Pacific Coast, halibut or herring) may be considered if appropriate in situ testing locations can be identified and accessed. Bioassays that are designed to include naturally occurring UV and visible spectrum exposure are preferred. Toxic effects assessments should include lethal and sublethal endpoints, consistent with the most current research on injury to early life stages of aquatic organisms exposed to oil. Bioassay testing plans should include a range of exposure conditions that allow for the determination of an in situ dose-response relationship. This may be achieved through exposures at different depths under the slick/sheen, under slicks/sheens with different characteristics (e.g., thickness), under different surface mixing conditions (e.g., wind speed), etc. Additionally, appropriate controls, such as deployment outside of the slick/sheen area must be included.

Data quantifying oil exposures should be collected concurrent with the bioassay, either as an integrated tool on the deployable platform or as a separate sampling effort. Chemical measurements of particulate and dissolved oil exposure in the water should be consistent with metrics produced by water column modeling tools, chemical concentrations measured in water samples collected in the field, and exposure metrics used in laboratory toxicity tests. Chemical exposure characterization could include fluorometry, grab samples, passive samplers, analysis of biota, or other tools.

In addition to providing input on study design and data needs, NOAA personnel will participate in and support fieldwork. NOAA anticipates that the EPA may provide in-kind support for some of the chemical analyses of samples mentioned above. Additional chemical analyses may be necessary to characterize exposure.

2. OBJECTIVES/SCOPE

The objective of the proposed project is to field test an in situ bioassay for assessing oil toxicity in the shallow surface mixing layer of the marine water column under surface oil slicks/sheens. Data that quantifies chemical exposures and characterizes other co-stressors will also be collected. The proposed project will test and refine an existing bioassay tool, and provide exposure and effects data that can be compared to modeled and laboratory toxicity testing methods and results.

3. ANTICIPATED RFQ SCHEDULE

- A. Release of RFQ: October 1, 2018
- B. Phase 1 Electronic Submissions Deadline: October 22, 2018
- C. Notification of Phase 1 Selection Process: November 1, 2018
- D. Phase 2 Electronic Submission Deadline: January 25, 2019
- E. Notification of Phase 2 Selection: February 2019

CRRC, at its sole discretion, may modify this schedule, as it deems appropriate.

Phase 1 packages will be submitted electronically by emailing the proposal as an attachment to a secure UNH data storage site at: In_Situ.p64i75waoygyn1en@u.box.com

Late submissions will not be considered. One hard copy of the Phase 1 and 2 packages must also be submitted to Nancy Kinner (216 Gregg Hall, 35 Colovos Rd, University of New Hampshire, Durham, NH 03824) no more than 72 hours after the electronic copy submission deadlines. Failure to meet the deadlines will disqualify a proposal/package.

All packages must be submitted in Adobe Acrobat (pdf) format in one continuous file. Electronic and hard copies must be identical. Do not password protect or otherwise encrypt electronic proposal submissions. The font must be Times New Roman 12 pt. single-spaced with all 1-inch margins.

A panel consisting of the UNH CRRC co-director, the NOAA ORR project lead and two additional NOAA ORR employees with expertise related to the project will evaluate submission packages.

Phase 1 submission is designed to determine the Proposer's qualifications to meet the metrics listed in Section 8 of this RFQ. Specifically, Phase 1 submission must demonstrate the Proposer's ability to conduct the project. See Section 13 for the contents of the Phase 1 submission.

If a Proposer demonstrates the ability to meet the metrics in the Phase 1 submission, a Phase 2 proposal will be requested by CRRC. The Phase 2 proposal will include a detailed project narrative regarding the scope of work, a detailed budget (not to exceed the available funding), and a detailed schedule. The proposal will be reviewed by the same panel as Phase 1. Interviews with the Proposers may be conducted by Zoom e-conferencing during Phase 2. Phase 2 proposals will only be accepted from those Proposers selected by the panel to submit.

All questions regarding this RFQ should be submitted in writing via email to nancy.kinner@unh.edu. Written and email communications must be from the Proposer's authorized Principal Investigator.

4. PROJECT TASKS

4.1 Study Plan

Prepare a detailed study plan, in collaboration with NOAA scientists. The plan should include an overview of the project and data needs, field logistics, methods and types of chemical, physical, and biological data that will be collected, test species and life stage, methods for targeting a range of exposure conditions, toxic effects endpoints that will be assessed and timeline for assessment, controls, data analyses, a data management plan, a field and laboratory quality assurance plan, and other relevant information.

4.2 Bioassay tool

Finalize development of a deployable, in situ bioassay tool. Finalize arrangements for obtaining bioassay organisms and any other elements of the tool that require time-sensitive materials. This proposed project assumes that research groups have a working or near-working in situ toxicity testing bioassay that can be ready for pilot testing with only minor updates, or modifications. It does not provide funding for full development of prototypes that are in the conceptual phase.

4.3 Field testing

Travel to the field site and deploy the in situ toxicity-testing tool according to the approved study plan. Collect additional supporting data as needed. Up to 3 days of fieldwork are anticipated. The subawardee will provide logistical support for the field-testing.

4.4 Data analysis and delivery

Data analysis and delivery of data to the NOAA Office of Response and Restoration's Spatial Data Branch for processing, organization, and archival. Data may come from researchers, contract laboratories, and other sources. Coordination with the Spatial Data Branch will take place during study planning.

4.5 Reporting and presenting results

Write report on the results of the in situ toxicity testing work including analysis and interpretation of data and areas for future work. Integration of the in situ bioassay into water column habitat or resource injury assessments should be discussed. For example, the discussion could include, nexuses to ephemeral data collection for NRDA, such as field sampling and remote sensing, as well as oil surface mixing models and injury assessment and quantification tools. Publication in a peer-reviewed journal is anticipated. Present results to NOAA through a webinar aimed at Assessment and Restoration Division scientists and Regional Resource Coordinators.

5. DELIVERABLES

5.1 Schedule and Distribution of Deliverables

Deliverable	Reviewed by	Due Date
Study plan (draft and final)	CRRC and NOAA Leads	Within 12 weeks from award
Field-ready, deployable, in situ bioassay tool and associated sensor/sampling tools	CRRC and NOAA Leads	Within 20 weeks from award
Field testing	CRRC and NOAA Leads	Approximately 24 weeks from award – may have seasonal requirements as defined in the study plan
Data analysis and delivery	CRRC and NOAA Leads	Within 16 from completion of field work and/or bioassay protocol
Report (draft and final) and presentation to NOAA/ARD	CRRC and NOAA Leads	28 weeks from completion of field work and/or bioassay protocol

6. PERIOD OF PERFORMANCE

The period of performance for the subawardee shall be for 18 months after the contract is signed, pending funding availability.

7. SPECIAL MATERIAL REQUIREMENTS

The subawardee is required to build or provide an existing in situ bioassay system, including hardware for deployment and test organisms per the specifications in this RFQ. Any additional equipment necessary for the bioassay and collecting complementary data must also be provided by the subawardee.

8. METRICS FOR SUCCESSFUL PERFORMANCE BY PROPOSERS AND SUBAWARDEE

Criteria	Score (pts)
a) Ability to develop a detailed study plan, including field and laboratory quality assurance plans.	10
b) Working or near working in situ bioassay tool, including all hardware and bioassay organisms. An early life stage fish or invertebrate species that is indigenous to the region where field-testing will occur is preferred. The tool should allow for adequate replication, testing across an exposure gradient, and controls.	20
c) Ability to support field operations necessary for testing the in situ bioassay tool in the shallow surface mixing layer of marine waters.	10

Previous site familiarity and sampling experience will enhance successful delivery.	
d) Previous experience with and ability to support appropriate sample and data collection for characterizing oil chemical exposures and other relevant environmental metrics and co-stressors.	10
e) Previous experience with and ability to support pre-, during-, and post-exposure animal husbandry as necessary and carry out appropriate lethal and sublethal effects assessments.	10
f) Previous experience conducting toxicity testing with the bioassay species and life stage proposed in a controlled laboratory setting and/or in situ from a remote platform.	10
g) Ability to compile, analyze, and share environmental, biological, chemical, and toxicological data.	10
h) Ability to produce a report and presentation documenting the results of the in situ bioassay test, including appropriate context for understanding relevance to injury assessment and comparisons to existing toxicity testing methods and results.	10
i) Ability to complete all activities within 18 months according to the performance schedule	10
TOTAL POINTS	100 points

9. TRAVEL

It is anticipated that carrying out the above tasks may require the subawardee to travel as directed by CRRC and NOAA. The purpose of the travel may include field support for testing the in situ bioassay and collection of supporting samples and data, as well as travel to support acquisition and development of the bioassay species/tool. Travel expenses shall be authorized in advance by CRRC and must be associated with the performance of the project.

10. INVOICES/PROGRESS REPORTING

Invoices may be submitted no more frequently than monthly but no shorter than quarterly to UNH CRRC. Invoices will be itemized by element of cost and include progress achieved, anticipated activities, issues, and resolution of issues anticipated.

Original invoices (via pdf email) will be submitted to:

ATTN: Kathy Mandsager
 Coastal Response Research Center
 220 Gregg Hall, 35 Colovos Rd
 University of New Hampshire
 Durham, NH 03824
Kathy.Mandsager@unh.edu

11. CONFLICT OF INTEREST CERTIFICATION

As prescribed in 48 CFR 3452.209-70, the proposer, will be required to sign a certification that states, to the best of its knowledge and belief, there are no relevant facts or circumstances that could give rise to an organizational or personal conflict of interest, for the organization or any of its staff, and that the Proposer has disclosed all such relevant information if such a conflict of interest appears to exist to a reasonable person with knowledge of the relevant facts. The proposer agrees to require any proposed subcontractors to provide the same certification. The conflict of interest certificate reads as follows:

Conflict of Interest Certification.

The offeror, [insert name of offeror], hereby certifies that, to the best of its knowledge and belief, there are no present or currently planned interests (financial, contractual, organizational, or otherwise) relating to the work to be performed under the subagreement resulting from this Request for Proposal that would create any actual or potential conflict of interest (or apparent conflicts of interest) (including conflicts of interest for immediate family members: spouses, parents, children) that would impinge on its ability to render impartial, technically sound, and objective assistance or advice or result in it being given an unfair competitive advantage. In this clause, the term "potential conflict" means reasonably foreseeable conflict of interest. The offeror further certifies that it has and will continue to exercise due diligence in identifying and removing or mitigating, to the University's satisfaction, such conflict of interest (or apparent conflict of interest).

Offeror's Name:

Signature:

Title:

Date:

12. BUDGET

The total budget for this scope of work shall be \$140,000.

13. PHASE 1 PROPOSAL REQUIREMENTS

Submit the following information and documentation:

- A. Experience and Background
 - i. Submit a narrative documenting the Proposer's overall background and experience relative to this project, including experience from other related projects. Awards, publications or other recognition received by the Proposer relative to work on similar projects should be included.
 - ii. A list should be provided of the key personnel who are proposed for work on this project, to include any subcontractors.
 - iii. Include resumes for each of these individuals detailing qualifications, experience, work history, education and any related licenses or certifications.

B. Approach to Project Management

- i. Provide a description of the Proposal's approach to managing this project including the fieldwork components.
- ii. Provide a narrative that demonstrates a knowledge and understanding of the work required for conducting this project.
- iii. Explain how the Proposer plans to address the logistics required to lead the field project and coordinate within the NOAA team.
- iv. Explain how the Proposer will organize and conduct meetings and general communications.

C. Projects of Similar Scope

List up to five projects that the Proposer has done of a similar nature to the project. Provide the following information:

- i. Project sponsor and contact information
- ii. Sponsor's project officer
- iii. Sponsor's project date (start/end)
- iv. Sponsor's project title
- v. Project status (started, % complete)
- vi. Scope of project (no more than 150 words)
- vii. List of reports or publications associated with the project

D. Organization Structure

- i. Submit a list of Proposer staffing resources by discipline and the number of personnel within each discipline.
- ii. If Proposer staffing resources includes subcontractors, submit the name of the entities who will perform each activity.
- iii. Provide a narrative that clearly defines responsibilities, contractual relationships and roles of all individuals in the organizational diagram.
- iv. Provide a narrative of the Proposer's recent, current, and projected workloads at the time of submission and provide a statement of Proposer's commitment of personnel and other resources and equipment to the project.
- v. Provide a narrative of all key personnel's recent, current and projected workloads at the time of submission and provide a statement of the availability for this project.

E. Statement of Financial Capability

- i. Provide a statement of the Proposer's financial and legal capability (e.g., insurance) for conducting this project.

F. Statement of Access to Required Project Resources

- i. Provide a narrative of the Proposer's access to the required equipment, logistical resources and data analysis/management tools.

14. CRRC AND UNIVERSITY OF NEW HAMPSHIRE RESERVE THEIR RIGHTS TO:

- Disregard all non-conforming proposals.
- Reject any and all proposals that fail to satisfy the requirements and specifications in this RFQ.
- Accept the proposal that is the best overall proposal, based on the selection criteria listed in the RFQ.
- Waive minor irregularities in any proposal.
- Issue addenda or otherwise revise the requirements in this RFQ.
- Reject all proposals, with or without cause.
- Issue requests for new proposals.
- Cancel this RFQ.

15. SUBCONTRACTORS

If the Proposer plans to use subcontractors in the course of this project, this information shall be disclosed and included within the Proposer's budget as part of the proposal. Such information shall be subject to review, acceptance and approval of the CRRC/UNH, prior to any award. CRRC/UNH reserves the right to approve or disapprove of any subcontractor candidate in its best interest and to require the Proposer to replace the subcontractor with one that meets CRRC/UNH approval.

The Proposer shall ensure that all of their proposed subcontractors perform in accordance with the terms and conditions of the project. The Proposer shall be fully responsible for Proposer's subcontractors' performance, and shall be liable for the Proposer's subcontractors' non-performance, acts and omissions.

16. PHASE 2 PROPOSAL REQUIREMENTS

Only those Proposers that respond to Phase 1 on or before the October 22, 2018 deadline and meet the qualifications criteria will be included in Phase 2. Upon notification of acceptance, the Phase 2 submission deadline will be January 25, 2019. Specific details on Phase 2 submissions will be provided to those Proposers that have been selected to participate.

17. CONTACT:

The UNH CRRC lead is:

Nancy E. Kinner, Ph.D.
Professor Civil & Environmental Engineering
UNH Co-Director
Coastal Response Research Center
603.862.1422
nancy.kinner@unh.edu

The NOAA ORR project lead is:

Sarah Allan, Ph.D.
Alaska Regional Resource Coordinator
NOAA, Office of Response and Restoration
Assessment and Restoration Division
907-271-5146
sarah.allan@noaa.gov