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**NRAC FULL PROPOSAL REVIEW FORM**

Project Code/Title: [**23-08 Fredriksson**](https://www.nrac.org/_files/ugd/5d062c_e060d5d035024600bedea43b6d486813.pdf)- Developing Structural Engineering Guidelines for Open Ocean Aquaculture Installations

Date Due: December 9, 2022

Please provide the information requested below. Length and detail of responses may vary according to the nature of the proposal. We value your honest appraisal and the format allows you to be as expansive as you deem necessary (feel free to use a separate sheet if necessary). Your comments and scoring will be shared with the principal investigator but with complete anonymity.

1. **Science, Technology, and/or Extension Program Design (technical merit of all aspects of the project, 30%):** Does this proposal use top quality science and/or technology, or demonstrate extension scholarship? Is (are) the PI(s) familiar with relevant previous and contemporary investigations? Are the objectives and hypotheses explicit and clear? Is the experimental plan clear and the statistical design appropriate? Is the methodology described in the plan appropriate to meet the objectives for a research or extension project? Will this work advance understanding of the science and the contemporary problems that the industry faces? If this is an Extension-demonstration or education project do the PI(s) provide an adequate plan to evaluate the success of the effort? Are the proper metrics provided? Can the PI(s) properly assess the short-term, medium-term, long-term outcomes projected?

*Comments: The proposed project is an excellent project to assist in the development of offshore aquaculture based on engineering parameters. The PIs are familiar with offshore engineering and have developed an excellent plan to study mussel longlines. I am not an engineer! My concern is that they are only studying one design of a single mussel farm. Their interaction with the US Army Corps of Engineers and state regulatory agencies, is vital to the sustained development of offshore aquaculture.*

*their work could be a boon to commercial offshore aquaculture. The project could reduce permitting time and reduce expenses for commercial operations engineering and gear expenses.*

*Rating: Maximum score = 30*

Excellent (numerical value = 30) \_\_\_\_\_\_\_

Very Good (numerical value = 27) \_\_\_x\_\_\_\_

Good (numerical value = 24) \_\_\_\_\_\_\_

Fair (numerical value = 21) \_\_\_\_\_\_\_

Poor (numerical value = 18) \_\_\_\_\_\_\_

1. **Industry Relevance and Probability of Success (30%):** Are the benefits and potential impacts related to industry utility such as increased farm-gate value or grower profitability? Will the project likely provide usable results that can be adopted by the industry in a timely manner? Alternatively, if it is a development effort toward a new technology, will this project’s results increase the team’s capacity to compete for external funds to support the next iteration of research and outreach needed to take the results to application? Will this project create an opportunity for information to be turned over to the industry for refinement and adoption that will eventually become self-sustaining?

*Comments: The potential benefits of the project could be very large and increase farm gate value and grower profitability by reducing time for permits, engineering expenses and equipment expenses. The information could be turned over to industry for refinement and adoption and also the interaction with regulatory agencies could improve the time to permitting and regulatory expenses.*

*There is a concern that the project is only studying one mussel longline system and would those findings be transferable to other systems such as net pens and floating systems.*

*Rating: Maximum score = 30*

Excellent (numerical value = 30) \_\_\_\_\_\_\_

Very Good (numerical value = 27) \_\_\_x\_\_\_\_

Good (numerical value = 24) \_\_\_\_\_\_\_

Fair (numerical value = 21) \_\_\_\_\_\_\_

Poor (numerical value = 18) \_\_\_\_\_\_\_

1. **Integration with Extension (20%):** Does this work identify the key stakeholders? Stakeholders include those individuals (industries and agencies) not directly involved in the project. Is the extension plan appropriately designed to reach the targeted stakeholders? How will the results of this work address the needs of key stakeholders? Will this project extend our knowledge to all stakeholders? Are the expected outputs, outcomes, and impacts clearly described? Is the budget appropriate for effective integration?

*Comments: The project identifies key stakeholders. The formulation of various committees is an important step in the project. Are the outputs from the project appropriate for the regulatory community to make appropriate decisions on offshore aquaculture?*

*Will an NRAC publication, NOAA technical bulletin and engineering journal article be enough for regulators in the commercial farmers to base large environmental and financial decisions on?*

*Extension engineers could offer assistance with planning, developing and distributing the information more thoroughly through workshops and publications. Hopefully they will be integrally involved.*

*$7000 is a substantial sum to be paying an industry advisory group member.*

*Rating: Maximum score = 20*

Excellent (numerical value = 20) \_\_\_\_\_\_\_

Very Good (numerical value = 18) \_\_\_\_\_\_\_

Good (numerical value = 16) \_\_\_x\_\_\_\_

Fair (numerical value = 14) \_\_\_\_\_\_\_

Poor (numerical value = 12) \_\_\_\_\_\_\_

**4. Capacity (10%):** Is (are) the principal investigator(s) and specified members of the research (extension) team qualified to conduct the research (program)? Is there industry representation as part of the team? Have the investigators clearly articulated they have adequate facilities and equipment to complete the project. Is the overall budget appropriate given the scope of the project? Is there a reasonable chance the project will be completed on-time?

*Comments: The principal investigator and members of the research team are qualified to conduct the research. There is industry representation on the team. They have adequate facilities and equipment to complete the project. The budget seems appropriate except for the expenses of the industry committee and travel seem a little high.*

*My major reservation is the study of only one long line system for mussel farms and extrapolating that information to various types of offshore aquaculture systems.*

*Rating: Maximum score = 10*

Excellent (numerical value = 10) \_\_\_\_\_\_\_

Very Good (numerical value = 9) \_\_\_x\_\_\_\_

Good (numerical value = 8) \_\_\_\_\_\_\_

Fair (numerical value = 7) \_\_\_\_\_\_\_

Poor (numerical value = 6) \_\_\_\_\_\_\_

**5. Accountability (10%):** Does the investigator and her/his team have a successful track record of previous NRAC funding being adopted by the industry? Have they leveraged NRAC funding for additional resources to solve bigger problems that can be funded by NRAC alone? Is there evidence that the investigator(s) has (have) an established record indicating a high probability of success on the proposed work? Does the PI(s) have an established record of completing projects on-time meeting the objectives laid out in previous projects? Can this project integrate or be leveraged with funding from other work of the investigator(s)? Does the investigator(s) have a track record that suggests this project will be a good investment for NRAC resources?

*Comments: The project team does not have previous NRAC funding, but they have been extremely successful in receiving external funding and completing engineering projects. They appear to be experts in the field. This project could be integrated with other funding later down the line and the investigators’ track record suggest that it would be a good investment of NRAC resources, although I do question the payment to the industry advisory committee.*

*Rating: Maximum score = 10*

Excellent (numerical value = 10) \_\_\_\_\_\_\_

Very Good (numerical value = 9) \_\_\_x \_\_\_\_

Good (numerical value = 8) \_\_\_\_\_\_\_

Fair (numerical value = 7) \_\_\_\_\_\_\_

Poor (numerical value = 6) \_\_\_\_\_\_\_

Non-Applicable – First Time Applicant \_\_\_\_\_\_\_

**6*.* Total score: \_\_\_88\_\_\_\_**

**Rating Excellent \_\_\_\_\_\_**

**Very Good \_\_\_x\_\_\_**

**Good \_\_\_\_\_\_**

**Fair \_\_\_\_\_\_**

**Poor \_\_\_\_\_\_**

**Final Recommendation: Must fund \_\_\_\_\_\_\_\_**

**Fund if resources are available \_\_\_x\_\_\_\_\_**

**Encourage Resubmission next year \_\_\_\_\_\_\_\_**

**Do Not Fund \_\_\_\_\_\_\_\_**

**7. Strengths:** What are the major strengths of this proposal? If you provided a rating of excellent for any of the categories above but did not comment, would you please share why you rated a particular category as “excellent”?

**8. Weaknesses:** Identify the weaknesses of this proposal. Are there any flaws (design, methodological, etc.) that might seriously compromise the scientific integrity, value and/or validity of the work? If you rated an evaluation area as fair or poor, how might that area of the proposal be improved?