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**NRAC FULL PROPOSAL REVIEW FORM**

Project Code/Title: [**23-07 Bowden**](https://www.nrac.org/_files/ugd/5d062c_9d8c0444b65e4a67afd86870a4c95ea8.pdf) - Defining the Development of Larval Immune Systems in Lumpfish and Yellowtail

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 project is designed to determine the heritability of disease resistance and the specific development of lumpfish and yellow tail in culture. The proposal does use top-quality science and technology. The PIs are familiar with the relevant information and have actually written a hatchery manual for lumpfish. The plan should reach its objectives. The project is basic research for the development of two aquaculture species industries.*

*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 project leans towards being a basic research project and although beneficial to the knowledge base of the two species, I'm not sure of its utility for increasing farm gate value and grow profitability.*

*Rating: Maximum score = 30*

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

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

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

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 researchers have a very good outline of an extension program but very little mainline extension interaction. the lack of mainline extension interaction is understandable because the project leans towards basic research. They have two workshops planned and are interacting directly with the two major hatcheries/industry participants. They are participating in scientific meetings and will develop factsheets and adding sections to an existing manual.*

*Rating: Maximum score = 20*

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

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

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

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 research team it's extremely qualified to conduct the research and have the capacity, facilities and equipment to complete the project. The utilization of extension is lacking.*

*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 research team has a successful track record with NRAC funding and have completed projects on time. The investigators have leveraged funding in prior work. There is an established record for the researchers. The principal investigator’s past research is with oysters, but the other researchers on the team do have finfish backgrounds.*

*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: \_\_\_87\_\_\_\_**

**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”?

*The team is well organized and has excellent connections with industry it appears. They attempt to extend the information, particularly to the scientific community.*

**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?

*The project is primarily a basic research project. Starting with new species, the information is important, but I'm not sure of the potential to utilize it in production. There is little mainline extension interaction.*