# External Review of the Joint Institute for Marine and Atmospheric Research (JIMAR)

A Presentation to the
NOAA Science Advisory Board

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October 2015

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# Science Review Panel


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# JIMAR and NOAA Collaborators

- Established in 1977 at the University of Hawaii (UH)
- It is the largest cooperative institute measured in terms of ocean area and its research themes reflect the region's issues that are highly tied to a coupled ocean-atmospheric state.
- JIMAR partnership brings university scientists together with scientists from NOAA's:
  - Pacific Islands Fisheries Science Center (PIFSC) and
  - Pacific Marine Environmental Laboratory (PMEL)

# JIMAR Research Themes

- Ecosystem forecasting, ecosystem monitoring, and ecosystem-based management;
- Protection and restoration of resources;
- Equatorial oceanography;
- Climate research and impacts;
- Tropical meteorology, and
- Tsunami and other long-period ocean waves.

# Strategic Plan and Science Management: Findings and Recommendations

- JIMAR's strategic plan is well developed; the science themes are broad and flexible. Research projects provide societal benefits of value across the Pacific Rim; these projects address and extend the full bread of NOAA's research and service enterprise very effectively.
- JIMAR has a flexible discretionary budget for enabling new starts.
- Roles of the Executive Board (EB), Council of Fellows(CF) and Senior Fellow (SF) Committee have not been well articulated

1. UH, PIFSC and PMEL should prioritize discretionary resources to be consistent with ideas that emerge from a think-tank retreat. Work should also include reconfiguring the EB, CF and SF for to work better in developing strategies and in working together.

- JIMAR has developed a funding stream for Task I however new models for Task I funding under discussion could reduce the funding stream and negatively impact JIMAR.

2. The review panel cautions against tampering with a Task I funding model that is successful at JIMAR,

# Strategic Plan and Science Management: Findings and Recommendations

- Stringent rules on foreign nationals at PIFSC prevents utilization of diverse skills and expertise in the Pacific Rim could offer in conducting research in this unique region.

3. NOAA should figure out a way to remove or fix the restriction on foreign nationals and integrate international diversity into its labs to best achieve their science mission.

- The JIMAR infrastructure allows for a productive collaboration between UH and NOAA however there is underutilized space at the Inouye Research Center (IRC) that could be used to further advance the collaboration.

4. JIMAR should evaluate and determine the best means of making the use of the IRC space to advance contributions that would pave the way to the next generation of fishery science.

# Science Review: Findings and Recommendations

- The diverse activities of JIMAR scientists related to coral reef ecosystems, pelagic fishes, fisheries, and protected species should be continued.
- In contrast with JIMAR's coral reef program, monitoring of the pelagic realm and studies of its ecology are a gap; the lack of zooplankton and ichthyoplankton time series for the central North Pacific is notable.

**5. Zooplankton and ichthyoplankton monitoring should be enhanced.**

- There is considerable influential observational and process-oriented science underway in JIMAR which provides an opportunity to better integrate physical and biological datasets using comprehensive modeling; however this modeling is lacking at JIMAR.

**6. JIMAR should pursue activities to develop a major center of ecosystem modeling for coral and pelagic systems that can be used for diagnostics and prediction.**

# Education/Outreach: Findings and Recommendations

- JIMAR graduate students are distributed among many UH departments and may conduct their research at the NOAA IRC away from the UH campus; thus JIMAR students may not have the same opportunities to foster relationships with university scientists as other more traditional students.

7. JIMAR should foster mentoring and exchange of ideas among student and faculty.

- The fisheries cooperative unit recently moved from UH-Manoa to UH-Hilo; reducing the pool of undergraduate students in the summer internship program.

8. Establish a partnership between the UH-Hilo campus and JIMAR to continue the relationship between NOAA, the fisheries cooperative unit and its pool of undergraduate students.

- There is a natural tension for JIMAR graduate students between satisfying degree requirements and gaining experience in carrying out NOAA's obligations to science, industry and the public.

9. JIMAR should help students navigate the tricky waters between university expectations and NOAA needs.

# Education/Outreach: Findings and Recommendations

- JIMAR has a multi-faceted approach to outreach that is wide-ranging and strongly impactful, particularly with the Summer Science Camp for high school students.

10. Outreach is an unfunded mandate but its impact is very high, so if funding permits, JIMAR should try to expand it in the most powerful ways.

- While strong educational programs exist at UH for the physical and ecological sciences, there is a noted lack of faculty and educational programs at UH to train fisheries scientists.

11. UH should create three tenure track positions in quantitative fisheries to foster development of a novel ecosystem-based graduate education emphasizing the tropical region and its location in the Pacific Rim. In turn, NOAA should match this university contribution through funding integrative science research programs including graduate student support.

# Overall Rating

# OUTSTANDING

# Questions?