POSTDOCTORAL SCHOLAR: Utility of Unmanned Surface Vehicles to Inform Stock Assessment

POSITION: OSU’s Cooperative Institute for Marine Resources Studies invites application for a full-time, 12-month POSTDOCTORAL SCHOLAR appointment with potential to extend for an additional 12 months depending on funding. This position is located at either the Hatfield Marine Science Center (HMSC) in Newport, Oregon, the campus of NOAA’s Northwest Fisheries Science Center in Seattle, WA, USA, or could be served from elsewhere as appropriate depending on circumstance to be negotiated with final candidate.

POSITION RESPONSIBILITIES: The scholar will collaborate with Oregon State University (OSU) and Northwest Fisheries Science Center (NOAA) scientists to address how information (quality and quantity) collected from unmanned surface vehicles (i.e., saildrones; Saildrone, Inc.) could be used to supplement or replace information collected from the standard NOAA Ship Bell M. Shimada acoustic-trawl survey that is used to biennially estimate Pacific hake biomass for use in stock assessment. Saildrones have potential as economical survey tools, but their strengths and limitations relative to the needs of the Pacific Hake survey and stock assessment have not been evaluated. Of particular interest is how to overcome the lack of biological sampling data associated with saildrone acoustic surveys that are required to develop a survey-based biomass estimate. In 2019, a saildrone survey was conducted concurrent with the standard 2019 NOAA acoustic-trawl survey, which enables a direct comparison between the two surveys.

The responsibilities of the scholar will be to evaluate the usefulness and cost-effectiveness of using saildrones to 1) supplement the existing acoustic-trawl survey, and 2), collect acoustic data which, when combined with some source of length-age sample data, can be used to generate reliable, age-specific biomass estimates for use in the assessment. Survey-based biomass-at-age estimates will be developed and compared among survey approaches, including that based on the standard acoustic survey design, saildrone acoustics supplemented with biological data sampled following the standard acoustic survey design, and saildrone acoustics supplemented with other auxiliary biological data. Statistical comparisons among biomass-at-age estimates will then be made, while operational comparisons will be made by incorporating estimates into the existing stock assessment-management framework (e.g., measures of stock status, total allowable catch levels (TACs), and uncertainty). Project findings will be communicated through presentations at scientific meetings and the publication of at least one paper in a peer reviewed journal.

MINIMUM/REQUIRED QUALIFICATIONS

- Doctorate (PhD) in Quantitative Ecology, Statistics, Fisheries Science, Oceanography, Computer Science, Ecology, Natural Sciences or related fields.
- Demonstrated experience with computer modelling, advanced statistical analysis, parameter estimations, and applying such techniques to statistical inference.
- Experience with writing manuscripts for submission to peer-reviewed scientific journals.
- Knowledge of fish and ocean ecology

PREFERRED QUALIFICATIONS

- Proficiency with “R” statistical package or similar programming languages.
- Experience working with large, multi-variate datasets
- Demonstrated success in scientific publication in peer review contexts,
- Willingness to work collaboratively across multiple levels from junior students to senior scientists and stakeholders promoting an environment that fosters inclusion and retention of diverse cultures and perspectives.

STIPEND: $54,000-$60,600 per year depending on qualifications, and health insurance for the incumbent. Health insurance for family members is available at reasonable cost. This position does not include retirement benefits. For more info on CIMRS see: https://hmsc.oregonstate.edu/cimrs

POSITION AVAILABLE: October 1, 2020

APPLICATION DEADLINE: Until a suitable candidate is found

Please send curriculum vitae, copies of transcripts and contact information of 3 references as soon as possible to: LeAnne Ruthland: LeAnne.Rutland@oregonstate.edu

For inquiries about the position, please contact Aaron Berger (aaron.berger@noaa.gov) and Lorenzo Ciannelli (Lorenzo.Ciannelli@oregonstate.edu)

Oregon State University is an affirmative action/equal opportunity employer.