

Post-Doctoral Fellow, Sustainable Animal Agriculture Modeling Group, Department of Animal Science, University of California, Davis, CA

A successful post-doctoral fellow in this position provides organizational leadership as part of a multi-departmental team within the college of Agriculture and Environmental Science. The fellow is expected to work on modeling ecological performance of fishes in ever changing estuary. A number of experiments relating to nutritional and environmental stress tolerance of sturgeon have been conducted and the fellow is expected to use the data in order to develop an ecological performance model. In order to combine all the information generated, a general framework will be applied. The framework is based on a structural equation model. Structural equation modeling is a multivariate statistical method that allows evaluation of a network of relationships between manifest and latent variables. In this statistical technique, pre-conceptualizations that reflect the research questions and existing knowledge of system structure create the framework for model development, while both direct and indirect effects and measurement errors are considered. We expect to introduce Bayesian structural equation modeling methodology that has the flexibility to (a) translate fairly complicated physiological phenomena (growth and development) and express them as functions of several conceptual environmental factors (salinity and temperature) and the nutritional status (body composition and blood variables); (b) link the conceptual factors of interest with observed variables (growth rate, feed efficiency, mortality) by explicitly acknowledging that none of those perfectly reflect the underlying property (model uncertainty); and (c) test both direct and indirect paths of this physiological structure and identify the importance of their role. The structural equation model can be used to identify, assess and quantify risk factors, explaining mortality rates in green and white sturgeon because the sturgeon responses collected in previous experiments will be used to parameterize the structural equation model. This model will provide a set of tools for natural resource managers to assess management strategies in the context of global climate change by predicting future population trends.

Responsibilities include: 1. Work closely with faculty, post-doctoral fellows and graduate students in the college to successfully carry out the job outlined above. 2. Prepare scientific manuscripts for publication in peer-review journal and abstracts for conferences.

Qualifications: The position requires a PhD in applied statistics, biostatistics, animal sciences, veterinary science or equivalent. Credentials outside these science-technology-based agricultural degrees will be considered when associated with relevant quantitative biology experience. Excellent communication ability is essential (written, electronic, oral, interpersonal) along with organizational, and problem-solving skills.

Applicants should submit a letter of application, CV, and names of three professional references to: ekebreab@ucdavis.edu. Applications are open until position is filled. This is a fixed-term appointment funded for one year with possibility of re-funding.

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