**PROJECT**

My work will model the risk of pesticide pollution in 225 sub-catchments of the Bay-Delta. The model will account for water management practices, land use, pesticide use rates, and cumulative pesticide stress. Additionally, my work will produce a web-based tool to simulate current and future risks based on the ranking of primary sources of pesticide contribution.

**TIMELINE**

**2020-2021** Integrate water management regimes, flow data, and available hydrologic models into the risk model. Compile environmental data for the sub-watersheds, and prepare the tool for the web.

**2021-2022** Calibrate and validate the pesticide risk model. Develop and integrate ranked pesticide sources. Investigate Bay-Delta-specific pesticide cumulative stress to aquatic fauna for the most hazardous pesticides detected.

**IMPACTS**

This work will provide a framework to predict risk from chemical stressors. Specific objectives are: (1) enhanced proactive chemical risk assessment, (2) creation of a tool which enables science-based chemical use decisions, (3) improved risk screening for vulnerable areas, and (4) identification of adverse effects of current and future chemical use strategies.

“**This project provides a framework for rapid and spatially explicit prediction of pesticide risk and other chemical stressors such as nutrients.**”

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**Post-Doctoral Fellow**

**University of California, Santa Barbara**

**Focus** Pesticide risk analyses and management actions, chemical fate and transport

**Award** $118,511

**Research Mentor**

Dr. Arturo Keller, UC Santa Barbara (Bren School)

**Community Mentor**

Dr. David Senn, San Francisco Estuary Institute
Dr. Haw Yen, Texas A&M
Dr. Yonping Yuan, Environmental Protection Agency