

## Shawn C. Acuña

Bay-Delta Initiatives  
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### Education

Ph. D, Ecology, University of California, Davis, June 2011.

Dissertation: Effects of *Microcystis aeruginosa* on Sacramento splittail, *Pogonichthys macrolepidotus*, and threadfin shad, *Dorosoma petenense*.

Master of Science, Animal Biology, University of California, Davis, April 2007.

Thesis: Inducing compensatory growth in California halibut, *Paralichthys californicus*.

Bachelor of Science, Aquatic Biology, University of California, Santa Barbara, June 1998.

### Goal

To become an awardee for the Proposition 1 Grant Program Solicitation.

### Work Experience

**Senior Resource Specialist.** Metropolitan Water District 12/13-present

Develop, manage and conduct research on the aquatic sciences in the San Francisco Estuary. Conducting ongoing researching regarding the genetic and status of listed species, and evaluating impacts of predation, entrainment, habitat quality, and contaminants on listed species in the San Francisco Estuary.

**Postdoctoral Research.** University of California, Davis 6/11 - 12/13

Collected, prepared and statistically evaluated data for ongoing studies on the Delta smelt, *Hypomesus transpacificus* (Fall Low Salinity Habitat study), splittail, *Pogonichthys macrolepidotus* (Splittail Habitat Survey), and largemouth bass, *Micropterus salmoides* (Largemouth Bass Salinity Survey).

**Community College Lecturer.** The New Plagues, Sacramento City College, 1/07-5/07.

Gave lectures, prepared lesson plans and graded tests for students with a variety of backgrounds the microbiology, history, and emergence of new pathogens.

**Research Assistant:** University of California, Davis, 9/04- 6/11.

Collected, maintained and statistically evaluated data for ongoing studies on fish from California. Studies included the evaluation of different culturing techniques, the effects of different habitats and the effects of toxicity from microcystin, pyrethroids, plastic, ammonia, turbidity, salinity and metals.

**Larval systems manager.** Scientific Hatcheries 6/03-06/04.

Care and maintenance of a fish hatchery for ornamental fish; zebra danios (*Danio rerio*), cherry barbs (*Puntius titteya*), feeder guppies (*Poecilia reticulata*), and bloodfin tetras (*Aphycoharax anisitis*) with an emphasis in larval production. Duties included system maintenance of a commercial hatchery, live feed production and management of the staff.

**Laboratory Analyst:** EMAX Laboratories, Inc., 8/00 – 06/03

Analyzed soil and water for dissolved gasses, fuels and oils. Prepared reports, developed methods for gas chromatography and prepared training files for audits.

### Reports:

- Teh, SJ, Acuña, SC, Baxa, D, Deng, DF, Lehman, P, Sommer, T. 2010. Dietary effects of *Microcystis aeruginosa* in Threadfin shad (*Dorosoma petenense*). Progress Report. Department of Water Resources.
- Lehman, P, Ger, KA, Acuña, SC, Baxa, D, Deng, DF, Lehman, P, Sommer, T. 2011. Microcystis final synthesis report, 2011. Department of Water Resources.

### **Publications**

- Acuña, SC. 2016. Insights into factors affecting long term fish surveys in the San Francisco Estuary, for Longfin smelt. *In progress*.
- Acuña, SC, Baxa, D, Deng, DF, Lehman, P, Teh, SJ. 2016. Assessing the potential impacts of *Microcystis* on threadfin shad (*Dorosoma pentenese*) in the San Francisco Estuary. Harmful Algal Blooms. *In progress*.
- Acuña, SC, Slater, S, Javidmehr, A, Teh, S. 2016. Patterns of prey use and nutritional status of subadult and adult Delta smelt. San Francisco Estuary Science. *In progress*.
- Hammock, B, Hobbs, J, Slater, S, Acuña, S, Teh, S. 2015. Contaminant and food limitations stress in an endangered estuarine fish. Science of the Total Environment. 532: 316-326.
- Feyrer, F, Hobbs, J, Acuña, S, Mahardja, B, Grimald, L, Baerwald, M, Johnson, R, Teh, S. 2015. Metapopulation structure of a semi-anadromous fish in a dynamic environment. Canadian Journal of Fisheries and Aquatic Sciences. 72: 709-721.
- Lehman, PW, Marr, K, Boyer, G, Acuña, S, Teh, S. 2013. Long-term trends and causal factors associated with *Microcystis* abundance and toxicity in San Francisco Estuary and implications for climate change impacts. Hydrobiologia. 718: 141-158.
- Acuña, SC, Baxa, D, Teh, SJ. 2012. Sublethal dietary effects of *Microcystis* from the San Francisco Estuary on threadfin shad, *Dorosoma petenense*. Toxicon. 60:1191-1202.
- Acuña, SC, Deng, DF, Lehman, P, Teh, SJ. 2012. Sublethal dietary effects of *Microcystis* on Sacramento splittail, *Pogonichthys macrolepidotus*. Aquatic Toxicology. 110:1-8.

### **Research Grants**

- Jastor Shields Research Fellowship 2005, (Principle Investigator: Douglas Conklin Ph.D.)
- Cal-Fed grant 2008 Splittail and *Microcystis* Study (Principle Investigator: Peggy Lehman Ph.D.)
- Department of Water Resources, Threadfin Shad Project 2009 (Principle Investigator: Swee Teh Ph.D.)
- US Bureau of Reclamation, Largemouth Salinity Survey 2010 (Principle Investigator: Fred Feyrer)
- Ecological Restoration Program Direct Action Fund 2011 (Principle Investigator: Swee Teh Ph.D.)

### **Scientific Conferences**

- Dietary effects of *Microcystis aeruginosa* on Sacramento Splittail, *Pogonichthys macrolepidotus*. Acuña SC, Feng DF, Lehman P, Teh SJ. 5<sup>th</sup> Biennial CALFED Science Conference 2008.
- Dietary effects of *Microcystis aeruginosa* on threadfin shad, *Dorosoma petenense*. Acuña SC, Baxa D, Lehman P, Teh SJ. Nor-Cal SETAC Conference 2009.
- Effects of *Microcystis aeruginosa* on threadfin shad, *Dorosoma petenense*. Acuña SC, Baxa D, Lehman P, Teh SJ. IEP Workshop 2009.
- Dietary of *Microcystis aeruginosa* from the SFE on threadfin shad, *Dorosoma petenense*. Acuña SC, Baxa D, Lehman P, Teh SJ. IEP Annual Workshop. 2010.

Dietary effects of *Microcystis aeruginosa* from the SFE on threadfin shad, *Dorosoma petenense*. Acuña SC, Baxa D, Lehman P, Teh SJ. 6<sup>th</sup> Biennial Bay-Delta Science Conference 2010.

Growth and nutritional status of largemouth bass, *Micropterus salmoides*, in the San Francisco Estuary. IEP Workshop 2011.

Health and nutritional status of largemouth bass, *Micropterus salmoides*, in four submerged islands of the San Francisco Estuary. 46<sup>th</sup> Annual AFS Conference 2012.

FLaSH: Health and nutritional analyses of Delta smelt, “Benchmarks for health”. IEP Workshop 2012.

FLaSH: Enzymatic biomarkers and pathogens as stress indicators of the health of delta smelt, *Hypomesus transpacificus*. 7<sup>th</sup> Biennial Bay-Delta Science Conference 2012.

FLaSH: Health status of delta smelt, *Hypomesus transpacificus*. 7<sup>th</sup> Biennial Bay-Delta Science Conference 2012.

FLaSH: Multivariate analyses of delta smelt indices of the upper San Francisco Bay Delta Estuary. 7<sup>th</sup> Biennial Bay-Delta Science Conference 2012.

FLaSH: Nutritional status of delta smelt, *Hypomesus transpacificus*. 7<sup>th</sup> Biennial Bay-Delta Science Conference 2012.

FLaSH: Maturity of delta smelt, *Hypomesus transpacificus*. 7<sup>th</sup> Biennial Bay-Delta Science Conference 2012.

Central valley versus Petaluma/Napa: A nutritional examination of Sacramento splittail. 7<sup>th</sup> Biennial Bay-Delta Science Conference 2012.

Trends in *Microcystis* abundance and Toxicity in the San Francisco Estuary, 2004-2008. 7<sup>th</sup> Biennial Bay-Delta Science Conference 2012.

Risk assessment of *Microcystis aeruginosa* from the San Francisco Estuary on threadfin shad, *Dorosoma petenense*. 34<sup>th</sup> Annual SETAC North America 2013.

Compare and contrast the Midwater and Otter Trawl of the Longfin smelt San Francisco Bay Study. 8<sup>th</sup> Biennial Bay-Delta Science Conference 2014

Insights into factors affecting long term fish surveys in the San Francisco Estuary, for a listed species. 100<sup>th</sup> Annual Ecological Society of America Conference 2015

## Honors

Recipient, Moberg Memorial Award, UC Davis, June 2005.

2<sup>nd</sup> place Poster Presentation, 19<sup>th</sup> Annual Nor-Cal SETAC 2009.

American Fisheries Society Travel Award, CalNeva AFS, April 1, 2011.