

# CURRICULUM VITAE

## **RYAN P. FERRER**

Associate Professor of Biology

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## **EDUCATION**

- 2002 - 2007     **University of California, Los Angeles**  
Ph.D. Ecology and Evolutionary Biology  
Dissertation: Hide and seek: The effects of dual chemical signals on predator and prey behaviors in a complex food web.
- 1996 - 2000     **Pepperdine University**  
B.S. Biology

## **ACADEMIC APPOINTMENTS**

- 2012 - Present     **Associate Professor of Biology**, Seattle Pacific University  
2010 - 2012     **Assistant Professor of Biology** (Tenure track), Seattle Pacific University  
2008 - 2009     **Assistant Professor of Biology** (Non-tenure track), Seattle Pacific University  
2007 - 2008     **Lilly SERVE Teaching Postdoctoral Fellow**, Biology, Seattle Pacific University

## **Teaching Responsibilities**

- 2010 – 2014     USEM 1000: The Biology of Toxins and Venoms  
2008 - 2010     BIO 1100: Introduction to Biology  
2007 – 2014     BIO 2101: General Biology I  
2008 – 2015     BIO 2102: General Biology II  
2009 - 2012     BIO 2103: General Biology III  
2014             BIO 2130: Anatomy & Physiology II  
2012 - 2014     BIO 2570: Introduction to Biology for Elementary Education  
2012 - 2014     BIO 3301: Tropical Biology of Galapagos Islands  
2015             BIO 3310: Introduction to Ecology (W)  
2012 - 2014     BIO 3899: Scientific Literature  
2012 - 2015     BIO 4356: Environmental Physiology (W)  
2014 - 2015     BIO 4413: Animal Physiology (W)  
2014 - 2015     BIO 4840: Chemical Ecology (W)  
2008 - 2015     BIO 4978: Research Proposal (W)  
2008 – 2015     BIO 4979: Research in Biology

## **University Governances and Committee Service**

- 2015 - Present     Chair, Institutional Animal Care and Use Committee  
2014 - Present     Member, Institutional Animal Care and Use Committee  
2014 - Present     College of Arts and Sciences: Sciences Division Representative, Faculty Council  
2011 - 2013        Member, Intercollegiate Athletics Committee

## PEER REVIEWED PUBLICATIONS

- Strawn, M. L.\*, E. T. Lunsford\*, L. E. Larsen\*, M. M. Moran\*, V. Allbritton\*, R. P. Ferrer, and K. M. Pierce. 2015. Identification and quantification of paralytic shellfish toxins in Puget Sound marine organisms. *Journal of Environmental Analytical Chemistry* 2(148): 2380-2391. Available at: <http://www.omicsgroup.org/journals/identification-and-quantification-of-paralytic-shellfish-toxins-in-pugetsound-marine-organisms-2380-2391-1000148.pdf>
- Ferrer, R. P., E. T. Lunsford\*, C. M. Camillo\*, M. L. Strawn\*, and K. M. Pierce. 2015. Saxitoxin and the ochre sea star: Molecule of keystone significance and a classic keystone species. *Integrative and Comparative Biology* 55(3):533-542. Abstract is available online at: <http://icb.oxfordjournals.org/content/early/2015/04/08/icb.icv010.abstract>
- Ferrer, R. P., and R. K Zimmer. 2013. Molecules of keystone significance: Crucial agents in ecology and resource management. *BioScience* 63: 428-438. Available online at: <http://bioscience.oxfordjournals.org/content/63/6/428.full.pdf+html>
- Ferrer, R. P., and R. K Zimmer. 2012. Community ecology and the evolution of molecules of keystone significance. *Biological Bulletin* 223: 167-177. Available online at: <http://www.biollbull.org/content/223/2/167.full.pdf+html>
- Ferrer, R. P., and R.K. Zimmer. 2009. Chemical neuroecology and community dynamics. *Annals of the New York Academy of Sciences* 1170: 450-455. Abstract available online at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1749-6632.2009.03908.x/abstract>
- Zimmer, R. K., and R. P. Ferrer. 2007. Neuroecology, chemical defense and the keystone specie concept. *Biological Bulletin* 213: 208-225. Available online at: <http://www.biollbull.org/content/213/3/208.full>
- Ferrer, R. P., and R. K. Zimmer. 2007. The scent of danger: Arginine as an olfactory cue of reduced predation risk. *Journal of Experimental Biology* 210: 1768-1775. Available online at: <http://jeb.biologists.org/content/210/10/1768.full>
- Ferrer, R. P., and R. K. Zimmer. 2007. Chemosensory reception, behavioral expression, and ecological interactions at multiple trophic levels. *Journal of Experimental Biology* 210: 1776-1785. Available online at: <http://jeb.biologists.org/content/210/10/1776.full>
- Han, B. A.\*, L. B. Kats, R. C. Pommerening\*, R. P. Ferrer, M. Murry-Ewers, and A. R. Blaustein. 2007. Behavioral avoidance of ultraviolet-B radiation by two species of Neotropical poisondart frogs. *Biotropica* 39: 433-435. Abstract available online at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1744-7429.2007.00268.x/abstract>
- Zimmer, R. K., D. W. Schar, R. P. Ferrer, P. J. Krug, L. B. Kats, and W. C. Michel. 2006. The scent of danger: Tetrodotoxin as an olfactory cue of predation risk. *Ecological Monographs* 76: 585-600. Available online at: <http://www.jstor.org/stable/27646063>
- Kats, L. B., and R. P. Ferrer. 2003. Alien predators and amphibian declines: Review of two decades of science and the transition to conservation. *Diversity & Distributions* 9, 99-110. Abstract available at: <http://onlinelibrary.wiley.com/doi/10.1046/j.1472-4642.2003.00013.x/abstract>

\* Denotes undergraduate.

## ORAL PRESENTATIONS

- 2015 Ferrer, R. P. (Jan 2015) Saxitoxin and the ochre sea star: Molecule of keystone significance and a classic keystone species. Society of Integrative & Comparative Biology, West Palm Beach, FL.

- 2012 Ferrer, R. P. (Feb 2012) Paralytic toxins and the *Pisaster-Mytilus* interaction. Ocean Sciences International Meeting, Salt Lake City, UT.
- 2010 Ferrer, R. P., and R. K. Zimmer. (Jan 2010) Community ecology, evolution, and molecules of keystone significance. Annual Meeting for the Society of Integrative and Comparative Biology, Seattle, WA.
- 2008 Ferrer, R. P., and R. K. Zimmer. (July 2008) Neuroecology, chemical defense, and the keystone concept. International Symposium on Olfaction and Taste, San Francisco, CA.
- 2007 Ferrer, R. P., and R. K. Zimmer. (Jan 2007) The consequences of olfaction for predation in a natural stream habitat. Annual Meeting for the Society of Integrative and Comparative Biology, Phoenix, AZ.
- 2006 Ferrer, R. P. (May 2006) The California newt: Natural history and chemically-mediated interactions. Meeting of the Southern California Academy of Sciences, Malibu, CA.

### **COLLABORATION WITH STUDENT PRINCIPAL INVESTIGATORS**

- 2015 Sebastian, R.\*, and R. P. Ferrer. (May 2015) Allelopathy in *Euphorbia milii* latex on heterospecific cut-flower longevity. Erickson Undergraduate Research Conference, Seattle, WA.
- Vincent, H.\*, and R. P. Ferrer. (May 2015) The indirect effects of sea star wasting syndrome on *Mytilus edulis*. Erickson Undergraduate Research Conference, Seattle, WA.
- 2014 Candido, C.\*, K. Pierce, and R. P. Ferrer. (Nov 2014) Saxitoxin and the ochre sea star: Molecule of keystone significance and a classic keystone species. Murdock Charitable Trust Undergraduate Research Conference, Vancouver, WA.
- Vincent, H.\*, and R. P. Ferrer. (Nov 2014) The physiological effects of seastar wasting syndrome on *Mytilus edulis*. Murdock Charitable Trust Undergraduate Research Conference, Vancouver, WA.
- 2013 Lunsford, E. T., C. M. Candido\*, and R. P. Ferrer. (Nov 2013). Abnormal spawning frequencies in Puget Sound starfish. Murdock Charitable Trust Undergraduate Research Conference, Vancouver, WA.
- 2012 Cutting, A. N.\*, and R. P. Ferrer. (Oct 2012) Shorebird foraging behaviors in the wake of harmful algal blooms. Murdock Charitable Trust Undergraduate Research Conference, Walla Walla, WA.
- Moran, M. M.\*, R. P. Ferrer, and K. M. Pierce. (Oct 2012) Quantitative analysis of paralytic shellfish toxins in mussel tissue using HPLC and fluorescence detection. Murdock Charitable Trust Undergraduate Research Conference, Walla Walla, WA.
- Larsen, L. E. \*, E. T. Lunsford\*, and R. P. Ferrer. (May 2012) The effects of paralytic shellfish toxins on *Pisaster ochraceus* behavior and physiology. Erickson Undergraduate Research Conference, Seattle, WA.
- Lunsford, E. T.\*, S. M. Maloney\*, and R. P. Ferrer. (May 2012) The effects of *Ulvaria* dopamine on barnacle feeding behavior. Erickson Undergraduate Research Conference, Seattle, WA.
- Sunde, B. S.\*, L. E. Larsen\*, and R. P. Ferrer. (May 2012). The indirect effects of algal dopamine on an intertidal predator-prey interaction. Erickson Undergraduate Research Conference, Seattle, WA.
- 2011 Larsen, L. E. \*, K. M. Pierce, and R. P. Ferrer. (Nov 2011) Quantifying saxitoxin in shellfish using prechromatographic oxidation and liquid chromatography with

- fluorescence detection. Murdock Charitable Trust Undergraduate Research Conference, Seattle, WA.
- Lunsford, E. T.\*, L. E. Larsen\*, and R. P. Ferrer. (Nov 2011) The effects of PSTs on the *Pisaster - Mytilus* interaction. Murdock Charitable Trust Undergraduate Research Conference, Seattle, WA.
- Lunsford, E. T.\*, and R. P. Ferrer. (Aug 2011) *Pisaster ochraceus* feeding behavior and response to paralytic shellfish poisons. Seattle Pacific University Summer Research Institute, Seattle, WA
- Larsen, L. E.\*, R. P. Ferrer, and K. M. Pierce. (May 2011) The effects of harmful algal blooms on *Pisaster ochraceus* behavior and physiology. Seattle Pacific University Summer Research Institute, Seattle, WA.
- 2010 Brossoit, A. N.\*, K. L. Konigsfeld\*, and R. P. Ferrer. (May 2010) Saxitoxin (STX) exposure history and byssus thread physiology in Puget Sound blue mussels. Erickson Undergraduate Research Conference, Seattle, WA.

## GUEST LECTURES

- 2008-2015 Chemical Ecology, Ecology, Seattle Pacific University, Seattle, WA.
- 2009-2015 Amphibian Biology, Vertebrate Diversity, Seattle Pacific University, Seattle, WA.
- 2011 Aquatic Ecology, Ecology, Seattle Pacific University, Seattle, WA.
- 2010 Population Genetics, General Biology, Point Loma Nazarene University, Point Loma, CA. Amphibian Biology, Vertebrate Diversity, Seattle Pacific University, Seattle, WA.
- 2007 Chemistry and community ecology, Biology Symposium, Pepperdine University, Malibu, CA.
- 2006 Ecology and Biodiversity, University of California, Los Angeles, CA. Natural History of Vertebrates, Pepperdine University, Malibu, CA.
- 2005 Introduction to Ecology, Pepperdine University, Malibu, CA.
- 2001 Biology of Plants, Pepperdine University, Malibu, CA.
- 2000 Tropical Rainforest Ecology, Pepperdine University, La Selva Biological Reserve, Costa Rica.

## SERVICE TO GUILD

- 2015 Reviewer for *Marine Ecology Progress Series*
- 2014 Reviewer for *Biological Bulletin*
- 2013 Reviewer for *Biological Bulletin*  
Reviewer for *Journal of Chemical Ecology*
- 2012 Conference session chair, Ocean Sciences International Meeting, Salt Lake City, UT.  
Reviewer for *Conservation Biology*
- 2011 Reviewer for *Hydrobiologia*
- 2010 Reviewer for National Science Foundation (3)  
Reviewer for *Conservation Biology*  
Consultant for *National Geographic* documentary on Amazonian poison frogs
- 2009 Reviewer for *Oecologia*  
Reviewer for *Hydrobiologia* (2)
- 2008 Reviewer for *Conservation Biology* (3)
- 2007 Reviewer for *Journal of Experimental Marine Biology and Ecology*
- 2005 Conference session chair, Annual Meeting for the North American Benthological

Society, New Orleans, LA.

### **AWARDS, HONORS & GRANTS**

- 2015 Faculty Research Grant, Seattle Pacific University, Sandy beaches, algal patches, and animal colonists: a sensory mechanism underlying navigation
- 2013 Principle Investigator, Murdock Charitable Trust, Life Sciences Research Grant, Reproductive and Developmental Consequences of Paralytic Shellfish Toxin in *Pisaster* Sea Stars
- 2011 Principle Investigator, Murdock Charitable Trust, Life Sciences Research Grant, Paralytic Shellfish Toxins and the Sea Star - Mussel Interaction
- 2007 George Bartholomew Award for excellence in graduate research, University of California, Los Angeles
- 2007 Ecology and Evolutionary Biology Departmental Research Fellowship, University of California, Los Angeles
- 2007 Highlighted in *Journal of Experimental Biology: Inside*, a perspectives column
- 2006 Ecology and Evolutionary Biology Departmental Research Fellowship, University of California, Los Angeles
- 2006 Excellence in Teaching Award, University of California, Los Angeles

### **PROFESSIONAL ASSOCIATIONS**

Association for the Sciences of Limnology and Oceanography  
Society of Integrative and Comparative Biology  
Association for Chemoreception Sciences

### **TEACHING DEVELOPMENT**

- 2012 POGIL Development Workshop, Seattle University
- 2008-2009 Undergraduate Research Development Seminar, Seattle Pacific University  
Education and Globalization Seminar, Seattle Pacific University  
Designing and implementing inquiry-based learning curriculum, Seattle Pacific University
- 2007-2008 New Faculty Seminar, Seattle Pacific University
- 2005-2006 Experimental Life Sciences Curriculum and Student Workshops, University of California, Los Angeles
- 2004-2005 P.E.E.R.S. (Program for Excellence in Education and Research in the Sciences), University of California, Los Angeles
- 2001-2002 Community education and conservation projects of endangered leatherback sea turtles – Las Baulas National Reserve, Costa Rica