

# Erin Jarvis Alberstat

## EDUCATION

- Current **PhD Candidate | Integrative Biology, University of California, Berkeley, CA**  
Project: Hox genes and neural musculature integration in the evolution of segment-specific diversity  
Thesis advisor: Nipam Patel
- Undergraduate **Honors B.S. in Biological Sciences | University of Missouri, Columbia, MO**

## FELLOWSHIP AWARDS

- 2016 Philomathia Graduate Fellowship in Environmental Sciences (\$20,000)
- 2014 USAID/NSF Research Innovation Fellowship (\$12,750 to cover research in Africa)
- 2012 National Science Foundation Graduate Research Fellowship (NSF GRFP)

## RESEARCH EXPERIENCE

- 2011 – Present **Doctoral Research | Integrative Biology, University of California, Berkeley, CA**  
Functional & molecular analysis of homeotic transformations using CRISPR/Cas9 mutagenesis  
Fluorescent confocal microscopy, embryo microdissection, CRISPR design, gene function discovery
- 2014 – 2015 **USAID Research and Innovation Fellow | National Zoological Gardens, Pretoria, South Africa**  
Analysis of whole genome NGS sequencing data to determine population units for conservation
- 2010 – 2011 **Research Associate | Lawrence Berkeley National Lab, Berkeley, CA**  
Profiled gene responses to actinides (qRT-PCR, microarray); tested novel decorporation drugs *in-vivo*
- 2010 **Engineering Technician | Joint Genome Institute, Walnut Creek, CA**  
Processed and sequenced submitted samples using 454 Sequencing technology
- 2008 – 2009 **Research Manager | Department of Surgery, University of California, San Francisco**  
Harvested, cultured, and injected stem cells *in-utero* to characterize fetal immune responses  
First hire to set up and manage a new lab; established colonies and databases, optimized protocols
- 2006 – 2007 **Research Associate | Dept. of Physiology & Neuroscience, University of Colorado, Boulder, CO**  
Studied hormonal and transcriptional responses to stress (brain cannulations, icv delivery, adrenalectomies, brain sectioning, radioisotopic in-situ hybridization, serological assays)
- 2004 – 2006 **Research Specialist | Dept. of Biochemistry, University of Missouri, Columbia, MO**  
Used molecular cloning and qPCR to profile plant biochemical pathways for disease resistance
- 2003 **Research Intern | USGS Biological Field Station, Volcano, HI**  
Mist-netted, banded, and bled native honeycreepers to study the effects of altitudinal cline on malaria
- 2003 **Seasonal Field Technician | Smithsonian Environmental Research Center, Edgewater, MD**  
Characterized ovenbird territories, nests, predation, and environment

## SELECTED PRESENTATIONS

- 2015 Genetic interactions among Hox genes in specifying limb identity in *Parhyale*. Pan-American Society for Evolutionary Developmental Biology, Inaugural meeting, Berkeley, CA (**Selected Talk**)  
Genetic interactions between the Hox genes *Ubx*, *abd-A*, and *Abd-B* in the amphipod *Parhyale hawaiiensis*. Genetics, Development and Evolution Symposium, UC Berkeley, CA (**Selected Talk**)  
Should we make freaks of Nature? NZG One Health Workshop, Pretoria, South Africa (**Speaker**)  
Hox genes and the integrated evolution of segment-specific diversity. University of the Free State, Bloemfontein, South Africa (**Invited Departmental speaker**)
- 2014 Functional integration of appendage morphology by Hox genes in the amphipod *Parhyale hawaiiensis*. National Zoological Garden 5<sup>th</sup> Annual Research Symposium, Pretoria, South Africa (**Talk**)
- 2012 Functional Appendage Transformation in *Parhyale hawaiiensis*. Neuroanatomy and Neurobiology of Marine Invertebrates Course. White Sea Biological Station, Russia (**Student Talk**)

## PUBLICATIONS

- 2016 Martin A, Serano JM, **Jarvis E**, Bruce HS, Wang J, Ray S, Barker CA, O'Connell LC, Patel NH (2016) CRISPR/Cas9 Mutagenesis Reveals Versatile Roles of Hox Genes in Crustacean Limb Specification and Evolution. *Current biology* 26:14–26.
- Serano JM, Martin A, Liubicich DM, **Jarvis E**, Bruce HS, La K, Browne WE, Grimwood J, Patel NH (2016) Comprehensive analysis of Hox gene expression in the amphipod crustacean *Parhyale hawaiiensis*. *Developmental biology* 409:297–309.
- An DD, Kullgren B, **Jarvis E**, Abergel RJ (2016) From early prophylaxis to delayed treatment: Establishing the plutonium decorporation activity window of hydroxypyridinonate chelating agents. *Chemico-biological interactions* (Article In Press).
- Pending Kao D, et al. (*in review*) The genome of the crustacean *Parhyale hawaiiensis*: a model for animal development, regeneration, immunity and lignocellulose digestion.
- Dalton D, Smit-Robinson H, VermaakE, **Jarvis E**, Kotze A (*submitted*) Is there genetic connectivity among the Critically Endangered Whited-winged Flufftail (*Sarothrura ayresi*) populations from South Africa and Ethiopia? *African Journal of Ecology*.
- Jarvis E**, et al. (*in preparation*) Genetic Interactions among Hox genes shape appendage diversity in the amphipod crustacean *Parhyale hawaiiensis*.
- 2014 Sturzbecher-Hoehne M, Kullgren B, **Jarvis E**, An DD, Abergel RJ (2014) Highly luminescent and stable hydroxypyridinonate complexes: a step towards new curium decontamination strategies. *Chemistry* 20:9962–9968.
- 2013 Nijagal A, Derderian C, Le T, **Jarvis E**, Nguyen L, Tang Q, Mackenzie TC (2013) Direct and indirect antigen presentation lead to deletion of donor-specific T cells after in utero hematopoietic cell transplantation in mice. *Blood*. 121:4595-602.
- Kullgren B, **Jarvis E**, An DD, Abergel RJ (2013) Actinide chelation: biodistribution and in vivo complex stability of the targeted metal ions. *Toxicology mechanisms and methods* 23:18–26.
- Bunin DI, Chang PY, Doppalapudi RS, Riccio ES, An D, **Jarvis E**, Kullgren B, Abergel RJ (2013) Dose-dependent efficacy and safety toxicology of hydroxypyridinonate actinide decorporation agents in rodents: towards a safe and effective human dosing regimen. *Radiation research* 179:171–182.
- 2012 **Jarvis E**, Bruce HS, Patel NH (2012) Evolving specialization of the arthropod nervous system. *Proceedings of the National Academy of Sciences* 109:10634–10639.
- Jarvis E**, An DD, Kullgren B, Abergel RJ (2012) Significance of Single Variables in Defining Adequate Animal Models to Assess the Efficacy of New Radionuclide Decorporation Agents: Using the Contamination Dose as an Example. *Drug Development Research* 73:281–289.
- 2011 Nijagal A, Wegorzewska M, **Jarvis E**, Le T, Qizhi T, MacKenzie TC (2011) Maternal T cells limit engraftment after in utero hematopoietic cell transplantation in mice. *J Clin Invest* 121:582–592.
- Osterland CD, **Jarvis E**, Chadayammuri A, Unnithan R, Weiser MJ, Spencer RL. (2011) Tonic, But Not Phasic Corticosterone, Constrains Stress Activated Extracellular-Regulated-Kinase 1/ 2 Immunoreactivity Within the Hypothalamic Paraventricular Nucleus. *Journal of Neuroendocrinology* 23:1241–1251.
- 2009 Pace TWW, Gaylord RI, **Jarvis E**, Girotti M, Spencer RL (2009) Differential glucocorticoid effects on stress-induced gene expression in the paraventricular nucleus of the hypothalamus and ACTH secretion in the rat. *Stress* 12:400–411.

## TEACHING EXPERIENCE (*Graduate Student Instructor for undergraduate courses at UC Berkeley unless otherwise stated*)

- Summers 2013-current Teaching Assistant for the summer Embryology course at the Marine Biological Lab, Woods Hole, MA
- Spring 2016 Brain, Mind, and Behavior (Discussion section)
- Fall 2012 Developed and facilitated my own semester-long course, “Politics for Scientists”  
Comparative Animal Physiology (Discussion section)
- Spring 2012 Evolutionary Medicine (Discussion section)
- Fall 2011, Summer 2012 Medical Ethnobotany (Lab)

## **OUTREACH AND SCIENCE COMMUNICATION**

- 2015 Organized and led a science writing workshop for student researchers in Pretoria, South Africa.
- 2014 “Hopeful Monsters” Public lecture about my research as part of the Bay Area Science Festival  
Exhibited my microscopy at the public gallery “Experimental Space: An Exhibition of Evidence” as part of the Bay Area Art and Science Interdisciplinary Collaborative Sessions  
Jarvis Alberstat E (2014) A Day in the life of a Parhyale lab. *The Node (Model organism series)*.  
Developed a research exhibit and activities for “Extreme Bugs” at the Lawrence Hall of Science.
- 2013 Editor for the Berkeley Science Review blog (Author & Blogger 2011 – 2013)  
Designed (and currently maintain) the Patellab.org website  
California Institute of Regenerative Medicine’s Bridges to Stem Cell Research Program (Volunteer)
- 2012 Developed and facilitated my own course “Politics for Scientists” at UC Berkeley (40 participants)  
Helped organize and lead my department’s recruitment week, orientation, and welcome events  
Dinner with a Scientist (Volunteer). Mind and Brain Night at Oakland Children’s Hospital (Volunteer)

**REFEREE/REVIEWER:** *Development*

## **PROFESSIONAL ORGANIZATIONS**

- 2015 - present Pan-American Society for Evolutionary and Developmental Biology
- 2010 - present Northern California Science Writers Association (NCSWA)