Angela Naoe Kaczmarczyk, Ph.D.

Somerville, MA 02143
(925)-817-7300
Angela.n.kaczmarczyk@gmail.com
www.angelakaczmarczyk.com

EDUCATION

Ph.D. in Molecular & Cell Biology
University of California, Berkeley, Department of Molecular & Cell Biology
Advisor: Dr. Nipam Patel
Dissertation: Germline maintenance and regeneration in the amphipod crustacean, *Parhyale hawaiensis*.
2009 – Dec. 2014

B.S. in Evolution, Ecology, & Biodiversity
University of California, Davis, Department of Evolution and Ecology
Advisor: Dr. Artyom Kopp
2004 – 2009

PROFESSIONAL EXPERIENCE

Co-founder and Board member (2015 – current) Boston Open Science Laboratory (BosLab), Somerville, MA.

- Worked with a small team of co-founders in a fast-paced start-up environment to incorporate a non-profit educational biotechnology community lab.
- Organized journal club, public seminar events, and educational workshops; co-developed curriculum for courses.
- Wrote and awarded a public outreach stipend grant ($1200) for organizing a public engagement forum through an NSF-funded synthetic biology museum program.

Visiting Scientist (September 2016 – August 2017) Broad Institute, Cambridge, MA.

- Optimized and performed Quality Control on next-generation library construction, bacterial RNA enrichment, and lysis methods for single-cell RNA-sequencing.
- Developed Shell, python, and R scripts for identifying current issues with library construction.
- Conducted weekly meetings a team of lab members to strategically decide on future experiments to reach project goals.

Scientific Communications instructor (May – August 2016) Broad Institute, Cambridge, MA.

- Worked closely with program director and coordinator to develop weekly lesson plans to engage undergraduates in learning effective storytelling in science.
- Trained students on how to give constructive feedback in both written and oral form.
- Ran interactive class activities that allowed students to learn and apply effective PowerPoint slide design, organization of presentation, and delivery of presentation.

Teaching Fellow (August – December 2015) MCB60 lab course, Harvard University.

- Used strong organizational skills to run 3 weekly lab sections for 40+ total undergraduates.
- Managed the research activities of undergraduates by providing guidance in designing DNA constructs and engineering yeast to study genes relevant to the DNA damage and repair pathway.

- Presented weekly course reviews and facilitated discussion in section to help students conceptualize lecture material and develop their problem-solving skills.

Junior Specialist (Jan. – March 2015) Dr. Nipam Patel, Division of Molecular and Cell Biology, UC Berkeley.

- Collaborated on a project with a team of scientists based in U.S.A., Japan, and France, which resulted in becoming a co-author on a recent *Nature* publication.
- Trained lab members on various laboratory techniques including molecular cloning, *In situ* hybridization, antibody staining, microinjections, and animal husbandry.
- Managed important transgenic fly stocks, transgenic crustacean stocks, laboratory reagents, and inventory.
- Piloted experiments on a transgenic line of crustaceans, which I generated during my Ph.D., confirmed that target gene, *dpp* is misexpressed ubiquitously upon heatshock in transgenic embryos.

Graduate Student Researcher (2009 – December 2014) Dr. Nipam Patel, Division of Molecular and Cell Biology, UC Berkeley.

- Wrote two compelling research proposals for a California Institute of Regenerative Medicine (CIRM) predoctoral fellowship, which resulted in two years of funding for my dissertation research totaling $70,000 for stipend and $10,000 for research.
- Engineered TrpE fusion proteins for production of a polyclonal antibody made to a germline-specific protein, Vasa, for immunofluorescence experiments, contributing to a manuscript in preparation.
- Developed a dual color pulse-chase cell proliferation protocol which resulted in Identification of putative germline stem cells in a crustacean.
- Generated a transgenic line of crustaceans for investigating the role of bone morphogenetic signaling (BMP) signaling in germline maintenance and ultimately germline regeneration.
- Wrote scripts using Perl to analyze Next Generation sequencing data. Screened crustacean transcriptome to find additional germline gene candidates, which were verified via whole mount in situ hybridization.
- Successfully generated RNA-seq libraries from small tissue samples for transcriptomics analysis in stickleback fish.
- Mentored four undergraduates in essential molecular biology techniques, microscopy, scientific writing, and oral presentation skills.

Teaching Assistant (Summer 2012) Woods Hole Embryology Course, Woods Hole, Massachusetts.

- Assisted graduate students and postdoctoral researchers in a two-week module on arthropod research.
- Led demonstrations on fly and crustacean gonad dissections for entire class.

Graduate Student Instructor (Spring 2011) Genetics Laboratory (MCB 140L), UC Berkeley.

- Prepared and ran weekly lab sections involving molecular biology and working with various genetic models including yeast, nematode worms, and fruit flies.
- Instructed students in experimental approaches in Genetics using the scientific method.
- Supervised students to ensure proper laboratory technique and safety.

Graduate Student Instructor (Fall 2010) Genetics, Genomics, and Cell Biology (MCB 104), UC Berkeley.

- Taught students fundamental concepts in Genetics, Genomics, and Cell Biology. Ran multiple discussion sections.

Undergraduate Researcher (2006-2009) Dr. Artyom Kopp, Division of Evolution and Ecology, UC Davis.

- Conducted independent research on quantifying GSCs in two fly populations selected for normal and extended lifespan, resulting in a first author publication.

Math-Biology trainee (2008) Collaborative Learning at the Interface of Math and Biology (CLIMB), UC Davis.

- Collaborated with six other undergraduates to develop mathematical models to address problems in biology, resulting in a publication in *Journal of Theoretical Biology*.
- Modeled the spread of Wolbachia-infected mosquitos to determine the feasibility of using life-shortening strains of Wolbachia to prevent the spread of dengue fever.
- Learned and utilized Perl, R, and Matlab for research projects.

AWARDS

California Institute of Regenerative Medicine (CIRM) predoctoral fellowship award, Jan. 2013- Dec. 2014.

Society for Integrative and Comparative Biology (SICB) conference best Division of Evolutionary Developmental Biology (DEDB) poster award, 2013.

NIH Genetics Training Grant fellow, University of California, Berkeley, 2009 – 2012.

Collaborative Learning at the Interface of Math and Biology (CLIMB) fellowship award, University of California, Davis, 2008.

President's Undergraduate Fellowship award, University of California, Davis, 2007.

PRESENTATIONS

Kaczmarczyk, A.N. "DIY Biomedical Products and Citizen Science Labs." March 2016. Guest lecturer for Harvard Extension School course BIOT E-225: Biomedical Product Development.

Kaczmarczyk, A.N. "BosLab: DIYBio community Lab." February 2016. Invited speaker at BioChanges event #4 at MIT Media Lab in Cambridge, MA.

Kaczmarczyk, A.N. "Germline Regeneration in *Parhyale hawaiensis*." 2014. Speaker at UC Berkeley Stem Cell retreat.

Kaczmarczyk, A.N., Villa, L., Andrade-Lopez, J., "The Molecular mechanisms of germline replacement in *Parhyale hawaiensis."* 2013. Poster presentation at Society for Integrative and Comparative Biology Conference.

PUBLICATIONS

Philip Barron Abitua, T. Blair Gainous, **Angela N. Kaczmarczyk**, Christopher J. Winchell, Clare Hudson, Kaori Kamata, Masashi Nakagawa, Motoyuki Tsuda, Takehiro G. Kusakabe, Michael Levine (2015) The pre-vertebrate origins of neurogenic placodes. *Nature.* 524(7566): 462-5.

Melinda S. Modrell*, Christopher Winchell*,Alivia L. Price, **Angela N. Kaczmarczyk**, Johanna Havemann, Carryn Barker, Ro C. Chaw, Elaine Kwan, Cassandra Extavour, Matthias Gerberding, and Nipam H. Patel. Germline replacement following ablation of the primordial germ cells in *Parhyale hawaiensis.* * co first authors. Manuscript in preparation.

Joshua G. Schraiber, **Angela N. Kaczmarczyk**, Ricky Kwok, Miran Park, Rachel Silverstein, Florentine U. Rutaganira, Taruna Aggarwal, Michael A. Schwemmer, Carole L. Hom, Richard K. Grosberg, Sebastian J. Schreiber (2012) Constraints on the use of lifespan-shortening *Wolbachia* to control dengue fever. *Journal of Theoretical Biology*. 297: 26-32.

Angela N. Kaczmarczyk, Artyom Kopp (2011) Germline stem cell maintenance as a proximate mechanism of life-history trade-offs? *BioEssays*. 33(1): 5-12.