

## ANNE KATHERINE BEULKE

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### EDUCATION

Graduate School, Ph.D. Student  
**University of California, Santa Cruz**  
*Ocean Science Department*  
Advisor: Dr. John Carlos Garza

September 2018 - Present

Bachelor of Science  
**University of Minnesota – Twin Cities**  
*Study Abroad: University of Otago, New Zealand, 2009*  
Majors: Ecology, Evolution and Behavior; Genetics, Cell Biology and Development

Graduated December 2010

### PUBLISHED PAPERS AND POSTERS

[Meireles](#) JE, Beulke A, Borkowski D, Romero-Severson J, Cavender-Bares J (2017) Balancing selection maintains diversity in a cold tolerance gene in broadly distributed Live Oaks. *Genome*. 60:762-769.

[Cavender-Bares](#) J, Gonzalez-Rodriguez A, Eaton DAR, Hipp AAL, Beulke A, Manos PS (2015) Phylogeny and biogeography of the American live oaks (*Quercus* subsection *Virentes*): a genomic and population genetics approach. *Molecular Ecology*. 24:3668-3687.

[Teasdale](#) SE, Beulke AK, Guy PL, Orlovich DA(2013) Environmental barcoding of the ectomycorrhizal fungal genus *Cortinarius*. *Fungal Diversity*. 58:299-310.

[Beulke](#) AK, Cavender-Bares J, Borkowski D (2013) Selection in candidate genes associated with drought and freezing response in live oaks (*Quercus* series *Virentes*) across a latitudinal gradient. *ESA 2013. Evolution Poster Session, Wednesday August 7, 2013.*

### GRANTS AND AWARDS

Services for Transfer and Re-entry Students (STARS) Scholarship, University of California Santa Cruz, 2019  
Regents Fellowship, University of California Santa Cruz, 2018

[MicroMORPH](#) Undergraduate Training Grant, National Science Foundation, 2011  
Undergraduate Research Opportunity Program (UROP) Grant, University of Minnesota, 2008  
University of Minnesota, College of Biological Sciences Dean's List, Spring 2007, Fall 2010

### EXPERIENCE

Big Data to Knowledge (BD2K) Mentor  
*UCSC BD2K Summer Undergraduate Program* June - August 2019

- Mentored an undergraduate intern in the Garza lab. I aided the student with lab practices, writing skills, and data management/analysis.

Biological Science Technician – Fisheries  
*US Forest Service, Shasta-Trinity National Forest, Weaverville Ranger District, CA*  
*Supervisor: Phil Fishella* May 2017 - Dec 2017

- Crew Leader: Organized snorkel surveys for adult steelhead and salmon counts. Organized salmon spawning surveys from rafts, inflatable kayaks and by foot. Completed stream condition inventory (SCI) surveys, placement of long-term temperature loggers, placed purchase orders, and arranged trainings as needed. Collaboration with multiple agencies. Data management and ArcGIS use.

Biological Science Technician – Aquatics  
*US Forest Service, Eldorado National Forest, Supervisor's Office, Placerville, CA*  
*Supervisors: Maura Santora and Jeff Mabe* May 2016 – Dec 2016

- Completed visual encounter surveys of endangered amphibian species. Snorkeled the Rubicon River to assess condition of the rainbow trout fishery after impact of the King Fire of 2014. Completed night survey for endangered amphibian species. Assisted in habitat restoration project for endangered frog species. Data management and ArcGIS use.

Biological Science Technician – Fisheries  
*US Forest Service, Mt. Baker-Snoqualmie National Forest, Mt. Baker Ranger District, WA*  
*Supervisors: Loren Everest and Jeremy Gilman* June 2015 – Oct 2015

- Snorkeled streams to identify fish species and record abundances. Completed stream habitat surveys. ArcGIS usage and data management.

Biological Science Technician – Fisheries  
*US Forest Service, Tongass National Forest, Thorne Bay Ranger District, AK*  
*Supervisor: Carol Mahara* May 2014 – Oct 2014

- Recorded fish species, fish habitat, stream class and channel types in proposed timber sale units. Electrofishing and minnow trapping to identify fish species. Data management and use of ArcGIS.

Junior Scientist and Laboratory Manager Dec 2011 – Aug 2013  
*University of Minnesota - Twin Cities, Cavender-Bares Lab, Ecology, Evolution and Behavior Department*  
 Supervisor: Dr. Jeannine Cavender-Bares

- Independent Research Project: Genetic variation in freezing tolerance candidate genes of seven live oak species. Presented a poster at ESA Conference in 2013. Co-authored the paper in *Genome* in 2017.
- Lab Manager: Led molecular biology bench work, organized lab equipment, trained students in molecular lab protocols, enforced safety regulations, utilized GIS, used statistical and modeling programs, ordered lab supplies, worked in the greenhouse and in the field, attended and presented at regular lab meetings. Participated in multiple projects and co-authored a paper in *Molecular Ecology* in 2015.

MicroMORPH Undergraduate Training Internship Sept 2011 - Nov 2011  
*University of Notre Dame, Romero-Severson Lab, Biological Sciences Department*  
 Supervisor: Dr. Jeanne Romero-Severson

- Molecular and statistical research training. Began independent research project of genetic variation in freezing tolerance candidate genes of seven live oak species.

Research Assistant in Costa Rica June 2011 - Aug 2011  
*University of Minnesota - Twin Cities, Cavender-Bares lab, Santa Elena, Guanacaste, Costa Rica*  
 Supervisor: Dr. Jeannine Cavender-Bares

- Field ecology assistant for development of long-term gardens of live oaks. Collected and planted acorns, recorded data, set up a solar powered sap flow monitoring system.

Laboratory Assistant Feb 2011 - May 2011  
*University of Minnesota - Twin Cities, Fahrenkrug Lab, Animal Science Department* Feb 2010 - June 2010  
 Supervisor: Dr. Scott Fahrenkrug and Dr. Dan Carlson Sept 2007 - Jan 2009  
 Volunteer: Feb 2007 - May 2007

- Gained multiple molecular biology skills such as: tissue/cell culture growth, E. coli and eukaryotic cell lines growth and manipulation, PCR, qPCR, RT-PCR, electrophoresis, media preparations, ligations, TOPO cloning, restriction digests, freezing cell lines, staining cell colonies and hazardous waste disposal protocols. Regular use of autoclaves, hemocytometers, microscopes, flow cytometers, incubators and computers.
- Independent project funded by UROP, 2008: Co-transfection of transposons into primary eukaryotic cells.

Directed Research, Independent Project June 2010 - Dec 2010  
*University of Minnesota - Twin Cities, Cavender-Bares Lab, Ecology, Evolution and Behavior Department*  
 Supervisor: Dr. Jeannine Cavender-Bares

- Field research of variation in willow species in response to leaf damage. Lab analysis of trichrome growth on leaves.

Plant Community Ecology Intern May 2010 - Sept 2010  
*University of Minnesota, Cedar Creek Ecosystem Science Reserve, East Bethel, MN*  
 Supervisor: Troy Mielke

- Identified and collected prairie plants (30+ species), recorded phenology of grasses/herbaceous plants, trapped and identified small mammals.

Wildlife Rehabilitation Center Volunteer May 2010 – Aug 2010  
*Waterfowl and Avian Nursery, Roseville, MN*

- Fed the waterfowl and birds; cleaned the pens.

Department of Conservation (DOC) Volunteer Program December 2009  
*New Zealand Department of Conservation, DOC Aniwanuiwa Field Centre, Lake Waikaremoana, Te Urewera National Park, New Zealand*  
 Supervisor: Aniwanuiwa Tawa and Sandra Francis

- Monitored fish species in streams with minnow traps, assessed tree health, planted rare native plants, tracked a kiwi bird with radio telemetry.

Student Research Project (Course: Evolutionary Genetics) July 2009 - Oct 2009  
*University of Otago, Dunedin, New Zealand*  
 Supervisor: Dr. David Orlovich

- Molecular identification of fungi through the design of genus specific primers. Co-authored the paper published in *Fungal Diversity* in 2013.