

CASSANDRA LANE ETTINGER

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EDUCATION

UNIVERSITY OF CALIFORNIA, DAVIS September 2013 – present
PhD Candidate – Integrative Genetics & Genomics Graduate Group

UNIVERSITY OF CALIFORNIA, BERKELEY August 2009 – May 2013
B.A. – Molecular & Cell Biology – Genetics, Genomics & Development Emphasis

UNIVERSITY OF YORK January – July 2012
United Kingdom – Visiting Scholar, Biology & Archaeology Departments

RESEARCH EXPERIENCE

GRADUATE RESEARCH Spring 2014 – Present

Dr. Jonathan Eisen, UC Davis

Interested in host-microbe interactions and coevolution

Current research: Seagrass Microbiome Project (www.seagrassmicrobiome.org)

UNDERGRADUATE RESEARCH August 2010 – June 2013

Dr. Ellen Simms, UC Berkeley

Assisted with research on Lupine phylogenetics

Honors thesis: "Genetic variation in abiotic tolerance and symbiotic quality among wild rhizobium bacteria" which involved validating draft genome assembly data of putative nickel tolerance genes, finding homologous proteins, building phylogenies and analyzing nitrogen isotope data

UNDERGRADUATE RESEARCH ABROAD April – July 2012

Dr. Christopher Elliott, University of York

Investigation of the role of dopamine in Drosophila vision and its relation to Parkinson's disease

ARCHEOLOGICAL EXCAVATION April – June 2012

Boltby Scar, University of York

TEACHING EXPERIENCE

UC DAVIS PLANT BIOLOGY DEPARTMENT Spring 2015 - present

Teaching Assistant

BIS2C - Introduction to Biology: Biodiversity and the Tree of Life

For 8 quarters: Spring 2015, Spring 2016, Summer 2016, Fall 2016, Winter 2017, Fall 2017, Fall 2018, Winter 2019

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BIS98 – Complimentary class to BIS2C for underserved minority students
For 1 quarter: Fall 2016

UC DAVIS EVOLUTION AND ECOLOGY DEPARTMENT Winter 2018
Teaching Assistant
EVE 161 – Microbial Phylogenomics
For 1 quarter: Winter 2018

UC DAVIS POPULATION BIOLOGY & ECOLOGY GRADUATE GROUPS Winter 2019
Organizer
PBG 298 / ECL 290 – Marine Microbial Ecology Seminar
For 1 quarter: Winter 2019

WORK EXPERIENCE

UC BERKELEY INTEGRATIVE BIOLOGY DEPARTMENT July 2010 – January 2012
Administrative Assistant
In charge of creating and maintaining electronic database
Responsible for filing and copying of sensitive information

UC BERKELEY DR. ELLEN SIMMS' LABORATORY Summer 2011
Research Assistant
Performed field work at UCD Bodega Bay Research Facility
Helped set up experiments at UCB Jane Gray Greenhouse

ACADEMIC SERVICE & AFFILIATIONS

UC Davis Data Science Initiative Graduate Affiliate October 2017 – present
UC Davis Center for Population Biology Graduate Affiliate December 2014 – present
Coastal & Marine Science Institute Grad Committee Co-chair October 2015 – Jan 2019
Integrative Genetics & Genomics Admissions Officer June 2016 – June 2018

VOLUNTEER & OUTREACH EXPERIENCE

EXPANDING YOUR HORIZONS Spring 2013 – present
Volunteer/Workshop Leader
Introduce 6th – 9th grade girls to STEM careers at UC Berkeley EYH &
Sacramento State EYH
Leads a yearly bioinformatics workshop "Genome Detectives" at Berkeley EYH

LETTERS TO A PRE-SCIENTIST Fall 2017 – Fall 2018
Volunteer

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Exchange letters throughout the year with a pen pal about science careers

DAVIS SCIENCE COLLECTIVE

Spring 2014 – Fall 2016

Volunteer

Promote science through the Davis Public Library

Helped 5th graders with science fair project ideas and experiential designs

CALIBER MAGAZINE

Spring 2010 – Fall 2010

Photographer

PEER-REVIEWED PUBLICATIONS

Amend A, Burgaud G, Cunliffe M, Edgcomb VP, **Ettinger CL**, Gutiérrez MH, Heitman J, Hom E, Ianiri G, Adam Jones, Kagami M, Picard K, Quandt A, Raghukumar S, Riquelme M, Stajich JE, Vargas-Muñiz J, Walker AK, Yarden O & Gladfelter AS. 2019. Fungi in the marine environment: open questions and unsolved problems. *mBio*.

Wilkins LGE*, **Ettinger CL***, Jospin G & Eisen JA. 2019. Metagenome-assembled genomes provide new insight into the microbial diversity of two thermal pools in Kamchatka, Russia. *Scientific Reports*. *co-first authors

Ettinger CL, Wilkins LGE, Dahlhausen KE, Ghose SL, Oberbauer D, Eisen JA & Coil DA. 2018. Even superheroes need help sometimes: Three incredible tales of microbial symbiosis. *Frontiers for Young Minds*.

Brown EA, Dickinson PJ, Mansour T, Sturges B, Aguilar M, Young A, Korff C, Lind J, **Ettinger CL**, Varon S, Pollard R, Brown T, Raude spp T & Bannasch DL. 2017. *FGF4* retrogene on CFA 12 is responsible for chondrodystrophy and intervertebral disc disease in dogs. *PNAS*.

Ettinger CL, Williams SL, Abbott JM, Stachowicz JJ & Eisen JA. 2017. Microbiome succession during ammonification in eelgrass bed sediments. *PeerJ*.

Coil DA, **Ettinger CL** & Eisen JA. 2017. Gut Check: The evolution of an educational board game. *PLoS Biology* 15(4):e2001984. DOI:10.1371/journal.pbio.2001984

Ettinger CL, Voerman SE, Lang JM, Stachowicz JJ & Eisen JA. 2017. Microbial communities in sediment from *Zostera marina* patches, but not the *Z. marina* leaf or root microbiomes, vary in relation to distance from patch edge. *PeerJ*.

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Shehata HR, Ettinger CL, Eisen JA, & Raizada MN. 2016. Genes Required for the Anti-fungal Activity of a Bacterial Endophyte Isolated from a Corn Landrace Grown Continuously by Subsistence Farmers Since 1000 BC. *Frontiers in Microbiology*.

Mousa WK, Shearer, C, Limay-Rios, V, Ettinger CL, Eisen JA & Raizada MN. 2016. Root-hair endophyte stacking in finger millet creates a physicochemical barrier to trap the fungal pathogen *Fusarium graminearum*. *Nature Microbiology*.

DATA PUBLICATIONS

Ettinger CL, Mousa WM, Raizada MN, Eisen JA. 2015. Draft genome sequence of *Enterobacter* sp. strain UCD-UG_FMILLET (phylum *Proteobacteria*). *Genome Announcements* 3(1):e01461-14. doi:10.1128/genomeA.01461-14.

Ettinger CL, Shehata HR, Johnston-Monje D, Raizada MN, Eisen JA. 2015. Draft genome sequence of *Burkholderia gladioli* strain UCD-UG_CHAPALOTE (phylum *Proteobacteria*). *Genome Announcements* 3(1):e01462-14. doi:10.1128/genomeA.01462-14.

GRANTS & FELLOWSHIPS

CENTER FOR POPULATION BIOLOGY COLLABORATIVE PROJECT RESEARCH AWARD with Victoria Morgan on “Unlocking the terrestrial realm: Are microbial symbioses the key to land crab terrestrial invasions?” (\$4000). June 2018 - present

CENTER FOR POPULATION BIOLOGY RESEARCH AWARD for metagenomic sequencing of grassland plant microbiomes (\$1600). June 2018 - present

SIGMA XI SCIENTIFIC RESEARCH SOCIETY GRANT-IN-AID OF RESEARCH for metagenomic sequencing of grassland plant microbiomes (\$1000). July 2018 – present.

H. A. LEWIN FAMILY FELLOWSHIP for research/travel (\$2000). July 2018 – present.

JEFFERY AND MARSHA GIBELING FELLOWSHIP for outstanding academic record and promise of productive scholarship (\$1100). October 2018 – present.

CENTER FOR POPULATION BIOLOGY COLLABORATIVE PROJECT RESEARCH AWARD with Marina LaForgia on “Understanding belowground plant-microbe feedback loops during competition between native and invasive plant species in a grassland ecosystem” (\$4500). June 2017 - present

CENTER FOR POPULATION BIOLOGY RESEARCH AWARD for genomic sequencing of seagrass-associated fungi (\$1300). June 2017 – October 2018

CENTER FOR POPULATION BIOLOGY RESEARCH AWARD for research on seagrass-associated fungi (\$1250). June 2016 – October 2017

NATURAL RESERVE SYSTEM RESEARCH GRANT for research on seagrass-associated fungi at UC Davis Bodega Marine Lab (\$2000). May 2016 – October 2017

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SANTA BARBARA SCHOLARSHIP FOUNDATION for tuition and stipend for four years at UC Berkeley and for four years at UC Davis (\$23,814). Fall 2009 – Spring 2017
MARINE BIOLOGICAL LABORATORY SCHOLARSHIP for tuition and room/board at the summer course in Microbial Diversity at the Marine Biological Laboratory in Woods Hole, Massachusetts (\$6975). July 4th – August 20th 2015
UNIVERSITY OF CALIFORNIA BLOCK GRANT for tuition and stipend during first two quarters at UC Davis. September 2013 – March 2014

ACHIEVEMENTS

NSF GRFP Honorable Mention 2014
Dean's Honor List, UC Berkeley Fall 2012

PROFESSIONAL MEMBERSHIPS

Association for Women in Science (AWIS), American Society for Microbiology (ASM), National Center for Science Education, American Association for the Advancement of Science (AAAS)

REVIEWER

Environmental Microbiology, mSystems, PLOS One, PeerJ

ORAL PRESENTATIONS

Ettinger CL & Eisen JA. 2019. "The seagrass mycobiome: what happened to fungal associations as plants moved back into the marine environment?" invited talk at the California Academy of Sciences, April 11, in San Francisco, California.

Ettinger CL & Eisen JA. 2018. "The seagrass mycobiome: what happened to fungal associations as plants moved back into the marine environment?" invited talk at the 12th annual UC Davis Research Retreat on Host Microbe Interactions, October 19, in Tahoe City, CA

Ettinger CL, Porter SS & Simms EL. 2013. "Genetic variation in abiotic tolerance and symbiotic quality among wild rhizobium bacteria" a ten-minute talk at the UC Berkeley Molecular and Cell Biology Honors Research Symposium, April 24, in Berkeley, California.

POSTER PRESENTATIONS

Ettinger CL & Eisen JA. 2018. "Characterization of the mycobiome of the seagrass, *Zostera marina*, across space and time" a poster presented at the Lake Arrowhead Microbial Genomics Conference, September 17, in Lake Arrowhead, California.

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Ettinger CL, Lang JM, Voerman SE, Stachowicz JJ & Eisen JA. 2015. "The Seagrass Microbiome Project: Edge Effects and Seagrass Microbiome Diversity" a poster presented at the 115th General Meeting of the Amer. Soc. for Microbiology, June 1, in New Orleans, Louisiana.

Ettinger CL, Lang JM, Voerman SE, Stachowicz JJ & Eisen JA. 2015. "Edge Effects and Seagrass Microbiome Diversity" a poster presented at the Integrative Genetics and Genomics Graduate Group Colloquium, May 18, in Davis, California.

Ettinger CL, Lang JM, Voerman SE, Stachowicz JJ & Eisen JA. 2014. "Edge Effects and Seagrass Microbiome Diversity" a poster presented at the 20th Annual International Meeting on Microbial Genomics, September 15, in Lake Arrowhead, California.

Ettinger CL, Lang JM, Voerman SE, Eisen JA & Stachowicz JJ. 2014. "Edge Effects and Seagrass Microbiome Diversity" a poster presented at the Integrative Genetics and Genomics Graduate Group Colloquium, June 2, in Davis, California. Won "People's Choice".

Ettinger CL,,, Watkins CC, Duckworth J, Duckworth CL & Vermeulen CW. 2007. "Permanently Self-Sterilizing Plastic Surfaces" a poster presented at the General Meeting of the Amer. Soc. for Microbiology, May 24, in Toronto, Ontario.

WORKSHOPS & TRAINING ATTENDED

NAIST INTERNATIONAL STUDENT WORKSHOP hosted by the Nara Institute of Science and Technology in Nara, Japan. November 9th-18th, 2018.

MARINE FUNGI WORKSHOP hosted by the Gordon and Betty Moore Foundation at the Marine Biological Laboratory, Woods Hole, MA. May 7th -9th, 2018

ANVIO WORKSHOP at the Joint Genome Institute, Walnut Creek, CA. September 25th – 26th, 2017

SCIENCE COMMUNICATION WORKSHOP hosted by the UC Davis Coastal and Marine Sciences Institute at UC Davis, Davis, CA. April 10th, 2017

EARLY CAREER OCEAN SUMMIT hosted by the Gordon and Betty Moore Foundation in Waikoloa, HI. January 17th – 21st, 2017

BAYESIAN STATISTICAL PHYLOGENETICS USING REVBayes at UC Davis, Davis, CA. July 11th – 15th, 2016

MICROBIAL DIVERSITY COURSE at the Marine Biological Laboratory, Woods Hole, MA. July 4th – August 20th, 2015

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EXPLORATIONS IN DATA ANALYSES FOR METAGENOMIC ADVANCES IN MICROBIAL ECOLOGY (EDAMAME) COURSE

at the Kellogg Biological Station,
Michigan State University, MI. August 13th – 20th, 2014

SOFTWARE CARPENTRY WORKSHOP at UC Davis, Davis, CA. June 16th – 17th, 2014

ADVISEES

Undergraduate Students:

Jolie Lobrutto* (September 2018 – present) *co-advised with Lena Capece

Neil Brahmbhatt (January 2018 – present)

Katelin Jones (June 2018 – September 2018)

Tess McDaniel (June 2018 – September 2018)

Hannah Kang* (September 2017 – June 2018) *co-advised with Marina LaForgia

Katie Somers (September 2017 – June 2018)

High Schools Students:

Henna Hundal, Young Scholars Program (June 2014 – August 2014)

SKILLS & INTERESTS

COMPUTER SKILLS: Coding and data analysis in Python and R. Basic knowledge of Perl, UNIX and HTML/CSS. Proficient in 16S and ITS amplicon analysis. Experience with microbial metagenome assembly, annotation and binning.

INTERESTS: photography, theatre, reading, baking, knitting, mountain biking, paddle boarding, rock climbing, backpacking, skiing, graphic design, science communication