

Onur Erbilgin

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Education

Ph.D. University of California, Berkeley

Microbiology, expected May 2015

Diversity of Bacterial Organelles: Bacterial Microcompartments

Thesis Committee: Dr. Cheryl Kerfeld (chair), Dr. Arash Komeili, Dr. Kathleen Ryan, Dr. David Savage

B.S. University of California, San Diego

Major: Cellular and Developmental Biology

Minor: Psychology; 2010

GPA: 3.770, Cum Laude

Phosphoregulation of Calcium-Dependent Protein Kinases Involved in Drought Signaling

Dr. Julian Schroeder (faculty mentor for undergraduate research)

Honors and Awards

Outstanding Graduate Student Instructor Award, 2013

American Society for Microbiology General Meeting Travel Grant, 2013

UC Berkeley Graduate Division Travel Grant, 2012

Plant and Microbial Biology Department Travel Grant, 2012

UC San Diego Chancellor's Research Scholarship, 2010

Certificate for Excellence in the Presentation of Research at the Undergraduate Research Conference, 2009

UC San Diego Chancellor's Research Scholarship, 2009

Publications

Cheryl A Kerfeld and Onur Erbilgin (2015). *Bacterial microcompartments and the modular construction of microbial metabolism*, **Trends in Microbiology**. (in press)

Seth D Axen*, Onur Erbilgin*, Cheryl A Kerfeld (2014). *A taxonomy of bacterial microcompartment loci constructed by a novel scoring method*. **PLoS Computational Biology**, 10: e1003898.

* Authors contributed equally to this work

Onur Erbilgin, Kent L McDonald, Cheryl A Kerfeld (2014). *Characterization of a Planctomycetal Organelle: A Novel Bacterial Microcompartment for the Aerobic Degradation of Plant Saccharides*. **Applied and Environmental Microbiology**, 80(7):2193-2205.

Featured in the Spotlight section of Applied and Environmental Microbiology

doi: 10.1128/AEM.00427-14

Featured in the Research Highlights section of Nature Chemical Biology

doi: 10.1038/nchembio.1488

Ariel Grostern, Christopher M. Sales, Wei-Quin Zhuang, **Onur Erbilgin**, Lisa Alvarez-Cohen, 2012. *Glyoxylate metabolism is a key feature of the metabolic degradation of 1,4-dioxane by Pseudonocardia dioxanivorans strain CB1190. Applied and Environmental Microbiology*, 78(9):3298-3308

Presentations of Work

ORAL PRESENTATIONS

Functional Characterization of a Predicted Bacterial Microcompartment in the Planctomycetes, American Society for Microbiology General Conference, Denver, CO, 2013

Cool Things in Strange Bugs: Study of a Bacterial Organelle, Plant and Microbial Biology Departmental Student and Post-Doc Seminar Series, Berkeley, CA, 2013

Organelles in Bacteria: Microcompartments Involved in Detoxification (and more!) in the Planctomycetes, Microbiology Student Group Symposium, Berkeley, CA 2013

Functional Characterization of a Predicted Bacterial Microcompartment in the Planctomycetes, *Planctomycetes-Verrucomicrobia-Chlamydia* Superphylum: Exceptions to the Bacterial Definition? Heidelberg, Germany, 2013

Phosphoregulation of Calcium-Dependent Protein Kinases (CDPKs) in Response to Abiotic Stress Stimuli, UC San Diego Undergraduate Research Conference, San Diego, CA, 2009

POSTERS

Exploring the Functional Diversity of Bacterial Microcompartments, Northern California American Society for Microbiology Conference, Dublin, CA, 2014

Investigation of a Putative Bacterial Microcompartment in the Planctomycetes, American Society for Microbiology General Conference, San Francisco, CA 2012

Formal Teaching Experience

University of California, Berkeley

Graduate Student Mentor, Summer 2012 – present

Train and directly supervise one undergraduate researcher working on an independent research project

Workshop Leader, August 2014

Four-hour workshop at the Graduate Student Instructor Teaching Conference for first-time graduate student instructors

Laboratory Fundamentals Boot Camp Instructor, June 2014

One week (40 hour) boot camp to introduce high school and undergraduate students to common techniques used in molecular biology laboratories, bioethics, and careers in science

Graduate Student Instructor

Microbiology Laboratory, Fall Semester 2013

Upper Division course; practical laboratory techniques in microbiology, two sections/week

General Biology A, Spring Semester 2012

Lower Division course; introduction to cell biology, genetics, cellular metabolism, and human physiology; three sections/week

University of California, San Diego

Teaching Assistant

Structural Biochemistry, Spring quarter 2009 and Winter quarter 2010

Upper Division; study of protein structure and function, one section/week

Techniques, Skills

BIOLOG phenotypic microarray analysis, molecular cloning, PCR, RNA extraction, Reverse-Transcription PCR, heterologous protein expression, protein purification (affinity purification, size exclusion chromatography, ion exchange chromatography), miscellaneous FPLC techniques, immunoblots, electron microscopy, light microscopy, colorimetric enzyme assays, bacterial cell culture, sterile technique, bacterial genomic manipulation, phylogenetic analysis, mass spectrum analysis, protein structural homology modeling.

Professional and Volunteer Activities

Docent - California Academy of Sciences, August 2014 - Present

Engage museum visitors in key messages of the institution

Student Representative for Faculty Meetings – Department of Plant and Microbial Biology, 2014-2015

Graduate student representative to the Plant and Microbial Biology Department faculty meetings

Founding Member - Peer Advising Committee for the Department of Plant and Microbial Biology, 2014-2015

One of eight founding committee members of graduate students who are advisors to first-year graduate students

Symposium Chair - Microbiology Student Group, 2013-2014

Organize the annual microbiology symposium that brings together San Francisco Bay Area microbiology students to discuss their research

Admissions Committee Member – Graduate Group in Microbiology, 2012-2013

Graduate student representative in a panel of 8 faculty members to provide input and decide on admission of applicants to the graduate program

Recruitment Weekend Committee Member - Department of Plant and Microbial Biology, 2012-2013

Co-chair with one graduate student to organize and lead the recruitment weekend

Classroom Volunteer – Berkeley High School, 2012

Assisted a high school Integrated Science teacher in classes of ESL students and students with learning disabilities

Retreat Committee Member - Department of Plant and Microbial Biology, 2012

Co-chair with one graduate student and two faculty members to organize and lead the retreat

Social Chair - Department of Plant and Microbial Biology, 2011-2012

Co-chair with one graduate student to organize and lead social events for graduate students

Professional Affiliations

American Society for Microbiology

Student Member, 2012 to Present

International Symbiosis Society

Student Member, 2014 to Present

References available upon request