

Matt J. Jaremko

3316 Jerusalem Ave, Wantagh, NY 11793

(808) 741-6277

mjaremko@ucsd.edu

Education

<i>Doctor of Philosophy: Chemical and Structural Biology</i>	2012-2017
University of California, San Diego; San Diego, CA	
Advisor: Professor Michael D. Burkart	
<i>Master of Science: Bioengineering</i>	2008-2011
University of Hawai'i, Mānoa; Honolulu, HI	
Advisor: Professor Jian Yu	
<i>Bachelor of Arts: Biology</i>	2003-2007
University of Hawai'i, Mānoa; Honolulu, HI	

Research Experience

<i>Postdoctoral NIH F32 Fellow, Cold Spring Harbor Laboratory</i>	2017-present
<ul style="list-style-type: none">Investigating DNA origin selection events through cryo-EM structural methodsDeveloping cryo-EM techniques for large protein complexes	
<i>Ph.D. Research, University of California, San Diego</i>	2012-2017
<ul style="list-style-type: none">Elucidated NMR structures of non-ribosomal peptide synthetases (NRPSs)Conducted NMR studies on protein-ligand and protein-protein interactions in NRPSs.Establishing crystallization conditions to understand protein-protein interactionsAssay development for monitoring ligand modification while tethered to a protein	
<i>Research Associate, Hawaii Natural Energy Institute</i>	2011- 2012
<ul style="list-style-type: none">Developed a biofuel conversion method to produce nutrients for polyhydroxyalkanoate (PHA) productionOptimized bioreactor conditions for generation of PHA in high yields from <i>Ralstonia eutropha</i>	
<i>M.S. Researcher, Hawaii Natural Energy Institute</i>	2008- 2011
<ul style="list-style-type: none">Established an <i>in vitro</i> bio-conversion method to determine intermediates in levulinic acid metabolismDetermined method to alter PHA composition by adjusting nutrient availability	
<i>Research Assistant, Specialized Neuroscience Research Program</i>	2007- 2008
<ul style="list-style-type: none">Managed the genotyping of all murine species in the facilityAssisted in Fluorescence <i>in situ</i> Transcription to study PTSD in human brainsConducted immunohistochemistry on murine brain sections to study CRF receptor activity	

Publications

- On, K. F.; **Jaremko, M. J.**; Stillman, B.; Joshua-Tor, L. A structural view of the initiators for chromosome replication. *Curr. Opin. Struct. Biol.* **2018**, *53*, 131-9.
- Jaremko, M. J.**; Lee, D. J.; Patel, A.; Winslow, V.; Opella, S. J.; McCammon, J. A.; Burkart, M. D. Manipulating protein-protein interactions in NRPS type II PCPs. *Biochemistry.* **2017**, *56* (40), 5269-73.
- McCulloch, I. P.; La Clair, J. J.; **Jaremko, M. J.**; Burkart, M. D. Fluorescent Mechanism-Based Probe for Aerobic Flavin-Dependent Enzyme Activity. *ChemBiochem* **2016**, *17* (17), 1598-601.
- Jaremko, M.J.**; Lee, D. J.; Opella, S. J.; Burkart, M. D. Structure and Substrate Sequestration in the Pyoluteorin Type II Peptidyl Carrier Protein PltL. *J. Am. Chem. Soc.* **2015**, *137* (36), p. 11546-9.
- Shakya, G.; Rivera, H.; Lee, D. J.; **Jaremko, M. J.**; La Clair, J. J.; Fox, D. T.; Haushalter, R. W.; Schaub, A. J.; Bruegger, J.; Barajas, J. F.; White, A. R.; Kaur, P.; Gwozdzowski, E. R.; Wong, F.; Tsai, S.-C.; Burkart, M. D. Modeling Linear and Cyclic PKS Intermediates through Atom Replacement. *J. Am. Chem. Soc.* **2014**, *136* (48), 16792-9.
- Yu, J.; Porter, M.; **Jaremko, M.J.** Generation and Utilization of Microbial Biomass Hydrolysates in Recovery and Production of Poly(3-hydroxybutyrate). *Biomass Now – Cult. and Utiliz.* **2013**.
- Porter, M. M.; Lee, S.; Tanadchangsang, N.; **Jaremko, M. J.**; Yu, J.; Meyers, M.; McKittrick, J. Porous hydroxyapatite-polyhydroxybutyrate composites fabricated by a novel method via centrifugation. *Mech. of Biol. Sys. Materials.* **2013**, *5*, p. 63-71.
- Jaremko, M.J.***; Yu, J. The initial metabolic conversion of levulinic acid in *Cupriavidus necator*. *J. Biotech.* **2011**, *155* (3), p. 293-8.

* - corresponding author

Presentations

1. *Engineering NRPS Pathways for Development of Enhanced Therapeutics (oral)*. National Cancer Institute Cancer/Oncogenesis Group Seminar, San Diego, CA, **2016**.
2. *The Recognition Interface Between the Peptidyl Carrier Protein and Adenylation Domain (poster)*. 25th Bioorganic Gordon Research Conference, Andover, NH, **2016**.
3. *Substrate sequestration and protein-protein interactions in pyrrole biosynthesis (oral)*. 251st ACS National Meeting, San Diego, CA, Young Investigators in Biological Chemistry, San Diego, CA, **2016**.
4. *Structure and aromatic substrate sequestration in pyrrole type II peptidyl carrier proteins (poster)*. Pacificchem International Meeting, Honolulu, HI, **2015**.
5. *Structure and aromatic substrate sequestration in the pyoluteorin peptidyl carrier protein PltL (poster)*. 250th ACS National Meeting, Boston, MA, **2015**.
6. *Pyrrole biosynthesis and incorporation in natural products (oral)*. National Cancer Institute Cancer/Oncogenesis Group Seminar, San Diego, CA, **2015**.
7. *Direct interactions between an aromatic acyl substrate and the peptidyl carrier protein, PltL (poster)*. 56th ENC Conference, Monterey, CA, **2015**.
8. *Pyrrole Carrier Proteins: Substrate Interactions and Structural Insights (oral)*. Natural Products Affinity Group Lectures, San Diego, CA, **2015**.
9. *Production of polyhydroxybutyrate from residual algal biomass of biodiesel extraction (poster)*. The 2nd International Conference on Algal Biomass, Biofuels & Bioproducts, San Diego, CA, **2012**.

Leadership Experience

<i>Vice President</i> , Biosciences Enterprise Club-CSHL, Cold Spring Harbor, NY	2017- present
<ul style="list-style-type: none">• Aiding science research professionals in skill development and alternative science career paths	
<i>Teaching Assistant</i> , University of California, San Diego	2012-2017
<ul style="list-style-type: none">• Conducting discussions and laboratory for undergraduates in the Chemistry Department	
<i>Teaching Intern</i> , University of Hawai'i, Mānoa	2007
<ul style="list-style-type: none">• Conducting laboratory experiments for undergraduates in the Biology Department	
<i>On-site Internship</i> , Kapi'olani Medical Center Emergency Room	2005-2006
<ul style="list-style-type: none">• Assisted nurses and physicians in various tasks• Obtained firsthand knowledge of medical operations	
<i>Resident Advisor</i> , University of Hawai'i, Mānoa	2003-2004
<ul style="list-style-type: none">• Organized events for undergraduates in the student dormitories• Performed in the theatrical performance "Unspeakable Acts", a demonstration sermonizing sexual assault issues.	

Honors/Fellowships

<i>National Institute of Health F32 Postdoctoral Fellowship</i>	2018-present
<i>UCSD NIH/NCI Cancer Training Grant</i> , Pre-doctoral Trainee	2015-2017
<i>Teddy Traylor Award</i>	2015
<ul style="list-style-type: none">• Merit-based research award recognizing an exceptional PhD student	
<i>Hawai'i Natural Energy Institute Fellowship</i>	2008-2011
<i>University of Hawai'i Dean's list</i>	2004-2007

Mentorship

Chemistry undergraduate research students	2013-2016
2015 Division of Organic Chemistry Undergraduate Award Winner	
2015 Dean's Undergraduate Award of Excellence	

Memberships

American Chemical Society	2010-present
American Heart Association	2014-present
Natural Product Affinity Group	2012-present
Royal Chemical Society	2014-present