

JENNIFER KATERI TESCHLER

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Education

University of California, Santa Cruz

2019

Ph.D. in Microbiology and Environmental Toxicology, Expected Graduation 2019. G.P.A. 3.889

University of California, San Diego

2008

B.S. in Environmental Systems: Ecology, Behavior and Evolution. Minor: Writing. G.P.A. 3.563

Cold Spring Harbor Advanced Bacterial Genetics Course

2014

ASM Microbe Academy for Professional Development

2019

Selected Skills and Techniques

• Molecular cloning • RNA isolation and transcriptome profiling • PCR • DNA amplification and purification • Fluorescence microscopy • Animal model experience • Protein expression • SDS-PAGE/Western blot • Data analysis and presentation • Genetic screening • CRISPRi • Phage transduction • Excellent technical writing skills • Exceptional oral communication, organizational and mentoring skills •

Research experience

Postdoctoral Researcher

2019-present

Advisor: Fitnat Yildiz. Studied antagonistic bacterial interactions, both between bacterial strains and with the human host. Helped develop novel techniques for analyzing host pathogen interactions and learned new molecular and biochemical skills, including CRISPRi, Fluorescence-activated cell sorting (FACS), and Fast protein liquid chromatography (FPLC). Published one first author paper and one second author paper, current publication in preparation. Trained two rotation students, who both later joined the lab. Helped develop and write new protocols to retain institutional knowledge and managed laboratory functions including organization, ordering and scheduling equipment use.

Graduate Student

2013-2019

Advisor: Fitnat Yildiz. Studied *Vibrio cholerae* biofilm regulation, with a focus on the role of two component regulatory systems (TCS) in biofilm formation and the role of growth in biofilms in transmission to a human host. Characterized a new biofilm and virulence regulator using molecular genetics and microscopy. Published three first author papers and contributed to three papers. Mentored and trained three undergraduate students. Worked in a collaborative environment and developed technical, analytical, and critical thinking skills.

Work experience

Biologist

2010-2012

Collected and processed water quality data from San Francisco Bay and Sacramento-San Joaquin Delta. Lead scientist on several select research cruises—collected discrete samples or operated CTD and analyzed data. Laboratory analyses include chlorophyll *a*, dissolved oxygen titrations, and suspended sediment.

Graduate Environmental Planner

2007-2010

Coordinated the environmental review processes between FEMA recipients of federal funding, state emergency management and historic preservation agencies, project archaeologists, and project biologists. Conducted site

visits and research to inform the environmental review and preparation of federal environmental compliance documents. Assisted with field work and the preparation of biological reports.

HONORS AND AWARDS

Dissertation Year Fellowship	2018
ARCS Foundation Fellowship	2016
Friends of Long Marine Lab Student Research Award	2014
UCSC Chancellors Fellowship	2013
URS Corporation Outstanding Achievement Award	2010
Thurgood Marshall College Outstanding Senior, UCSD	2008
JMC Patrick J. Ledden Diversity Award, UCSD	2008
Outstanding Senior Nominee and Finalist, UCSD	2008
Dean's Award for Excellence in Physical Science, UCSD	2007

PUBLICATIONS

Tan K, **Teschler JK**, Wu R, Jedrzejczak RP, Zhou M, Shuvalova LA, Endres MJ, Welk LF, Kwon K, Anderson WF, Satchell KJF, Yildiz FH, Joachimiak A. 2021. Sensor Domain of Histidine Kinase VxrA of *Vibrio cholerae* - A Hairpin-swapped Dimer and its Conformational Change. *J. Bacteriol.*

Gallego-Hernandez AL*, Depas WH*, Park JH*, **Teschler JK***, Hartmann R, Jeckel H, Drescher K, Beyhan S, Newman DK, Yildiz FH. (***contributed equally**). 2020. Upregulation of virulence genes promotes *Vibrio cholerae* hyperinfectivity. *Proc. Natl. Acad. Sci. U. S. A.* 117(20):11010–17

Cheng AT, Zamorano-Sánchez D, **Teschler JK**, Wu D, Yildiz FH. 2018. NtrC Adds a New Node to the Complex Regulatory Network of Biofilm Formation and *vps* Expression in *Vibrio cholerae*. *J. Bacteriol.* 200:e00025-18.

Kemter FS, Messerschmidt SJ, Schallopp N, Sobetzko P, Lang E, Bunk B, Spröer C, **Teschler JK**, Yildiz FH, Overmann J, Waldminghaus T. 2018. Synchronous termination of replication of the two chromosomes is an evolutionary selected feature in Vibrionaceae. *PLOS Genet.* 14:e1007251.

Teschler, J. K., Cheng, A.T., and Yildiz, F. H. 2017. The Two-Component Signal Transduction System VxrAB Positively Regulates *Vibrio cholerae* Biofilm Formation. *J. Bacteriol.* 199, e00139-17

Joshi, A., Kostiuk, B., Rogers, A., **Teschler, J.K.**, Pukatzki, S., and Yildiz, F.H. 2016. Rules of Engagement: The Type VI Secretion System in *Vibrio cholerae*. *Trends Microbiol.* 24, 2833–2842

Conner, J. G.*; **Teschler, J. K.***; Jones, C. J.; Yildiz, F. H. (***contributed equally**). 2016. Staying Alive: *Vibrio cholerae*'s Cycle of Environmental Survival, Transmission, and Dissemination. *Microbiology Spectrum*. ASM Pub2Web

Teschler, J. K.; Zamorano-Sánchez, D.; Utada, A. S.; Warner, C. J. A.; Wong, G. C. L.; Linington, R. G.; Yildiz, F. H. Living in the matrix: assembly and control of *Vibrio cholerae* biofilms. *Nat. Rev. Microbiol.* 2015, 13 (5), 255–268 DOI: 10.1038/nrmicro3433.

PRESENTATIONS

Teschler, J. K. et al. (Mar 2021) Bay Area Microbial Pathogenesis Meeting. Upregulation of virulence genes promotes *Vibrio cholerae* biofilm hyperinfectivity. Oral Presentation. Virtual meeting.

Teschler, J. K. et al. (May 2020) VibriOnline Meeting. Mechanism of *Vibrio cholerae* Biofilm Hyperinfectivity. Oral Presentation. Virtual meeting.

Teschler, J. K. et al. (June 2019) ASM Microbe. Mechanism of *Vibrio cholerae* Biofilm Hyperinfectivity. Poster Presentation. San Francisco, CA.

Teschler, J. K. et al. (January 2018) The Gordon Research Conference on Sensory Transduction in Microorganisms. Contribution of the VxrB regulon to virulence, the T6SS, and cell wall homeostasis. Poster Presentation. Ventura, CA.

Teschler, J. K. et al. (December 2016) West Coast Bacterial Physiologists Conference. The VxrAB TCS positively regulates *Vibrio cholerae* biofilm formation. Oral Presentation. Asilomar Conference Grounds, Pacific Grove, CA.

Teschler, J. K. et al. (August 2016) Molecular Genetics of Bacteria and Phages. The VxrAB TCS positively regulates *Vibrio cholerae* biofilm formation. Poster Presentation. University of Wisconsin-Madison.

Teschler, J. K. et al. (April 2016). The VxrAB TCS positively regulates *Vibrio cholerae* biofilm formation. Seymour Center, Santa Cruz. Poster Presentation. UCSC STEM Postdoc Symposium

Teschler, J.K. (November 2015). "A novel regulator of virulence, the T6SS, and biofilm formation in *Vibrio cholerae*." Presenter. METX Seminar, UCSC.

Teschler, J.K. (May 2015). "Characterizing the Vxr regulon, mechanism of activation of Vxr, and role of T6SS in *V. cholerae* biofilms." Presenter. METX Seminar, UCSC.

Teschler, J.K. (May 2014). "Role of LysR-type Transcriptional Regulators in *V. cholerae* biofilm formation." Poster presentation. Graduate Research Symposium.

Teschler, J.K. (May 2014). "The global transcriptional regulators, LTTRs, play a role in *V. cholerae* biofilm formation." Presenter. METX Seminar, UCSC.

TEACHING EXPERIENCE

Guest Lecturer

Spring 2019

METX119: Microbiology: Guest lectured a class on *Vibrio cholerae* for Prof. Karen Ottemann.

Teaching Assistant

Spring 2019

METX119: Microbiology: Teaching Assistant for Prof. Karen Ottemann.

Teaching Assistant

Fall 2018

METX119: Microbiology: Teaching Assistant for Prof. Vicki Stone.

Student Mentoring

Summer 2016, September 2017-present

In the Winter of 2020 I trained Vanessa Mariscal on a project where we analyzed the activation and function of a diguanylate cyclase (DGC), an enzyme responsible for producing c-di-GMP, using genetic and biochemical approaches, including morphology analysis, fast protein liquid chromatography (FPLC), and size exclusion chromatography-multi-angle light scattering (SEC-MALS). In the Fall of 2019 I trained a rotation student, Lizett

Gonzalez, on a project where we used CRISPRi to knockdown key biofilm genes during different stages of biofilm development. From June 2016-August 2016, I supervised a summer student, Beril Pakalin, from Koç University, Turkey. I designed a two month training and research plan for her that culminated in a presentation of her findings in August 2016. In September 2017 I began mentoring a third year undergraduate, Adiaratou Ba, and in May 2019 I began training a first year undergraduate student, Semin Hazir. In addition to providing hands on training in the lab and collaborating with them to design tailored project plans, we also have weekly literature discussions to ensure they understand the reasoning and concepts behind their project and the methods they are using. Adiaratou recently graduated and is now applying to medical school and Semin's project is progressing nicely.

Teaching Assistant

Spring 2015

Bio 20A: Cell and Molecular Biology: Teaching Assistant for Prof. Jeremy Lee.

Teaching Assistant

Fall 2014

METX119: Microbiology: Teaching Assistant for Prof. Vicki Stone.

COMMUNITY INVOLVEMENT

Organizer of the Social Biofilm Network Online meeting

June 2020

Lab Safety Representative (LSR) for the Yildiz lab

September 2015-September 2018

Co-president of the Graduate Student Association

June 2014-June 2016

Volunteer: Women in Science and Engineering (WiSE) Educational Outreach Program

Fall 2013-present

Volunteer: Volunteers for Outdoor California

2008-present

Volunteer: Lafayette School Mentoring Project

2008-2010

PROFESSIONAL AFFILIATIONS

Member of American Society of Microbiology

2013-present

Member of Graduate Women in Science

2017-present