**TRICIA A. VAN LAAR, Ph.D.**

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**EDUCATION**

**Ph.D. Cell and Molecular Biology (2012)**

The University of Texas at San Antonio, San Antonio, TX

Dissertation Project: *Role of the mevalonate pathway in the patho-physiology of Borrelia burgdorferi*

Major Advisor: J. Seshu, Ph.D.

**Master of Science Biology (2007)**

University of the Pacific, Stockton, CA

Thesis Project: *The behavior of Rad51D and XRCC2 in response to drug induced DNA damage and a continuing study of the fly Rad51 paralogs*

Major Advisor: Lisa Wrischnik, Ph.D.

**Bachelor of Science** **Biology** **(2005)** Minor in Chemistry, Concentration in Genetics  
 California State University, Stanislaus, Turlock, CA

Research Project: *Speciation of Sylvilagus bachmani riparius*

Major Advisor: Jim Youngblom, Ph.D.

**PROFESSIONAL POSITIONS**

* **Assistant Professor of Microbiology,** California State University, Fresno (August 2015-present)
* **Adjunct Instructor**, St. Philip’s College (August 2014-August 2015)
* **NRC Postdoctoral Research Fellow**, US Army Institute of Surgical Research, Dental and Trauma Research Detachment (April 2012-August 2015)
* **Graduate Research and Teaching Assistant**, The University of Texas at San Antonio (August 2007-March 2012)
* **Graduate Research and Teaching Assistant**, University of the Pacific(August 2005-August 2007)
* **Undergraduate Research Assistant**, California State University, Stanislaus, Endangered Species Recovery Program (April 2004-August 2005)

**TEACHING ACTIVITES**

* **Courses Taught**
  + California State University, Fresno
    - Immunology
    - Revenge of the Killer Microbes
    - Medical Microbiology
    - Introductory Microbiology
    - Cell Biology
    - Bacterial Pathogenesis
    - Graduate Writing
  + St. Philip’s College
    - Microbiology for Allied Health and Nursing (lecture and laboratory)
    - Biology II for Science Majors (lecture and laboratory)
  + The University of Texas at San Antonio
    - General Biology (discussion leader)
    - Microbiology and Bacterial Pathogenesis (guest lectures/teaching assistant)
  + University of the Pacific
    - Genetics (laboratory instructor – designed all lab curriculum)
    - Microbiology (laboratory instructor – designed all lab curriculum)
    - General Biology (laboratory instructor)
* **American Society for Microbiology Science Teaching Fellowship Program** (October 2013-January 2014)
* **Educational Teaching Service** (March 2010-December 2010)
  + Item writer for Biology, Chemistry, and Physics GED

**PEER-REVIEWED PUBLICATIONS**

* Lin YH, Romo J, Reyes A, Smith T, Karna SLR, Miller CL, **Van Laar TA**, Yendapally R, Chambers J, and J Seshu. Spermine and spermidine alter gene expression and antigenic profile of Borrelia burgdorferi. (*in revision* at Infection and Immunity)
* Miller, CL\*, **TA Van Laar\***, T You, T Chen, and KP Leung. 2016. Global Transcriptome Responses Including Small RNAs During Mixed-Species Interactions with Methicillin-Resistant *Staphylococcus aureus* and *Pseudomonas aeruginosa.* Microbiologyopen doi:10.1002/mbo3.427
* Kennedy, V, **TA Van Laar**, O Aleru, M Thomas, M Ganci, and M Rawat. 2016. Genome Sequences of Three Spore-Forming Bacteria Isolated From Organically Raised Chicken Feces. Genome Announc 4(5):e00880-16. doi:10.1128/genomeA.00880-16.
* Nelson, RL, MA Castro, M Katti, JA Eisen, and **TA Van Laar**. 2016. Genome Sequence of a Multi-Drug Resistant Strain of *Bacillus pumilus*, CB01, Isolated From the Feces of an American Crow, *Corvus brachynrhynchos*. Genome Announc 4(4):e00807-16. doi:10.1128/genomeA.00807-16.
* **Van Laar, TA**, C Hole, SL Karna, CL Miller, YH Lin, FL Wormley, R Reddick, and J Seshu. 2016. Statins Reduce Spirochetal Burden and Modulate Immune Responses in the C3H/HeN Mouse Model of Lyme Disease. Microbes Infect 18(6):430-5.
* **Van Laar, TA**, T Chen, T You, and KP Leung. 2015. Sublethal Concentrations of Carbapenems alter Cell Morphology and Genomic Expression of *Klebsiella pneumoniae* Biofilms. Antimicrob. Agents Chemother. 59(3):1707-1717.
* **Van Laar, TA**, T Chen, BM Childers, P Chen, JJ Abercrombie, and KP Leung. 2014 Genome Sequence of a Multi-Drug Resistant Strain of *Klebsiella pneumoniae*, BAMC 07-18, Isolated From a Combat Injury Wound. Genome Announc. 2(6):e01230-14.
* Childers, BM, **TA Van Laar**, T You, S Clegg, and KP Leung. 2013. MrkD(1P) from *Klebsiella pneumoniae* IA565 Allows for Co-existence with *Pseudomonas aeruginosa* and Protection from Protease-mediated Biofilm Detachment. Infect. Immun. **81**:4112:4120.
* **Van Laar, TA**, YH Lin, CL Miller, SL Karna, JP Chambers, J Seshu. 2012. Effect of Levels of Acetate on the Mevalonate Pathway of *Borrelia burgdorferi*. PLoS One. 7(5):e38171
* Raju, BV, MD Esteve-Gassent, SL Karna, CL Miller, **TA Van Laar**, and J Seshu. 2011. Oligopeptide Permease A5 Modulates Vertebrate Host-Specific Adaptation of *Borrelia burgdorferi*. Infect. Immun. **79:**3407-3420.

**BOOK CHAPTERS**

* Seshu J, Smith T, Lin YH, Karna SLR, Miller CL, **Van Laar TA**. Analysis of DNA and RNA binding properties of *Borrelia burgdorferi* regulatory proteins. (*in preparation* for Borrelial Methods)

**INVITED LECTURES**

* California State University, Stanislaus 2016: *Good drugs gone bad: An investigation of antimicrobial/resistance and tolerance in war-wound pathogens*
* Central Valley Café Scientifique 2015: *A biologist and a sociologist walk into a…CRISPR* (podcast also available)
* South Texas Center for Emerging Infectious Diseases 2011: *Role of the mevalonate pathway in the patho-physiology of Borrelia burgdorferi*

**CONFERENCE PRESENTATIONS WITH FRESNO STATE**

\* indicates graduate student, ^ indicates undergraduate student, # indicates presenting author

**2016**

* **Van Laar, TA#**, T Birges^, J Thomas^, B Hazen, M Rawat (poster) *Redox status affects pyocyanin synthesis and biofilm formation in Pseudomonas aeruginosa*. ASM Microbe 2016
* Nelson, RL^#, JA Eisen, M Katti, and **TA Van Laar**. (poster) *Discovering the Microbiome and Resistome of Crows Across the Rural-Urban Gradient.* College of Science and Mathematics Celebration of Student Research and Achievements.
* Esani, S\*# and **TA Van Laar** (poster) *Genetic analysis of persister cell formation in Pseudomonas aeruginosa*. College of Science and Mathematics Celebration of Student Research and Achievements.
* Esani, S\*# and **TA Van Laar** (oral) *Genetic analysis of persister cell formation in Pseudomonas aeruginosa*. Graduate Research and Creative Writing Symposium.
* Nelson, RL^#, JA Eisen, M Katti, and **TA Van Laar**. (poster) *Discovering the Microbiome and Resistome of Crows Across the Rural-Urban Gradient.* Central California Research Symposium
* Esani, S\*# and **TA Van Laar** (oral) *Genetic analysis of persister cell formation in Pseudomonas aeruginosa*. Central California Research Symposium (**Outstanding Oral Graduate Presentation to SE**)
* Esani, S\*# and **TA Van Laar** (poster) *Genetic analysis of persister cell formation in Pseudomonas aeruginosa*. CSU Biotechnology Symposium
* **Van Laar, TA#**, J Thomas\*, B Hazen, M Rawat (poster) *Redox status affects pyocyanin synthesis and biofilm formation in Pseudomonas aeruginosa*. CSU Biotechnology Symposium

**SELECTED OLDER CONFERENCE PRESENTATIONS**

* Military Health System Research Symposium 2014: (poster) *Sublethal concentrations of carbapenems alter cell morphology and genomic expression of Klebsiella pneumoniae biofilms*
* American Society for Microbiology General Meeting 2014: (poster) *Transcriptome analysis of persister cells of Pseudomonas aeruginosa*
* Interscience Conference on Antimicrobial Agents and Chemotherapy 2013: (poster) *The effect of imipenem on biofilms of a multi-drug resistant isolate of Klebsiella pneumoniae*
* Symposium on Infectious Diseases and Health Disparities in a Changing World 2011: (poster) *Mevalonate pathway of Borrelia burgdorferi*
* UTSA College of Science Research Symposium 2010: (poster presentation) *Regulation of expression of a linear plasmid encoded ORF in the patho-physiology of Borrelia burgdorferi*
* UTSA College of Science Research Symposium 2010: (oral presentation) *Role of the mevalonate pathway in the patho-physiology of Borrelia burgdorferi*
* American Society for Microbiology General meeting 2010: (poster presentation) *Role of the mevalonate pathway in the patho-physiology of Borrelia burgdorferi*
* Texas Branch of the American Society for Microbiology meeting 2009: (oral presentation) *Role of the mevalonate pathway in the patho-physiology of Borrelia burgdorferi*
* Texas Branch of the American Society for Microbiology meeting 2008: (poster) *A metabolic comparison of Borrelia spp.*
* California State University Student Research Competition 2005 (System-wide competition): (oral presentation) *Speciation of Sylvilagus bachmani riparius*
* California State University, Stanislaus Student Research Competition 2005: (oral presentation) *Speciation of Sylvilagus bachmani riparius*
* California State University Research Symposium 2005: (poster) *Speciation of Sylvilagus bachmani riparius*

**HONORS, AWARDS, and GRANTS**

* 2016: College of Science and Mathematics Professional Development Award ($1,200)
* 2015: Biology Travel Award ($1,000)
* 2012-2015: National Research Council Post-Doctoral Fellowship
* 2011-2012: Center for Excellence in Infection Genomics Doctoral Scholarship (tuition/stipend)
* 2010-2011: South Texas Center for Emerging Infectious Diseases PhD Fellowship (tuition/stipend)
* 2010: UTSA Presidential Dissertation Fellowship, Summer 2011-2012 ($1,500)
* 2009: O.B. Williams Award (honorable mention) for oral presentation at Texas ASM
* 2005: First place oral presentation at the CSUS Student Research Competition

**STUDENT HONORS, AWARDS, and GRANTS**

* 2016: CSU Council on Ocean Affairs, Science & Technology Undergraduate Award ($400 to R. Lee Nelson)
* 2016: Outstanding Oral Graduate Presentation at the Central California Research Symposium (to Saika Esani)

**OUTREACH**

Fresno State

* Annual Biomedical Conference for Minority Students Presentation Judge (2016)
* Division of Graduate Studies Symposium Judge (2016)
* Head Microbiology Judge for the Central California Regional Science, Math & Engineering Fair (2016)
* Expanding Your Horizons Presenter (2015)

Center for Excellence in Infection Genomics STEM program

* + Visited John Jay and Thomas Edison High Schools to instruct students in microbiological techniques
  + Volunteered at various science fairs

**PROFESSIONAL SOCIETY MEMBERSHIP**

American Society for Microbiology