



# Tricia Van Laar

ASSISTANT PROFESSOR OF MICROBIAL GENOMICS

Department of Biological Sciences, California State University Stanislaus

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I am an educator and scientist interested in all things microbial.

## Education

### California State University, Fresno

MBA Fresno, CA

2024 - expected

- Emphasis in human resource management

### The University of Texas at San Antonio

San Antonio, TX

PH.D. CELL AND MOLECULAR BIOLOGY

2012

- Dissertation Project: Role of the mevalonate pathway in the patho-physiology of *Borrelia burgdorferi*
- Major Advisor: J. Seshu, Ph.D.

### University of the Pacific

Stockton, CA

MS BIOLOGY

2007

- 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.

### California State University, Stanislaus

Turlock, CA

BS BIOLOGY

2005

- Minor in Chemistry, Concentration in Genetics
- Research Project: Speciation of *Sylvilagus bachmani riparius*
- Major Advisor: Jim Youngblom, Ph.D.

## Professional Positions

### California State University, Stanislaus

Turlock, CA

ASSISTANT PROFESSOR OF MICROBIAL GENOMICS

2022-Present

### California State University, Fresno

Fresno, CA

ASSISTANT AND ASSOCIATE PROFESSOR OF MICROBIOLOGY

2015-2022

### St. Philip's College

San Antonio, TX

ADJUNCT INSTRUCTOR

2014-2015

### US Army Institute for Surgical Research, Dental and Trauma Research Detachment

JBAS Fort Sam Houston, TX

NRC POST-DOCTORAL RESEARCH FELLOW

2012-2015

### The University of Texas at San Antonio

San Antonio, TX

GRADUATE RESEARCH AND TEACHING ASSISTANT

2007-2012

### University of the Pacific

Stockton, CA

GRADUATE RESEARCH AND TEACHING ASSISTANT

2005-2007

### Endangered Species Recovery Program

Turlock, CA

UNDERGRADUATE RESEARCH ASSISTANT

2004-2005

## Peer-Reviewed Publications (Student Authors Underlined)

2023

Whittaker, D. J., Atyam, A., Burroughs, N. A., Greenberg, J. M., Hagey, T. J., Novotny, M. V., Soini, H. A., Theis, K. R., Van Laar, T. A., & Slade, J. W. G. (2023). Effects of short-term experimental manipulation of captive social environment on uropygial gland microbiome and preen oil volatile composition. *Frontiers in Ecology and Evolution*, 10. <https://www.frontiersin.org/articles/10.3389/fevo.2022.1027399>

## 2022

**Van Laar, T. A., Biehler, L., & Slade, J. W. G. (2022).** Draft Genome Sequence of a Multidrug-Resistant Strain of *Salmonella enterica* Serovar Typhimurium Isolated from a Pine Siskin (*Spinus pinus*). Microbiology Resource Announcements, e0098222. <https://doi.org/10.1128/mra.00982-22>

## 2020

Osborne, C. J., Wakeman-Hill, A. J., Loa, S. E., Crosbie, P. R., & **Van Laar, T. A.** (2020). *Rickettsia* spp. In Five Tick Species Collected in Central California. Journal of Medical Entomology, 57(5), 1596–1603. <https://doi.org/10.1093/jme/tjaa080>

Avila, A. T., **Van Laar, T. A.**, Constable, J. V. H., & Waselkov, K. (2020). 16S rRNA Gene Diversity of Bacterial Endophytes in Parasitic *Cuscuta campestris* and Its *Helianthus annuus* Host. Microbiology Resource Announcements, 9(43). <https://doi.org/10.1128/MRA.00968-20>

## 2019

Osborne, C. J., Crosbie, P. R., & **Van Laar, T. A.** (2019). *Borrelia parkeri* in *Ornithodoros parkeri* (Ixodida: Argasidae) Collected Using Compact Dry Ice Traps in Madera County, California. Journal of Medical Entomology, 56(2), 579–583. <https://doi.org/10.1093/jme/tjy213>

Esani, S., Chen, T., Leung, K. P., & **Van Laar, T. A.** (2019). Transcriptome Sequence of Antibiotic-Treated *Pseudomonas aeruginosa*. Microbiology Resource Announcements, 8(12). <https://doi.org/10.1128/MRA.01367-18>

## 2018

**Van Laar, T. A.**, Esani, S., Birges, T. J., Hazen, B., Thomas, J. M., & Rawat, M. (2018). *Pseudomonas aeruginosa* gshA Mutant Is Defective in Biofilm Formation, Swarming, and Pyocyanin Production. mSphere, 3(2). <https://doi.org/10.1128/mSphere.00155-18>

## 2017

Miller, C. L., **Van Laar, T. A.**, Chen, T., Karna, S. L. R., Chen, P., You, T., & Leung, K. P. (2017). Global transcriptome responses including small RNAs during mixed-species interactions with methicillin-resistant *Staphylococcus aureus* and *Pseudomonas aeruginosa*. MicrobiologyOpen, 6(3). <https://doi.org/10.1002/mbo3.427>

Lin, Y.-H., Romo, J. A., Smith, T. C. 2nd, Reyes, A. N., Karna, S. L. R., Miller, C. L., **Van Laar, T. A.**, Yendapally, R., Chambers, J. P., & Seshu, J. (2017). Spermine and Spermidine Alter Gene Expression and Antigenic Profile of *Borrelia burgdorferi*. Infection and Immunity, 85(3). <https://doi.org/10.1128/IAI.00684-16>

## 2016

**Van Laar, T. A.**, Hole, C., Rajasekhar Karna, S. L., Miller, C. L., Reddick, R., Wormley, F. L., & Seshu, J. (2016). Statins reduce spirochetal burden and modulate immune responses in the C3H/HeN mouse model of Lyme disease. Microbes and Infection, 18(6), 430–435. <https://doi.org/10.1016/j.micinf.2016.03.004>

## 2015

**Van Laar, T. A.**, Chen, T., You, T., & Leung, K. P. (2015). Sublethal concentrations of carbapenems alter cell morphology and genomic expression of *Klebsiella pneumoniae* biofilms. Antimicrobial Agents and Chemotherapy, 59(3), 1707–1717. <https://doi.org/10.1128/AAC.04581-14>

## 2013

Childers, B. M., **Van Laar, T. A.**, You, T., Clegg, S., & Leung, K. P. (2013). MrkD1P from *Klebsiella pneumoniae* strain IA565 allows for coexistence with *Pseudomonas aeruginosa* and protection from protease-mediated biofilm detachment. Infection and Immunity, 81(11), 4112–4120. <https://doi.org/10.1128/IAI.00521-13>

## 2012

**Van Laar, T. A.**, Lin, Y.-H., Miller, C. L., Karna, S. L. R., Chambers, J. P., & Seshu, J. (2012). Effect of levels of acetate on the mevalonate pathway of *Borrelia burgdorferi*. PloS One, 7(5), e38171. <https://doi.org/10.1371/journal.pone.0038171>

## 2011

Raju, B. V. S., Esteve-Gassent, M. D., Karna, S. L. R., Miller, C. L., **Van Laar, T. A.**, & Seshu, J. (2011). Oligopeptide permease A5 modulates vertebrate host-specific adaptation of *Borrelia burgdorferi*. *Infection and Immunity*, 79(8), 3407–3420. <https://doi.org/10.1128/IAI.05234-11>

## Editor Accepted Publications (Student Authors Underlined)

### 2017

Esani, S., Constable, J. V. H., & **Van Laar, T. A.** (2017). Draft Genome Sequence of a Multidrug-Resistant Strain of *Enterococcus faecalis*, PM01, Isolated from the Nest of an American Bushtit, *Psaltiriparus minimus*. *Genome Announcements*, 5(11). <https://doi.org/10.1128/genomeA.00017-17>

### 2016

Kennedy, V., **Van Laar, T. A.**, Aleru, O., Thomas, M., Ganci, M., & Rawat, M. (2016). Genome Sequences of Three Spore-Forming Bacteria Isolated from the Feces of Organically Raised Chickens. *Genome Announcements*, 4(5). <https://doi.org/10.1128/genomeA.00880-16>

Nelson, R. L., Castro, M. A., Katti, M., Eisen, J. A., & **Van Laar, T. A.** (2016). Genome Sequence of a Multidrug-Resistant Strain of *Bacillus pumilus*, CB01, Isolated from the Feces of an American Crow, *Corvus brachyrhynchos*. *Genome Announcements*, 4(4). <https://doi.org/10.1128/genomeA.00807-16>

### 2014

**Van Laar, T. A.**, Chen, T., Childers, B. M., Chen, P., Abercrombie, J. J., & Leung, K. P. (2014). Genome Sequence of a Multidrug-Resistant Strain of *Klebsiella pneumoniae*, BAMC 07-18, Isolated from a Combat Injury Wound. *Genome Announcements*, 2(6). <https://doi.org/10.1128/genomeA.01230-14>

## Book Chapters

Seshu, J., Smith, T. C. 2nd, Lin, Y.-H., Karna, S. L. R., Miller, C. L., & **Van Laar, T. A.** (2018). Analysis of DNA and RNA Binding Properties of *Borrelia burgdorferi* Regulatory Proteins. *Methods in Molecular Biology* (Clifton, N.J.), 1690, 155–175. [https://doi.org/10.1007/978-1-4939-7383-5\\_13](https://doi.org/10.1007/978-1-4939-7383-5_13)

## Invited Seminars

- 2023 **Math is for the Birds:** Seminar Series for the Quantitatively Curious, Stanislaus State
- 2023 **Microbiology of Avian Systems:** Seminar Series, University of the Pacific
- 2023 **Avian Microbial Genomics:** Seminar Series, Stanislaus State
- 2020 **The Birds of Fresno State:** Fresno Audubon Society,
- 2019 **We did something bad: Is this the end of the antibiotic era?:** Colloquium, Fresno State
- 2018 **Good drugs gone bad: Antimicrobial resistance research at Fresno State:** Seminar Series, UC Merced
- 2018 **GMOs and transgenic organisms – threat or opportunity?:** Central Valley Cafe Scientifique, Fresno, CA
- 2017 **Good drugs gone bad: Antimicrobial Resistance:** Central Valley Cafe Scientifique, Fresno, CA
- 2016 **Good drugs gone bad: An investigation of antimicrobial/resistance and tolerance in war-wound pathogens:** Seminar Series, Stanislaus State
- 2015 **A biologist and a sociologist walk into a...CRISPR:** Central Valley Cafe Scientifique, Fresno, CA
- 2011 **Role of the mevalonate pathway in the patho-physiology of *Borrelia burgdorferi*:** South Texas Center for Emerging Infectious Diseases, The University of Texas at San Antonio

## Grants and Funding (Total funding: \$804,891)

### Stanislaus State

2023	<b>Research, Scholarly, and Creative Activity Award</b>	\$10,000
2022	<b>National Science Foundation New Faculty Enhancement Grant (Co-PI)</b>	\$467,622
2022	<b>Research, Scholarly, and Creative Activity Award</b>	\$10,000

## Fresno State

2022	<b>CSUPERB New Investigator Seed Grant (Co-PI)</b>	\$14,919
2020	<b>College of Science and Mathematics Scholarly and Creative Activity Award</b>	\$5,000
2019	<b>CSU-STEM NET Grant (Co-PI)</b>	\$50,000
2019	<b>CSU Program for Education and Research in Biotechnology Curriculum Redesign Award</b>	\$15,000
2018	<b>College of Science and Mathematics Professional Development Award</b>	\$5,000
2018	<b>College of Science and Mathematics Scholarly and Creative Activity Award (Co-PI)</b>	\$5,000
2018	<b>College of Science and Mathematics Scholarly and Creative Activity Award (Co-PI)</b>	\$5,000
2017	<b>Biology Travel Award</b>	\$1,000
2017	<b>College of Science and Mathematics Scholarly and Creative Activity Award</b>	\$7,000
2017	<b>College of Science and Mathematics Scholarly and Creative Activity Award</b>	\$5,000
2017	<b>College of Science and Mathematics Professional Development Award</b>	\$950
2016	<b>Biology Travel Award</b>	\$500
2016	<b>College of Science and Mathematics Professional Development Award</b>	\$1,200
2015	<b>Biology Travel Award</b>	\$1,000

## Older Funding

2012	<b>National Research Council Post-Doctoral Fellowship</b>	\$150,000
2011	<b>Center for Excellence in Infection Genomics Doctoral Scholarship</b>	\$30,000
2010	<b>South Texas Center for Emerging Infectious Diseases PhD Fellowship</b>	\$30,000
2010	<b>UTSA Presidential Dissertation Fellowship</b>	\$1,500

## Honors and Awards

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### Fresno State

2020	Provost Award for Promising New Faculty
2019	Outstanding Advisor Nominee

### Older Awards

2009	O.B. Williams Award for Oral Presentation at Texas ASM meeting
2005	First Place Oral Presentation Stanislaus State Research Competition

## Outreach and Service

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### Stanislaus State

- Darwin Day Presenter (2024)
- CSUBIOTECH Nagel Award Selection Committee (2023-Present)
- ASPIRE STEM 4 PALS Presenter (2023-present)
- Social Media (Instagram/Twitter) (2022-Present)

### Fresno State

- American Society for Microbiology Abstract and Travel Award Reviewer (2020-present)
- Fresno Audubon Society Campus Walks (2019-2022)
- American Ornithological Society Poster Judge (2018-present)
- College of Science and Mathematics Day of Giving (2018)
- Feria de Educacion/Day of Discovery (2018-2022)
- Science Olympiad Preparation with University High School (2017 & 2018)
- Central California Research Symposium Judge (2017-2021)
- Annual Biomedical Conference for Minority Students Presentation Judge (2016)
- Café Scientifique Website, Facebook Page, Twitter Account (2016-2022)
- Division of Graduate Studies Symposium Judge (2016)
- Head Microbiology Judge for the Central California Regional Science, Math & Engineering Fair (2016)
- Expanding Your Horizons Presenter (2015-2018)

## Professional Society Membership

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- American Ornithological Society
- American Society for Microbiology

## Professional Service

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- Associate editor for mSystems
- Reviewer for Genes, Medical Sciences, mSystems, Microbiome, Microorganisms, Molecules, Molecular Biology and Evolution, Data, Biomolecules, Pharmaceuticals
- Reviewer for NSF
- Reviewer for Microbiology: An Evolving Science 5e Textbook (Norton Publishing)