

Danielle M. Stevens

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Education:

2024	University of California, Davis (UCD)	Ph.D. Integrative Genetics & Genomics Thesis Title: "Characterizing the evolution and mechanisms of bacterial epitope perception and evasion of the plant immune system" Thesis Committee: Dr. Gitta Coaker, Dr. Dan Kliebenstein, Dr. Mary Beth Mudgett
2018	Oregon State University (OSU)	B.S. Biochemistry & Biophysics Thesis Title: "Characterizing the symbiotic interactions between <i>Rhodococcus</i> and plants" Thesis Mentor: Dr. Jeff Chang

Research Experience:

2024 – Present	Postdoctoral Scholar Advisor: Dr. Ksenia Krasileva UC Berkeley, Dept. of Plant and Microbial Biology, Berkeley, CA, USA
2021 – 2024 2019 – 2021	USDA NIFA Predoctoral Fellow Graduate Student Researcher Advisor: Dr. Gitta L. Coaker UC Davis, Department of Plant Pathology, Davis, CA, USA
2017	Research Intern Advisor: Dr. Eva H. Stukenbrock Max Planck Institute for Evolutionary Biology, Plön, Germany
2015 – 2018	Undergraduate Researcher Advisor: Dr. Jeff H. Chang OSU, Department of Botany and Plant Pathology, Corvallis, OR, USA

Research Grants & Fellowships:

Total Funds Raised: \$204,900

2021 – 2024	USDA-AFRI-NIFA Predoctoral Fellowship	\$180,000
2019 – 2024	UCD Peter J. Shields & Henry A. Jastro Research Award	\$10,000
2023	UCD Graduate Studies Spring Travel Award	\$1,000
2022	12 th Annual US-Japan Seminar in Plant Pathology Early Career Award	\$1,200
2019 – 2022	UA Local 290 Scholarship (Research Supply Funds)	\$6,000
2019	NSF XCEDE Start-Up Computing Resource Allocation	50,000 SU
2017	OSU & Agricultural Research Foundation Continuing Researchers Program	\$1,000
	OSU Biochemistry & Biophysics Undergraduate Travel Fund Award	\$700
2016	OSU Summer Undergraduate Research Experience	\$5,000

Honors & Awards

2021	UCD Professor for the Future Fellow
2020	Sigma Xi, Associate Member
2019	NSF Graduate Research Fellowship Program Honorable Mention Best poster award at the Northern California Computation Biology (NCCB) Conference
2018	OSU Culture of Writing Award in Biochemistry and Biophysics

2017 OSU Carol L Woodstock Scholarship in Biochemistry and Biophysics
OSU Merrill Family Foundation Scholarship
Phi Beta Kappa: OSU Chapter

Teaching and Mentorship:

Winter 2023 **Plant Pathology Teaching Fellow** | PLP100, Biology of Plant Pathogens
UCD, Department of Plant Pathology
Led weekly journal club and provided lecture on Gram-positive pathogens
(enrollment: 20-30)

Spring 2021 **Teaching Assistant** | MIC102, Introduction to Microbiology
UCD, Department of Microbiology & Molecular Genetics
Assisted in lectures, lead weekly review sessions, recorded and captured lecture material, lead lectured on plant immune perception of microbes.
(enrollment: 350-400)

Fall 2019 **Teaching Assistant** | BIS101, Genes and Gene Regulation
UCD, Department of Molecular & Cellular Biology
Led three weekly discussion sessions & review sessions
(enrollment: 35-45 per discussion session, 250-300 for the course)

10/2016 & 11/2017 **Guest Lecturer** | BB111, Introduction into Biochemistry and Biophysics Research
OSU, Department of Biochemistry & Biophysics
Led interactive discussion about the importance of undergraduate research
(enrollment: 60-70)

Spring 2016 – 2017 **Teaching Intern** | 21X, Principles of Biology – Lab Course
OSU, Department of Integrative Biology
Assisted lab course, answered questions, lead one lecture a quarter (enrollment: 35-50)

Mentorship

Undergraduate

Jasmine Brandes (Human Development & Family Science, OSU)
Emily Fucarino (Molecular & Medical Microbiology, UC Davis)
Melanie Madrigal (Environmental Toxicology, UC Davis)

Junior Specialist

Andrea Tang (UC Davis)

Ph.D. Student

Charis Ramsing (Plant Pathology, UC Davis; Rotation)
Dominique Lewis (Plant Pathology, UC Davis)
Natalie Hamada (Plant Biology, UC Davis; provided guidance on awarded USDA NIFA Predoctoral Fellowship)

Peer-Reviewed Publications:

13 publications (4 first/co-first authors) | **Authors contributed equally | ^^Student Mentee | [Google Scholar](#)

2024 **Stevens DM**, Moreno-Perez A, Weisberg AJ, Ramsing C, Fliegmann J, Zhang N, ^^Madrigal M, Martin G, Steinbrenner A, Felix G, Coaker G. Natural variation of immune epitopes reveals intrabacterial antagonism. **PNAS**.
<https://doi.org/10.1073/pnas.2319499121>

Highlighted in:

Plantae Plant Science Research Weekly: <https://plantae.org/non-immunogenic-bacterial-epitopes-mask-recognition-of-their-immunogenic-counterparts/>

IS-MPMI Interfaces: <https://www.ismpmi.org/Community/Interactions/Lists/Posts/Post.aspx?ID=1321>

- 2023 Sasaki Y, González-Tobón J, Hino Y, Jin C, Li T, Nguyen TAN, Oakley B, **Stevens DM**. 12th Japan-US Seminar in Plant Pathology Meeting Report. *Molecular Plant-Microbe Interactions*.
<https://doi.org/10.1094/MPMI-04-23-0041-MR>
- 2023 Trinh J**, Li T**, Franco J**, Toruño T**, **Stevens DM****, Thapa S, Wong J, Pineda R, Avila de Dios E, Kahn TL, Seymour D, Ramadugu C, Coaker G. Variation in microbial feature perception in the Rutaceae family with immune receptor conservation in citrus. *Plant Physiology*.
<https://doi.org/10.1093/plphys/kiad263>
- Commentary on Publication:**
 McMillan, HM (2023) New Receptors for common MAMPs: Can wild relatives save citrus from disease? *Plant Physiology*.
- 2023 Lewis D, **Stevens DM**, Little H, Coaker G, Bostock R. Overlapping local and systemic defense induced by an oomycete fatty acid MAMP and brown seaweed extract in tomato. *Molecular Plant-Microbe Interactions*.
<https://doi.org/10.1094/MPMI-09-22-0192-R>
- 2021 **Stevens DM**, Tang A^^, Coaker G. A genetic toolkit for investigating *Clavibacter*: markerless deletion, permissive site identification and an integrative plasmid. *Molecular Plant-Microbe Interactions*.
<https://doi.org/10.1094/MPMI-07-21-0171-TA>
- 2021 Castro B**, Citterico M**, Kimura S**, **Stevens DM**, Wraczek M, Coaker G. Stress-induced reactive oxygen species compartmentalization, perception and signaling. (Review). *Nature Plants*.
<https://doi.org/10.1038/s41477-021-00887-0>
- 2020 Franco JY, Thapa SP, Pang Z, Gurung FB, Liebrand T, **Stevens DM**, Anaconda V, Wang N, Coaker G. Citrus vascular proteomics highlights the role of peroxidases and serine proteases during Huanglongbing disease progression. *Molecular and Cellular Proteomics*.
<https://doi.org/10.1074/mcp.RA120.002075>
- 2020 Lei L, **Stevens DM**, Coaker GL. Phosphorylation of the Pseudomonas effector AvrPtoB by Arabidopsis SnRK2.8 is required for bacterial virulence. *Molecular Plant*.
<https://doi.org/10.1016/j.molp.2020.08.018>
- 2020 Savory EA**, Weisberg AJ**, **Stevens DM**, Creason AL, Fuller SL, Pearce E, Chang JH. Phytopathogenic *Rhodococcus* have diverse plasmids with few conserved virulence functions. *Frontiers in Microbiology*.
<https://doi.org/10.3389/fmicb.2020.01022>
- 2020 Lolle S**, **Stevens DM****, Coaker GL. Plant NLR triggered immunity: From receptor activation to downstream signaling. (Review). *Current Opinion in Immunology*.
<https://doi.org/10.1016/j.coi.2019.12.007>
- 2019 Feurtey A, **Stevens DM**, Wolfgang S, Stukenbrock EH. Inter-specific gene exchange introduces high genetic variability in crop pathogen. *Genome Biology & Evolution*.
<https://doi.org/10.1093/gbe/evz224>
- 2019 Thapa S, Davis II E, Lyu Q, Weisberg A, **Stevens DM**, Clarke C, Coaker G, Chang JH. The evolution, ecology, and mechanisms of infection by Gram-positive, plant-associated bacteria. (Review). *Annual Reviews in Phytopathology*.
<https://doi.org/10.1146/annurev-phyto-082718-100124>
- 2017 Savory EA**, Fuller SL**, Weisberg AJ**, Thomas WJ, Gordon MI, **Stevens DM**, Creason AL, Belcher MS, Serdani M, Wiseman MS, Grunwald NJ, Putnam ML, Chang JH. Evolutionary transitions between beneficial and phytopathogenic *Rhodococcus* challenge disease management. *eLife*.
<https://doi.org/10.7554/eLife.30925>

Commentary on Publication:

Melnyk, RA and Haney, CH (2017) Plasmid-powered evolutionary transitions. *eLife* 6: e33383.
Tena, G (2018) Dr. Rhodo and Mr. Coccus. *Nature Plants*.
Podcast in *Bacteriofiles* (2018).

Manuscripts in Prep/Review:

Li T, Bolanos EJ, **Stevens DM**, Sha H, Prigozhin DM, Coaker G. Unlocking Expanded Flagellin Perception Through Rational Receptor Engineering. *In Review*. On bioRxiv:
<https://doi.org/10.1101/2024.09.09.612155>

Stevens DM, Madrigal M, Weisberg AJ, Syvrerson RL, Ramsing C, Lu Y, Hwang IS, Smart C, Samac DA, Teper D, Oh CS, Ishimaru C, and Coaker G. Effector diversification and pangenome evolution of host-specific *Clavibacter* pathogens. *In Prep*.

Presentations:

Oral Presentations

- 2024, June American Society of Plant Biology, Plant Biology 2024, Honolulu, HI.
Presented at concurrent session and was a **guest speaker** at the graphical abstract and science illustrations **workshop**.
- 2024, May UC Davis Host-Microbe Interactions Meeting, Davis, CA.
- 2024, April Corteva UC Davis Plant Science Symposium, Davis, CA.
- 2023, July International Society for Molecular Plant-Microbe Interactions XIV Congress, Providence, RI.
Presented findings in both the **concurrent session and a satellite meeting**.
Additionally, my mentor, Gitta Coaker, was selected to give an oral talk on my work.
- 2022, Sept. UC Davis Integrative Genetics and Genomics Colloquium, Davis, CA.
- 2022, Sept. 12th US-Japan Seminar on Plant Pathology, Ithaca, NY.
- 2022, August American Phytopathology Society, Plant Health 2022. Pittsburg, PA.
- 2022, April UC Davis Plant Pathology Spring 2022 Seminar Series.
- 2021, August American Phytopathology Society, Plant Health 2021. Online.
- 2021, May UC Davis Host-Microbe Interactions Meeting. Online.
- 2020, Sept. 12th Annual US-Japan Seminar in Plant Pathology: Early Career Showcase. Online.
- 2019, May Bay Area Meetup for Tomato Plant Pathology (BAMTOPP), Berkeley, CA.
- 2018, October UC Davis, Department of Plant Pathology, Early Career Scientist Seminar Series, Davis, CA.

Poster Presentations

- 2024, Sept. Inside Innovative Genomics Institute (IGI) 2024, Berkeley, CA.
- 2024, June American Society of Plant Biology, Plant Biology 2024, Honolulu, HI.
- 2022, June American Society for Microbiology, Microbe 2022, Washington, DC.
- 2019, Oct. Northern California Computational Biology Symposium, Davis, CA.
- 2019, July International Society for Molecular Plant-Microbe Interactions XVIII Congress, Glasgow, United Kingdom.
- 2018, May Celebrating Undergraduate Excellence Symposium, Corvallis, OR.
- 2017, April Stanford Research Conference, Stanford, CA.
- 2016, Sept. Center for Genome Research & Biocomputing (CGRB) Fall conference, Corvallis, OR.

2015, Sept. CGRB Fall conference, Corvallis, OR.

Software Developed

2021 permissR An R package which uses GenBank and Fasta from bacterial whole genomes and find permissive, non-coding regions for potential plasmid integration.
GitHub Repository: <https://github.com/DanielleMStevens/permissR>
Published in: Stevens, DM et al. 2021. *MPMI* (see publication above).

Educational Tools Developed:

2022 Web resource for using free vector-based graphics software to create better figures.
UC Davis, Professors for the Future Project
Website: inkscapeforstem.com
Views on Site: Over 1k unique visitors/month

2016 Videos created for course in conjunction with efforts to improve active learning
Oregon State University, Department of Integrative Biology
BI212, Principles of Biology, 4 credits | ~1000 undergraduate students annually
DNA Video: youtu.be/D7rIhIN3iBQ
RNA Video: youtu.be/OW2VZvqvA0w

Professional Development and Service:

2019 – Present **Member** | American Society for Microbiology (ASM), Molecular Plant-Microbe Interactions (MPMI), American Phytopathology Society (APS)

Committees and Service

2023 – 2024 **Organizer** | UC Davis, SNPs and Sips Integrative Genetics & Genomics (IGG) Seminar
A bi-monthly student focused seminar where presenters showcase work-in-progress while obtaining feedback by their peers, faculty, and other members of the UCD community.

2023 **Session Organizer** | IS-MPMI XIV Congress, Plant responses towards vascular pathogens and phloem-feeding insects

2022 **Session Moderator** | 12th Annual US-Japan Seminar in Plant Pathology, Session 1: Disease

2022 **Session Moderator** | APS Plant Health, Genomics, Genetics, and Virulence of Plant Pathogenic Bacteria

2021 – 2024 **Admissions Officer** | UC Davis, IGG Student Executive Committee
Reviewed and scored applicants (2021 – 22: 136; 2022 – 2023: 132; 2023 – 2024: 142) alongside three other graduate students and four faculty members. Took workshop on Holistic review process.

2021 – Present **Bacteriology Committee** | APS Student Member

2020 – Present **Evolutionary Genetics and Genomics Committee** | APS Student Member

2022 – 2023 **Student Representative** | UC Davis IGG Faculty Executive Committee

2020 – 2021 **Graduate Student Recruitment Chair** | UC Davis IGG Student Executive Committee

2019 – 2020 **Graduate Student Recruitment Officer** | UC Davis IGG Student Executive Committee

2017 **Planning Committee for 50th Anniversary Departmental Celebration** | OSU

2020 – Present **Ad hoc Reviewer**

Molecular Plant-Microbe Interactions (3), Nature (1), Science Advances (1), mSystems (1),
Molecular Plant Pathology (1), Phytopathology (1), Proteomes (1), Physiology and
Molecular Plant Pathology (1), Plant Health Progress (1)

Professional Development & Additional Training

2023 **Computational Structural Biology Workshop** | EMBO
2023 **Lab Management & Leadership Symposium** | Torrey Pines Training Consortium
2022 **Summer Institute in Statistical Genetics & Big Data** | University of Washington
2017 – 2018 **Peer Advisor** | OSU College of Science
2015 – 2016 **Academic Learning Assistant** | OSU University Housing & Dining Services

Outreach & Volunteer Experiences:

Nov. 1st, 2022 UC Davis Educational Enrichment & Outreach Programs (EEOP) ABRCMS Prep
Oct. 31st, 2022 UC Davis EEOP Graduate School Interview Panel
April 14th, 2018 State of Oregon Science Olympiad Co-Judge Event Supervisor
2016 – 2018 OSU College of Science Discovery Days
2018 OSU College of Science Discovery Days Co-Organizer
2017 – 2018 OSU Dept. of Botany & Plant Pathology High School STEM Camp