



LINDSEY BURBANK

CANDIDATE STATEMENT

I bring expertise in plant pathogen microbiology and agriculture, areas essential for a sustainable food supply and to address the global challenges of changing climate. I hope to represent this important area of One Health, the health of our food crops and the microbes that influence them around the world. I aim to use my broader connections in plant pathology and agriculture to increase communication within ASM across these disciplines. As a scientist working in the government sector, I also bring my background in public service and my experience working with stakeholders from diverse backgrounds, within and outside of the scientific community. Topics such as antimicrobial stewardship and catastrophic pathogen spillover from natural environments apply to plant infectious disease as much as to human and animal disease. We can learn much by enhancing communication across these different scientific fields that will benefit our microbial science community.

ASM-RELATED ACTIVITIES

- ASM Future Leaders Mentoring Fellowship mentor, 2022-2024
- *Microbiology Spectrum* Data Policy Working Group, 2022
- Editor, *Microbiology Spectrum*, 2021-2024
- Editorial Board, *AEM*, 2019-2024
- ABRCMS abstract reviewer, 2019, 2022
- ABRCMS judge, 2019, 2022

Lindsey Price Burbank

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EDUCATION

- 2014** **Ph.D. Plant Pathology and Microbiology**
University of California-Riverside, Riverside, CA
Dissertation: Global regulation of virulence determinants during plant
colonization of the bacterial phytopathogen *Pantoea stewartii* subsp. *stewartii*.
- 2009** **B. S. Pathobiology**
University of Connecticut, Storrs, CT
Minor: Molecular and Cell Biology

PROFESSIONAL RESEARCH POSITIONS

- 2016- Present** **Research Plant Pathologist**
USDA Agricultural Research Service
Crop Diseases, Pests, and Genetics Research Unit
San Joaquin Valley Agricultural Sciences Center, Parlier, CA
- 2014 - 2016** **Research Molecular Biologist/Postdoctoral Research Associate**
USDA Agricultural Research Service
Crop Diseases, Pests, and Genetics Research Unit
San Joaquin Valley Agricultural Sciences Center, Parlier, CA

PEER REVIEWED PUBLICATIONS

- Krugner, R., Rogers, E.R., **Burbank, L.P.**, Wallis, C. and Ledbetter, C. **2022**, Insights Regarding Resistance of ‘Nemaguard’ Rootstock to the Bacterium *Xylella fastidiosa*. *Plant Disease* 106:8, 2074-2081
- Burbank, L.P.** and Ochoa, J. **2022**. Evidence for elicitation of an oxidative burst in *Vitis vinifera* by *Xylella fastidiosa* cold shock protein peptide csp20. *PhytoFrontiers*.
<https://doi.org/10.1094/PHYTOFR-05-22-0048-SC>
- Burbank, L. P.** **2022** Threat of *Xylella fastidiosa* and options for mitigation in infected plants, CABI Reviews. CABI International. doi: 10.1079/cabireviews202217021.

Wei, W., Sawyer, T., and **Burbank, L.P.** 2021. Csp1, a Cold Shock Protein Homolog in *Xylella fastidiosa* Influences Cell Attachment, Pili Formation, and Gene Expression. *Microbiology Spectrum*. DOI: <https://doi.org/10.1128/Spectrum.01591-21>

Burbank, L.P., and Roper, M.C. 2021. Microbe Profile: *Xylella fastidiosa* – a devastating agricultural pathogen with an endophytic lifestyle. *Microbiology* DOI: 10.1099/mic.0.001091

O'Leary, M.L., Arias-Giraldo, L.F., **Burbank, L.P.**, De La Fuente, L., Landa, B.B. 2021. Complete genome resources for *Xylella fastidiosa* strains AlmaEM3 and BB08-1 reveal prophage-associated structural variation among blueberry-infecting strains. *Phytopathology* DOI: 10.1094/PHYTO-08-21-0317-A

O'Leary, M.L., **Burbank, L.P.**, Krugner, R., Stenger, D.C. 2020. Complete genome sequence data of three *Xylella fastidiosa* subsp. *multiplex* Strains Isolated from Olive Trees in California, U.S.A. *Phytopathology*, 110(11), pp. 1759–1762

Lee, S.A., Wallis, C.M., Rogers, E.E., **Burbank, L.P.** 2020. Grapevine phenolic compounds influence cell surface adhesion of *Xylella fastidiosa* and bind to lipopolysaccharide *PLoS ONE*, 15(10 October), e0240101

Burbank, L.P., Sisterson, M.S., O'Leary, M.L. 2020. Infection of blueberry cultivar 'Emerald' with a California Pierce's disease strain of *Xylella fastidiosa* and acquisition by glassy-winged sharpshooter. *Plant Disease* 104:1, 154-160.

Sisterson, M.S., **Burbank, L.P.**, Krugner, R., Haviland, D. and Stenger, D.C. 2020. *Xylella fastidiosa* and glassy-winged sharpshooter population dynamics in the southern San Joaquin Valley of California. *Plant Disease*. <https://doi.org/10.1094/PDIS-01-20-0066-RE>

Stenger, D.C., **Burbank, L.P.**, Wang, R., Stewart, A.A., Mathias, C., and Goodin, M. M. 2020. Lost and found: Rediscovery and genomic characterization of sowthistle yellow vein virus after a 30+ year hiatus. *Virus Research*. <https://doi.org/10.1016/j.virusres.2020.197987>

Chen, J., O'Leary, M., **Burbank, L.P.**, Zeng, Z., and Deng, X. 2020. Whole Genome Sequence of *Xylella fastidiosa* ATCC 35879T and Detection of Genome Rearrangements Within subsp. *fastidiosa*. *Current Microbiology*. <https://doi.org/10.1007/s00284-020-01937-0>

Burbank, L.P., Wei, W. 2019. Broad host-range plasmids for constitutive and inducible gene expression in the absence of antibiotic selection. *Microbiology Resource Announcements* DOI: 10.1128/MRA.00769-19

Stenger, D. C., **Burbank, L. P.**, Krugner, R., and Sisterson, M. S. 2019. Individual field-collected glassy-winged sharpshooter vectors harbor sequences from two *Xylella fastidiosa* subspecies. *European Journal of Plant Pathology*:

Krugner, R, Sisterson, M.S., Backus, E., **Burbank, L.P.**, and Redak, R. 2018. Sharpshooters: a review of what moves *Xylella fastidiosa*. *Austral Entomology*

Burbank, L., and Ortega, B., 2018. Novel amplification targets for rapid detection and differentiation of *Xylella fastidiosa* subspecies *fastidiosa* and *multiplex* in plant and insect tissues. *Journal of Microbiological Methods*. 155 8-18

Burbank, L. and Van Horn, C.R. 2017. Conjugative plasmid transfer in *Xylella fastidiosa* is dependent on *tra* and *trb* operon functions. *Journal of Bacteriology*. doi:10.1128/JB.00388-17

Burbank, L. and Stenger, D.C. 2017. The DinJ/RelE toxin-antitoxin system suppresses bacterial proliferation and virulence of *Xylella fastidiosa* in grapevine. *Phytopathology* 107:4, 388-394.

Burbank, L., and Stenger, D.C. 2016 Plasmid vectors for *Xylella fastidiosa* utilizing a toxin-antitoxin system for stability in the absence of antibiotic selection. *Phytopathology* 106:8, 928-936

Burbank, L., and Stenger, D.C. 2016 A temperature-independent cold-shock protein homolog acts as a virulence factor in *Xylella fastidiosa*. *Molecular Plant-Microbe Interactions*. 29:5, 335-344.

Chen, J., Wu, F., Zheng, Z., Deng, X., **Burbank, L.,** and Stenger, D. C. **2016.** Draft genome sequence of *Xylella fastidiosa* subsp. *fastidiosa* strain Stag's Leap. *Genome Announcements*, 4:2, e00240–16.

Roper, M.C., **Burbank, L.,** Williams, K., Viravathana, P. and von Bodman, S. **2015.** A large repetitive RTX-like protein mediates water-soaked lesion development, leakage of plant cell content and host colonization in the *Pantoea stewartii* subsp. *stewartii* pathosystem. *Molecular Plant-Microbe Interactions*. 28:12, 1374-1382.

Burbank, L., Mohammadi, M., and Roper, M.C. **2015.** Siderophore-mediated iron acquisition influences motility and is required for full virulence of the xylem-dwelling bacterial phytopathogen *Pantoea stewartii* subsp. *stewartii*. *Applied and Environmental Microbiology*, 1: 139-148.

Burbank, L., and Roper, M.C. **2014.** OxyR and SoxR modulate the inducible oxidative stress response and are implicated during different stages of infection for the bacterial phytopathogen *Pantoea stewartii* subsp. *stewartii*. *Molecular Plant-Microbe Interactions*, 27: 479-490.

Mohammadi, M., **Burbank, L.,** and Roper, M.C. **2012.** Biological role of pigment production for the bacterial phytopathogen, *Pantoea stewartii* subsp. *stewartii*. *Applied and Environmental Microbiology*, 78: 6859-6865.

Mohammadi, M., **Burbank, L.** and Roper, M. C. **2012.** *Pantoea stewartii* subsp. *stewartii* produces an endoglucanase that is required for full virulence in sweet corn. *Molecular Plant Microbe Interactions*, 25: 463-470.

Abarca-Grau, A.M., **Burbank, L.,** de Paz, H.D., Crespo-Rivas, J.C., Marco-Noales, E., López, M.M., Vinardell, J.M., von Bodman, S.B., and Penyalver, R. **2012.** Role for *Rhizobium*

rhizogenes K84 cell envelope polysaccharides in surface interactions. *Applied and Environmental Microbiology*. 78:6 1644-1651.

Carrier, A., **Burbank, L.**, and von Bodman, S.B., **2009**. Identification and characterization of three novel EsaI/EsaR quorum-sensing controlled stewartan exopolysaccharide biosynthetic genes in *Pantoea stewartii* ssp. *stewartii*. *Molecular Microbiology*, 74:4 903-913.

PREPRINTS

O’Leary, M.L., **Burbank, L.P.** Natural recombination among Type I restriction-modification systems creates diverse genomic methylation patterns among *Xylella fastidiosa* strains
bioRxiv 2022.09.01.506293; doi: <https://doi.org/10.1101/2022.09.01.506293>

PROFESSIONAL SERVICE

2021 – present Editor – Microbiology Spectrum (American Society for Microbiology)

2019-2021 - Editorial Board – Applied and Environmental Microbiology (American Society for Microbiology)

RECENT INVITATIONS

2019 - Guest Faculty for Topics in Plant Pathogenic Bacteria short course
National Taiwan University. Taipei, Taiwan.

2018 - International Symposium on Proactive Technologies for Enhancement of Integrated Pest Management on Key Crops. Winter climate and cultivar effects on severity of Pierce’s Disease in table grapes. Taichung, Taiwan.

National Taiwan University invited seminar. Winter climate and cultivar effects on severity of Pierce’s Disease in table grapes. Taipei, Taiwan.

2017 - Australian Entomological Society AGM and Scientific Conference. Detection and typing of *Xylella fastidiosa* from glassy-winged sharpshooter for Pierce’s disease epidemiology. Terrigal, NSW, Australia.

Claremont Colleges Keck Science Department Seminar. Cold response in *Xylella fastidiosa*: influence of the environment on plant disease. Claremont, CA

2016 - Pierce’s Disease Research Symposium. Plasmid transfer by conjugation as a possible route of horizontal gene transfer and recombination in *Xylella fastidiosa*. San Diego, CA.

SELECTED RECENT MEETING PRESENTATIONS AND ABSTRACTS

2019 -

Second European Conference on *Xylella fastidiosa*. Cultivar susceptibility and temperature-dependent recovery of *Xylella fastidiosa*-infected grapevines. Ajaccio, France.

International Society for Molecular Plant-Microbe Interactions Congress. Plant responses involved in cold temperature suppression of *Xylella fastidiosa* in grapevine. Glasgow, Scotland.

2018 - **ASM Microbe.** RNA metabolism in *Xylella fastidiosa* during cold adaptation and survival response. Atlanta, GA.

International Congress of Plant Pathology. Temperature dependent RNA metabolism in *Xylella fastidiosa* during cold stress and grapevine infection. Boston, MA.

California Department of Food and Agriculture Pierce's Disease Research Symposium. Novel amplification targets for rapid detection and differentiation of *Xylella fastidiosa* subspecies *fastidiosa* and *multiplex* in plant and insect tissues. San Diego, CA.

2017 - **American Phytopathological Society Annual Meeting.** Plasmid transfer by conjugation in *Xylella fastidiosa*. San Antonio, TX.

CDFR Research Progress Reports: Pierce's Disease and Other Designated Pests and Diseases of Winegrapes. Assessing effects of seasonality on the epidemiology of Pierce's Disease in the southern San Joaquin Valley. (Abstract)

2016 - **International Society for Molecular Plant-Microbe Interactions XVII Congress.** The DinJ/RelE toxin-antitoxin system suppresses virulence in *Xylella fastidiosa*. Portland, OR.

Plant and Microbe Adaptation to Cold Meeting. The role of *Xylella fastidiosa* cold shock proteins in Pierce's disease of grape. Seattle, WA.

PROFESSIONAL SOCIETY MEMBERSHIPS

American Phytopathological Society (Chair, Bacteriology Committee 2019-2020)

International Society for Molecular Plant-Microbe Interactions (Member)

American Society for Microbiology (Member)