

Emerson Crabill, Ph.D.

Contact Information

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Education

Ph.D. Biology, University of Nebraska-Lincoln, 2012 B.A.
Biology, University of Kansas, 2004

Employment

2019-Present	Assistant Professor Department of Biology Angelo State University San Angelo, TX
2012-2019	Associate Research Scientist Mentor: Craig R. Roy, Ph.D. Department of Microbial Pathogenesis Yale School of Medicine New Haven, CT
2006-2012	Graduate Research Assistant Adviser: James R. Alfano, Ph.D. School of Biological Sciences University of Nebraska Lincoln, NE

Teaching experience

Summer 2022	General Microbiology, lecture and lab Genetics
Spring 2022	Pathogenic Microbiology, lecture and 2 labs Zoonotic Diseases
Fall 2021	General Microbiology, lecture and 4 lab sections Microbiology for Non-Science Majors lecture and lab coordinator

Spring 2021	Pathogenic Microbiology, lecture and 2 labs; Microbiology for Non-Science Majors lecture and lab coordinator
Winter 2020	Genetics, on-line
Fall 2020	General Microbiology, lecture and 4 lab sections Microbiology for Non-Science Majors lecture and lab coordinator
Summer 2020	Genetics, Angelo State University, On-line course
Spring 2020	Pathogenic Microbiology, Angelo State University Lecture course and two lab sections Genetics, Angelo State University Lecture course Principles of Biology I, Angelo State University Lab course
Fall 2019	General Microbiology, Angelo State University Lecture course and two lab sections Principles of Biology II Laboratory, Angelo State University, two lab sections
2008-2009	Botany Lab, University of Nebraska-Lincoln Taught multiple lab sections including background lectures and laboratory experiments

Grants and Fellowships

2022	Submitted NSF Grant Proposal, "Characterizing the role that <i>Coxiella burnetii</i> effector protein Cbu513 plays in inducing host autophagy" - \$498,485.00 over 3 years - <i>Pending</i>
2022	Contributed to NIH Biomedical Facilities Grant Application - <i>Pending</i>
2020-2021	Faculty Research Enhancement Program (FREP), \$15,000 Angelo State University

2014-2016	National Research Service Award, National Institute of General Medical Sciences, Award Number 1F32GM108411-01A1, Yale School of Medicine
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2006-2007	Life Sciences Interdisciplinary Graduate Recruitment Program Research Assistantship Award, University of Nebraska-Lincoln
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Research Mentoring

Spring 2022	Mentored semester long research project of Raeana Mayo on Cbu513 activity.
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Fall 2021-Present	Ongoing Master's thesis advisor for Anna Rodriguez and her project on Cbu513 activity.
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Ongoing Master's thesis advisor for Katie Storrie and her project on EmcA enzymatic targets.

Fall 2021-Spring 2022	Mentored year-long research project of Hudson Payne on <i>Pseudomonas aeruginosa</i> resistance to contact lens solution. Funded by office of sponsored projects both semesters
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Mentored yearlong research project of Alexander Bell on De-ubiquitination activity of EmcB

Spring 2021-Spring 2022	Mentored the year and a half long research project of Sharin Salam on EmcA. Funded by office of sponsored projects all three semesters.
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Spring 2021	Mentored the research project of Calvin Benningfield on Cbu513
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2020-2021	Mentored the year-long research project of Marissa Brezgiel on EmcA. Funded by office of sponsored projects
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2019-2020	Oversaw three undergraduate student research projects. Cut short by Covid19 pandemic.
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Summer 2019	Mentor to undergraduate researcher Directed research on bacterial cloning and protein purification
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Dec. 2018-March 2019	Mentor to graduate student during lab rotation. Directed research on mutagenesis and protein purification
Summer 2018	Mentor to visiting graduate student Directed research on mutagenesis and bacterial cloning
Feb.-March 2018	Mentor to graduate student during lab rotation Directed research on bacterial infections and mutagenesis
Dec. 2015-March 2016	Mentor to graduate student during lab rotation Directed research on a screen of bacterial mutant library for immune suppression
June 2011-August 2012	Mentor to undergraduate student Directed research on plant transformation with bacterial genes
Jan. – June 2011	Mentor to graduate student Directed research on targeted bacterial mutagenesis
Aug. – Dec. 2010	Mentor to undergraduate student Directed research on bacterial infections of plants
Jan. – June 2010	Mentor to undergraduate student Directed research on bacterial in vitro secretion experiments
Summer 2009	Mentor to a high school teacher Introduced molecular biology techniques and suggested experiments to local high school microbiology teacher to be used in his classes

Community Service

2020	Institutional Biosafety Committee (IBC) review of human gene transfer clinical trials for Clinical Biosafety Services
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2020	As part of the urgent national effort for COVID-19 vaccine development accepted appointment as a Primary Local Member of the Institutional Biosafety Committee (IBC) for Benchmark Research - San Angelo
April 2010 and 2011	Served as chair of the Biological and Medical Sciences session for the Nebraska Academy of Sciences Annual Meeting
March 2011	Instructed high school students on how to carry out basic laboratory experiments

University Service

2022-Present	Member of Health Professions Advisory Committee
2022	Served as second reader on Lily Ellzey's Honors Thesis, "Screening for Coronavirus strains in Myotis Velifer".
2021-Present	ASU student advisor
2021	Served on the Graduate Advisory Committee for Amelia Daniels
2020-Present	Served on Angelo State University Biosafety committee

Professional Societies

2013-Present	Member of the American Society for Rickettsiology
2012-Present	Member of the American Society for Microbiology
2011-2012	Member of the Missouri Valley Branch of American Society for Microbiology
2008-2009	Member of the American Phytopathological Society
2007-2012	Member of the International Society for Molecular Plant-Microbe Interactions

Editorial Review

2020	Textbook Review for Norman-McKay L. <i>Microbiology: Basic and Clinical Principles</i> . New York, NY: Pearson; 2019.
2011	Served as a peer reviewer for Molecular Plant Microbe Interactions

Meetings Attended

March 3 and 4 2023	Texas Academy of Science Meeting, Angelo State University in San Angelo, TX
Feb 28 and 29, 2020	Texas Academy of Science Meeting, Stephen F. Austin State University in Nacogdoches, TX
July 7-13, 2018	Microbial Toxins and Pathogenicity Gordon Research Conference and Seminar, Waterville Valley in Waterville Valley, NH
June 20-23, 2015	27 th Meeting of the American Society for Rickettsiology, Olympic Valley, CA
June 15-18, 2013	26 th Meeting of the American Society of Rickettsiology, Portland, ME
March 24-25, 2012	2012 Midwestern Section Annual Meeting of the American Society of Plant Biologists, Lincoln, NE
September 13-17, 2011	Microbial Pathogenesis & Host Response Meeting at Cold Spring Harbor Laboratory, Cold Spring Harbor, NY
March 19-20, 2011	2011 Midwestern Section Annual Meeting of the American Society of Plant Biologists, West-Lafayette, IN
July 19-23, 2009	XIV International Congress on Molecular Plant Microbe Interaction, Quebec City, Canada
July 26-30, 2008	2008 American Phytopathological Society Centennial Meeting, Minneapolis, MN
July 21-27, 2007	XIII International Congress on Molecular Plant Microbe Interaction, Sorrento, Italy

Research Articles

Duncan-Lowey, J., Crabill, E., Jarret, A., Reed, S. C. O., & Roy, C. R. (2023). The *Coxiella burnetii* effector EmcB is a deubiquitinase that inhibits RIG-I signaling. *Proceedings of the National Academy of Sciences of the United States of America*, 120(11), e2217602120. <https://doi.org/10.1073/pnas.2217602120>

Crabill, E., Schofield, W. B., Newton, H. J., Goodman, A. L., & Roy, C. R. (2018). Dot/Icm-Translocated Proteins Important for Biogenesis of the *Coxiella burnetii*-Containing Vacuole Identified by Screening of an Effector Mutant Sublibrary. *Infection and immunity*, 86(4), e00758-17. <https://doi.org/10.1128/IAI.00758-17>

Newton, H. J., Kohler, L. J., McDonough, J. A., Temoche-Diaz, M., Crabill, E., Hartland, E. L., & Roy, C. R. (2014). A screen of *Coxiella burnetii* mutants reveals important roles for Dot/Icm effectors and host autophagy in vacuole biogenesis. *PLoS pathogens*, 10(7), e1004286. <https://doi.org/10.1371/journal.ppat.1004286>

Misas-Villamil, J. C., Kolodziejek, I., Crabill, E., Kaschani, F., Niessen, S., Shindo, T., Kaiser, M., Alfano, J. R., & van der Hoorn, R. A. (2013). *Pseudomonas syringae* pv. *syringae* uses proteasome inhibitor syringolin A to colonize from wound infection sites. *PLoS pathogens*, 9(3), e1003281. <https://doi.org/10.1371/journal.ppat.1003281>

Crabill, E., Karpisek, A., & Alfano, J. R. (2012). The *Pseudomonas syringae* HrpJ protein controls the secretion of type III translocator proteins and has a virulence role inside plant cells. *Molecular microbiology*, 85(2), 225–238. <https://doi.org/10.1111/j.1365-2958.2012.08097.x>

Crabill, E., Joe, A., Block, A., van Rooyen, J. M., & Alfano, J. R. (2010). Plant immunity directly or indirectly restricts the injection of type III effectors by the *Pseudomonas syringae* type III secretion system. *Plant physiology*, 154(1), 233–244. <https://doi.org/10.1104/pp.110.159723>

Wei, C. F., Kvitko, B. H., Shimizu, R., Crabill, E., Alfano, J. R., Lin, N. C., Martin, G. B., Huang, H. C., & Collmer, A. (2007). A *Pseudomonas syringae* pv. *tomato* DC3000 mutant lacking the type III effector HopQ1-1 is able to cause disease in the model plant *Nicotiana benthamiana*. *The Plant journal : for cell and molecular biology*, 51(1), 32–46.