

Charlotte Francoeur

Microbiology Ph.D. Candidate

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Education

University of Wisconsin - Madison

August 2016 - Present

Microbiology Doctoral Training Program
Laboratory of Dr. Cameron Currie, Department of Bacteriology
GPA: 4.0/4.0
2020 WISCIENCE Public Service Fellow

University of Maryland - College Park

August 2012 - May 2016

Bachelor of Science in Microbiology with a Black Women's Studies Minor
GPA: 3.905/4.0
Cum Laude Latin Honors
Integrated Life Sciences Honors
Cell Biology and Molecular Genetics Departmental Honors

Research Experience

Current

Currie Lab, University of Wisconsin-Madison

January 2017-Present

Graduate research assistant in the laboratory of Dr. Cameron Currie investigating bacterial and viral associations in fungus-farming ants (tribe: Attini). You can find more details about my research at cfrancoeur.github.io/research/

Past

Wu Lab, University of Maryland - College Park

September 2014 - July 2016

Institute for Bioscience and Biotechnology Research Laboratory
Volunteer undergraduate research assistant in the laboratory of Dr. Louisa Wu
Used the Drosophila Genetics Research Panel to perform a genome-wide association study (GWAS) to find genes associated with the phagocytosis of fungi in *Drosophila melanogaster*

Nou Lab, USDA-ARS

August 2012 - May 2014

Biological Science Aid in the Environmental Microbial and Food Safety laboratory of Dr. Xiangwu Nou
Investigated biofilm formation between *Ralstonia insidiosa* and foodborne pathogens, *Escherichia coli*, *Salmonella* spp., and *Listeria monocytogenes*
Resulted in a publication (see below)

Martin Lab, USDA-ARS

August 2011 - May 2012

High School Research Intern in the Invasive Insect Biocontrol and Behavior laboratory of Dr. Phyllis Martin
Investigated bacterial strains pathogenic to the brown marmorated stink bug using 16S rRNA sequencing, Biolog, and phenotypic tests (e.g. optimal growth conditions, hemolytic activity, urease production)

Publications

Liu, N. T., Bauman, G. R., **Francoeur, C. B.**, Shelton, D. R., Lo, Y. M., & Nou, X. (2016). *Ralstonia insidiosa* serves as bridges in biofilm formation by foodborne pathogens *Listeria monocytogenes*, *Salmonella enterica*, and Enterohemorrhagic *Escherichia coli*. *Food Control*, 65, 14–20.

Oral Presentations

- Francoeur, C.B.**, Khadempour, L., Moreira-Soto, R.D., Gotting, K., Book, A.J., Pinto-Tomás, A.A., Keefover-Ring, K., & Currie, C.R. Bacteria contribute to plant secondary compound degradation in a generalist herbivore system. **Winner of the Lightning Talk Competition** at the 9th Annual UW-Madison Plant Sciences Symposium. November 2019
- Francoeur, C.B.**, Khadempour, L., Keefover-Ring, K., & Currie, C.R. Garden bacteria in fungus-farming ants can metabolize plant secondary compounds. **Selected Speaker** at the Gordon Research Seminar on Animal-Microbe Symbioses. June 2019
- Francoeur, C.B.** & Currie, C.R. Characterizing microbial associations in leaf-cutter ant fungus gardens. **MDTP Student Seminar Series Talk** at University of Wisconsin - Madison. October 2018

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| 4. Francoeur, C.B. , Nazario-Toole, A., & Wu., L. Genome Wide Association Study on Phagocytosis of Zymosan in <i>Drosophila melanogaster</i> . Senior Thesis Talk at University of Maryland - College Park. | May 2016 |
| 5. Francoeur, C.B. , Nazario-Toole, A., & Wu., L. Genome Wide Association Study on Phagocytosis of Zymosan in <i>Drosophila melanogaster</i> . ILS Student Seminar Series at University of Maryland - College Park. | March 2016 |
| 6. Francoeur, C.B. , Price, T., & Martin, P. Isolation and Identification of Pathogenic Bacteria From Stink Bugs. Research Symposium Talk at Eleanor Roosevelt High School. | April 2012 |

Poster Presentations

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| 1. Francoeur, C.B. , Khadempour, L., Moreira-Soto, R.D., Gotting, K., Book, A.J., Pinto-Tomás, A.A., Keefover-Ring, K., & Currie, C.R. Bacteria contribute to plant secondary compound degradation in a generalist herbivore system. Poster Presentation at the 9th Annual UW-Madison Plant Sciences Symposium (Nov. 15) and the Entomological Society of America 2019 Conference (Nov. 18). | November 2019 |
| 2. Francoeur, C.B. , Khadempour, L., Keefover-Ring, K., & Currie, C.R. Garden bacteria in fungus-farming ants can metabolize plant secondary compounds. Poster Presentation at the Gordon Research Seminar and Gordon Research Conference on Animal-Microbe Symbioses. | June 2019 |
| 3. Francoeur, C.B. , Khadempour, L., Currie, C.R. Microbial tolerance of plant defense compounds in the fungus-farming ant system. Poster Presentation at the 8th Annual UW-Madison Plant Sciences Symposium. | November 2018 |
| 4. Francoeur, C.B. , Hoang, D., Carlos, C., & Currie, C.R. Potential roles of <i>Burkholderia</i> in the fungus-farming ant system. Poster Presentation at the Beneficial Microbes Meeting. | July 2018 |
| 5. Francoeur, C.B. , Khadempour, L., Currie, C.R. Microbial tolerance of plant defense compounds in the fungus-farming ant system. Poster Presentation at Madison Microbiome Meeting. | April 2018 |
| 6. Francoeur, C.B. , Khadempour, L., Currie, C.R. Microbial tolerance of plant defense compounds in the fungus-farming ant system. Poster Presentation at the DOE Joint Genome Institute Genomics of Energy and Environment Meeting. | March 2018 |
| 7. Francoeur, C.B. & Martin, P. Identifying Bacteria From Stink Bugs. Poster Presentation at Eleanor Roosevelt High School Research Symposium. | April 2012 |

Professional Development

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| 1. Active Learning Ambassadors Workshop California State University, Northridge | October 2019 |
| 2. Ant Course French Guiana, Nouragues Research Station | August-Sept 2018 |
| 3. Anvi'o Workshop UW-Madison | May 2017 |
| 4. Microbiota Analysis in R UW-Madison | November 2016 |
| 5. Microbiota Processing in mothur UW-Madison | November 2016 |

Teaching & Mentoring

Currie Lab

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| Olivia Panthofer: Undergraduate Student. Isolation of phage from fungus gardens. | 2018-Present |
| Jennifer Koehler: REU student. Lipid Production of <i>Streptomyces</i> on Conversion Residue. | Summer 2018 |
| Donny Hoang: MDTP rotation student. Inhibition of <i>Escovopsis</i> by <i>Burkholderia</i> . | January 2018 |
| Josh Daniels: Undergraduate student. Investigation of Bee-Associated <i>Streptomyces</i> species and their ability to produce lipids. | 2017-2018 |
| Laura Williams: Undergraduate student. Characterization of <i>Burkholderia</i> sp. isolated from the fungus gardens of fungus farming ants. | 2017-2018 |

Teaching

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| Assistant Teacher | September 2017 - December 2017 |
| Assistant teacher for Pathogenic Bacteriology with Professor Joe Dillard
Duties include giving three lectures (Antibiotics + Disinfection, Clostridia, Treponema and Borrelia), writing and grading exams, and meeting with students | |
| Undergraduate Teaching Assistant | January 2016 - May 2016 |
| Teacher's assistant for Research Applications in the Life Sciences (HLSC377). Duties included weekly office hours, grading assignments, and aiding discussions about scientific papers | |

Awards and Grants

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| 1. O.N. Allen Soil and Environmental Microbiology Small Grant Recipient, \$4000 | August 2019 |
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2. UW-Madison Student Research Travel Grant - Conference, \$1200	June 2019
3. UW-Madison CALS Dr. Leonard E. Mortenson Graduate Scholarship, \$1250	April 2019
4. Dean's List and Academic Honors - University of Maryland	Fall 2012-Spring 2016
5. Senator Pinsky's Senatorial Scholarship	August 2012-May 2013
6. Delegate Anne Healey Scholarship	August 2012-May 2013

Leadership & Volunteering

UW-Madison Women's Club Ultimate Frisbee B Team Coach	2018-Present
Junior Science Cafe (Junior Science Cafe Program)	Fall 2017
Outreach program that brings high school and middle school students and scientists together to discuss careers in science run by the Morgridge Institute for Research	
Women's Maryland Club Ultimate B Team Captain	2014-2016
Organize practices and tournaments in order to grow the women's ultimate community	
Women's Maryland Club Ultimate Treasurer	2013-2016
Manage funds for women's club ultimate	
Alternative Spring Break-Chesapeake Bay	Spring Break 2013
Engaged in tree planting, urban farming, river clean up and oyster restoration	

Organizations/Committees

MDTP Steering Committee	2019-Present
Attend monthly faculty meeting to give voice to students' concerns and opinions	
MDTP Student Invited Speaker Committee	2017-2019
A committee of students who coordinate visits from prominent researchers outside of UW-Madison	

Relevant Classes

2017	CS 301: Introduction to Data Programming (Python) MICROBIO526: Microbial Physiology MICROBIO875: Bioinformatics for Microbiologists
2016	MICROBIO655: Biology and Genetics of Filamentous Fungi ENST432: Environmental Microbiology
2015	BSCI467: Freshwater Biology BSCI424: Pathogenic Microbiology