

TAYLOR CLARKSON

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RELEVANT EXPERIENCE

Professional Research Assistant, Malykhina Laboratory Dec 2020 to Present
University of Colorado, Anschutz Medical Campus

Aurora, Colorado

- Studying the roles of neural and immune systems in lower urinary tract symptoms (LUTS).
- Leading the effort of flow cytometry-guided cell sorting and single-cell RNA analysis in the Malykhina laboratory.
- Managing and maintaining the mouse hepatitis virus (MHV)-induced neurogenic mouse model of multiple sclerosis (ABSL2).

Graduate Research Assistant, Shah & Montpetit Laboratories Sept 2019 to July 2020
University of California, Davis

Davis, California

Advisors: Dr. Priya Shah, Dr. Ben Montpetit

- Investigated host-pathogen interactions between *Flaviviridae* viral RNA and host nuclear proteins.
- BSL3 certification and experience.
- Wrote and delivered chalk talks to experts and non-experts in the virology field
- Quickly learned and applied new laboratory techniques including tissue culture, PCR, ELISA, IHC, plaque assays.
- Rewarded the Microbiology Graduate Group Fellowship.

Undergraduate Research Assistant/Lab Manager Aug 2015 to Aug 2019
Colorado State University, Center for Infectious Disease

Fort Collins, Colorado

Advisors: Dr. Brian Foy, Dr. Kenneth Olson, Dr. William C. Black

- Sought to develop a mosquitocidal vaccine against *Anopheles gambiae*.
- Investigated the efficacy of a novel insecticide and repellent, nootkatone, against *Aedes* mosquitoes.
- BSL3 certification and experience.
- Published first author paper in the journal *Insects*.
- Received a 30% pay raise and a promotion to manager of undergraduates and volunteers in April 2017.

Teacher's Assistant 2018
Colorado State University, Fort Collins, Colorado

- Teacher Assisted General Microbiology Lab 302, an undergraduate course averaging 40 students per semester, covering the following topics: microscopy, microbe identification, various assays, and general microbiology techniques.
- Graded quizzes, exams, and homework.
- Coordinated grading and labs with a team of two other teaching assistants.

EDUCATION

- PhD training in Microbiology** August 2019- July 2020
University of California, Davis
- BS in Microbiology; Minor in Chemistry** May 2019
Colorado State University
3.7 GPA, Dean's list student, CSU Outdoors Club member.

HONORS AND AWARDS

- Microbiology Graduate Group First Year Fellowship** 2019
Rewarded a fellowship to attend the University of California to pursue my PhD.
- Highest Honors Poster Presentation Award** 2018
Won highest honors award for my poster presentation at the CSU Celebrate Undergraduate Research Conference.
- Second Place Poster Presentation Award** 2018
Won a second-place award for my poster presentation at the Rocky Mountain Virology Club meeting.
- Undergraduate Travel Grant** 2018
Awarded an \$800 travel grant to attend the American Society of Tropical Medicine and Hygiene meeting and present my research.

RELEVANT SKILLS

- Well versed in common biomedical laboratory techniques including PCR, ELISA, IHC, plaque assays, western blot, bottle bioassays, special repellency assays, tissue culture.
- Fluorescent microscopy.
- Experience working with biosafety level 3 organisms in a BLS3 environment.
- Small mammals handling and injections
- Mosquito rearing (*C. tarsalis*, *Ae. aegypti*, *Ae. albopictus* & *An. Gambiae* species).
- Flow cytometry and single cell RNA expression analysis
- Scientific writing and oral presentations.

COMPUTER SKILLS

Programming: Excel, SAS

Applications: GraphPad, Affinity Photo, BLAST, VectorBase, Kaluza, FlowJo, EndNote

Platforms: LinkedIn, Slack, G Suite, Benchling

PUBLICATIONS

Clarkson, T.C.; Janich, A.J.; Sanchez-Vargas, I.; Markle, E.D.; Gray, M.; Foster, J.R.; Black IV, W.C.; Foy, B.D.; Olson, K.E. Nootkatone Is an Effective Repellent against *Aedes aegypti* and *Aedes albopictus*. *Insects* 2021, 12, 386. <https://doi.org/10.3390/insects12050386>

Xie, A.X.; Iguchi, N.; **Clarkson, T.C.;** Malykhina, A.P. Pharmacogenetic inhibition of lumbosacral sensory neurons alleviates visceral hypersensitivity in a mouse model of pelvic pain. Under review, *Scientific Reports*, 2021.

Miller, M.R.; Fargre, A.C., **Clarkson, T.C.;** Markel, E.D., Foy, B.D. In search of an immunocompetent small animal model for the study of sexual transmission of Zika virus. *Pathogens*, 2021,10, 971. <https://doi.org/10.3390/pathogens10080971>

Miller, M.R.; Sorensen, M.R.; Markle, E.D.; **Clarkson, T.C.;** Knight, A.L.; Savran, M.J.; Foy, B.D. Characterizing and Quantifying Arbovirus Transmission by *Aedes aegypti* Using Forced Salivation and Analysis of Bloodmeals. *Insects* 2021, 12, 304. <https://doi.org/10.3390/insects12040304>

PRESENTATIONS AND INVITED LECTURES

Lecture, “Mosquitocidal Vaccines: A Novel Way to Mitigate Vector Borne Diseases,” College of Veterinary Medicine and Biomedical Science Research Symposium, April 2019. The only undergraduate invited to give a talk.

Poster Presentation, “Mosquitocidal Vaccines: A Novel Way to Mitigate Vector Borne Diseases,” American Society of Tropical Medicine and Hygiene, October 2018.

Poster Presentation, “Nootkatone as a Novel Insecticide and Repellent,” Rocky Mountain Virology Club Meeting, September 2018.

Poster Presentation, “Mosquitocidal Vaccines: A Novel Way to Mitigate Vector Borne Diseases,” Celebrate Undergraduate Research Conference, April 2018.

SERVICE AND OUTREACH

STEM Squad Volunteer

Volunteer/educator, Davis, CA Fall 2019-Spring 2020

Volunteered to teach science projects to elementary aged children in an afterschool program. I helped design lessons, answer questions, and kept the kids engaged.

Microbiology Peer Mentor Program

Peer Mentor/Tutor, Fort Collins, CO. Fall 2018-Spring 2019

Tutored students in microbiology core classes, ran Microbiology Undergraduate Student Instagram account, conducted campus outreach on microbiology related topics, such as STD prevention and treatment.

Wildlife Restoration Volunteers

Volunteer, Fort Collins, CO Fall 2017-Fall 2018

Helped restore natural spaces along Colorado’s front range. Planted seeds, removed invasive plants, and helped with wildfire mitigation by clearing debris.

REFERENCES

Dr. Anna Malykhina, Professor
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Dr. Alison Xie, Assistant Professor
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Dr. Priya Shah, Professor
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Dr. Ben Montpetit, Professor
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Dr. Megan Miller, Post-Doctoral Scholar
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Lyndsey Gray, Graduate Student
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