Jackson Watkins

Earth and Planetary Sciences
Northwestern University
jacksonwatkins2026@u.northwestern.edu

Education

PhD Student, Earth and Planetary Sciences (2021-Present)
Northwestern University, Evanston, Il

M.Sc Microbiology, Immunology and Pathology (2018-2020)
Colorado State University, Fort Collins, CO

B.A. & S. double major in Microbiology, and Philosophy (2013-2017)
Colorado State University, Fort Collins, CO

Research Interests

Characterizing the subsurface microbial life of modern and ancient Earth through genomic, metabalomic, and proteomic analysis, as well as culture of previously uncultured organisms. Additional strong interest in science communication and policy with a focus on community and collective involvement.

Scientific Research, and Professional Experience

Research Associate, Colorado State University College of Veterinary Medicine and Biomedical Sciences (2020-2021)
Project looking at morphological differences, proteomic changes, and malaria transmission potential of *An. stephensi* larvae and eggs reconstituted from cryopreservation.

Graduate Research Assistant, Colorado State University College of Veterinary Medicine and Biomedical Sciences (2018-2020)
Advisor: Dr. Karen Dobos
Thesis: Inactivation of *Mycobacterium tuberculosis* for Safe Use Outside of the BSL-3 Laboratory

Development Communications Specialist, Colorado State University College of Veterinary Medicine and Biomedical Sciences (2019-2021)
Position creating impact reports, generating video content, and interviewing members of the CSU research core to communicate the impact of individual donations to the college.

COVID Surveillance Study, Colorado State University (2020)
Responsible for the transportation of human specimen samples from various nursing home and care communities in the Denver metro area, for weekly routine surveillance.

Colorado State University College of Veterinary Medicine and Biomedical Sciences -- Research Assistant (2013-2018)
Assistant and lead on a variety of projects, including but not limited to gamma-irradiation inactivation experiments, DNA isolation and identification experiments, and development of comparative viability assays for different inactivation protocols.

Proficient Laboratory/Science Skills:
Microbiology: flow cytometry, microscopy and staining, bacterial streaking and cultivation, large scale culture and media preparation, cell transformation and recombinant protein expression and purification, gel electrophoresis and western blotting, development of specific alamar blue viability assays for select agents and BSL-3 organisms
Microbial Genetics: R pipeline genomic analysis, Genomic DNA purification, PCR and cloning of PCR products, custom PCR primer design, RNA extraction and purification, sequence analysis and alignment, Reverse transcription of cDNA from depleted RNA product, ddPCR assay

development and optimization

Bio Safety level 3: trained and qualified via Colorado State University Bio Safety Officers, and comfortable for work in a BSL-3 environment. 6+ yrs. experience working inside BSL-3 laboratory. Trained and proficient in emergency procedures and spill clean-up SOPs in accordance to Colorado State University Biosafety protocols.

Vector Biology: Mosquito rearing and colony maintenance, NMR analysis of colony health biomarkers, cryopreservation of mosquito eggs and larvae, special focus on genus *Anopheles*

Academic or Professional Presentations

CVMBS Research Day, Fort Collins CO (January 2020)

Presenter: thesis work was presented in both poster format, and a 5 minute pop-talk. This is an all day event aimed at connecting the CVMBS graduate students to faculty and other students in various departments in the college.

AGU Fall Meeting, San Francisco (December 2019)

Co-chair/Organizer of poster session "Science Communication at Multiple Scales"

Hosting a workshop, "Independent Science Podcasting: The Value of Reaching Local Audiences"

MIP Department Seminar Presentation (November 2019)

Thesis work and progress presented to the department, a requirement of all PhD and Master's Track A students in the MIP department. Presentation involved a 45 minute presentation, and question session.

AGU Fall Meeting, Washington DC (December 2018)

Co-presenter: Science Podcasting workshop with Dr. Ryan Haupt of "Science… Sort of"

CURC Undergraduate Research Symposium, Colorado State University, Fort Collins, CO (April 2017)

Title: "Modeling the effect of Cesium Source Gamma-Irradiation on *Mycobacterium tuberculosis* Cell Viability"

Capstone Seminar and CURC Undergraduate Research Symposium, Colorado State University, Fort Collins, CO. (April 2016)

Title: "Development of a Reliable Alamar Blue Assay on *Brucella* spp."

CURC Undergraduate Research Symposium, Colorado State University, Fort Collins, CO. (April 2015)

Title: "Identification of *Burkholderia pseudomallei* in ABSL-3 Laboratory Environmental Samples"

Science-Communication and Teaching Experience

MIP700 – Science and Ethics (Spring 2020)

Graduate Teaching Assistant for Dr. Karen Dobos

MIP Graduate Student Organization: Science Policy Panel (March 2020)

Panel co-organizer

ComSciCon Rocky Mountain West (October 2019)

Member of the organizing committee for the conference. Responsible for hosting pop-talk sessions, organizing the "Diversity and Inclusion" panel, and general oversight of operations/workshops

AGU Sharing Science: Voices for Science, Washington DC (April, 2018 - April, 2019)

A year long program involving the development of writing/podcasting skills, monthly calls, and networking with science-communications professionals

Source Magazine: College of Veterinary Medicine and Biomedical Science

Writing articles for the college magazine (online access articles are linked below)

Professional Writing

"World TB Day: Microbiology labs open doors to area high school students"
https://cvmbs.source.colostate.edu/world-tb-day-2019-csu/

"World TB Day inspires students to join fight against tuberculosis"
https://cvmbs.source.colostate.edu/world-tb-day-inspires-students-to-join-fight-against-tuberculosis/
Researcher Spotlights:
http://www.cvmbs.colostate.edu/mip/mipnews_archives/mipnews-March2018.html
http://www.cvmbs.colostate.edu/mip/mipnews_archives/mipsnews-April2018.html
Plainspoken Scientist through AGU's Sharing Science:
https://blogs.agu.org/sciencecommunication/2020/09/04/agurocks-the-intersection-of-music-and-science/

KCSU (August 2014 – May 2016)

Radio DJ, responsible for putting together a weekly show, and writing one or more CD reviews each month.

Press

https://collegian.com/2018/11/local-band-yail-blends-science-sadness-sass-with-first-ep/

https://source.colostate.edu/csu-collaborating-across-campus-and-with-local-businesses-to-produce-hand-sanitizer/?fbclid=IwAR19AApSun7Ii9fYCuTYFG8cXp46yfyZriYNTCWkQZ58q8EpP5V9GmFDeqA

https://collegian.com/2020/02/category-arts-and-culture-local-band-yail-ends-hiatus-community-rejoices/?fbclid=IwAR0O6H7RqDYPkifqVug25dE6-BUAaTWybiBl3z6GqAi8fipdS2FGIuncY_8

http://kcsufm.com/2020/05/indoors-yail-interview/?fbclid=IwAR2J7Cr8sh0dYoBaA1SQ_8I-ZJmUdD1at8U1MGwKFnMe3P59qaV8ssYZF44

http://www.getalternative.com/the-alts-bookshelf-vol-4/

Non-professional Science Communication Projects

Convergent Lines: A Zine About Graduate Students in DIY (2020)

This is a zine I published independently through Wendy House Press in Chicago, IL. The purpose of the zine is to highlight graduate students who are also involved with underground art spaces. Released June 2020. https://wendyhousepress.bigcartel.com/product/convergent-lines-digital

Yail (2017-Present)

A band I started with the intention of bringing science communication into the DIY and independent art spaces. We have toured and play regularly. Additionally, we table science-specific zines and artwork at our shows.

Humanizing Science Podcast (2017-2018)

A podcast I started with the intention of bringing in scientists to talk about their lives outside of science, and how it influences the way they work in the lab.

Professional Development, Organizations, and Fellowships

CSU MIP Graduate Student Organization: Member and Event Organizer (2018-2020)

In charge of organizing guest speaker events for the Microbiology, Immunology, Pathology Graduate Student Organization.

Keystone eSymposia Series: Proteomics in Cell Biology and Disease (September 2020)

Attended online sessions and lightning sessions on disease and cell proteomics, cell surfaceome, instrumentation and analytical tools, broad-scale proteomic analysis of disease in humans and animals, and other topics related to proteins and disease.

AGU Fall Meeting, San Francisco, CA (December 2019)

Ran a workshop focused on science podcasting, as well as a poster session on communicating to broad sizes of audiences. Attended various talks and presentations related to earth science, space science, and science communication

AGU Fall Meeting, Washington DC (December 2018)

Presented on science podcasting, and attended a variety of panels and presentations regarding climate/earth science, and communicating science to the public

ComSciCon Rocky Mountain West, Fort Collins, CO (October 2018)

Development of science-communications skills in a two-day conference that involved workshops, presentation of personally prepared material, and panels with professionals in science communications

Colorado *Mycobacteria* Conference, Fort Collins, CO (June 2016)

Workshops and presentations on current topics in *Mycobacteria* research

Publications

PUBLISHED

Wallace E, Hendrickson D, Tolli N, Mehaffy C, Peña M, Nick JA, Knabenbaur P, **Watkins J**, Simpson A, Amin AG, Chatterjee D, Dobos KM, Lahiri R, Adams L, Strong M, Salfinger M, Bradford R, Stedman TT, Riojas MA, Hazbón MH. Culturing Mycobacteria. Methods in Molecular Biology (Clifton, N.J.). 2021 ;2314:1-58. DOI: 10.1007/978-1-0716-1460-0_1. PMID: 34235647.

Watkins J. "Inactivation of Mycobacterium Tuberculosis for Safe Use Outside of the BSL-3 Laboratory," Thesis, Colorado State University, Fort Collins, CO (2020).

IN SUBMISSION

(Pre-print Available) **Watkins J**, Bell J, Knabenbauer K, Brandl A, Dobos KM. “D10 Modeling and a Novel Calibration Method for Mycobacterium tuberculosis Inactivation via Cesium-Source Gamma-Irradiation.”

Community Involvement

Shepardson Elementary School STEM Day (2019)

Worked with a local elementary school to show them some of the graduate work that we do with bacteria and mosquitoes.

Seventh Circle Music Collective, Denver, CO (2014-2020)

Volunteer graphic design, running door/sound and booking/promoting shows at a community-forward music venue

Honors and Awards

Sumner M. Morrison Memorial Scholarship (2016-2017)

Scholarship awarded by Colorado State University’s CVMBS to undergraduate students based on “outside activities and potential for achievement in graduate school.”

CURC Highest Honors Award (2016)

Highest honors awarded to three poster presentations at Colorado State’s Celebrating Undergraduate Research and Creativity symposium.