

**Makani Layne Fisher**

TTU Natural Resources Management

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Education

<u>Name of Institution</u>	<u>Years</u>	<u>Major Focus</u>	<u>Degree</u>
Purdue University	2018-2023	Entomology	Ph.D.
Brigham Young University	2016-2018	Biology	M.S.
Brigham Young University	2010-2016	Biology	B.S.

Professional Experience

<u>Name of Institution</u>	<u>Years</u>	<u>Department</u>	<u>Position</u>
Texas Tech University	2024-Present	Natural Resources Management	Postdoc
Purdue University	2023-2024	Entomology	Postdoc

Current Research Interests

Biogeography, biodiversity, and niche patterns. Trained in entomology and focused specifically lichen-feeding tiger moth evolution and ecology, but I have broad interests in other taxa.

Currently working on the niches and distributions of North American bats.

Publications

- Sisson, M.S., Dowdy, N.J., **Fisher, M.L.**, Lawrence, G., Goldstein, P.Z., Homziak, N., Schmidt, B.C., Simmons, R., Weller, S., Zahiri, R., Zaspel, J.M., and Zilli, A., (2025). Erebidae Systematics: Past, present, and future – Progress in understanding a diverse lepidopteran lineage. *Insect Systematics and Diversity*.
- Hadfield, R.*, Mulford, T.*, **Fisher, M.L.***, Borgmeier, A., Ardon D., Suchomel A.D., Lontchi, J.F., Sutherland, L., Huie, M., Lupiyaningdyah, P., Nichols, S., Lin, Y.F., & Anataprayoon, N., (2024). Imperiled wanderlust lichens in steppe habitats of western North America comprise geographically structured mycobiont lineages and a reversal to sexual reproduction within this asexual clade. ***these authors contributed equally as co-first authors**. *Molecular Phylogenetics and Evolution*, 201, 108212.
- Skvarla, J.M., **Fisher, M.L.**, Christensen, C.C., Jensen, W.F., & Kelly, E.J. (2024). Some new range records for Pacific Deer Keds and Western Deer Keds (Hippoboscidae: *Neolipoptena ferrisi* and *Lipoptena depressa*). *Prairie Naturalist Notes*, 56:N5-N9.
- Fisher, M.L.**, (2023). Observed unpalatability of *Hypoprepia fucosa* (Erebidae: Arctiinae: Lithosiini) to an *Eremobates scaber* species group Solifugae (Arachnida). *The Lepidopterists' Society*, 77(3), 202-207.
- Fisher, M.L.** & Cicero, J.M., (2022). First Record of the Firefly *Pleotomus nigrepennis* LeConte (Coleoptera: Lampyridae: Lampyrinae: Pleotomini) from Utah, USA with Comments on its Distribution and Morphology. *The Coleopterists' Bulletin*, 76(3), 394-397.

- Fisher, M.L.** & Schmidt, B.C., (2022). Rediscovery of *Apantesis eureka* (Erebidae: Arctiinae: Arctiini): Contributions to the Distribution and Biology of a Great Basin Endemic. The Journal of the Lepidopterists' Society, 76(3), 210-213.
- Hale, E., **Fisher, M.L.**, Keuler, R., Smith, B., & Leavitt, S.D., (2019). A biogeographic connection between Antarctica and montane regions of western North America highlights the need for further study of lecideoid lichens. The Bryologist 122(2), 315-324.
- Fisher, M.L.**, Mower, R.C., & Nelson, C.R., (2019) *Climacia californica* Chandler, 1953 (Neuroptera: Sisyridae) in Utah: taxonomic identity, host association and seasonal occurrence. Aquatic Entomology 40(4), 317-327.

Mentoring

- Amanda N. Newman, Texas Tech, Dissertation Chapter.....August 2024-Present
- Clint J. Perkins, Texas Tech, Dissertation Chapter.....August 2024-Present
- Jayne E. Czap, Texas Tech, Dissertation Chapter.....August 2024-Present
- Martha Drake, Purdue, SDM project.....September 2023-Present
- Charlie Carlton, Purdue, Undergraduate Capstone Research.....November 2023-December 2024
- Teagan Mulford, Northern Arizona University, SDM project.....February 2023-Present
- Mitchell McKesson Purdue Undergraduate Capstone Research.....January-December 2021

Trainings and Certificates

- Purdue Certificate of Practice in College Teaching.....December 2023
- Purdue Certificate of Foundations in College Teaching.....December 2023

Research Grants

- Career Development Grant, Sloan Scholars Mentoring Network.....April 2025
- SysEB Student Research Travel Award, Entomological Society of America.....April 2019
- Summer Award for Upper Division and Graduate Students, Charles Redd Center.....April 2019
- Theodore Roosevelt Memorial Fund Award, American Museum of Natural History.....April 2019
- Annalee Naegle Redd Assistantship Award, Charles Redd Center.....January 2017
- Summer Award for Upper Division and Graduate Students, Charles Redd Center....January 2017

Scholarships, Travel Awards, and Recognitions

- Early Career Travel Award, American Society of Mammalogy.....March 2025
- Outstanding Doctoral Student Award, Purdue Entomology Department.....December 2023
- Purdue Graduate Student Government Travel Award.....November 2023
- Bilsland Dissertation Fellowship.....June 2023
- Purdue Three Minute Thesis (3MT) semifinalist.....February 2023
- Purdue Graduate Student Government Travel Award.....November 2022
- Dave Mueller Entomology Travel Funds.....November 2022
- 2nd place in the Student Competition for the President's Prize, Entomological Society of America.....November 2019
- National Science Foundation Internship, *Successful Scientific Communication for Next-Generation Natural History Researchers*, Milwaukee Public Museum.....Fall 2019
- ARGE Diversity Research Assistantship, Purdue University.....Fall 2018
- Alfred P. Sloan Scholar, Purdue University, Alfred P. Sloan Foundation's Indigenous Graduate

Partnership (SIGP) Program.....Fall 2018
 Residual Scholarship, Purdue University.....Fall 2018, Spring 2019
 5th place out of 45 at Ohio Valley Entomological Association Annual Forum.....October 2018
 Student Travel Award, American Bryological and Lichenological Society.....August 2018
 6th place out of 34, Brigham Young University Graduate Student Society Grad Expo...April 2018
 Semesteral Departmental Scholarship, Brigham Young University.....2016-2017
 Elwood Christensen-Graduate Presentation Award, Brigham Young University.....October 2017
 Mather Travel Award, The Lepidoptersists' Society August 2017
 D. Elden Beck Scholarship, Brigham Young University August 2017
 S. Paul and Hilda F. Stewart Scholarship, Brigham Young University January 2016
 Life Science Annual Fund Scholarship, Brigham Young University.....August 2015

Invited Seminars

Fisher, M.L. *The evolution and ecology of the enigmatic lichen-feeding tiger moths:* Brigham Young University, Biology Undergraduate Alumni Symposium.....October 2023
Fisher, M.L., Dowdy, N.J., Sullivan, K., Leavitt, S.D., Nelson, C.R., Cameron, S.L., Zaspel, J.M., *The evolutionary ecology of lichen-feeding tiger moths (Erebidae: Arctiinae: Lithosiini):* SIGP Webinar: Highlighting Indigenous Researchers.....February 2021

Oral Presentations

Newman, A.N. & **Fisher, M.L.**, *Effects of Roadways on Bat Activity and Distributions in East Texas: 3 Minute Thesis*.....April 2025
 Newman, A.N., **Fisher, M.L.**, Young, L., & Stevens, R.D., *Effects of Roadways on Bat Activity and Distributions in East Texas:* Texas Society of Mammalogists.....February 2025
Fisher, M.L., *Phylogenomics and Species Distribution Models to Infer Evolutionary Relationships, Delimit Species, and Better Understand Lichen-Host Interactions in Tiger Moths:* Purdue Doctoral Defense..... November 2023
Fisher, M.L., Dowdy, N.J., Sullivan, K., Cameron, S.L. & Zaspel, J.M., *Hypoprepia miniata, H. fucosa, and everything in between: A taxonomic dive into this lichen moth species complex:* Entomological Society of America.....November 2023
Fisher, M.L., Dowdy, N.J., Sullivan, K., Cameron, S.L., & Zaspel, J.M., *Hypoprepia fucosa Hypoprepia miniata and everything in between:* Arctiinae Research Community Meeting.....May 2023
Fisher, M.L., Cameron, S.L., Zaspel, J.M., & Lendemer, J.C., *Using Species Distribution Modeling to Address Knowledge Gaps in Lithosiini (Erebidae: Arctiinae):* Entomological Society of America, Entomological Society of Canada, and Entomological Society of British Columbia Joint Annual Meeting.....November 2022
 Mulford, T.M., **Fisher, M.L.**, & Nelson, C.R., *Biogeography of the robber fly genus Proctacanthus (Diptera: Asilidae):* Entomological Society of Canada, and Entomological Society of British Columbia Joint Annual Meeting.....November 2022
Fisher, M.L., Cameron, S.L., Lendemer, J.C., & Zaspel, J.M., *Exploring the use of lichens in the species distribution modeling of Lithosiini (Erebidae: Arctiinae):* Arctiinae Research Community Meeting.....May 2022
 McKesson, M., Stanford-Beale, D.A.C., Cameron, S.L., & **Fisher, M.L.**, *Using Maxent to Predict Species Distribution and Compare Niche Overlap between Aptinothrips rufus and Aptinothrips stylifer:* Purdue Undergraduate Capstone Research.....December 2021

- Fisher, M.L.**, Stanford-Beale, D.A.C., & Sweet, A.D., *Everyone poops, but some throw it: The evolution of excrement removal by caterpillars*: Entomological Society of America.....November 2021
- Fisher, M.L.**, Nelson, C.R., Leavitt, S.L., Cameron, S.L., Zaspel, J.M., *Host preference and selective sequestration in the lichen-feeding tiger moths (Erebidae: Arctiinae: Lithosiini)*: Arctiinae Research Community Meeting.....May 2021
- Fisher, M.L.**, Dowdy, N.J., Lemmon, A.R., Lemmon, E.M., Sweet, A.D., Cameron, S.L., & Zaspel, J.M., *Phylogenetic assessment of the lichen-feeding tiger moth subtribe Cisthenina (Erebidae: Arctiinae: Lithosiini) by combining anchored hybrid enrichment data with traditional loci*: Entomological Society America.....November 2020
- Fisher, M.L.**, *Makani Fisher: Life History of a Bug Nerd*: Purdue Sloan Foundation of Indigenous Graduate Researchers Weekly Meeting.....March 2019
- Fisher, M.L.**, Nelson, C.R., Leavitt, S.D., & Zaspel, J.M., *Host preference and selective sequestration in the lichen-feeding tiger moths (Erebidae: Arctiinae: Lithosiini)*: Entomological Society of America.....November 2019
- Fisher, M.L.**, *Biogeography and Natural History of Spongillaflies and Tiger Moths of Intermountain North America with Experimental Studies of Host Preference in the Lichen-Feeder Cisthene angelus (Insecta: Neuroptera: Sisyridae and Lepidoptera: Erebidae: Arctiinae)*: BYU Master's Thesis Defense.....November 2018
- Fisher, M.L.**, Nelson, C.R., & Leavitt, S.D., *Pick your poison, the decision of what's for dinner for the lichenivorous caterpillars of Cisthene angelus (Lepidoptera: Erebidae: Arctiinae)*: Ohio Valley Entomological Association.....October 2018
- Fisher, M.L.**, Riley C.R., & Leavitt S.D., *Pick your poison, the decision of what's for dinner for the lichenivorous caterpillars of Cisthene angelus (Dyar) (Lepidoptera: Erebidae: Arctiinae)*: American Bryological and Lichenological Society Conference.....August 2018
- Fisher, M.L.**, Mower, R.C., & Nelson, C.R., *Spongillafly Biology in Utah (Neuroptera: Sisyridae: Climacia californica)*: Entomological Society of America.....November 2017
- Fisher, M.L.**, Riley, C.R., Zaspel, J., & Leavitt, S.D., *Metabolomics, Feeding Behavior, and Host Association of western North American Cisthene (Erebidae: Arctiinae: Lithosiini)*: The Lepidoptersist's Society Annual Meeting.....August 2017
- Fisher M.L.**, Nelson, C.R., Baum, E., Robinson, D., & Widdison, R., *Western North America Odonata Nymphs: Freshwater Invertebrate Identification Guide (FIIG)*: Dragonfly Society of the Americas.....July 2016
- Fisher, M.L.**, & Nelson, C.R., *Identifying Plecoptera nymphs of western North America using the Freshwater Invertebrate Identifications Guide (FIIG)*: North American Plecoptera Symposium.....May 2016

Poster Presentations

- Newman, A.N., **Fisher, M.L.**, Young, L., & Stevens, R.D., *Effects of Roadways on Bat Activity and Distributions in East Texas*: Texas Tech Cross Disciplinary Research Graduate and Post-Doc Poster Event.....April 2025
- Czap, J.E., **Fisher, M.L.**, Young, L., & Stevens, R.D., *The use of brides as day roosts by bats (Order Chiroptera) in East Texas*: Texas Society of Mammalogists.....February 2025
- Fisher, M.L.**, Stanford-Beale, D.A.C., & Sweet, A.D., *The crappiest Lepidoptera phylogeny: the evolution of frass removal by caterpillars*: Entomological Society of America.....November 2020

- Fisher, M.L.**, Stanford-Beale, D.A.C., & Sweet, A.D., *The crappiest Lepidoptera phylogeny: the evolution of frass removal by caterpillars*: American Indian Science and Engineering Society.....October 2020
- Fisher, M.L.**, Stanford-Beale, D.A.C., & Sweet, A.D., *Everyone poops, but some throw it: the evolution of excrement removal by caterpillars*: Sigma Xi.....October 2020
- Fisher, M.L.**, Zaspel, J., Nelson, C.R., & Leavitt, S.D., *Are you what you eat? Patterns of chemical sequestration in the lichen-feeding tiger moth *Cisthene angelus* (Lepidoptera: Erebidae: Arctiinae: Lithosiini)*: Entomological Society of America, Entomological Society of Canada, and Entomological Society of British Columbia Joint Annual Meeting.....November 2018
- Fisher, M.L.**, Nelson, C.R., & Leavitt, S.D., *You are What You Eat: The Strange Feeding Behavior of Lichen Eating Caterpillars*: BYU Graduate Student Society Grad Expo.....April 2018

Other Special Projects

- Arthropods associated with ghost pipes (*Monotropa uniflora*), citizen science iNaturalist project.....May 2022-Present
- When Caterpillars Throw their Poo video from PurdueExtensionEntm used by the University of Ottawa's animal behavior class.....January 2022
Link: <https://www.youtube.com/watch?v=UFc8nyvux04>
- Milwaukee Public Museum exhibit, Butterflies of Wisconsin.....October 2021
- Milwaukee Public Museum Breakfast with the Curators.....June 2020
Link: <http://www.mpm.edu/Breakfast>
- National Science Foundation Internship, *Successful Scientific Communication for Next-Generation Natural History Researchers*, Milwaukee Public Museum.....Fall 2019
- Purdue Entomology Research Collection Mayfly Specimen Digitization.....August 2018-2021
- Monte L. Bean Life Science Museum BYU Campus Lichen Tour.....June 2018
Link: <https://spark.adobe.com/page/wgzTKs2IzzZW8/>
- Accepted Caterpillar Photograph in the National Insect Salon, Entomological Society of America and Peoria Camera ClubNovember 2017

Community Outreach and Service

- Church Youth Sunday School Teacher.....August 2022-2023/February 2025-Present
- Church Primary Boys Activity Day Leader.....January 2020-March 2024
- Purdue Spring Fest/Bug Bowl Cricket Spitting Volunteer.....April 2022
- Purdue Entomology Graduate Organization President.....July 2020-July 2021
- When Caterpillars Throw their Poo, video for Purdue BugBowl.....April 2021
Link: <https://www.youtube.com/watch?v=UFc8nyvux04>
- Elementary School Grasshopper Dissection Leader Aid.....January 2020
- Judge of Undergraduate Poster Competition for the Entomological Society of America Annual Meeting.....November 2019
- Boy Scouts of America, Webelos Den Leader.....September 2018-August 2019
- Purdue Spring Fest/Bug Bowl Cricket Spitting Volunteer.....April 2019
- Brigham Young University Tanner Entomology Club President.....August 2015-April 2016
- Brigham Young University Tanner Entomology Club Treasurer.....April 2016-July 2018
- Elementary School Insect Club Presentations.....September 2017 & March 2018

Middle School Life Science and Insect Tours.....March 2016 & 2017
Brigham Young University College of Life Sciences Student Council, Representative for the
Tanner Entomology Club..... August 2015-April 2016

Additional Laboratory and Field Experience

Purdue Mayfly Ethanol Long-term Specimen Transfer.....August 2018-2020
Utah County Mosquito Abatement lab and field technician.....May-August 2016
Project lead on Freshwater Invertebrate Identification Guide (FIIG).....January 2014-May 2016
Alaska rock fish otolith, isotope, and parasite work.....June 2014

Additional Skills

- ArcGIS
- R
- Phylogenetics
- Ecological Niche Models

Languages

Proficient in speech, writing, and reading

- English
- Spanish