

Zachary Whaley

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Personal Profile

Masters student
Sonsthagen Lab, University of Nebraska Lincoln
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Academic Background

B.S. Biological Sciences (Conservation Biology and Ecology) - Arizona State University May 2024
B.A. Global Health - Arizona State University May 2024
Minor in Political Science - Arizona State University May 2024

Research Interests

Landscape Genetics
Gene flow and functional connectivity
Community-based Conservation
Food Sovereignty

Experience

Sonsthagen Lab, University of Nebraska Lincoln June 2025 – Current
Masters Student

Collected, extracted, and processed genomic data from the Greater Prairie Chicken. Performed bioinformatic processes on genomic datasets. Developed and pursued research questions in collaboration with state wildlife management agencies.

Genomics, Ecology, and Modeling for Conservation Lab, North Dakota State University June 2024 – June 2025
RaMP-CHANGE Research Fellow

Integrated spatial and genomic data to assess functional connectivity of elk in Minnesota, North Dakota, and Manitoba. Collaborated with management agencies and scientific partners to develop and interrogate research questions. Extracted DNA from tissue samples. Managed and analyzed big genomic datasets using a high performance computing cluster.

Cramer Lab August 2022 - May 2024
<https://katielcramer.com/>

Undergraduate Researcher
Performed literature reviews to find data on eutrophication of coral reefs in the Caribbean. Used Arcgis Pro to map study sites and analyze health of Caribbean coral reefs. Compiled and analyzed water quality data using Excel and R. Conducted an undergraduate thesis on the role of Coral Reef Fisheries in Indigenous Food Sovereignty.

Small Mammal Program, Arizona Game and Fish Department May 2023 - January 2024
Intern

Conducted trackplating surveys for the New Mexico Jumping Mouse, a federally listed subspecies. Utilized ArcGISPro and ExpertGPS to plan and execute monitoring efforts. Led a team of interns and planned all field work. Conducted small mammal trapping and handling. Performed visual count surveys for Gunnison's and Black-Tailed Prairie dogs and Three Forks Springsnails. Conducted telemetry, trapping, and handling for the Mexican Gray Wolf.

Indigenizing Food Systems Humanities Lab January 2023 - May 2023
Developed and executed a collaborative project focused on restoring indigenous food pathways within my community. Created an [ArcGIS story map](#) in order to promote decolonization of the history of the Salt River. Conducted archival research and literature review to determine the historical ecology of the Salt River and its relation to Indigenous food pathways.

Research Department, Arizona Game and Fish Department May 2022 - December 2022
Intern

Performed wildlife, floral, and herpetofaunal surveys on grasslands and riparian areas with a variety of field techniques. Navigated using GPS to remote riparian areas to place camera traps and collect data on wildlife presence. Analyzed camera trap data and performed data entry tasks.

Redding Lab

August 2021 - May 2022

Barrett Honors College Fellow

*Conducted molecular biology research on metabolic and photosynthetic pathways with *Helicobacter*. Designed and performed experiments on cultured bacteria including conjugations, transformations, and cloning.*

Hurtado Lab

January 2022 - May 2022

Research Assistant

Entered data for research on Covid-19 trends within indigenous communities in South America. Communicated with NGOs in South America in order to collect and clarify data.

Arizona State University

August 2021 - May 2023

Community Assistant

Supervised 70 residents within the Arizona State University residential communities. Demonstrated strong interpersonal skills. Utilized Microsoft and Google suite in order to keep track of resident concerns and interactions. Planned events to increase resident affinity and involvement in the community.

National Youth Science Camp

May 2021 - July 2021

Cabin Leader

Planned and led activities for 20 international and domestic delegates to National Youth Science Camp.

Awards/achievements

Moeur Award (2024)

Phi Beta Kappa (2023)

[Sage Family Southeast Asian Studies Scholarship \(2023\)](#)

EPICS Rising Star Award (2021)

Delegate for Arizona, National Youth Science Camp (2020)

National Merit Scholarship (2020)

Bank of America Student Leader (2020)

Elks Lodge Scholarship Recipient (2020)

Activities/memberships

Fargo Moorhead Audubon Society, Activities Coordinator

January 2025 – August 2025

Planned five field trips with over 50 participants for members of the Fargo Moorhead Audubon Society. Attended the Audubon Leadership Conference in Montreal to network with other conservation leaders and learn more about North American bird conservation.

North Dakota State University Birding Club, Activities Coordinator

August 2024 – June 2025

Founded the Bird Nerds, a community bird walk initiative. Directed a team of 10 volunteers to educate community members about birds in the Fargo, ND area. Planned field trips and club meeting activities for the NDSU Birding Club.

Barrett Residential Council, President

September 2020 - May 2021

Planned events and advocated for general improvement in the Barrett community. Communicated with university officials. Previewed budgets for programs. Contracted third party vendors for events.

Engineering Projects in Community Service, Team Lead

August 2020 - May 2021

Collaborated in a team of 5 to design a water aerator for small scale shrimp farmers in Vietnam. Acted as team lead and professional liaison by condensing team efforts into concise reports for professional presentations. Collaborated with nonprofits to design technology to increase productivity and sustainability of small scale shrimp farming operations in Vietnam.

Arizona Outdoors Club, Membership Director

August 2021 - July 2023

Planned and led camping and hiking trips to instill a love for nature within students at ASU. Developed outdoors survivorship skills to successfully complete backpacking trips. Utilized geospatial technologies to plan backpacking routes.

Barrett Sustainability Club, Garden Manager

August 2021 - May 2022

Coordinated gardening efforts by the Barrett community to create a sustainable and local source of food for residents. Educated others on regenerative gardening practices and spearheaded projects to improve garden biodiversity and accessibility.

National Youth Science Camp, Alumnus

May 2020 - Present

Represented Arizona at a national level. Attended presentations from scientists in various fields.

Grants and Scholarships

Scholarships and Fellowships:

Mary and Charles C. Cooper/Emma I. Sharpless Fellowship

\$3000

September 2025

Travel Grants:

TWS Molecular Ecology Working Group Travel Grant

\$1000

October 2025

Elk Without Borders: Genomics Reveals Asymmetrical Gene Flow Between Patchily-distributed Herds in Manitoba, Minnesota, and North Dakota

Completed Research:

Sage Family Undergraduate Scholarship

\$4000

May 2023 - August 2023

The Role of Coral Reef Fisheries in Indigenous Food Sovereignty

Amplifier Mini Grant

Arizona State University Humanities Lab

\$1000

January 2023 - May 2023

Life of the Salt River

Publications

Reports

Whaley, ZB, Romine, M. 2023. New Mexico Jumping Mouse Surveys 2023 Summary Report. Arizona Game and Fish Department.

Presentations

The Wildlife Society Annual Meeting

“Where the elk herd roams: genomics reveal the connectivity of small, patchily distributed herds”

October 9, 2025

Nebraska Cooperative Fish and Wildlife Unit Annual Meeting

“Jigsaw grasslands: puzzling together prairie fragments to assess landscape-level connectivity of a dispersal-limited game bird”

September 30, 2025

Prairie Grouse Technical Council

“Why did the prairie chicken cross the road? Genomics and species distribution of fragmented populations of *Tympanuchus cupido* in the Central Great Plains”

September 23, 2025

Prairie Grouse Technical Council

“Influence of the Conservation Reserve Program on population structure, demography, and space use by Greater Prairie-Chickens in Kansas and Nebraska”

September 23, 2025

North American Meeting of the International Association of Landscape Ecologists

“Where the elk herd roams: genomics reveal the connectivity of small, patchily distributed herds”

April 13, 2025

NDSU Research Days

“Where the elk herd roams: genomics reveal the connectivity of small, isolated herds”

April 9, 2025

Fargo Moorhead Audubon Society

“An (in)visible Killer: Window Strikes Impact Birds on a Hemispheric Scale”

April 3, 2025

North Dakota Chapter of The Wildlife Society

“Where the elk herd roams: simulations and genomics reveal the status of connectivity of small, isolated herds”

February 10, 2025

All NDSU Agriculture Conference

“Assessing the Influence of Dispersal Capability on Functional Connectivity in Elk”

November 6, 2024

Global Asia Speaker Series

“The Role of Coral Reef Fisheries in Indigenous Food Sovereignty”

January 19, 2024

Conservation Paleobiology Symposium

“Long-term change in Caribbean reef water quality and ecosystem health”

February 19, 2023

National Youth Science Camp

“Environmental Ethics: an Introduction”

July 13, 2022

Skills

Soft: Leadership, communication, team management

Technical: Microsoft Suite, Arcgis Pro, R, Expert GPS, Python, Arcgis Story Maps, Molecular Biology Experience, photography

Language: English (fluent), Spanish (fluent), Indonesian (Proficient), Portuguese (proficient)