

EDUCATION

- 2022-2026** **PhD, Biology**, Advisor: Dr. Kathryn Hanley, New Mexico State University
Dissertation: In the Zone: Investigating Endemic Vesicular Stomatitis Virus (VSV) Transmission Dynamics in Chiapas, Mexico
- 2017-2019** **MS, Biology**, Advisor: Dr. Peter W. Houde, New Mexico State University
Thesis: Re-assessing the Utility of mtDNA for Deep Avian Phylogenetic Reconstruction
- 2013-2017** **BA, Biology**
Saint John's University, Collegeville, MN

RESEARCH EXPERIENCE

- 2022-present** **PhD Candidate**, Laboratory of Dr. Kathryn A. Hanley
Department of Biology, New Mexico State University
- **Understanding Vesicular Stomatitis Virus (VSV) Endemic Transmission in Chiapas, Mexico:** Sampled and identified incriminated VSV insect vectors, screened insects for VSV using RT-qPCR, monitored livestock cases, and integrated environmental data to elucidate mechanisms enabling endemic VSV transmission.
 - **Identifying Evidence of Endemic VSV Sylvatic Cycles:** Indirectly evaluated the possibility of a wildlife VSV sylvatic cycle in forests adjacent to cattle ranches in Chiapas, Mexico through insect sampling and screening, insect host bloodmeal identification and wildlife camera trapping.
- 2020-2022** **Data Analyst**, Laboratory of Dr. Kathryn A. Hanley
Department of Biology, New Mexico State University
- **Surveilling VSV Insect Vectors During Outbreaks:** Conducted VSV insect vector sampling and screening in endemic and outbreak ranges (Chiapas, Mexico and New Mexico, USA) to elucidate transmission dynamics during VSV outbreaks.
 - **Modelling Environmental Drivers of VSV Transmission:** Generated data for developing a spatial and temporal model of VSV transmission and environmental drivers in Mexico.

- **Investigating the Possibility of SARS-CoV-2 Spillback in New World Bats:** Sampled New World bats in New Mexico to investigate life histories and the potential for SARS-CoV-2 spillback.

2017-2019

MS Graduate Research Assistant, Laboratory of Dr. Peter W. Houde
Department of Biology, New Mexico State University

- **Re-assessing the Phylogenetic Utility of mtDNA Genomes:** Reconstructed avian phylogeny with updated data partitioning methods (PartitionFinder2) and mtDNA genomes from the largest taxon set to date (340 avian species). Investigated factors causing phylogenetic tree incongruence between mtDNA and nDNA genomes (i.e. base compositional, saturation, GC% bias, etc.) using command line (UNIX) and bioinformatics tools.
- **Reconstructing Avian Time Tree using mtDNA:** Re-estimated divergence times using BEAST2 software and updated fossil calibration data.

2015-2016

Research Assistant, Laboratory of Dr. Robert B. Page
Department of Biology, Saint John's University (MN)

- **Avian Reproductive Strategies and Microsatellites:** Investigated potential correlations between microsatellite variation and breeding behavior in *Alophoixus pallidus* (puff-throated bulbuls).

PUBLICATIONS:

- 6) Weary, T.E., **Zhou, L.H.**, MacDonald, L., Ibañez IV, D., Jaramillo, C., Dunn, C.D., Wright, T.F., Hanley, K.A., Goldberg, T.L., Orr, T.J. Novel bat adenovirus closely related to canine adenoviruses identified via fecal virome surveillance of bats in New Mexico, USA, 2020-2021. *Viruses* **2025**, *17*, 1349.
- 5) Valdez, F.V, Velazquez-Salinas, L., **Zhou, L.H.**, Smoliga, G., Fish, I., Navarro-Lopez, R., Lopez-Gonzalez, I., Hanley, K., Mire, C., Rodriguez, L., Arzt, J. Near full-length genome sequence of a vesicular stomatitis New Jersey virus isolate collected from a naturally infected cow in the endemic state of Chiapas, Mexico. *Microbiology Resource Announcements* **2025**, *14*, 01007-2414.
- 4) **Zhou, L.H.***, Valdez, F.V.*, Lopez Gonzalez, I., Freysser Urbina, W., Ocaña, A., Tapia, C., Zambrano, A., Hernandez Solis, E., Peters, D.P., Mire, C.E., Navarro, R., Rodriguez, L.L., Hanley, K.A. Vesicular stomatitis virus transmission dynamics within its endemic range in Chiapas, Mexico. *Viruses* **2024**, *16*, 1742.
- 3) Whelpley, M. J.*, **Zhou, L. H.***, Rascon, J., Payne, B., Moehn, B., Young, K. I., Mire, C. E., Peters, D. P. C., Rodriguez, L.L., Hanley, K.A. Community composition of black flies during and after the 2020 vesicular stomatitis virus outbreak in Southern New Mexico, USA. *Parasites & Vectors* **2024**, *17*, 93.

- 2) Young, K.I., Valdez, F., Vaquera, C., Campos, C., **Zhou, L.H.**, Vessels, H.K., Moulton, J.K., Drolet, B.S., Rozo-Lopez, P., Pelzel-McCluskey, A.M., Peters, D.C., Rodriguez, L.L., Hanley, K.A. Surveillance along the Rio Grande during the 2020 vesicular stomatitis outbreak reveals spatio-temporal dynamics of and viral RNA detection in black flies. *Pathogens* **2021**, *10*, 1264.
- 1) Houde, P., Braun, E.L., **Zhou, L.H.** Deep-time demographic inference suggests ecological release as driver of Neoavian adaptive radiation. *Diversity* **2020**, *12*, 164.

* contributed equally

HONORS AND AWARDS:

2025	<i>1st Place Graduate Student Poster Presentation</i> (2025 Rio Grande Branch of the American Society for Microbiology Annual Meeting) New Mexico State University, Las Cruces, NM
2025	<i>Outstanding Graduate Assistantship Award</i> (NMSU Graduate School) New Mexico State University, Las Cruces, NM
2025	<i>3rd Place Oral Presentation</i> (Graduate Research & Arts Symposium) New Mexico State University, Las Cruces, NM
2025	<i>Graduate Travel Award</i> (NMSU College of Arts & Sciences) New Mexico State University, Las Cruces, NM
2024	<i>Merit-Based Enhancement Fellowship</i> (NMSU Graduate School) New Mexico State University, Las Cruces, NM
2024	<i>Graduate Award for Research Excellence</i> (NMSU Biology Department) New Mexico State University, Las Cruces, NM
2022	<i>Graduate Travel Award</i> (NMSU College of Arts & Sciences) New Mexico State University, Las Cruces, NM
2019	<i>Outstanding Graduate Award</i> (NMSU College of Arts and Sciences) New Mexico State University, Las Cruces, NM
2019	<i>Best Poster Presentation Award</i> (NMSU Biosymposium 2019) New Mexico State University, Las Cruces, NM
2013-2017	<i>Trustee's Scholarship</i> Saint John's University, Collegeville, MN
2013-2017	<i>President's Scholarship</i> Saint John's University, Collegeville, MN

PRESENTATIONS:

Invited Oral Presentations:

- 2025** *From feathers to flies: A journey from avian phylogenetics to vesicular stomatitis virus disease ecology*
Northwestern State University of Louisiana (Natchitoches, LA)
- 2024** *Who's flying this thing? Investigating vesicular stomatitis virus (VSV) endemic transmission dynamics in Chiapas, Mexico*
2024 New Mexico State University Biology Graduate Award for Research Excellence Seminar (Las Cruces, NM)
- 2023** *Vesicular stomatitis virus: Grand challenge of understanding and forecasting an emerging virus*
Cary Institute of Ecosystem Studies (Millbrook, NY)
- 2022** *Who's flying this thing? Relationships between vesicular stomatitis virus and potential insect vectors in endemic and outbreak regions of the virus*
2022 Joint Annual Meeting, Entomological Society of America (Vancouver, BC)
**Wrote presentation but was too sick to present. Talk was given by colleague instead.

Submitted Oral Presentations:

- 2025** *Into the wild: Searching for sylvatic vesicular stomatitis virus (VSV) transmission in its endemic region in Chiapas, Mexico*
New Mexico State University Graduate Research and Arts Symposium (Las Cruces, NM)
- 2024** *Who's flying this thing? Investigating vesicular stomatitis virus (VSV) endemic transmission dynamics in Chiapas, Mexico*
2024 New Mexico State University Biosymposium (Las Cruces, NM)
- 2023** *Who's flying this thing? Investigating VSV transmission dynamics in outbreak and endemic regions*
New Mexico State University Arts and Sciences Research and Creativity Week (Las Cruces, NM)

Submitted Poster Presentations:

- 2025** *Into the wild: Searching for sylvatic vesicular stomatitis virus (VSV) transmission in its endemic region in Chiapas, Mexico*
2025 Rio Grande Branch of the American Society for Microbiology Annual Meeting (Las Cruces, NM)

- 2025** *Into the wild: Searching for sylvatic vesicular stomatitis virus (VSV) transmission in its endemic region in Chiapas, Mexico*
2025 Ecology and Evolution of Infectious Diseases (EEID) Conference (South Bend, IN)
- 2024** *Who's flying this thing? Investigating vesicular stomatitis virus (VSV) endemic transmission dynamics in Chiapas, Mexico*
2024 American Society of Tropical Medicine and Hygiene (ASTMH) Annual Meeting (New Orleans, LA)
- 2024** *Who's flying this thing? Investigating vesicular stomatitis virus (VSV) endemic transmission dynamics in Chiapas, Mexico*
2024 Ecology and Evolution of Infectious Diseases (EEID) Conference (Palo Alto, CA)
- 2023** *Who's flying this thing? Relationships between vesicular stomatitis virus and potential insect vectors in endemic and outbreak regions of the virus*
27th Annual Virus Evolution and Molecular Epidemiology Workshop (VEME) (Stellenbosch, South Africa)
- 2019** *Investigating deep neoavian divergences using mtDNA*
2019 New Mexico State University Biosymposium (Las Cruces, NM)

TEACHING EXPERIENCE

- 2017-present** **Teaching Assistant**
 Department of Biology, New Mexico State University
- Instructed undergraduate students in weekly laboratory courses. Conducted review sessions and lectured when needed.
- Courses:**
BIOL353L (Human Anatomy Lab)
 Fall 2017, Fall 2018, Summer 2019, Fall 2019
BIOL322L (Zoology Lab)
 Fall 2019
BIOL354L (Human Physiology Lab)
 Spring 2019, Spring 2024
BIOL101L (Introduction to Human Biology Lab)
 Spring 2018
- 2015-2017** **Teaching Assistant**
 Department of Biology, Saint John's University (MN)
- Assisted professor with preparing laboratory materials, instructing laboratory courses and held review sessions outside of class.
- Courses:**
BIOL322L (Development Biology Lab)

Fall 2015, Fall 2016
BIOL316L (General Genetics Lab)
Spring 2017

MENTORING EXPERIENCE

- 2024** **Amanda Mock** (*Undergraduate*)
Current Position: Research Technician at YEEO Eco-Safe, Inc.
- Trained Amanda in various laboratory techniques (PCR, gel electrophoresis, data analysis), offered career guidance, professional development advice
- 2026** **Christine Yoo** (*Undergraduate*)
Current Position: Research Assistant at NMSU
- Trained Christine in processing VSV insect vectors (insect sorting, DNA/RNA extractions, and RT-qPCR virus screening).
- 2026** **Noah Lundstrom** (*Undergraduate*)
Current Position: Pre-Med Student
- Trained Noah in DNA extractions, PCR, gel electrophoresis, data analysis and conference poster construction.

CITIZENSHIP:

- United States of America

LANGUAGES SPOKEN:

- English, Chinese (Mandarin), Spanish

PROFESSIONAL AFFILIATIONS AND ACTIVITIES:

- American Society of Tropical Medicine and Hygiene, 2024-present
- USDA-ARS VSV Grand Challenge Project, 2020-present
- The Bird 10,000 Genomes (B10K) Project, 2017-2019
- NMSU Biology Graduate Student Organization (BGSO), 2017-present
 - NMSU BGSO Event Representative, 2024