

HALEY HALE

CONTACT INFORMATION

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EDUCATION

Master of Science, Biology

Texas Tech University, Lubbock, TX

- Thesis: An investigation into the phenological and sexually dimorphic characteristics of the willow, *Salix exigua*
- Supervisor: Dr. Matt Olson
- Summa Cum Laude

Bachelor of Science, Ecology and Evolutionary Biology

Angelo State University, San Angelo, TX

- Magna Cum Laude

EMPLOYMENT EXPERIENCE

Technician III - Lab Manager and Technician

Texas Tech University, Department of Biological Sciences, Sep 2018 - Present

2901 Main Street, Lubbock TX 79409

Supervisor: Dr. Matt Johnson

- Lab Management:
 - Keeping inventory of samples, reagents, and equipment
 - Washing and autoclaving equipment
 - Waste management
 - Ordering supplies
 - Shipping samples
 - Receiving and processing shipments
 - Training undergraduates and graduates in lab safety and protocols
- Lab Technician:
 - DNA extractions of leaf and seeds from both fresh tissue and herbarium specimens
 - DNA extractions from seeds and soil samples
 - Fungal DNA extractions from herbarium leaf and root tissue
 - High molecular weight DNA extractions from moss
 - DNA library preparation
 - Hybridization techniques for targeted sequencing

- RNA extractions from moss and seeds
- Electrophoresis
- Creating, balancing, and storing solutions
- Destructive sampling of herbarium specimens
- Moss propagation
- Other:
 - Creating interactive maps using R for PhyscoHunt using iNaturalist data
 - Transporting supervisor and students to field trips, community outreach, and conferences
- Future Projects:
 - DNA extractions from Antarctic peat cores

Research Assistant – Assistant Curator at the E. L. Reed Herbarium

Texas Tech University, Department of Biological Sciences, May 2018 – Aug 2018

2901 Main Street, Lubbock TX 79409

Supervisor: Dr. Matt Johnson

- Reorganized herbarium to promote safety and efficiency
- Set up new microscopes and dissecting scopes for research projects
- Maintained cleanliness and organization
- Took inventory and prepared purchase orders
- Developed protocols for:
 - Specimen preparation, mounting, and entry into the collection
 - Pest control and prevention

Teaching Assistant - Lab Coordinator

Texas Tech University, Department of Biological Sciences, Aug 2017 – May 2018

2901 Main Street, Lubbock TX 79409

Supervisors: Dr. Matt Johnson and Dr. Nick Smith

- Developed weekly PowerPoint lectures, quizzes, and offline/online assignments
- Led weekly meetings with other teaching assistants and professor
- Took inventory and ordered lab supplies and plants
- Coordinated six labs during the fall semester and five in the spring
- Helped to develop lab syllabi
- Assisted in the editing and alterations of the lab manual

Teaching Assistant

Texas Tech University, Department of Biological Sciences, Aug 2015 – May 2018

2901 Main Street, Lubbock TX 79409

- Assigned to Organic Evolution, a senior level course, for four semesters
 - Developed exams and offline/online assignments
 - Graded exams and assignments
 - Led weekly discussion sessions for students
- Assigned to Biology of Plants, a non-majors course, for three semesters
 - Developed weekly quizzes
 - Graded several assignments each week
 - Taught two labs for both my first and second semester; one lab the third semester

Research Assistant

Texas Tech University, Department of Biological Sciences, May 2017 – Aug 2017
2901 Main Street, Lubbock TX 79409

- Designed methodology for field sampling of study species, *Salix exigua*
- Completed and received BLM collecting permit
- Propagated study species using stem cuttings in the Biology Department greenhouse
- Germinated seeds from study species
- Extracted DNA from leaf tissue
- Collected and counted seeds from pollen limitation experiment
- Collected insects for pollinator study on study species

Assistant Editor

The Southwestern Naturalist, Nov 2014 – Apr 2015
PO Box 4022, Topeka KS 66604
Worked from San Angelo, TX

- Organized important dates needed for publishing
- Estimated page charges for articles
- Developed and sent page charge statements and invoices

Animal Caretaker

San Angelo Nature Center, San Angelo Recreation Department, Oct 2013 – Nov 2014
7409 Knickerbocker Road, San Angelo TX 76904

- Cleaned, fed, and practiced enrichment with various animals native to the Concho Valley and exotic animals common in the pet trade
 - Animals include: Prairie dogs, Raccoons, Porcupines, Gray Foxes, Bobcats, Ground squirrels, Rock squirrels, Rattlesnakes, Tarantulas, Tortoises, Salamanders, etc.
- Educated visitors, often families and school classes, about the animals as well as conservation and sustainability
- Helped coordinate and train volunteers of various ages

Angelo State Natural History Collection Herbarium Research Assistant

Angelo State University, Biology Department, Aug 2012 – Nov 2013
2601 W. Avenue N, San Angelo TX 76909

- Hired via an NSF grant to digitize collections:
 - Assisted in entering specimen data into the Specify 6.5 database
 - Prepared and mounted an assortment of plant specimens
 - Photographed specimens and entered them into an online database

PUBLICATIONS

H. Hale, E.M. Gardner, J. Viruel, L. Pokorny, and M.G. Johnson. 2020. Strategies for reducing per-sample costs in target capture sequencing for phylogenomics and population genomics in plants. Invited Special Issue: *Low-cost methods in plant sciences Applications in Plant Sciences* e11337. doi:10.1002/aps3.11337.

PRESENTATIONS

Implementing undergraduate research in an upper-level botany lab using target capture sequencing of herbarium specimens

Haley Hale, Yanni Chen, Lindsay Williams, and Dr. Matt Johnson

- *Oral Paper*: Botany - Online Conference - TBA July 2020

Developing a cost-effective workflow for targeted sequencing of herbarium specimens using Angiosperms353

Haley Hale, Dr. Lisa Pokorny, Dr. Elliot Gardner, and Dr. Matt Johnson

- *Oral Paper*: SICB - Austin, TX - January 2020
- *Oral Paper*: Botany - Tucson, AZ - July 2019

Sex determination using molecular methods and the identification of sexual dimorphism in *Populus balsamifera*

Haley Hale, Helen Scott, and Dr. Matt Olson

- *Poster*: Evolution - Austin, TX - June 2016

Establishing a Population of the Threatened Chisos Mountain Hedgehog Cactus

Haley Hale and Dr. Bonnie Amos

- *Oral Paper*: Christmas Mountains Symposium - Terlingua Ranch Headquarters, TX - May 2014
- *Poster*: Beta Beta Beta National Convention - Erie, PA - June 2014

COMMUNITY INVOLVEMENT AND SERVICE

E.L. Reed Herbarium, Sep 2018 - Present

Texas Tech University, Department of Biological Sciences

- Designed the new logo
- Collecting and pressing plants for community outreach programs through the E.L. Reed Herbarium
- Taught elementary school children the importance of herbarium collections as well as how to make a specimen
- Constructed new plant presses for the herbarium for use in future courses and field work

Botanical Society of America, Jul 2019 - Present

- Assisted in searching governmental legislation to spotlight those that the public policy committee can help
- Moderated a talk session during Botany 2019

Texas Tech University Association of Biologists, Sep 2015 - Sep 2018

Texas Tech University, Department of Biological Sciences

- Assisted in recycling pickup throughout the department
- Sold lab manuals and equipment to undergraduates

Beta Beta Beta Biological Honor Society, Aug 2011 – May 2015

Angelo State University, Epsilon Sigma chapter

- STEM Conference – Focused on women in science, I led girls of various ages through various biology experiments
- HEB Feast of Sharing - Served thanksgiving meals to the community
- Helping Hands - Improved homes around San Angelo
- SAFE Recycling - Sorted recyclables at San Angelo's main recycling center
- Science Days/Nights - Taught local children about biology
- Spring Chicken Affair - Served food to the people of San Angelo
- WTMA Distinguished Lectureship - Organized and distributed brochures to the audience of renowned and distinguished professionals in various fields of study

Natural History Collection Mammal Collection Volunteer, Feb - May 2012

Angelo State University, Biology Department

- Provided help with the preparation of several mammal specimens
- Skinned, stuffed, and took tissue samples of each specimen
- Recorded capture information and specimen data
- Assisted with research by skinning skunk heads and taking tissue and blood samples

Concho Valley PAWS Volunteer, Jan 2012 - May 2012

- Cared for and cleaned cats and their habitats
- Looked after dogs during adoption events
- Took phone calls and assisted visitors at the front desk

HONORS AND AWARDS

- Graduated Summa Cum Laude from Texas Tech University
- Graduated Magna Cum Laude from Angelo State University
- Inducted into Alpha Chi Honor Society, Fall 2012
- ASU Dean's Lists, Fall 2011, Spring-Fall 2012, Spring 2013, Fall 2014, Spring 2015
- JCT award recipient, Epsilon Sigma chapter of Tri-Beta, Fall 2011

PROFESSIONAL MEMBERSHIPS AND ORGANIZATIONS

- Botanical Society of America, Summer 2019 - Present
 - Public Policy Committee Member, Summer 2019 - Present
 - Member, Summer 2019 - Present
- Society for the Study of Evolution, Spring 2016 - Spring 2017
- Southwestern Association of Naturalists, Spring 2015 - Spring 2016
- Texas Tech University Association of Biologists, Fall 2015 - Fall 2018
- Beta Beta Beta Biology Honor Society member, Fall 2011- Present
 - President, Summer 2014 - Summer 2015
 - Treasurer, Summer 2013 - Summer 2014
 - Representative, Summer 2012 - Summer 2013

- Honor Member, Spring 2013 - Present
- Delta Tau Alpha Agricultural Honor Society, Fall 2013 - Spring 2015
- Alpha Chi Honor Society member, Fall 2012 - Spring 2015
- Block and Bridle Club, Fall 2011 - Spring 2012

REFERENCES

Matt Johnson, PhD.

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Matt Olson, PhD.

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Email: matt.olson@ttu.edu

Brian Sanderson, PhD.

Email: brian@biologicallyrelevant.com