SPENCER A. HURT

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SELECT EDUCATION

University of Nevada, Reno June 2026 – Present
Doctoral Student in Ecology, Evolution, and Conservation Biology *Reno, NV*

New Mexico Institute of Mining and Technology January 2025 – August 2025
Graduate Student in Hydrology (no degree completed) *Socorro, NM*

University of Colorado Boulder May 2020 – May 2022
Bachelor of Arts in Astrophysics, Planetary Science Track (summa cum laude) *Boulder, CO*

SELECT WORK EXPERIENCE

Northern Arizona University School of Forestry February 2026 – Present
Research Technician *Fort Bragg, CA*

- Collaborate with the USFS Pacific Southwest Research Station to operate a network of hydrologic sensors and collect water and sediment samples from the Caspar Creek Experimental Watersheds to investigate how timber management affects watershed health in a coastal redwood forest.
- Compile and review hydrologic data for use in research.

Grand Environmental Services September 2025 – January 2026
Hydrology Intern *Grand Lake, CO*

- Conducted hydrologic modeling and data analysis to inform improvements to the Fraser, CO, stormwater drainage system, with a focus on green infrastructure that enhances water quality in the Fraser River.
- Assisted with agricultural land management and post-fire habitat restoration projects on private property.

Gila National Forest June 2025 – August 2025
Natural Resources Technician *Silver City, NM*

- Implemented low-tech process-based stream restoration and revegetation (primarily pole planting and grass seeding) at Centerfire and Willow Creeks to mitigate habitat degradation due to wildfire and over-grazing.
- Mapped and removed invasive plants and nonnative fish from riparian corridors throughout the forest.
- Evaluated habitat quality in grazing allotments and exclosures, including vegetative cover and species composition using transects and quadrats.
- Conducted presence/absence surveys for protected species, including Mexican Spotted Owl, Chiricahua Leopard Frog, Chihuahua Chub, and Loach Minnow. Collected eDNA samples to monitor fish species.
- Evaluated vegetation and soil burn severity in the Trout Fire burn scar and developed hydrologic models (using HEC-HMS) of the Mimbres Watershed to identify at-risk infrastructure and habitat.

Wyoming Infrared Observatory (University of Wyoming) March 2023 – December 2024
Engineer *Laramie, WY*

- Led facility maintenance and upgrades, including telescope motion control, instrumentation and software development, IT and communication solutions, roads, and structures.
- Maintained and operated tools and equipment, including vehicles (trucks, UTVs, and a Tucker Sno-Cat).
- Managed purchasing and facility budget while writing grant proposals to supplement state funding.
- Coordinated outreach programs, including tours of the facility, and supported an NSF-funded Research Experience for Undergraduates program.

RESEARCH EXPERIENCE

New Mexico Tech Department of Earth and Environmental Science January 2025 – August 2025
Graduate Research Assistant *Socorro, NM*

- Operated a network of sensors and sediment monitoring stations in an experimental watershed. Used the resulting data to validate models of sediment transport (HEC-RAS and AdH) in arid and post-fire settings.
- Utilized satellite imagery and GIS software to monitor trends in vegetation health and composition along the Gila River and to identify relationships with flood frequency and alluvial groundwater levels.
- Operated drones and utilized imagery to generate digital elevation models (DEMs) and vegetation maps.

Center for Astrophysics and Space Astronomy June 2020 – May 2022
Undergraduate Researcher *Boulder, CO*

- Modeled images of circumstellar debris disks using high-performance computing solutions and Bayesian inference (including MCMC simulations) to better understand the processes that drive planet formation.

University of Hawaii Institute for Astronomy May 2021 – August 2022
Undergraduate Researcher *Honolulu, HI*

- Modeled spectra of 90 M and L spectral type ultracool dwarfs using grids of precomputed model atmospheres and Bayesian inference. Identified systematic behavior in the model atmospheres.

California Planet Search October 2019 – December 2021
Undergraduate Researcher *Remote*

- Maintained and added functionality to `RadVel`, a Python package used to model radial velocities times using Bayesian methods. Applied this work to search for low-mass exoplanets around nearby stars.

Harvard-Smithsonian Center for Astrophysics January 2019 – January 2021
Undergraduate Researcher *Cambridge, MA*

- Helped identify transiting exoplanet candidates with the TESS Follow-up Observing Program. Led a radial-velocity search for planets around the bright, nearby star Vega.

TEACHING EXPERIENCE

CU Boulder Department of Physics August 2021 – December 2021
Learning Assistant *Boulder, CO*

- Supported student learning in an introductory class on quantum mechanics and special relativity by facilitating in-class discussion, holding office hours, and providing constructive feedback on assignments.
- Participated in EDUC 4610, a class focused on developing effective teaching pedagogy.

CU Boulder Department of Astrophysical and Planetary Science August 2021 – December 2021
Grader *Boulder, CO*

- Graded and provided feedback on assignments for ASTR 3710 (Planet Formation and Dynamics).

SELECT VOLUNTEER EXPERIENCE

Stream Restoration, Invasives Removal, and Native Plant Revegetation 52 hours
Quivira Coalition (NM); Socorro Soil and Water Conservation District (NM); Platte River Revival (WY); Kawuneeche Valley Restoration Collaborative (CO)

- Implement low-tech process-based stream restoration projects (primarily Zeedyk structures and BDAs).
- Mechanically remove invasive plants from riparian corridors, including Russian olive and tamarisk.
- Reestablish native vegetation in riparian corridors via live pole planting and grass seeding.

Bird Population Surveys 76 hours

North American Breeding Bird Survey (NM & WY); Intermountain West Shorebird Survey (NM & WY); Colorado Parks and Wildlife (CO)

- Conduct point-count surveys and follow strict protocols to support research on bird population trends.
- Assist with waterfowl banding at Arapaho NWR.

Amphibian Population Surveys and Chytrid Monitoring 83 hours

University of Wyoming (WY); U.S. Fish and Wildlife (WY); Turner Endangered Species Fund (NM); The Nature Conservancy (NM)

- Conduct visual encounter surveys and follow protocols to support research on amphibian populations, including endangered and threatened species like the Wyoming Toad and Chiricahua Leopard Frog.
- Collect chytrid swabs from amphibians to monitor the spread of chytridiomycosis in wild populations.

Mammal Population Surveys 20 hours

U.S. Fish and Wildlife (CO); University of Wyoming (WY)

- Conduct spotlight surveys and setup traps for Black-footed Ferrets at Rocky Mountain Arsenal NWR.
- Conduct visual encounter surveys for Shiras Moose along mesic habitat in Medicine Bow National Forest.

Outdoor Education 280 hours

Harvard First-year Outdoor Program (MA)

- Led week-long backpacking trips and trail construction projects to help incoming students build a sense of community and prepare for the upcoming school year. Required strong outdoor and interpersonal skills.

SELECT AWARDS AND FELLOWSHIPS

- Graduate Dean's Merit Scholarship (2026; $10,000; University of Nevada, Reno)
- Raymond H. Berner Scholarship (2026; $5,000; University of Nevada, Reno)
- New Mexico Geological Society Kottlowski Award (2025; $6,000; statewide)
- Theodore Snow Scholarship (2022; $5,000; CU Boulder APS Department for best undergraduate thesis)
- National Science Foundation Graduate Research Fellowship (2022; $159,000; national; *declined*)
- Churchill Scholarship (2022; $70,000; national; *declined*)
- Astronaut Scholarship (2021; $10,000; national)
- Barry Goldwater Scholarship (2021; $7,500; national)
- Program for Research in Science and Engineering Fellowship (2019; $5,000; Harvard College)

TRAINING AND CERTIFICATIONS

- Certified Wyoming Naturalist (2024 and 2025)
- Wilderness First Responder and CPR Certified (valid through 2026)
- FAA Part 107 UAV Remote Pilot (valid through 2027)

TALKS AND PRESENTATIONS

- New Mexico Geological Society Spring Meeting (2025; Poster Presentation)
- Harvard-Smithsonian Center for Astrophysics Exoplanet Presentation Lounge (2021; Talk)
- Transiting Exoplanet Survey Satellite (TESS) Science Team Meeting (2021; Talk)

PUBLICATIONS

8. *Uniform Forward-modeling Analysis of Ultracool Dwarfs. III. Benchmark and Candidate Late-M and L Dwarfs in Young Moving Groups and the Pleiades*
S. A. Hurt, M. C. Liu, Z. Zhang, M. Phillips, K. N. Allers, N. R. Deacon, K. Aller, W. M. J. Best
The Astrophysical Journal, 961, 1 (doi:10.3847/1538-4357/ad0b12)

7. *The Hawaii Infrared Parallax Program. VI. The Fundamental Properties of 1000+ Ultracool Dwarfs Using Optical to Mid-infrared Spectral Energy Distributions*
A. Sanghi, M. C. Liu, W. B. Best, T. J. Dupuy, R. J. Siverd, Z. Zhang, **S. A. Hurt**, E. A. Magnier, K. M. Aller, N. R. Deacon
The Astrophysical Journal, 959, 1 (doi:10.3847/1538-4357/acff66)

6. *Evidence for Misalignment Between Debris Disks and Their Host Stars*
S. A. Hurt, M. A. MacGregor
The Astrophysical Journal, 954, 1 (doi:10.3847/1538-4357/accf9d)

5. *The Apparent Absence of Forward Scattering in the the HD 53143 Debris Disk*
C. C. Stark, B. Ren, M. A. MacGregor, W. S. Howard, **S. A. Hurt**, A. J. Weinberger, G. Schneider, E. Choquet
The Astrophysical Journal, 945, 2 (doi:10.3847/1538-4357/acbb64)

4. *Planet Search with the Keck/NIRC2 Vortex Coronagraph in M_S-band for Vega*
B. B. Ren, N. L. Wallack, **S. A. Hurt**, D. Mawet, J. Llop-Sayson, T. Meshkat, J. Aguilar, E. Cady, E. Choquet, R. Oppenheimer, G. Ruane, G. Vasisht, M. Ygouf
Astronomy & Astrophysics, 670, A162 (doi:10.1051/0004-6361/202244485)

3. *ALMA Images the Eccentric HD 53143 Debris Disk*
M. A. MacGregor, **S. A. Hurt**, C. C. Stark, W. S. Howard, A. J. Weinberger, B. Ren, G. Schneider, E. Choquet, D. Mawet
The Astrophysical Journal Letters, 933, 1 (doi:10.3847/2041-8213/ac7729)

2. *Confirmation of the Long-Period Planet Orbiting Gliese 411 and the Detection of a New Planet Candidate*
S. A. Hurt, B. Fulton, H. Isaacson, L. J. Rosenthal, A. W. Howard, L. M. Weiss, E. A. Petigura
The Astronomical Journal, 163, 5 (doi:10.3847/1538-3881/ac5c47)

1. *A Decade of Radial-Velocity Monitoring of Vega and New Limits on the Presence of Planets*
S. A. Hurt, S. N. Quinn, D. W. Latham, A. Vanderburg, G. A. Esquerdo, M. L. Calkins, P. Berlind, R. Angus, C. A. Latham, G. Zhou
The Astronomical Journal, 161, 4 (doi:10.3847/1538-3881/abdec8)