Stephen Huysman

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Education

2022-Present	**Graduate Student - M.S. Biological Sciences**, *Montana State University*, Bozeman, MT
	Committee - Dr. Brian Smithers, Dr. David Thoma, Dr. Danielle Ulrich
2007-2011	**B.S. Plant Sciences, *cum laude***, *Cornell University*, Ithaca, NY, GPA:3.56
2009-2010	**Study Abroad**, *University of Tasmania*, Hobart, Australia

Experience

08/2022-Present — **Graduate Research Assistant**, *Montana State University*, Bozeman, MT

- Analyzing landscape-scale responses of high elevation pine species to climate change using computer simulations.
- Developed high-resolution water balance model to identify ideal planting microsites in areas of complex topography.
- Mapping ideal planting areas for whitebark pine in the Greater Yellowstone Ecosystem based on climate and water balance thresholds for critical life stages.
- Extended a wildfire ignition danger rating system based on climatic water balance parameters to other ecoregions.
- Developed a model of climatic drivers of an invasive fungal pathogen in whitebark pine.
- Parallelizes computational workflows to run on the Montana State University Tempest High Performance Computing cluster.
- Teaches Identification of Seed Plants labs as a Teaching Assistant.

08/2023-12/2023 — **ORISE Fellow**, *Montana State University*, Bozeman, MT
Mentors - Dr. Barbara Bentz, Dr. Brian Smithers

- Identified climate and water balance correlates for recent mortality event of Great Basin bristlecone pine caused by unprecedented bark beetle outbreak.
- Flew a drone survey of Great Basin bristlecone pine habitat in Mount Moriah Wilderness, NV.

3/2022-07/2022 — **Biological Science Technician**, *National Park Service*, Brooklyn, NY

- Worked on the threatened and endangered species program for nesting shorebirds and endangered plants at Gateway National Recreation Area.
- Monitored piping plover populations. Located active nests and recorded data on breeding pairs, clutch size, and nest and fledgling success.
- Installed symbolic fencing around nesting shorebird habitat. Installed exclosures and electric fence lines around active Piping Plover nests for protection against predation and disturbance.
- Monitored American oystercatcher, common tern, least tern, and black skimmer populations and located active nests.
- Conducted plant surveys for threatened and endangered plants including seabeach amaranth and seabeach knotweed.
- Conducted outreach and education with visitors to promote shared stewardship of threatened and endangered species and understanding of park regulations for the protection of natural resources.
- Monitored wetland elevation dynamics using SET (Surface Elevation Table) protocol.
- Responded to calls for dead or injured animals. Assessed avian mortality events for highly pathogenic avian influenza and collected samples for laboratory analysis.

5/2021-10/2021 — **Riparian Botanist**, *Great Basin Institute*, Bend, OR

- Surveyed vegetation on streams on Bureau of Land Management (BLM) managed public lands in Oregon using the BLM's Aquatic AIM (Assessment, Inventory, and Monitoring) and MIM (Multiple Indicator Monitoring) ecological monitoring protocols for riparian systems.
- Collected botanical data including species inventory, riparian plant utilization, and tree size and age.
- Collected stream habitat data including water chemistry, aquatic macroinvertebrates, and stream physical and geological characteristics.

- Used GIS software (ArcGIS, ArcMap, Google Earth) for geographic measurements, route planning, and back-country navigation. Used Excel for data collection and statistical analysis.
- Produced routine reports and summaries of field visits from collected data to assist the BLM in making resource management decisions and evaluations for Endangered Species Act (ESA).
- Worked with project staff to develop and improve procedures and sample design/methods.
- Assisted with field hitch planning and scheduling.
- Identified plants to species using dichotomous keys.
- Established sample plots and transects.
- Collected herbarium specimens of rare plants and noxious weeds.
- Operated a 4x4 truck and UTV to reach sample sites.

1/2020-5/2021	**Senior Programmer/Analyst**, *Stony Brook Medicine: Department of Psychiatry*, Stony Brook, NY
1/2019-1/2020	**Programmer/Analyst**, *Stony Brook Medicine: Department of Psychiatry*, Stony Brook, NY

- Administrated psychiatry research computing infrastructure including CentOS-based 192-core, 384GB RAM HPC cluster, Linux servers, and Apple workstations.
- Modernized IT infrastructure by updating legacy Django codebase, migrating hardware servers to containerized/virtualized solutions, and decommissioning unused hardware.
- Implemented cloud-based, HIPAA-compliant back up solution for 120TB of clinical research data.
- Developed digital patient intake solution to automate data entry into Cerner EMR system.
- Developed web app using Django to manage HR information including faculty compensation data and annual evaluations.
- Set up digital tooling to improve collaboration among programmers in department.
- Supervised and mentored student programmers.

Volunteer Experience

12/2011-7/2012	**Volunteer**, *Cambugán Foundation*, Quito, Ecuador

- Supported conservation initiatives to promote restoration and preservation of native Andean cloud forest flora and fauna.
- Installed camera traps in cloud forest preserve to assist researchers in conducting wildlife surveys and monitoring activities. Documented georeferenced occurrences of rare wildlife such as Andean Spectacled Bears.
- Translated documents and videos from Spanish to English. Edited conservation outreach videos for online publication.
- Collected seed from native plants. Propagated and cared for native plants in nursery.

Computer & Technology Skills

Programming	R, Python, Bash, JavaScript, git
Systems Administration	Linux (Debian, Ubuntu, Rocky), Containers (Docker, Apptainer), Networking & Security
Web Development	Django, nginx
Databases	MySQL, MariaDB, SQLite
HPC	SLURM, Sun Grid Engine
Geospatial Computing	R Spatial Ecosystem (terra, sf, raster, rayshader), QGIS, ArcGIS, netCDF, THREDDS, CDO

Language Skills

English	Native
Spanish	Fluent
Japanese	Basic