Hubert Andrzej Szczygieł

Curriculum Vitae

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Education

B.A., Earth Systems, Vassar College (2018). Thesis: Holocene Ecology and Climate in the Northern Adirondack Mountains, advisors: Dr. Kirsten Menking, Dr. Lynn Christenson.
PhD, Natural Sciences, University of Gothenburg (ongoing). Advancing biodiversity monitoring for tropical forest restoration. Supervisors: Dr. Alexandre Antonelli, Dr. Daniel Zuleta, Dr. Daisy Dent

Employment

- **Biodiversity Lead, Ponterra Ltd.** (November 2023 –present). Leading Ponterra's biodiversity programs in Panama and Mexico for generating biodiversity credits on reforestation projects. Training and managing field teams, logistics, data analysis, report and grant writing. Developing Verra SD VISta pilot project. Designing and running the Ponterra Biodiversity Laboratory. (consultant)

- **Co-founder, MothBox Project** (October 2022 – present). Developing an automated light trap for monitoring nocturnal insects in the tropics. Grant writing, networking, testing, development, expedition planning. https://digital-naturalism-laboratories.github.io/Mothbox/ (project lead)

- **Consultant, Crowther Lab, ETH Zurich** (September 2023 – September 2024). Building and testing a toolkit for scalable biodiversity monitoring in recovering tropical forested landscapes, training field crews and coordinating data collection over 1000 hectares, analyzing complex biodiversity datasets, preparing publications. (consultant)

- **Smithsonian Tropical Research Institute, Panama** (2016 – present). Long term relationship with STRI, working on a variety of projects in tropical ecology. Extensive field and lab work, multiple peer-reviewed publications.

  - **Visiting researcher, Monitoring Ecological Restoration** (Nov 2022 – Dec 2022, Jan - April 2024, Oct – Dec. 2024, Jan. – April 2025). Developing systems for large-scale tropical biodiversity monitoring. Training and leading a team of technicians and specialist experts to simultaneously collect diverse datasets. Collaboration with Pro Eco Azuero, Ponterra, Earthshot Labs. Advisor: Dr. Daisy Dent
  - **Research assistant, Butterfly Lab** (January 2022 – May 2022). Worked to identify patterns in evolutionary response of reef fishes to climate change. Fieldwork in Pacific and Caribbean with SCUBA and freediving, high molecular weight DNA extraction, website construction. Advisor: Dr. Owen McMillan.
  - **Fellow, Soil Lab/ SWELTR soil warming project** (November 2019 – October 2020). Year-long independent project studying the effect of soil warming on soil and leaf litter invertebrate diversity and abundance using the soil warming plots on Barro Colorado Island. Publication anticipated 2024. Advisor: Dr. Andrew Nottingham.
  - **Intern, Bat Lab** (April – July 2020). Studied bat roost colonization behavior using camera traps, auditory and olfactory lures. Advisor: Dr. Rachel Page.
  - **Intern and project manager, SWELTR soil warming project** (September 2019 – March 2020). Data collection, instrument maintenance, and data management for the Soil Warming Experiment in Lowland Tropical Rainforest (SWELTR) project on Barro Colorado Island. Advisor: Dr. Andrew Nottingham.
  - **Intern with Vassar College Undergraduate Summer Research Institute (URSI)** (Summer 2016). Research on phenotypic plasticity in hourglass treefrogs (*Dendropsophus ebraccatus*). Advisor: Dr. Justin Touchon.

- **Sampling Lead, ACT NOW - Amazonas Action Alliance team for XPRIZE Rainforest Competition** (February – July 2023). Designing plan for using innovative technology to document biodiversity remotely. Competed at semifinal competition in Singapore, June 2023. (consultant, part-time)

- **Biodiversity Coordinator and Naturalist, Earthshot Labs** (September 2022 – January 2023). Designing and piloting a comprehensive monitoring program to quantify biodiversity co-benefits of Earthshot's carbon projects. Represent Earthshot in conversations with academic institutions, NGOs, companies, and project partners about the quantification of biodiversity for the emerging biodiversity credit market. (consultant, full-time)

- **Lead technician, National Ecological Observatory Network (NEON), Alaska** (June – October 2021; May – August 2023). Implementing diverse ecological monitoring protocols for plants, animals, and structure in boreal forest and tundra, including phenological observations, plant diversity, belowground biomass, as well as carabid, mosquito, and litter sampling. (seasonal full-time)

- **Laboratory technician, University of Hawaii at Manoa** (2019-2022)

  - **Biology Department** (January – March 2021; November 2021 – January 2022). Developed protocols for identifying arthropods and lizard gut contents. Advisor: Dr. Amber Wright.
  - **Institute of Biogenesis Research** (February – May 2019). Contributed to the development of methods for study of sperm chromatin structure. Advisor: Dr. Steve Ward

- **Technician, Montana Natural Heritage Program** (May – September 2019). Collected *Assessment, Inventory, and Monitoring* (AIM) data on Idaho streams while living and working in the field as part of a 3-person team. (seasonal full-time)

- **Research assistant, Dr. Justin Touchon lab, Vassar College** (February 2015 – May 2018). Lab and field work using amphibians to study phenotypic plasticity and behavioral ecology.

Peer-Reviewed Publications citations: 8

- Szczygieł, H. A., O. Butler, and A. Nottingham. 2024. Decline in diversity of tropical soil fauna under experimental warming. *Proc. R. Soc. B*. 291: 10.1098/rspb.2024.2193
- Nottingham, A. T., M. Montero-Sanchez, M. Slot, H. A. Szczygieł, E. Velasquez, P. Meir. 2023. Seedling growth declines in warmed tropical forest soils. *Biotropica* 55(5): 10.1111/btp.13238
- Szczygieł, H. A., and R. A. Page. 2020. When the hunter becomes the hunted: foraging bat attacked by pit viper at frog chorus. *Ecology* 101(10): e03111. 10.1002/ecy.3111
- Szczygieł, H. A, D. Dent, A. Quitmeyer. 2025. MothBox: inexpensive, lightweight, automated light trap for scalable biodiversity monitoring. In preparation for *Methods in Ecology and Evolution*.

Grants

- PI: Andrew Quitmeyer; CO-PIs: **Hubert Szczygieł**, Brianna Johns, Kit Quitmeyer, Alex Rogers, Moritz Buttlar. February 2024. Project title: A Mass Manufacturable Mothbox. 2025 WILDLABS Awards. **$50,000**
- PI: **Hubert Szczygieł**; CO-PIs: Andrew Quitmeyer, Yash Sondhi. February 2024. MothBox: Automated light trap for biodiversity monitoring in the tropics. 2024 WILDLABS Awards. **$60,000**
- PI: Daisy H. Dent; CO-PIs: Thomas W. Crowther, Leland Werden, Carolina Bello, Stephanie Feeney, Sandra Vásquez de Zambrano, Andrew Coates, **Hubert Szczygieł**. June 2023. *Assessing the true benefits and limitations of global reforestation initiatives*. Google Carbon Removal Research Awards **$450,000**
- PI: Yash Sondhi; CO-PIs: **Hubert Szczygieł**, Andrew Quitmeyer, and Phoebe Lehmann Zarnetske. August 2023. *Can automated moth diversity monitoring be used to measure habitat restoration success in a tropical jungles?* experiment.com. **$10,024**

Other Publications

- Szczygieł, H. A., Ung, A., Hguyen, H., and Ward, W. Steven. "Update on Torioid Linker Model for Sperm Chromatin". In: Carrell, D., Hotaling, J., & Pastuszak, A. (Eds.). Men's Reproductive and Sexual Health throughout the Lifespan: An Integrated Approach to Fertility, Sexual Function, and Vitality. Cambridge: Cambridge University Press. 2023. NIHMSID: 1901732

- Szczygieł, H. A., and R. A. Page. 2020. When the Hunter Becomes the Hunted: Foraging Bat Attacked by Pit Viper at Frog Chorus. Bull Ecol Soc Am 101(4): e01751. https://doi.org/10.1002/bes2.1751 [Photo Gallery]
- Szczygieł, H., Nov. 2019. *Yikes! Venomous snake captures frog-eating bat*. Smithsonian Tropical Research Institute News. https://stri.si.edu/story/yikes

Internships, Experiences, Certifications

- **iNaturalist**: Curator and prolific observer and identifier on iNaturalist. Currently #33 of over 3 million users for number of species observed.
- **SCUBA certifications: SDI Rescue Diver** (Mar. 2022), **SSI Advanced Adventurer** (Dec. 2021)**, SSI Open water** (Dec. 2021) – 63 dives, total dive time 2695 minutes
- **Independent biodiversity-focused travel**
  - **Peru** (Spring 2024)
  - **Vietnam, Cambodia, and Laos** (Spring 2023)
  - **Southwest USA** (winter 2020)
  - **Tanzania and Poland** (Summer 2018)
- **Greenpeace Frontline Representative** (September 2018 – January 2019)
- **DLNR Hawaii Hunter Education Program** (March 2019)
- **Semester in Tanzania – School for International Training: Wildlife Conservation and Political Ecology** (Fall 2016)
- **Research Assistant for ash tree genetics project, Vassar College, adviser: Dr. Mark Schlessman** (Spring 2016)
- **Greenhouse Assistant, Vassar College Biology Department** (August 2015 – May 2016)

Skills and Experiences

- Fieldwork: experience working in tropical, temperate, and arctic systems, with both terrestrial and aquatic environments. Navigation and carrying heavy loads cross-country, operating and maintaining equipment, quality data collection in diverse weather conditions.
- Lab work: microscopy, PCR, pulsed field gel electrophoresis (PFGE), small vertebrate dissection, standard molecular biology lab techniques, microbalance and sub-milligram sample packing, enzyme assays.
- Soil Science: carbon and trace gas flux, physical properties (moisture, texture, color, structure), nitrogen fixation, seedling and root growth, decomposition measurements, invertebrate collection and extraction.
- Aquatic: water chemistry using probes and kits, benthic invertebrate sampling, identification of hydrologic features and processes
- Paleoclimate: stable isotope analysis, pollen purification, pollen identification, paleoclimate data analysis.
- Animal physiology and behavior: camera traps, bioacoustics recordings, small animal handling and care, breeding frogs and fish, skin swabs, standardized photography.
- Taxonomy: identification of terrestrial arthropods to Order, many plants to Family, Central American frogs, and most terrestrial and aquatic taxa in Hawaii to species. Prolific observer and identifier on iNaturalist.
- Media: Macro, underwater, wildlife, and landscape photography. Popular science writing.
- Software: R, Adobe Photoshop, Adobe Illustrator, ImageJ, Microsoft Office
- General: project management, troubleshooting, working independently and as part of a team, public speaking, working under pressure in a variety of environments and environmental conditions.
- General Outdoor: Extensive hiking and kayaking experience, expedition planning, backpacking, freediving, rock climbing, wilderness first aid, leading groups on outdoor trips. President of Vassar College Outing Club, 2015 – 2018.
- Languages: native fluency in English and Polish, some knowledge of Spanish, Swahili, French.