VAUGHN MICHAEL SHIREY

Washington, DC

PROFESSIONAL APPOINTMENTS

National Science Foundation Graduate Research Fellow — 2020 - Current
Georgetown University, Department of Biology — Washington, DC

Graduate Teaching Fellow — 2019 - 2020
Georgetown University, Department of Biology — Washington, DC

Graduate Research Assistant — 2018 - 2019
Georgetown University, Department of Biology — Washington, DC

Fulbright Finland Research Fellow — 2017 - 2018
Finnish Museum of Natural History, University of Helsinki — Helsinki, Finland

Undergraduate Research Assistant — 2014 – 2017
Entomology Department, The Academy of Natural Sciences of Drexel Univ. — Philadelphia, PA

Undergraduate Curatorial Assistant — 2013 – 2014
Botany Department, The Academy of Natural Sciences of Drexel Univ. — Philadelphia, PA

EDUCATION

Ph.D. in Biology (Ecology, Evolution, and Animal Behavior) — 2018 - 2023
Georgetown University, Department of Biology — Washington, DC
Thesis: “Detecting signals of recent climate change in cold-adapted butterfly communities and populations.” Advisor: Dr. Leslie Ries

B.S. in Environmental Sciences (Biodiversity and Systematics) — 2012 - 2017
Drexel University, Department of Biodiversity, Earth, and Environmental Sciences — Philadelphia, PA
Thesis: “Capturing the bycatch: metagenomic profiling of NGS contaminants.”
Advisors: Dr. Jon Gelhaus and Dr. Richard McCourt

AWARDS, FELLOWSHIPS, AND RECOGNITION

Total Awarded to Date (USD): $160,500.00

STEM for the Public Good Award — 2022
Georgetown University, Graduate Student Government

Global Biodiversity Information Facility Young Researchers Award — 2020
The Global Biodiversity Information Facility, a*warded to one Ph.D. student globally*

Arctic Winter College Fellow — 2020
The Arctic Institute

Exploration and Field Research Grant — 2019
Washington, DC Explorers’ Club

National Science Foundation Graduate Research Fellowship — 2019
United States National Science Foundation

Fulbright Finland Study/Research Fellowship — 2017
Fulbright Finland Foundation/United States Department of State

Excellence in Undergraduate Research Award 2015
Drexel University College of Arts and Sciences

TEACHING EXPERIENCE

Graduate Teaching Fellow 2019 - 2020
General Ecology and Global Climate Change Ecology | Georgetown Univ. Washington, DC

Guest Lecturer at Pacific Northwest College of Art, Georgetown University, Temple University, and Immaculata University

SERVICE, OUTREACH, AND PROFESSIONAL DEVELOPMENT

SERVICE AND OUTREACH

Participant/Pen Pal 2019 - Current
Black + Pink Incarcerated Pen Pals Program for LGBTQ+ Prisoners

Ph.D. Student Representative 2022 - 2023
Georgetown Executive Committee of Graduate Studies (Grad-ExCo)

Grievance Officer 2021 - 2023
Georgetown Alliance of Graduate Employees

Department Organizer 2018 - 2023
Georgetown Alliance of Graduate Employees

Co-President 2021 - 2022
Georgetown Biology Organization of Graduate Students (BOGS)

Senator Representative for Biology 2020 - 2021
Georgetown Graduate Student Government

Bargaining Committee Member 2019 - 2020
Georgetown Alliance of Graduate Employees

Centennial Alumni Ambassador 2018 - 2019
Fulbright Finland Foundation

PROFESSIONAL DEVELOPMENT AND SKILL-BUILDING

Apprenticeship in Teaching Certification 2018 - 2023
Georgetown Center for New Designs in Learning and Scholarship

Nimble Virtual Short Course 2021

Organizing for Power 2021
Rosa-Luxemburg Stiftung

Arctic Winter College 2021
The Arctic Institute

Bayesian Modeling with INLA Short Course 2021
PR Statistics

ORGANIZED CONFERENCE SESSIONS AND SYMPOSIA

ESA/CSEE 2022 Joint Meeting in Montreal, Canada 2022
"Methods for occurrence data from natural history museums and community science data" Co-organized with Dr. Laura Melissa Guzman and Dr. Rassim Khelifa

PEER REVIEW

Austral Ecology (1); Ecography (1); Ecological Entomology (1); Environmental Entomology (1); Global Change Biology (1); Journal of Animal Ecology (1); PeerJ (1); PLoS Biology (1);

PRESENTATIONS AND SEMINARS

INVITED PRESENTATIONS AND SEMINARS

"Utilizing occupancy-detection models with opportunistic data to detect climate-driven changes in communities." Invited talk. Ecological Society of America/Canadian Society for Ecology and Evolution Joint Annual Meeting in Montreal, Canada. Summer 2022.

"Detecting climate-driven, macroscale changes in boreal and tundra butterfly communities." Invited talk. American Entomological Society in Philadelphia, PA. Spring 2021.

"Detecting macro-, regional, and local signals of global change in North American, subpolar butterfly communities and populations." Invited talk. Drexel University Department of Biodiversity, Earth, and Environmental Sciences Seminar in Philadelphia, PA. Spring 2021.

"How to make meaning from citizen science biodiversity data." Invited talk/panelist. Northeastern Natural History Conference. Virtual. Spring 2021.

"Developing a framework for assessing macroscale butterfly diversity shifts in threatened but sparsely sampled regions of the north." Invited talk. The Finnish Museum of Natural History Aleksanteri-seminaari Series. Virtual. Fall 2020.

"Biodiversity storytelling through digitization: highlighting institution-based research." Invited talk. International Congress of Entomology in Orlando, FL. Fall 2016.

CONTRIBUTED PRESENTATIONS AND POSTERS

V. Shirey, N. Neupane, L. Ries. "Modeling 50 years of high-latitude butterfly community shifts in western North America." International Biogeography Society Conference. Summer 2022. Presentation.

V. Shirey, R. Khelifa, L. M'Gonigle, L.M. Guzman, N. Neupane, and L. Ries. "Reconstructing macroscale, historic butterfly ecologies in the understudied North American boreal and Arctic biomes from museum specimen data." iDigBio Digital Data in Research Conference. Spring 2022. Presentation.

V. Shirey. "Curiosity cabinets to climate change: what natural history collections can tell us about life on a changing planet." Georgetown Department of Biology Work in Progress Seminar Series. Spring 2022. Seminar.

V. Shirey. "Detecting macro-, regional, and local signals of global change in North American, subpolar butterfly communities and populations." Georgetown Department of Biology Work in Progress Seminar Series. Spring 2021. Seminar.

V. Shirey and L. Ries. "Assessing responses to global change in North American boreal butterfly communities." Georgetown Department of Biology Graduate Recruitment Weekend. Winter 2020. Poster.

V. Shirey, M. Belitz, V. Barve, R. Guralnick. "Disparities in butterfly inventory completeness across North America based on museum specimen and community observation data." Entomological Collections Network Annual Meeting. Fall 2020. Presentation.

V. Shirey and L. Ries. "Challenges in developing a knowledge model for butterfly habitats via information extracted from field guides: an ecologist's perspective." North American Symposium on Knowledge Organization. Summer 2019. Presentation/Panel.

V. Shirey and A. Tursi. "Biology in the age of information: exploring biological informatics in Finland." Aalto University Fulbright Finland Forum. Winter 2018. Presentation/Panel.

V. Shirey, V. O'Leary, S. Dilliplane. "Big data opportunities in ecological and biodiversity informatics: a functional trait perspective." iDigBio Digital Data in Research Conference. Spring 2017. Poster.

V. Shirey. "Bugs in biodiversity data: detecting human influence on natural history collections." Drexel Science, Technology, and Society Work in Progress Seminar Series. Spring 2017. Presentation.

V. Shirey. "Insight into historical drivers of collection diversity: digital evidence from the entomology type collection at the Academy of Natural Sciences." Entomological Collections Network Annual Meeting. Fall 2016. Invited Poster.

V. Shirey, J. Gelhaus, S. Dilliplane. "Biodiversity informatics tools and challenges for large natural history collections." Drexel Department of Biodiversity, Earth, and Environmental Sciences Research Day. Summer 2016. Poster.

V. Shirey. "What can we learn from 18-million dead things?" Drexel Office of Undergraduate Research Nerd Night. Summer 2016. Presentation.

PUBLICATIONS

* *Denotes mentee; + Denotes equal contribution*

In Submission/Review/Revision

V. Shirey[+] and J.E. Rabinovich[+]. "Climate change-induced degradation of expert range maps drawn for kissing bugs (Hemiptera: Reduviidae) worsens across regions already experiencing notable sampling gaps." Submitted to Memórias do Instituto Oswaldo Cruz

A.Y. Kawahara, C. Storer, A.P.S. Carvalho, D.M. Plotkin, …, **V. Shirey**, A. Sourakov, G. Talavera, R. Vila, P. Vlasanek, H. Wang, A.D. Warren, K.R. Willmott, M. Yago, W. Jetz, M. Jarzyna, J.W. Breinholt, M. Espeland, L. Ries, R. Guralnick, N.E. Pierce, and D.J. Lohman. "Evolution and diversification dynamics of butterflies." In Review at Nature Ecology and Evolution.

T. Rippel[+], C.M. Davis[+], **V. Shirey**, and G. Wimp. "The grass is always greener: using remote sensing and machine learning to track changes in a foundation marsh plant species." In Review at Estuarine, Coastal, and Shelf Science.

F.X. Palacio, C. Callaghan, P. Cardoso, E.J. Hudgins, M. Jarzyna, G. Ottaviani, F. Riva, G. Roza, **V. Shirey**, and S. Mammola. "A protocol for reproducible functional diversity analyses." In Revision at Ecography.

M. Belitz, E. Larsen, **V. Shirey**, D. Li, and R. Guralnick. "Phenological research based on natural history collections: practical guidelines and a lepidopteran case study." In Revision at the Journal of Functional Ecology.

2022

[10] **V. Shirey**, E. Larsen, A. Doherty, C. Kim*, F. Al-Sulaiman*, J. Hinolan, M. Naïve, M. Itliong, M. Ku, M. Belitz, G. Jeschke, V. Barve, A.Y. Kawahara, R. Guralnick, N. Pierce, D. Lohman, and L. Ries. "LepTraits 1.0 a globally comprehensive dataset of butterfly traits." 9(1): 1-7.

[9] **V. Shirey**, R. Khelifa, L. M'Gonigle, and L.M. Guzman. 2022. "Occupancy-detection models with museum specimen data: promise and pitfalls." In Press at Methods in Ecology and Evolution.

2021

[8] S.C. Mason Jr.*, **V. Shirey**, L. Ponisio, and J.K. Gelhaus. 2021. "Responses from bees, butterflies, and ground beetles to different fire characteristics: a global meta-analysis." Biological Conservation 261.

[7] **V. Shirey**, A.P.S. Carvalho, and A.Y. Kawahara. 2021. "Early evidence for sexually dimorphic, ultraviolet eyespots in *Parnassius smintheus,* Doubleday, [1847]." The Journal of the Lepidopterists' Society 75(3): 215-216.

[6] E. Larsen and **V. Shirey**. 2021. "Method matters: pitfalls in analyzing phenology from occurrence records." Ecology Letters 24(6): 1287-1289.

[5] **V. Shirey**, M. Belitz, V. Barve, and R. Guralnick. 2021. "A complete inventory of North American butterfly occurrence data: narrowing data gaps but increasing bias." Ecography 44(4): 537-547.

2019

[4] **V. Shirey**, S. Seppälä, V.V. Branco, and P. Cardoso. 2019. "Current GBIF occurrence data demonstrates both promise and limitations for potential red listing of spiders." Biodiversity Data Journal 7.

[3] P. Cardoso, **V. Shirey**, S. Seppälä, S. Henriques, M.L. Draney, S. Foord, A.T. Gibbons, L.A. Gomez, S. Kariko, J. Malumbres-Olarte, M. Milne, and C.J. Vink. 2019. "Globally distributed occurrences utilized in 200 spider species conservation profiles (Arachnida: Araneae)." Biodiversity Data Journal 7.

2018

[2] **V.** Shirey. 2018. "Visualizing natural history collection data provides insights in collection development and bias." Biodiversity Data Journal 6.

[1] K. Seltmann, S. Lafia, D.L. Paul, S.A. James, D. Bloom, N. Rios, S. Ellis, U. Farrell, J. Utrup, M. Yost, E. Davis, R. Emery, G. Motz, J. Kimmig, **V. Shirey**, E. Sandall, D. Park, C. Tyrrell, S. Thackurdeen, …, and B. Nyberg. 2018. "Georeferencing for Research Use (GRU): an integrated geospatial training paradigm for biodiversity researchers and data providers." Research Ideas and Outcomes 4.

CREATIVE WORKS

+ Denotes equal contribution

V. Shirey. 2022 and ongoing. "Untitled." Exposed chlorophyll prints on *Quercus* spp. (varying dimensions).

J.E. Tucker[+] and **V. Shirey**[+]. 2021 and ongoing. "Ripples: cyanotype climate change study series." Toned cyanotype chemistry on paper (9x12 and 19x24).