

Research Associate
Yale School of the Environment

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Education and Appointments

Research Associate	Yale University School of the Environment PI: Dr. Paulo Brando	2023 - present
MS	James Madison University Department of Biology Thesis: <i>Pastures as natural climate solutions: a socio-ecological study of tree carbon and beef production trade-offs</i> Advisor: Dr. Heather Griscom	2021 - 2023
BA	Ohio Wesleyan University Biology, Spanish Department of Zoology	2017 - 2020

Research and Professional Experience

Yale School of the Environment New Haven, CT <i>Research Associate</i>	2023 - present
○ Utilize remote sensing and data analysis tools (including R, Python, Google Earth Engine, and ArcGIS Pro) alongside field-based monitoring methods (such as eddy covariance systems) to evaluate ecosystem responses to climate and land-use change over time. ○ Conduct fieldwork in the Southeastern Amazon to assess forest structure using Riegl VZ 2000i Terrestrial LiDAR system. Participate in tree inventories, tree coring for starches, and soil resistivity assessments. ○ Mentor undergraduate student research and lead field trips to Tanguro Field Station in Southeastern Brazil and support lab members with data management, analysis, and visualization. ○ Foster and maintain international, NSF and NASA funded collaborations with NGOs and other institutions, including Woodwell Climate Center, Max Planck Institute, and Amazonian Environmental Research Institute (IPAM).	
James Madison University , Dept. of Biology Harrisonburg, VA <i>Master's thesis</i>	2021 - 2023
○ Evaluated trade-offs between tree carbon sequestration, ecosystem restoration, and cattle production in pastoral landscapes of Virginia, U.S. and the Azuero Peninsula of Panama using remote sensing and in-situ field sampling. ○ Interviewed stakeholders to quantify stewardship and highlight landowner needs. ○ Mentored and led undergraduate students and volunteers in fieldwork, data analysis, and literature review. ○ Partnered with local organizations, including the Conservation Reserve and Enhancement Program (CREP) in Virginia, and the Yale School of Environment's Environmental Leadership & Training Initiative (ELTI) in Los Santos, and community members to share methodology for measuring tree carbon within agricultural systems.	

Ohio Wesleyan University, Dept. of Botany and Microbiology | Delaware, OH 2020
Undergraduate Research

- Implemented a joint project through the Ecological Research as Education Network (EREN) and the National Ecological Observatory Network (NEON).
- Utilized data analysis tools (R, Excel) to compare the effects of various landscape alterations on plant diversity, biomass, and ecosystem services from data collected throughout Ohio and Virginia.

Ohio Wesleyan University, Dept. of Botany and Microbiology | Delaware, OH 2020
Undergraduate Research

- Analyzed the effect of jasmonic acid on plant responses to external wounding using *Arabidopsis thaliana* mutant *coi1-21*.
- Conducted laboratory experiments with PCR analyses, gel electrophoresis, and western blot techniques.

The Institute for Agribiotechnology Research (CIALE) | Salamanca, Spain 2019
Laboratory Intern

- Investigated the effect of nitric oxide on ABA signaling and germination in *Arabidopsis thaliana*.
- Performed PCR, gel electrophoresis, western blot analyses, conducted statistical analyses using R.
- Shared results through oral presentations and written reports in both English and Spanish.

Ohio Wesleyan University, Dept. of Zoology | Delaware, OH 2019
Undergraduate Research

- Designed and implemented a study to assess the impact of restoration efforts on mangrove regeneration and distribution in Guanacaste, Costa Rica.
- Conducted literature review on restoration techniques and status of mangrove ecosystems, and constructed a dichotomous key to ID various species present.
- Gained additional experience in field methodologies, including mist netting, game camera surveys, and sea turtle rehabilitation.

Fellowships and Awards

2024 Botanical Society of America PlantingScience F2 Fellowship
2023 James Madison University Graduate Student Showcase Best Poster Award
2022 James Madison University Outstanding Graduate Student Award
2022 Bodkin Scholarship
2021 Virginia State Scholarship Award

Grants

2023 James Madison University Travel Grant
2022 James Madison University Institute for Stewardship of the Natural World Grant
2022 James Madison University Graduate School Professional Development Grant
2022 James Madison University Travel Grant
2020 Ohio Wesleyan University Theory-to-Practice Grant

Peer-Reviewed Publications

* Undergraduate student

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- (9) Jagannathan, L., **Starinchak, B.**, Nussebaum, N., Moseley, D., & Griscom, H. 2025. A comparison of soundscapes between traditional and sustainably managed cattle pastures. ***Agriculture, Ecosystems, and Environment*** (in prep).
- (8) Storch de Oliveira, F., Alencar, A., Maracahipes, L., Dias, A., Potter, N., **Starinchak, B.**, Bendavid, N., Xavier, F., Rattis, L., Brando, P. 2025. Balancing production and conservation in Brazil's agricultural frontier: the case of Mato Grosso's PCI Strategy (in prep).
- (7) Maracahipes, L., Brando, P., Silvério, D., Maracahipes-Santos, L., Silva, A., Verona, L., Macedo, M., Trumbore, S., Lenza, E., **Starinchak, B.**, Herrera-Ramirez, D., Potter, N., Barros, F., Rocha, E., Andrade, A., Byrnes, L., Uribe, M., Rattis, L., & Oliveira, R. 2025. Forest recovery pathways following fire and drought in southeast Amazonia. ***Proceedings of the National Academy of Science*** (under review).
- (6) Brando, P.M., Barlow, J., Macedo, M.N., Silvério, D., Ferreira, J., Maracahipes, L., Anderson, L., Morton, D., Alencar, A., Paolucci, L., Jacobs, S., Stouter, H., Randerson, J., Flores, B., **Starinchak, B.**, Pires, M.M., Rattis, L., Armenteras, D., Artaxo, P., Ordway, E.M., Trumbore, S., Staver, C., Beringuer, E., Menor, I.O., Maracahipes-Santos, L., Potter, N., Uribe, M. 2025. Tipping points of Amazonian forests: beyond myths and toward solutions. ***Annual Reviews***, 50. <https://doi.org/10.1146/annurev-environ-111522-112804>
- (5) Maracahipes-Santos, L., Maracahipes, L., Silverio, D., Macedo, M., Silverio, A., Potter, N., Paolucci, L., **Starinchak, B.**, Alencar, A., Brando, P. 2025. Amazonian forest resilience inferred from fire-induced changes in carbon stocks and tree diversity. ***Environmental Research Letters***, 20: e084017 <https://doi.org/10.1088/1748-9326/ade60d>
- (3) **Starinchak, B.S** & Griscom, H.P. 2024. Pastures as Natural Climate Solutions: A Socioecological Study of Tree Carbon and Beef Production Trade-offs. ***Agriculture, Ecosystems, and Environment***. 373: 109112. <https://doi.org/10.1016/j.agee.2024.109112>
- (2) Portmann, J.M., Davenport, G.H.*, **Starinchak, B.S.**, Griscom, H.P. 2024. A preliminary assessment of water quality in silvopastoral systems of Panama's dry tropical forest. ***Neotropical Biology & Conservation***. 19(2): 223–233. <https://doi.org/10.3897/neotropical.19.e111865>
- (1) Portmann, J.M., Gillen, S.K., **Starinchak, B.S.**, Griscom, H.P. 2023. Case Study on Blacks Run: A Novel Approach to Assessing Urban Stream Restoration. ***Urban Naturalist***. 6: 1–12.

Contributed Talks and Posters

2025	Association for Tropical Biology & Conservation	Oaxaca, Mexico
2024	American Geophysical Union	Washington, D.C.
2023	Ecological Society of America	Portland, Oregon
2023	James Madison University Graduate Student Showcase	Harrisonburg, Virginia
2023	Association of Southeastern Biologists	Winston-Salem, North Carolina
2022	Ecological Society of America	Montreal, Canada
2022	Association for Tropical Biology & Conservation	Cartagena, Colombia
2022	Association of Southeastern Biologists	Little Rock, Arkansas
2020	Association for Hispanic Classical Theater	Virtual
2018	Ohio Wesleyan University Plant-Fungi Symposium	Delaware, Ohio

Teaching Experience

Instructor of Record

2021-2023	Introductory Biology Laboratory	James Madison University
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Guest Lectures

2023	Managing Ecosystems for NCS	Yale University
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Mentorship & Advising

Skye Hellenkamp	Master's Thesis
Sarah Jacobs	Undergraduate Honors Thesis, Field Research
Natalie Smink	Undergraduate Honors Thesis, Field Research
Lisa Jagannathan	Undergraduate Honors Thesis, Field Research

Professional Service

2024	Council on Undergraduate Research, Abstract Reviewer
2022	ESA Annual Meeting, Volunteer

Professional Affiliations: Yale Center for Geospatial Solutions, Ecological Society of America · Association of Tropical Biology & Conservation · American Geophysical Union · Association of Southeastern Biologists · Botanical Society of America

Outreach & Community Service

2023 - <i>present</i>	Botanical Society of America Planting Science Mentor
2021 - 2023	Big Brothers Big Sisters Mentor
2021 - 2023	James Madison University Women In Science Panel, Coordinator
2022 - 2023	Virginia Science-Community Interface, Environmental Justice Team
2022 - 2023	Harrisonburg Big Brothers Big Sisters Science Workshop, Coordinator
2019	AmaZOOonico Wildlife Refuge, Volunteer
2018	Feracare Wildlife Center, Volunteer
2017	Elephant Nature Park, Volunteer

Specialized Training

2025	Young Voices of Science Communication Training Program, Virtual
2025	ELTI-YPS Forest Carbon and Monitoring Workshop, Great Mountain Forest, CT
2025	NSF Tropical Forest Resilience Workshop, New Haven, CT
2025	NSF-FAPESP Workshop: Forest Edges and Biodiversity, São Paulo, BR
2024	BSA F2 Science Communication Profession Training, St. Louis, MO
2024	ESIIL Innovation Summit - Environmental Resilience, Boulder, CO