Environmental scientist and plant-insect ecologist with experience in pollinator ecology, sustainable agriculture, biodiversity conservation, teaching and community environmental outreach. Skilled in ecological research, public education, student mentorship, and developing collaborative programs focused on ecology, plant–insect interactions, agriculture and sustainable landscapes.

ORCiD ID : https://orcid.org/0000-0001-6935-9976

EDUCATION

Florida International University Miami, FL

PhD in Earth Sciences, Natural Resources 2021-2026

Dissertation: "Heat Stress Effects on Zucchini Squash and Its Pollinators"

Masters in Environmental Studies, Agroecology Concentration 2019- 2021

Major GPA: 4.0/4.0 Honors: *FIU Worlds Ahead Scholar*

University of Central Florida, Honors College Orlando, FL

Bachelor of Science in Environmental Studies, Sciences Concentration

Major GPA: 3.9/4.0 *Summa Cum Laude*

PUBLICATIONS

Peer-Reviewed:

- **Kleiman, B.M,** & Koptur, S. 2023. *Weeds Enhance Insect Diversity and Abundance and May Improve Soil Conditions in Mango Cultivation of South Florida*. Insects, 14(1), 65. MDPI AG. https://www.mdpi.com/2075-4450/14/1/65
- **Kleiman, B. M.,** Koptur, S., & Jayachandran, K. 2021. *Weeds Enhance Pollinator Diversity and Fruit Yield in Mango.* Insects, 12(12), 1114. https://www.mdpi.com/2075-4450/12/12/1114
- **Kleiman, B.M.**, Koptur, S, Jayachandran, K. 2021. *Beneficial Interactions of Weeds and Pollinators to Improve Crop Production.* Journal of Research in Weed Science, 4(2), 151-164. https://www.jrweedsci.com/article_123062.html
- **Kleiman, B.M.**, Koptur, S., Jayachandran, K., Salas, A. 2020. *Weeds, Pollinators, and Parasitoids - Using Weeds for Insect Manipulation in Agriculture.* Journal of Research in Weed Science, 3(3), 382-390. http://www.jrweedsci.com/article_102809.html
- **Kleiman, B.M**, Koptur, S., & Jayachandran, K. (2022, January 18). *Weeds enhance pollinator diversity in Mango*. Encyclopedia. Retrieved January 18, 2022, from https://encyclopedia.pub/item/revision/794499e209f5a14aa29978244946d16c.
- Rockwell, C., **Kleiman, B.M**. 2022. Pamphlet: *Food Forests For Schools: Greens of the Food Forest.* The Education Fund.

Submitted:

- **Kleiman B.M.**, Rockwell, C., Mallinger, R., Jayachandran, K et al. 2026. *Sustained warming alters Bombus impatiens foraging, colony performance, and pollination of zucchini (Cucurbita pepo).* Prospective Journal: Ecosphere.

In Preparation:

- **Kleiman, B.M.**, Rockwell, C., Jayachandran, K., Koptur, S., Mallinger, R.E., et al. In preparation. *Sustained warming reduces Cucurbita pepo fruit retention and marketable yield through post-pollination failure: controlled-environment and open-top-chamber field evidence from subtropical agriculture, with management-dependent resilience.* Prospective: Agriculture, Ecosystems & Environment.
- **Kleiman, B.M.**, Rockwell, C., Jayachandran, K., Koptur, S., et al. In preparation. *Buckwheat flower strips increase pollinator abundance and squash yield but elevate herbivore pressure and reveal biodiversity tradeoffs in a large-scale South Florida commercial agroecosystem.* Prospective: Journal of Applied Ecology.
- Participating on manuscript ("*Influences of plant diversity on insect abundance and richness in urban food forests*") for Special Issue on "Urban Horticulture, Challenges, and Opportunities" in peer-reviewed journal Plants, People, Planet.

FELLOWSHIPS, GRANTS, AND AWARDS

FIU Presidential Fellowship	$136,620, 2021-2025
FIU Dissertation Evidence Acquisition, Dissertation Fellowship	$38,000, 2025-2026
USDA Hispanic-Serving Institution	$15,000 2019-2020

AWARDS ***~$55,000 TOTAL***

2023-2025 USDA SSARE Graduate Student Grant, PI	$16,358 Research Grant
2025/21 GCA Corliss Knapp Horticulture Award	$6,000 Research Grant
2024/25/26 Greater Miami Jewish Federation	$4,500 Student Grant
2025/23/21 Florida Federation of Garden Clubs	$9,000 Research Grant
2023 Agroecology Travel Award	Ecological Society of America Meeting
2023 Les Real & Jim Brown Student Travel Award	Ecological Society of America Meeting
2022 Florida Vegetation Management Association	$1,500 Research Grant
2019-2026 Kelly Foundation Tropical Botany Scholarship	$4,000 Research Grant
2021 First Prize Torrey Botanical Society Graduate Fellowship	$2,500 Research Grant
2021 Sigma Xi Grants-In-Aid of Research Award	$1,000 Research Grant
2020/21 National Garden Club	$4,000 Scholarship
2020/21 Deep South Garden Clubs	$3,500 Scholarship
2020 Agri Council UF/IFAS TREC Mango Forum	Research Grant
Tropical Fern and Exotic Plant Society	2019 Scholarship Recipient

HONORS

2022 Botanical Society of America Conference	1st Place Poster in Ecology
2022 UGS Excellence Award	1st Place State Scholarly Forum Conference

2022 Best Master's Thesis CASE Achievement Award

2020/21/22/25 FIU Earth and Environment Symposium 1st Best Poster & Best Talk

2022 Best Interdisciplinary Proposal, "Food Access and Sustainability" FIU Global Studies

PROFESSIONAL SERVICE

- Session Chair/Moderator, Botanical Society of America 2025, 2022
- Botanical Society of America Agroecology Section Member
- British Ecological Society Agroecosystems Member
- Torrey Botanical Society Graduate Committee Member
- FIU Earth and Environment + Agroecology Symposium Session Chair/Moderator

CONFERENCES

- **International Conference on Pollinator Biology, Health, and Policy 2026**, Bozeman, Montana, June *2026*; "Sustained warming alters *Bombus impatiens* foraging, colony performance, and pollination of zucchini (*Cucurbita pepo*)".
- **Botanical Society of America Annual Conference**, Palm Springs, California, July *2025*; "Heat Stress Effects on Zucchini Squash and Its Pollinators"
- **British Ecological Society Annual Meeting** "Heat Stress And Its Influence On A Tropical Annual Crop And Its Pollinators: Implications For Agriculture In An Era Of Climate Change" on behalf of FIU, Dec *2025*, Edinburgh, Scotland.
- **Entomological Society of America Meeting,** "Heat Stress Effects of Bumblebee (*Bombus impatiens*) Pollination of Zucchini (Cucurbita pepo)". Nov 10-13 *2024*, Phoenix, Arizona.
- **Pollinators and Plants Presentation** on behalf of FIU, *2024*, The Kampong Botanic Garden, Miami FL.
- **FIU Earth and Environment Symposium** + 3 Minute Thesis Competition, Oral Presentation "Heat Stress And Its Influence On A Tropical Annual Crop And Its Pollinators: Implications For Agriculture In An Era Of Climate Change", *2024*.
- **Ecological Society of America** Conference, Portland, Oregon, Oral presentation of paper "Weeds Enhance Insect Diversity and Abundance and Improve Soil Conditions in Mango Cultivation of South Florida", *2023*.
- **Botanical Society of America Conference**, Alaska, 1st place poster "How weeds affect insects in mango, *Mangifera indica*, cultivation of South Florida"; Oral presentation of paper "Weeds Enhance Pollinator Diversity and Fruit Yield in Mango", *2022*.
- **Entomological Society of America**, Vancouver, British Columbia, Canada. Oral Paper: "Weeds Enhance Pollinator Diversity and Fruit Yield in Mango". Poster: "How Weeds Affect Insects in Mango, *Mangifera indica*, Cultivation of South Florida", *2022*.
- **Conference of Florida Graduate Schools**, Orlando, Poster Competition on behalf of FIU, "How weeds affect insects in mango cultivation", *2022*.
- **Sigma Xi Society** Induction Ceremony, on GIAR Funded Research "How weeds affect insects in mango cultivation".

- **Plant Biologists of South Florida** Annual Meeting, Oral presentation of paper "Weeds Enhance Pollinator Diversity and Fruit Yield in Mango", *2022*.
- **Graduate Scholarly Forum**, FIU, Poster: "How weeds affect insects in mango cultivation", *2022*.
- **Plant Biologists of South Florida**, Oral Presentation "How do weeds affect insects in mango cultivation of South Florida?", *2021*.
- **Earth and Environment Graduate Symposium,** Oral presentation, "How do weeds affect insects in mango cultivation of South Florida?", *2020/21/22.*
- **3 Minute Thesis Competition**, Oral Presentation, "Do weeds support beneficial insects in mango farms?", *2021*.
- **FIU Biology Symposium**, Poster/ Oral Presentation, "Do weeds support beneficial insects in mango farms?", *2021*.
- **University of Florida Plant-Science Symposium,** Poster/ Oral Presentation, "Do weeds support beneficial insects in mango farms?", *2021*.
- **Agroecology Symposium**, FIU, Poster/ Oral Presentation, "Do weeds support beneficial insects in mango farms?", *2020*.
- **Botanical Society of America Meeting**, Oral Paper: "Weeds, Pollinators, and Parasitoids - Using Weeds for Insect Manipulation in Agriculture". Poster: "Do weeds support beneficial insects in mango farms?", *2020*.
- **Entomological Society of America** Meeting, Oral Paper: "Weeds, Pollinators, and Parasitoids - Using Weeds for Insect Manipulation in Agriculture". Poster: "Do weeds support beneficial insects in mango farms?", *2020*.
- **South-Dade Garden Club** extension presentation on weeds and insects in agriculture.

TEACHING EXPERIENCE

Florida International University Miami, FL

Instructor Summer 2026, 2025 *Ecology of South Florida Lab + Lecture, EVR 3013*
Fall 2021- Summer 2022 *Physical Geology, GLY 1010L*

Teach introductory courses on the Ecology of South Florida, incorporating field trips exploring local natural resources and the region's distinctive ecosystems. Lead geoscience lab topics such as earth materials and structure, surface processes, groundwater dynamics, and climate change. Developed inquiry-based labs integrating field ecology and data literacy. Mentored undergraduate interns through field and data collection.

Mentorship and Outreach Miami, FL

Mentored 10+ undergraduates in field ecology and experimental design. Program mentor for 5+ Hispanic undergraduate students and early-career farmers through the USDA GO-START-NOW program. Co-organized plant-insect and pollinator workshops and K–12 citizen-science projects with the Kampong Botanical Garden and Miami-Dade County schools.

Invited Guest Lecturer *Florida International University*

USDA GO START NOW Costa Rica Agriculture Trip Mentor Summer 2022

EVR 4272 Agroecology Fall 2021- Onward

ENY 4060 Entomology Spring 2022-2025

Broward County Schools, Food Conservation Alliance Summer 2022, 2024, 2026

EXPERIENCE

Florida International University Miami, FL

PhD Graduate Research/Teaching Assistant *Aug 2021-Aug 2026*

Dissertation title: "How heat stress effects zucchini squash, *Cucurbita pepo*, and its pollinators"**.** Designed and carried out dissertation research examining plant-insect ecological interactions in agricultural environments. Performed laboratory assays in the Food Forest Ecology, Agroecology, Plant Ecology, and University of Miami labs. Mentored numerous (10+) undergraduate students and agroecology program interns on my research and their individual internship experiments.

Advisors: Dr. Cara Rockwell and Dr. Krish Jayachandran.

Florida International University – Plant Ecology/Agroecology Lab Miami, FL

Masters Graduate Research Assistant *Aug 2019-Aug 2021*

Designed and executed thesis research investigating "How weed communities influence crop-insect interactions in *Mangifera indica* (mango) farms in Homestead, Florida". Performed laboratory assays in the Agroecology and Plant Ecology labs and mentored undergraduate students and program interns.

Advisors: Dr. Suzanne Koptur and Dr. Krish Jayachandran.

Florida International University – Food Forest Ecology Lab Miami, FL

Research Assistant *Dec 2020-Aug 2021*

Map the location, abundance, and diversity of plant species in food forests established by The Education Fund at public schools throughout Miami-Dade County. Conduct biodiversity analyses of plant and insect communities and identify specimens in the lab as part of the EPA-funded project, "Environmental Education in Urban Food Forests: Measuring Students' Knowledge and Attitudes About the Natural Sciences in a Participatory Setting".

Advisor: Dr. Cara Rockwell

University of Florida/IFAS Tropical Research and Education Center (TREC)
Miami, FL

Research Assistant *Feb 2019-Aug 2019*

Conducted research to identify potential insectary plants and evaluate their role in supporting biotic pollination and natural pest control for crops in South Florida. Carried out field and laboratory work at Florida International University, UF TREC, Fairchild Tropical Botanic Garden, and various agroecosystems across Miami-Dade County.

Advisor: Dr. Suzanne Koptur

Everglades National Park Biocorps Internship Program Everglades National Park, FL

Fire Effects Monitor *Feb- Sep 2018*

Collected vegetation condition data and monitored endangered butterfly populations across permanent plots in the Everglades, accessed by hiking and helicopter. Supported prescribed burns, responded to wildfires, and assisted with invasive reptile and vegetation removal, as well as hydrologic monitoring and other park projects. Entered and managed field data in the Fire Effects Monitoring System (FFI) and organized photo monitoring datasets

Supervisor: Ms. Aerin Land.

Temporary Instructor Miami-Dade County Public Schools

Substitute Teacher *Sep 2018-Febuary 2019*

Taught ongoing lesson plans across diverse schools, adapting to each classroom and ensuring student participation, safety, and engagement. Experienced with students from elementary through high school.

Chase Mason Plant Evolutionary Ecophysiology Lab UCF, Orlando, FL

Lab Assistant *Jan – Aug 2017*

Office of Sustainability UCF, Orlando, FL

Intern *Jan 2017-May 2017*

VOLUNTEERING

South-Dade Garden Club **Fruit and Spice Park & Deering Estate, Miami FL**

Member *Nov 2020- Present*

Attend training seminars on South Florida plant-insect ecology and participate in club meetings, outreach, and fundraisers supporting the Fruit and Spice Park and Deering Estate.

Every Kid in a Park Program Everglades National Park, FL

Volunteer *Aug 2018-Present*

Present Everglades ecology topics to school groups and assist rangers on wildlife and plant tours.

Florida Coastal Everglades Long Term Ecological Research Program Miami, FL

Member *Aug 2019-Present*

Participate in research and dataset management of the Everglades ecosystems.

Tropical Beekeepers Association Miami, FL

Member *Aug 2019-Present*

Assist with public outreach events and group meetings on beekeeping.

Skills

Computer: Proficient in R, SPSS, ARM, ArcGIS, ArcMap, ESRI, Microsoft Office (Word, Excel, PowerPoint), and FFI/FFI Lite.

Training: R for Ecologists Micro-Credential Badge, Enacting Global Learning Micro-Credential Badge, Basic Wildland Fire Fighter Training, Basic Aviation Training, Water Ditching. Field and Lab Ecology Methods. Beginners' Spanish proficiency.

Societies

Torrey Botanical Society
Entomological Society of America
Botanical Society of America
Ecological Society of America
Southern Appalachian Botanical Society
Sigma Xi Society
Florida Federation of Garden Clubs
International Pollinator Conservation
National Garden Club
Garden Club of America
American Society for Horticultural Sciences
Plant Biologists of South Florida
South Dade Garden Club
British Ecological Society

Equipment Proficiency/Maintenance

- EthoVision XT video tracking
- Percival Growth Chamber Model E-41LT
- LECO TruSpec CN Analyzer
- SEAL Analytical Inc. AQ2 Discrete Analyzer
- Thermo Scientific Orion 3 Star Benchtop pH meter
- Olympus BX51 Polarizing Light Microscope
- Olympus SZX7 Stereo Microscope
- Compound/Dissecting Microscope
- Fisher Scientific Isotemp Muffle Furnace
- Thermo Scientific Precision Compact Oven
- SPAD 502 Plus Chlorophyll Meter
- Greenseeker Crop Sensing System
- atLEAF CHL Chlorophyll Meter

References:

Name	Mentor/Employer	Phone	Email
Dr. Cara Rockwell	Florida International University	305-348-1930	crockwel@fiu.edu

Name	Mentor/Employer	Phone	Email
Dr. Krishnaswamy Jayachandran	Florida International University	305-348-6553	jayachan@fiu.edu
Dr. Rachel Mallinger	University of Florida	352-273-3962	rachel.mallinger@ufl.edu

07/13/2026