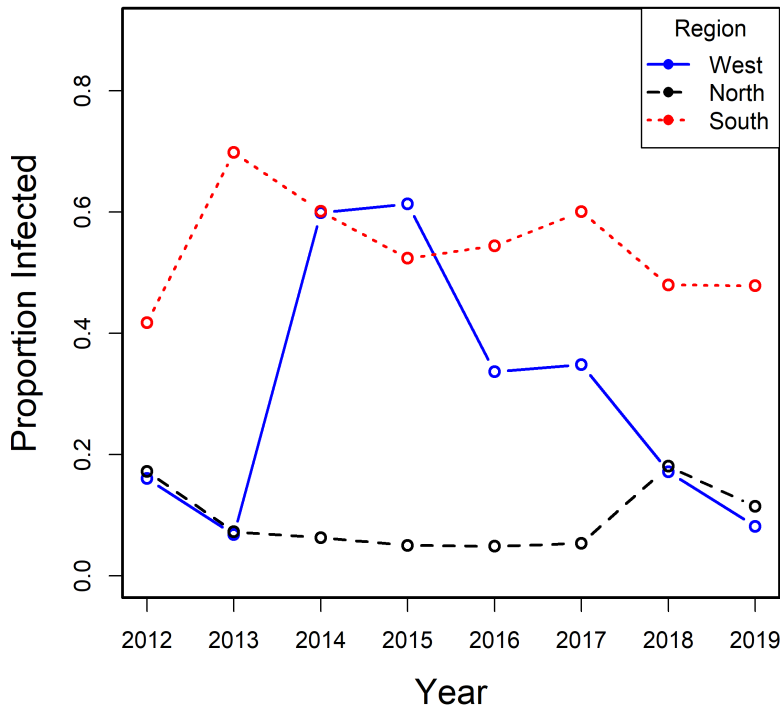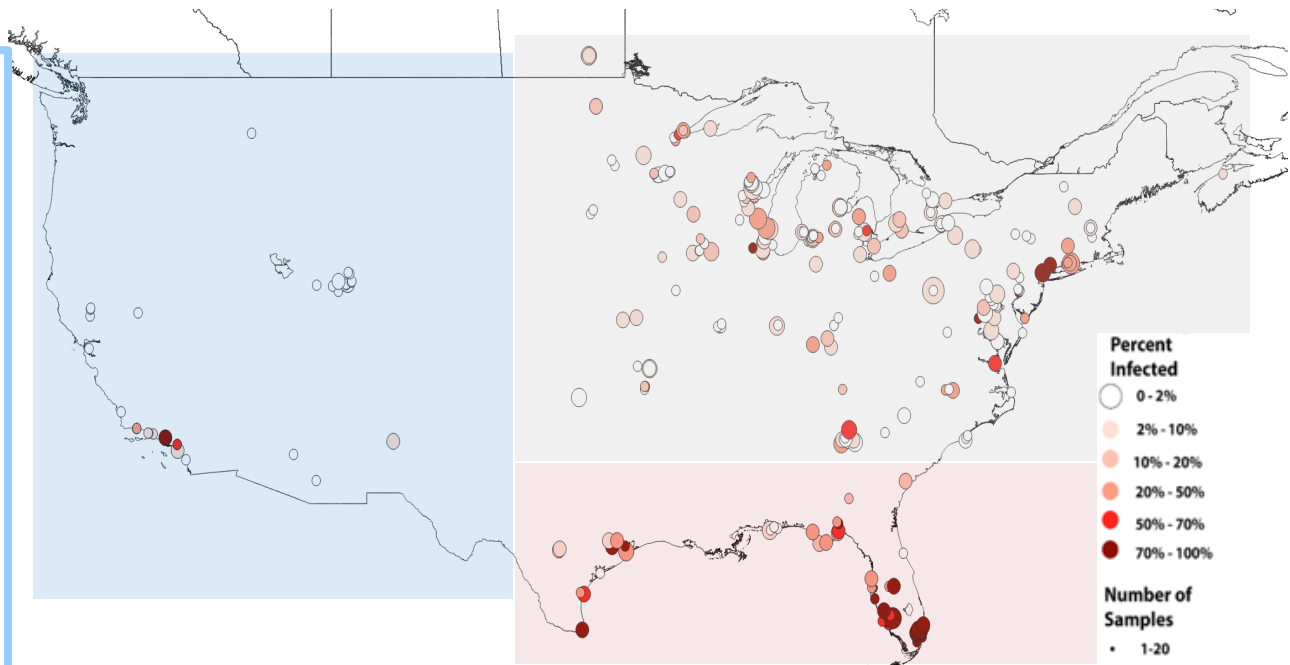# Monarch Health News
2019 Monitoring Summary

In 2019, 165 volunteers collected 9525 samples, from across 36 US states and 3 Canadian Provinces. Overall infection prevalence by the protozoan OE was 20%.

The average number of samples per volunteer in 2019 was 53 (median = 29, range = 1-708). Across all samples, infection prevalence of the protozoan OE was 20%. As in past years, the highest infection prevalence (> 50%) was observed in the southern US, where many locations support year-round breeding. Infection prevalence was lowest in the northern region, but we saw an uptick in prevalence for 2018-19 (15-20%) relative to the previous 5 years. Prevalence in the West continued a downward trend observed since 2016, with approximately 12% of samples testing positive for OE.

We would love to recruit more volunteers for PMH in 2020! We are especially interested in gap areas based on the map (R), including the West, Great Plains and Prairies (from TX and OK up to the Dakotas and SK), and eastern Canada.

Percent Infected
- 0 - 2%
- 2% - 10%
- 10% - 20%
- 20% - 50%
- 50% - 70%
- 70% - 100%

Number of Samples
- 1-20
- 21-63
- 64-150
- 151-366
- 367-708

Please tell your friends, family and neighbors about Project Monarch Health, and write to us at monarchhealth@gmail.com to request a sampling kit for 2021!

What's new at Monarch Health? Ensuring safety during the covid-19 pandemic

2020 presented many challenges arising from the covid-19 pandemic. Like most businesses and universities, we paused operations to adapt to this grave public health threat. Research labs at the University of Georgia shut down most activity from March to June, to allow time to create a safe working environment for students and employees. Protocols we implemented in the Monarch Lab include wearing face masks inside the building, staggering work schedules to limit the number of workers overlapping in time, and using online communication platforms for team meetings. **We remain committed to the safety of our staff and personnel.** At the same time, we realize that this has dramatically slowed our processing of samples, mailing of kits, and email response times. We thank volunteers for their patience, and are grateful for the continued participation in this project.
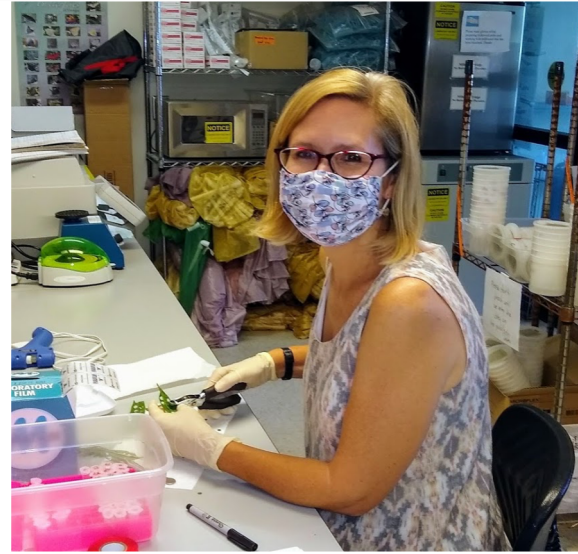
Monarch Health director Sonia Altizer, working in the monarch lab at UGA

Graduate Student Cody Prouty studies neonicotinoid pesticides in monarchs

Cody Prouty is an Ecology MS student at UGA. His work explores how a commonly used class of insecticides (neonicotinoids) affects monarchs as caterpillars and adult butterflies. **He is studying responses of monarch development rate, survival, body size, and flight to different doses of imidacloprid and clothianidin**. One recent experiment asked whether the milkweed species that monarchs feed on as caterpillars determines their tolerance for neonicotinoids. We hope this work will inform understanding of major threats to monarch conservation, and efforts to restore and protect future monarch habitats.

## Citizen Scientist Spotlight: Kelly Overduijn, Santa Clara, CA

Kelly Overduijn has cultivated an interest in conservation and scientific research in over 2,500 students through her work as the curator of the Bryan Osborne Nature Center, for the Santa Clara Unified School District. Kelly participated in MH since 2018 and involved 17 classrooms across multiple grade levels. Her goals are to provide students with hands-on experience collecting scientific data and to get them involved in local conservation efforts. The most rewarding part of her work, Kelly says, is to witness the moment a student realizes that their actions can make a difference and their work is undeniably important. We appreciate Kelly's passion for outreach and her incredible contribution!

Undergraduate Research Highlight: Farran Smith

During Fall 2019, UGA undergraduate Farran Smith launched a survey of PMH participants, to better understand who participates in the project, motivation for participating, and how PMH has impacted understanding of monarch science. We thank the 256 volunteers who responded to the survey! Results will help us better serve our volunteers, who are a committed group that spans all ages and backgrounds. At (R) is Farran presenting her findings. To view the poster online, visit: https://www.monarchparasites.org/research
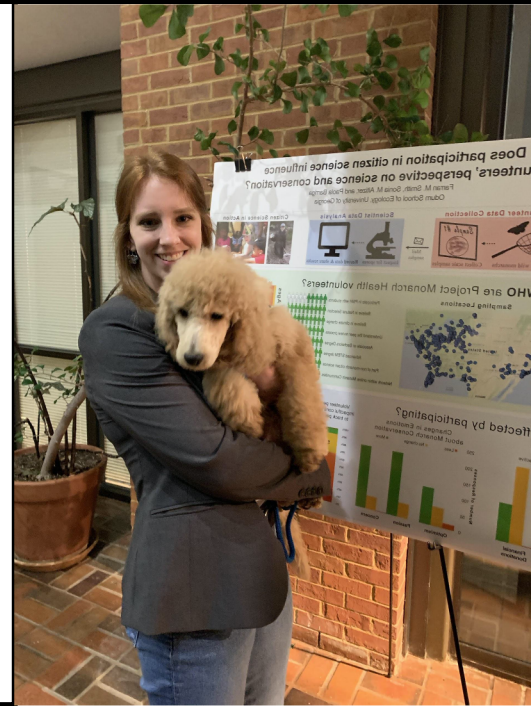
Participate in PMH with students
Believe in Natural Selection
Believe in climate change
Understand the peer review process
Associate or Bachelors Degree
Advanced STEM degree
Part of non-monarch citizen science
Network within online Monarch Communities
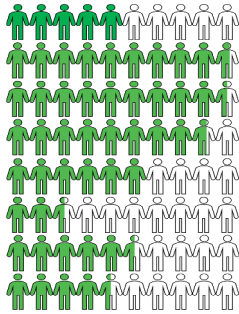
ENGINEER FARMER HEALTHCARE STUDENT
ENVIRONMENTAL EDUCATOR
NURSE CHEMIST DOCTOR OTHER
TEACHER
OFFICE WORKER NATURALIST CAREGIVER
BIOLOGIST
BUSINESS OWNER LEGAL SERVICES INFORMATION TECHNOLOGY

Congratulations to our graduates and welcome to new team members!

Henry W. Grady
College of Journalism and
Mass Communication

- Congratulations to Anabel Prince, our social media intern, who graduated from the UGA Grady College of Journalism and Communications in May 2020!
- We thank alumna Hayley Schroeder for her contributions to PMH. She left UGA in July 2019 to pursue a PhD at Cornell.
- In 2019, we welcomed undergraduates August Anderson, Jonathan Schulz, Kade Donaldson, Caroline Aikins, Jaycee Quinn, and Christopher Brandon to the UGA monarch lab. We thank them for their hard work and juggling monarch research with their classes during this unusual year!

The UGA Monarch Health Team (Oct 2019)

From left to right: Farran, Jaycee, Sonia, Anabel, Caroline, Christopher, Paola
Not pictured: August , Kade and Jonathan.

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