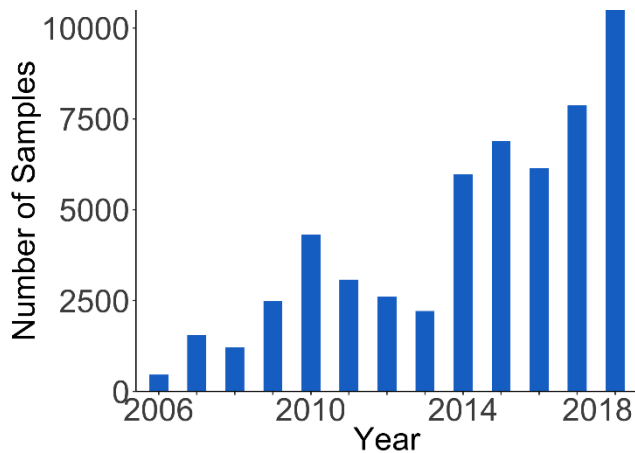




# MONARCH HEALTH NEWS

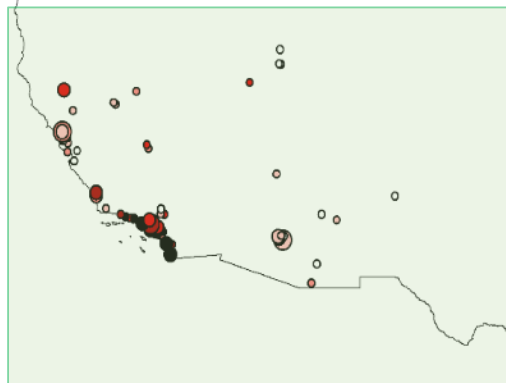
## 2018 MONITORING SUMMARY

**Citizen scientists collected a record number of samples for Project Monarch Health, and monarchs numbers reached at 12-year high in Mexico!**

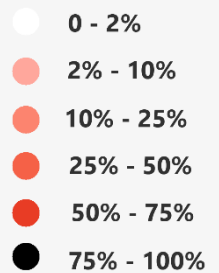


In 2018, 207 volunteers from 32 US states and 2 Canadian provinces submitted **10,497 samples** to Project Monarch Health (and late samples are still rolling in!). The average number of samples per volunteer was 50.71. Infection prevalence by the protozoan OE was 24.6% across all samples, and varied by region, with highest infection prevalence in the southern US where many locations support year-round breeding, and lower prevalence at more northerly sites.

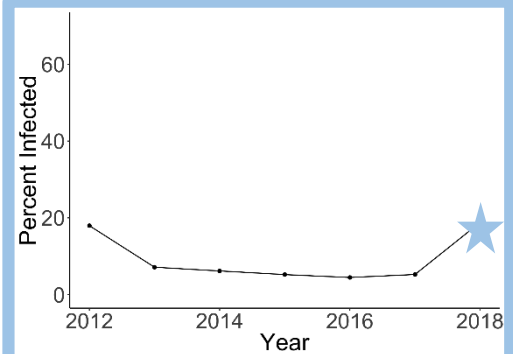
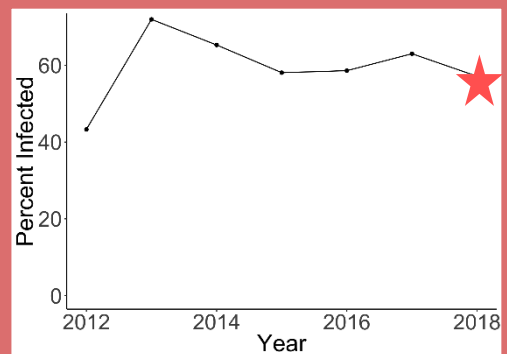
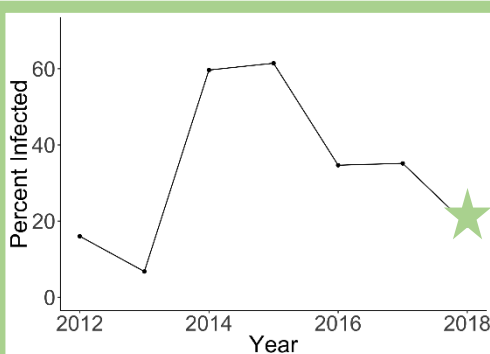
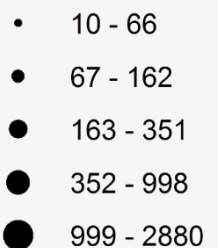
**Sampling locations and OE prevalence in 2018**



**Percent infected**



**Number of Samples**

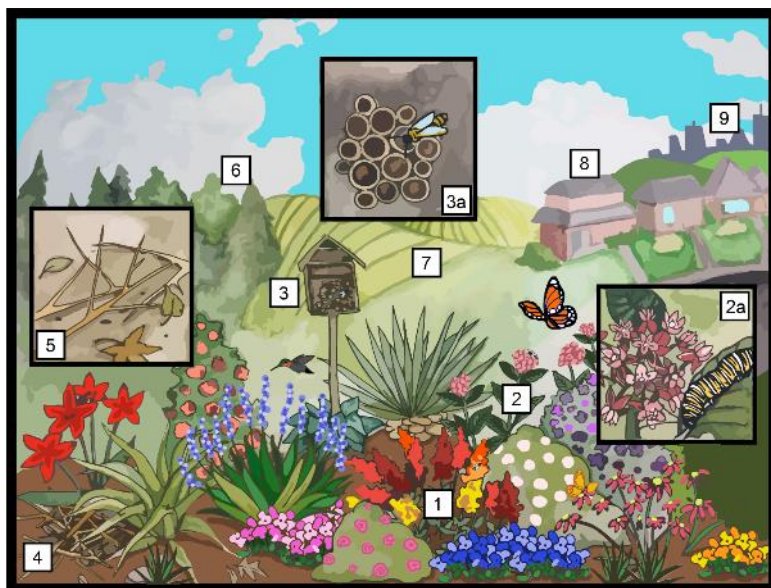


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# The Science of Pollinator Gardens

Have you ever wondered how you can build the most ecologically responsible pollinator garden? In the face of global insect declines in recent decades, pollinator gardens have been widely promoted as a strategy to combat habitat loss and boost insect populations. Our own Dr. Ania Majewska, has spent the past six years studying pollinator gardens to understand what garden characteristics are most important for promoting healthy pollinator populations.



## Here are Ania's recommendations:

- Include a high plant species diversity
- Plant your garden in an area with high sun exposure
- Incorporate woody vegetation
- The larger the garden the better!
- Read the paper for more information:

<https://onlinelibrary.wiley.com/doi/10.1111/cobi.13271>

In this graphic (created by Rebecca Atkins) you can see a number of additional important characteristics like exposed soil for ground nesting bees, host plants for immature insect stages (like monarchs!), and a plenty of nectar plants that can support a diversity of pollinators—even birds!



## Donate to Project Monarch Health and we'll send you a t-shirt or a mug to thank you for your support!

Each \$25 donations funds:

- processing of 200 samples,
- Supplies for 5 free sampling kits **or**
- A virtual tour of the lab for a classroom

[www.bit.ly/ugamonarchfunding](http://www.bit.ly/ugamonarchfunding)

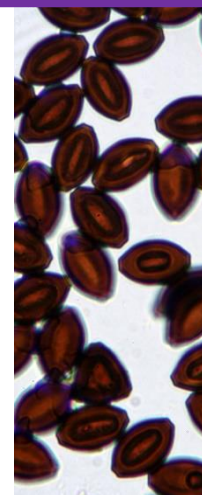


## What should you do if you think you have a sick monarch?

If you think a monarch may have OE, ask yourself these questions:

1. Did you use responsible rearing techniques (i.e. no overcrowding, no adults emerging over larvae, all rearing supplies bleached between caterpillars)?
2. Is your monarch able to fly?

If you answered **YES** to these questions, it's fine to release your monarch. If you answered **NO**, to either of these questions, visit the new page on our website (<https://monarchhealth.wixsite.com/monarch/what-to-do-with-ill-monarchs>) for a detailed explanation of how you should proceed.

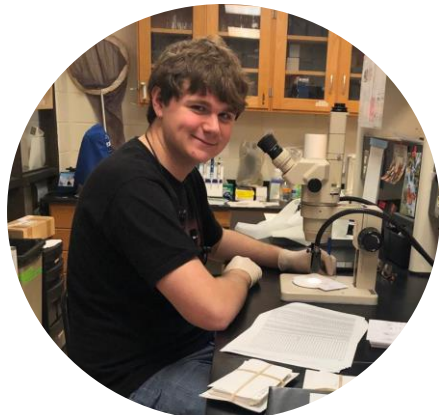


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Project Monarch Health is built on collaboration. Here we recognize some of the amazing people that make this project great!

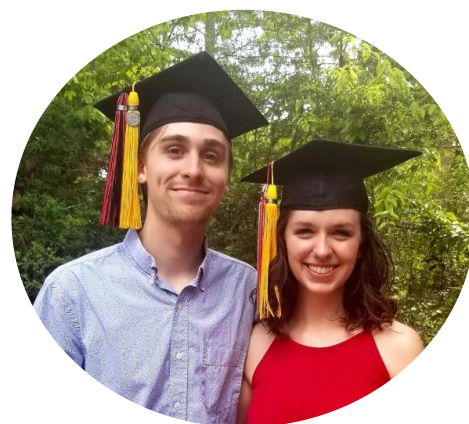


### Monarch Health's First Young Dawg!

High School senior Bennett Caughran spent the past year working with us at Monarch Health. He has been an instrumental part of the team both in the lab and the field and we are excited that he has chosen to pursue his undergraduate degree at UGA!

### A huge thank you to our 12-year Volunteers!

- Ilse Gebhard
- Richard Breen
- Sharon Duerkop
- Bruce Parker
- Chris Goodwin
- Sondra Cabell



### Congratulations to Ashley Ballew and Cody Prouty!

They have both been accepted into the UGA Ecology Masters program. Cody plans to examine implications of neonicotinoids on monarch butterfly health and Ashley will be investigating the role of nectar quality in monarch immune defense.



## The UGA Monarch Health Team

From left to right: Sonia Altizer, Ashley Ballew, Isabella Ragonese, Paola Barriga, Hayley Schroeder, Cecilia Nachtmann, Farran Smith, Cody Prouty



### Citizen Scientist Spotlight: Ilse Gebhard

Ilse has been a part of Project Monarch Health since it began in 2006, but her love of monarchs started nearly a decade earlier in 1997 when she and her husband raised their first monarch. She is passionate about citizen science and is also an active member of MLMP, a Conservation Specialist with Monarch Watch, and a Chair of the Kalamazoo Area Wild Ones Monarch Committee. She gives presentations on monarch conservation, aids in establishing waystations, and helps volunteers with planting and collecting milkweed throughout the year. Go Ilse!



Undergraduate Cecilia Nachtmann represented Monarch Health at the 6<sup>th</sup> Annual International Symposium for Monarch Conservation. Cecilia gave a talk in Toluca, Mexico on findings from our lab concerning the impact tropical milkweed on OE prevalence.

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