We have used an active environmental selection gradient to see the impact of changing pH conditions on a soil bacterial community and find that changing pH conditions alter community composition but not alpha diversity, while some bacterial genera are less impacted than others.

Ecosystem functions are currently threatened by anthropic disturbance, including those mediated by soil fauna. While in temperate regions microarthropods support soil productivity and biogeochemical cycles to a great extent, they are usually excluded from sustainability assessments. Understanding and quantifying pathways of microarthropods decline due to vegetal cover loss and nutrient enrichment is needed in managed landscapes. Here we focused on the role of leaf litter as a key driver of the response of microarthropods to anthropic disturbance. Using a novel experimental setup, we explored how multiple nutrient enrichment impact microarthropods' community structure and their functional role in leaf litter decomposition. Changes observed in their functional role in decomposition can compromise long-term nutrient and carbon cycling. An unprecedented response to potassium drove observed in their functional role in decomposition can compromise long-term nutrient and carbon cycling. An unprecedented response to potassium drove

Monarch butterfly conservation efforts have inspired many backyard gardeners to contribute their land to hosting this declining species host plant, milkweeds. But there are many species of milkweed, each with their own suite of traits we imagined would select a certain insect community - one that may interact with monarchs differently. In backyard settings, we found monarchs use and survive on each of the recommended milkweed species to different degrees, and the impact of the cohabitating insect community varies between milkweed species. These findings will contribute to regional conservation efforts informed by in-field study of species interactions.

Soil microbes drive phosphate (PO4) cycling in soils, so tracing the PO4 assimilated and released by microbes can inform their role in other processes within the soil-plant-water system. Direct measurement of PO4 processed by the microbial biomass is now possible by tracing oxygen-18 (18O) stable isotopes bound to P. The oxygen on PO4 in microbes is driven to isotopic equilibrium with the surrounding soil water (18OH2O) via an enzyme-mediated equilibrium isotope effect. Therefore, exposing microbes to isotopically enriched or depleted 18OH2O and measuring the approach of extracted PO4 to isotopic equilibrium enables a nearly direct measurement of PO4 passing through the microbial biomass. However, this meta study on 18OPO4 tracing revealed that isotopic equilibration between H2O and PO4 had a higher reaction constant (k) when microbes were exposed to isotopically enriched 18OH2O compared to depleted 18OH2O. This divergence in equilibration rates and apparent contradiction of 18O-tracing theory is likely due to competing kinetic isotope effects from PO4 uptake, mineralization, and sorption, which will be explored in this presentation. Given this finding, relating oxygen isotopic equilibrium between PO4 and H2O to microbially-driven PO4 turnover must considered carefully. Improving our understanding of in situ isotope effects is a necessary step towards refining the 18O tracing method and the ultimate modeling and understanding of the biogeochemical cycling of PO4.

Learning how to visualize and understand genetic data is a valuable skill for scientists, especially as access to sequencing data expands. This talk will discuss the importance of delivering bioinformatics workshops to increase scientific capacity in different communities. We delivered a bioinformatics workshop in 2021 to adult participants in Madagascar and in 2022 to historically underrepresented Penn State undergraduate students. I will review methods that can be utilized to deliver educational materials to asynchronous and synchronous audiences when travel is difficult due to COVID-19.
Current post-doctoral researchers

Braulio Assis (Tracy Langkilde)
Marcella Baiz (David Toews)
Amita Bhattacharya (David Kennedy)
Henry Birt (Francisco Dini-Andreote)
Connie Bolte (Jill Hamilton)
Kristin Bondo (David Walter)
Matthew Boucher (John Tooker)
Veronica Saenz Calderón (Daniel Allen)
Gordon Custer (Francisco Dini-Andreote)
Charles Dean (Margarita Lopez-Uribe)
Aniruddha Deka (David Kennedy)
Nereyda Falconi (Gui Becker)
Alberto Famel (David Walter)
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Valentina Gómez-Bahamón (David Toews)
Sohini Guha (Liana Burghardt)
Antoine Guiguet (Heather Hines)
Hidetoshi Inamine (Katrina Shea)
Morgan Kain (David Miller)
Melania Kammerer (Sarah Goslee)
Jessica Kansman (Sara Hermann)
Anissa Kennedy (Christina Grozinger)
Allison Kerwin (Mónica Medina)

Erica Lawrence (Jesse Lasky)
Chia-Hua Lue (David Walter)
Leilton Luna (David Towes & Julian Avery)
Paul McLaughlin (Tyler Wagner)
Daniel Medina (Gui Becker)
Jaya Sravanthi Mokkapati (Christina Grozinger)
Behnam Nikparvar (Nita Bharti)
Namhyeon Park (Kevin Hockett)
Gabriela Quinlan (Christina Grozinger)
Santosh Rana (Jill Hamilton)
Jose Raul Roman (Estelle Couradeau)
Javi Rudolph (David Miller)
Kelly Russo-Petrick (David Walter)
Kaitlyn Spangler (Erica Smithwick)
Margarita Takou (Jesse Lasky)
Katharine Thompson (Sagan Friant)
Nash Turley (Margarita Lopez-Uribe)
Catherine Tylan (Tracy Langkilde)
Kurt Vandegrift (Peter Hudson)
Gabriel Villar (Etya Amsalem)
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Sean Wineland (Daniel Allen)
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Madeline Luthard, EGSO rep

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Eva Barr - Social co-chair

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Madeline Luthard - Diversity and Inclusion chair
Emma Rice - Curriculum rep
Marissa Kopp - Program committee rep
Maisie MacKnight - Andersen Award rep
Beth Tuschhoff - Webmaster

Awards given in spring semesters
Please consider nominating your students, colleagues, faculty and friends

The Frank A. Andersen Travel Award award is given in memory of Frank A. Andersen to a student who would benefit from travel to a scientific conference.

The J. Brian Horton Award recognizes outstanding achievement and service to the graduate community by a student in Ecology. A memorial to J. Brian Horton who was an untiring source of advice, help, collaboration, and inspiration to his fellow students and to faculty.

The Edward D. Bellis Award recognizes current faculty members in the IGDP in Ecology for outstanding contribution and dedication to educating and training of graduate students in the program.

The Victoria Braithwaite Research Excellence Award was established to reward Ecology graduate student research excellence. The new award will recognize outstanding research potential as demonstrated by a student being lead author on the best ecology paper published in the previous year, as determined by a committee of faculty and students.