

ECOSYSTEM GENOMICS NEWS

ECGN GIDP is live!

The Ecosystem Genomics GIDP went live in July 2022. Of our 20 BRIDGES trainees, seven will earn graduate certificates and 13 will earn PhD minors. We are excited to grow our GIDP student enrollment and faculty partnerships in the coming year! For more information please contact Betsy Arnold (Chair and Director of Graduate Studies), Bonnie Hurwitz (Vice-Chair), or Heather Ingram (Program Coordinator).

Faculty Congratulations!

Malak Tfaily is now tenured ENVS faculty and has been recognized by numerous awards, including the UArizona ALVSC's inaugural Early Career Research Award. Well done!

Laura Meredith received the American Geophysical Union's Hilker Early Career Award in Biogeosciences. Congratulations!

Jana U'Ren was recognized for her research excellence as an invited speaker at the Kavli Frontiers of Science Symposium, hosted by the US National Academy of Sciences. We also congratulate her on being recruited to the outstanding Plant Pathology program at Washington State University, where she will move in June. Congratulations! We will miss her and hope to stay connected during this exciting new phase of her career.

Betsy Arnold was recognized as a Fellow of the Mycological Society of America and Fellow of the American Assoc. for the Advancement of Science, and just completed her term as MSA President. Well done!

Share your good news with us to include in our next newsletter!

Happenings in BRIDGES, Ecosystem Genomics Initiative, and the ECGN GIDP

Welcoming our 2nd BRIDGES Cohort!



Santa Rita hike led by Betsy Arnold (Co-Director) in September 2022, with five members of our second cohort and two from our first cohort, as well as Scott Saleska (Co-Director), and Heather Ingram (Asst. Director). Photo by Paul Ingram

We thank our BRIDGES community for a great turnout at our Welcome event for our new cohort of seven trainees. It was a nice opportunity to catch up with our first cohort, faculty, and staff, and to learn more about everyone's summer research experiences, updates to our program, and more. Special thanks to Betsy, who provided a gift of free T-shirts for everyone! This year's diverse cohort represents four of the seven participating departments (EIS, SNRE, HAS, and SPLS), with two additional departments (BE and ENVS) represented through co-advisors. Welcome all!

Recruiting Now for our 3rd Cohort!



Building Resources for
InterDisciplinary training
in Genomic and
Ecosystem Sciences

Please help us make this BRIDGES recruitment cycle the strongest yet by sharing with interested students, groups, and faculty members. Fellowships are available! Please contact Heather (hci@arizona.edu) for the flyer and sample email text. The application can be found at <https://bridges.arizona.edu>, and the first review will begin after Dec. 9. And many thanks to our recruitment committee from the past year – Scott Saleska, Betsy Arnold, Heather Ingram, Michelle Higgins, and Albert Barberán!

2nd Annual EG Convergence Institute



Zoe Jensen presents at the 2022 Convergence Institute.

Save the date for our next Ecosystem Genomics Convergence Institute May 15-19, 2023. Last year's program featured keynote talks and a panel discussion on the Challenges of Ecosystem Genomics with Sarah Bagby (CSU), Manuel Lerdau (UVA), and Erin Leahey (UA); trainee Research Experience Proposal presentations; a Data Skills workshop; professional development training; and social events. We look forward to seeing you there!

Improved website for Ecosystem Genomics Initiative

Established in 2012, UA's Ecosystem Genomics Initiative (EGI) seeks to discover the emergent properties and processes of ecosystems at multiple scales, through analysis of communities, populations, organisms, and their metabolomes, transcriptomes, and genomes.

EGI serves as the umbrella for BRIDGES and the ECGN GIDP.

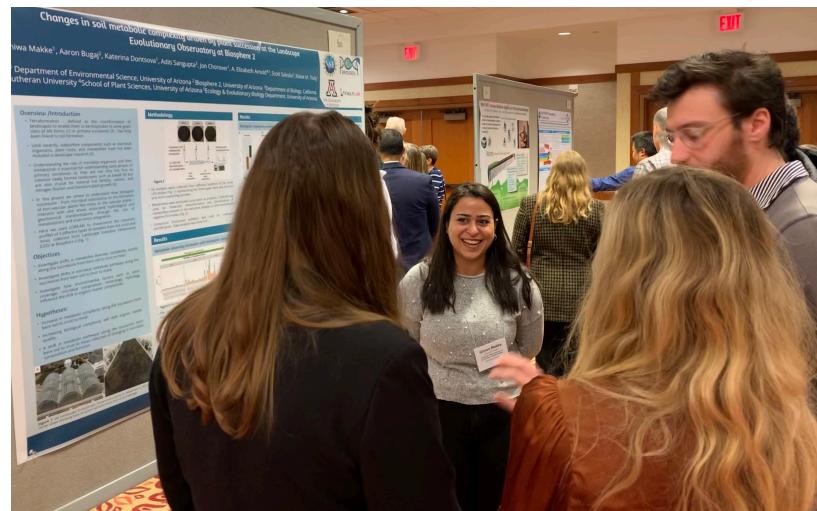
Visit: <https://egi.arizona.edu>

UA faculty, interested in being involved? Contact Heather today!

Lightning Talks!

Trainees are presenting their summer research experience lightning talks in the EG course. The next presentations are Nov. 18th. Contact Heather if you'd like to attend remotely or in person!

NRT Annual Meeting Report



Ghiwa Makke presents her BRIDGES research at the 2022 NRT Annual Meeting

Most of the BRIDGES Steering Committee members as well as Ghiwa Makke, BRIDGES trainee, represented the program at the NRT Annual Meeting in Blacksburg, VA this month.

It was a great opportunity to meet PIs, program coordinators, and students from other NRTs and be inspired by their programs. Scott, Heather, and Jen shared the BRIDGES poster while Ghiwa presented a poster on her NRT research. If you are a trainee or faculty member interested in participating next year, let us know.

For BRIDGES Faculty & Trainees

Please ensure that an acknowledgment of NSF support is made in any publication (including Web pages) of any material based on or developed under this project, in the following terms: "This material is based upon work supported by the National Science Foundation under Grant No. DGE-2022055."

NSF support also must be orally acknowledged during all news media interviews, including popular media such as radio, television and news magazines. Trainees are responsible for ensuring that every publication of material (including web pages) based on or developed under this award, except scientific articles or papers appearing in scientific, technical, or professional journals, contains the following disclaimer: "Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation."

End-of-the-Semester Gathering

Co-Director Scott Saleska will host a BRIDGES gathering at his home next month. We will thank our BRIDGES instructors for this fall (Rachel Gallery) and last spring (Luciano Matzkin) while celebrating the many accomplishments of our EG co

Trainee Congratulations!

Taylor Portman, with interdisciplinary collaborators Malak Tfaily, Betsy Arnold, Jeffrey Fehmi, and Craig Rasmussen was awarded the Environmental Molecular Research Laboratory (EMSL) Large-Scale Research award, with two years of access to EMSL's cutting edge metabolomics resources funded through DOE. Well done!

Christian Ayala-Ortiz, Viviana Freire-Zapata, Ghiwa Makke, and Megan Nickerson will be presenting research posters at AGU next month. Have fun!

Harrison Friedman received first place among graduate student posters at the 2022 Research in Semi-Arid Ecosystems Symposium on Nov. 5th. Congratulations!

Savannah Fuqua is participating in an NSF funded workshop in S. Africa where she is learning how to work with fungal genomes to better understand the dynamics of plant-fungal co-invasions.

Share your good news with us to include in our next newsletter!

Thank you!

While we appreciate and value all contributions made by our Ecosystem Genomics Community, we would like to especially thank our EG Seminar instructors: Laura Meredith, Fall 2021; Luciano Matzkin, Spring 2022; and Rachel Gallery, Fall 2022

And those on committees*: Betsy Arnold (GIDP CC, SC, RC); Albert Barberán (RC); Jennifer Croissant (SC); Rachel Gallery (SC); Michelle Higgins (SC,RC); Bonnie Hurwitz (GIDP CC, SC); Heather Ingram (GIDP CC, SC, RC); Scott Saleska (SC, RC), Shirley Vincent (SC)

*KEY: Recruitment Committee (RC), Steering Committee (SC), GIDP Co-Chairs (GIDP CC)

Our BRIDGES/GIDP Trainees!



Year 1 Ecosystem Genomics Research Topics

High-altitude ecosystem microbial communities & function, Pablo Arán

Soil bacteria & fungal communities responses to resource availability in a desert ecosystem, Christian Ayala-Ortiz

Plant species loss effects on soil microbial communities, Rebecca Bland

Alternative energy source for soil microbes: atmospheric hydrogen, Meara Clark

Integrating machine learning & omics information to improve simulations of microbial-mediated soil organic matter decomposition, Changpeng Fan

How microbial & metabolite assembly forces drive ecosystem function in arctic Sweden, Viviana Freire-Zapata

European beachgrass invasion effect on plant-mycorrhizal interactions across spatial scales, Savannah Fuqua

Genetic resistance to Vip3 toxin in H. zea, Zoe Jensen

Growing a new science of landscape terraformation, Ghiwa Makke

Micronutrients in plant-microbe-soil interactions along an altitudinal gradient, Adalee Martinez

Multi-omics investigation of boreal & arctic moss microbial community diversity & ecosystem function, Megan Nickerson

Litter decomposition dynamics of Eragrostis lehmanniana, Taylor Portman

Interlinked above & belowground phenology of plant communities in Abisko, Sweden, Jessica Szetela

*Titles edited for space.

Cultures of Science Fellow Research Topic



Ecosystem Genomics: Emergence of an Interdiscipline,
Megan McKendry