Nichole A. Ginnan, Ph.D.

Curriculum vitae

Microbiome Center, Huck Institutes of the Life Sciences
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Education

2014–20 **Ph.D., Plant Pathology,** University of California, Riverside, CA
Research advisor: Caroline Roper

2010–14 **B.S., Biology**, Long Island University-Post Campus, Brookville, NY
Research advisor: Kent Hatch

Appointments

2022- **Research Project Manager II; One Health Microbiome Center**, State College, PA
Huck Institutes of the Life Sciences, Pennsylvania State University
The Center is dedicated to enhancing microbiome scholarship and science communication. ***I act as the senior project manager, overseeing research, educational, and outreach programs from initiation to completion****. This includes: 1. developing and managing internal and external partnerships, 2. facilitating research collaborations and working groups, 3. writing Center-level grant proposals, press releases, and editorials, 4. managing communications, media, and branding, 5. coordinating Center grant programs (travel, equipment, research awards, etc.), 6. managing budgets and financial projections, 7. Identifying gaps in research and training, 8. event planning (Symposiums, etc.), and more.*

2022- **Adjunct Researcher, University of Kansas**; Lawrence, KS
Dept. of Ecology and Evolutionary Biology, *PI: Maggie Wagner*
I continue to lead projects started in my postdoc, mentor an undergraduate student, and collaborate with other Wagner lab members.

2020–22 **Postdoctoral Scholar, University of Kansas;** Lawrence, KS
Dept. of Ecology and Evolutionary Biology, *PI: Maggie Wagner*
I led independent research focused on microbial adaptations and plant-microbiome eco-evolution in the context of drought/climate change using maize and a native prairie plant (gamagrass). I curated a >1200 maize-associated bacterial culture collection for reductionist experiments, and interrogated full-complexity soil microbiomes using manipulative experiments, metagenomics, metatranscriptomics, and advanced plant trait measurements (root architecture, xylem vessel area, water use efficiency etc.). The overall goal, was to advance our understanding of plant-microbiome evolution and interactions to help improve crop management.

2020 **Interim Postdoctoral Scholar, University of California**; Riverside, CA
Dept. of Microbiology and Plant Pathology, *PI: Caroline Roper*
Transitioned continuing citrus microbiome projects from my PhD to new researchers.

2014–20 **Graduate Student Researcher, University of California;** Riverside, CA
Dept. of Microbiology and Plant Pathology, *PI: Caroline Roper*
My research focused on unraveling microbiome-mediated plant disease tolerance in perennial tree crops (Citrus spp), shifts in the microbiome associated with plant phenology, and microbiome assembly using field sampling and synthetic microbial communities.

2012–14 **Research Assistant, Long Island University**; Brookville, NY
Dept. of Biology - Ecology and evolution lab, *PI: Kent Hatch*
I tested the effects of common ecological research practices (toe clipping for mark-recapture, stomach flushing, etc.) on amphibian (frog, toad, salamander) health and survival, with potential impacts on research protocols and regulations.

Fellowships

2019–20 **University of California President's Dissertation Year Fellowship**
UC Office of the President; *$22,570 stipend, tuition and fees for 1yr*

2016–19 **National Science Foundation Graduate Research Fellowship**
National Science Foundation; *$172,000 stipend, tuition, and fees for 3yrs*

2014–15 **Dean's Distinguished Fellowship**
University of California - Riverside; *stipend, tuition, & fees for 5 yrs (declined last 3 yrs)*

Research Grant

2021 Seed Grant, Center for Genomics Research, Univ. of Kansas **($9,000)**
Title: Mining Bacterial Genomes for Genetic Factors Involved in Microbial Drought Adaptation and Microbially-mediated Drought Tolerance in Plants

Research Awards & Smaller Grants

2020 Charles W. Coggins, Jr. Endowed Scholarship, UC Riverside **($10,000)**
For research excellence and benefit to the agricultural industry.

2019 Peter/Pamela Tsao Graduate Student Scholarship, UC Riverside **($1,000)**
For excellence in soil-borne disease research.

2019 Earle C. Anthony Travel Grant, UC Riverside **($1,500)**

2019 Edmond C. Calavan Memorial Scholarship Award **($1,000)**
For research excellence in the field of plant pathology.

2018 Charles W. Coggins, Jr. Endowed Scholarship, UC Riverside **($4,642)**
For research excellence and benefit to the agricultural industry.

2018 Am. Phytopathological Society Moller Student Travel Award **($500)**

2018 Am. Phytopathological Society Mathre Education Endowment **($1,000)**

2017 European Molecular Biology Organization Travel Grant **(450 €)**

2016 Noble Foundation Best Poster Award, APS annual meeting **($250)**

2016	Audience Choice Award - Best Talk, UC Riverside GradSlam **($2,000)**
2015	Am. Phytopathological Soc. Don/Judy Mathre Educational Award **($500)**
2015–19	Graduate Student Assoc. Travel Grant, UC Riverside **($300–$600 yearly)**
2015–19	Klotz Memorial Travel Award, UC Riverside **($500–750 yearly)**
2013	Frontier Award in Scientific Research, Long Island University

Peer-Reviewed Publications (*denotes equal contribution)

1. Kurbessoian T, Heimlich-Villalta G, **Ginnan NA**, Campos Freitas Vieira F, Rolshausen P, Roper MC, Stajich J. (2023). Genome sequence and assembly of 18 *Fusarium* isolates from Florida citrus under high Huanglongbing disease pressure and California citrus under low Huanglongbing disease pressure. *Microbiology Resource Announcements.* DOI: 10.1128/mra.00101-23

2. Xi M, Deyett E, **Ginnan NA**, Ashworth V, Dang T, Bodaghi S, Vidalakis G, Roper C, Glassman S, Rolshausen P. (2022). Geographic location, management strategy and Huanglongbing disease affect arbuscular mycorrhizal fungal communities across US citrus orchards. *Phytobiomes.* 6:4, 342-353. DOI: PBIOMES-03-22-0014-R

3. **Ginnan NA,** De Anda N, Campos Freitas Vieira F, Rolshausen P, Roper MC. (2022). Microbial turnover and dispersal events occur in sync with plant phenology in the perennial evergreen tree crop, *Citrus sinensis*. *mBio.* 13:3, 1-18. DOI: 10.1128/mbio.00343-22

4. O'Brien AM, **Ginnan NA**, Rebolleda-Gómez M, Wagner MR. (2021). Microbial effects on plant phenology and fitness. *American Journal of Botany*. 108:10, 1-14. DOI: 10.1002/ajb2.1743

5. **Ginnan NA,** Dang T, Bodaghi S, Ruegger P, McCollum G, England G, Vidalakis G, Borneman J, Rolshausen P, Roper MC. (2020). Disease-induced microbial shifts in citrus indicate microbiome-derived responses to Huanglongbing across the disease severity spectrum. *Phytobiomes.* 4:375-387. DOI: PBIOMES-04-20-0027-R
    a. *Honorable Mention - Phytobiomes Journal Best Grad. Student Paper 2020*
    b. *Press release- HLB: The Microbiome's Role, picked up by 6 news outlets*

6. Blacutt A, **Ginnan NA**, Dang T, Bodaghi S, Vidalakis G, Ruegger P, Peacock B, Viravathana P, Campos-Vieira F., Drozd, C, Jablonska B., Borneman J, McCollum G, Cordoza J, Meloch J, Berry V, Salazar L, Maloney K, Rolshausen P, Roper, MC. (2020). Development of an in vitro pipeline to screen and select citrus-associated microbiota with potential anti-*Candidatus Liberibacter asiaticus* properties. *Applied and Environmental Microbiology*. 86:8. DOI: 10.1128/AEM.02883-19

7. Su Y, Ashworth V, Geitner N, Wiesner M, **Ginnan NA**, Rolshausen P, Roper C, Jassby D. (2020). Delivery, fate, and transport of silver nanoparticles in citrus trees. *ACS Nano*. 14:3, 2966-2981. DOI: 10.1021/acsnano.9b07733

8. Pedroncelli L, Carter-House D, **Ginnan NA**, Andrews H, Drozd C, DiSalvo B. (2019). The consequences of drought on plant pathology. *Journal of Science Policy and Governance.* 15:1.

9. **Ginnan NA***, Dang T*, Bodaghi S, Ruegger P, Peacock B, McCollum G, England G, Roper MC, Rolshausen P, Borneman J. (2018). Bacterial and fungal next generation sequencing datasets and metadata from citrus infected with *Candidatus Liberibacter asiaticus*. *Phytobiomes.* 2:2, 64-70.

10. **Ginnan NA**, Lawrence JR, Russell M, Eggett DL, and Hatch KA. (2014). Toe clipping does not affect the survival of leopard frogs (*Rana pipiens*). *Copeia.* 2014:4, 650-653.

Semi-technical Publications, Press Releases, & Science Communication

Lovelace A, Read A, **Ginnan NA**, Cox K. (2023). The 2022 Early Career Showcase: A Model for Future Virtual Symposiums. International Society for Molecular Plant-Microbe Interactions - *Interactions.* https://www.ismpmi.org/Community/Interactions/Lists/Posts/Post.aspx?ID=1255

Ginnan NA. (2023). Habitat split may impact disease risk in amphibians and other vertebrates. Penn State News. https://www.psu.edu/news/research/story/habitat-split-may-impact-disease-risk-amphibian-and-other-vertebrates/

Ginnan NA and Bordenstein S. (2023). Free film and panel discussion reveals 'invisible' crisis of the microbial world. Penn State News. https://www.psu.edu/news/huck-institutes-life-sciences/story/free-film-and-panel-discussion-reveals-invisible-crisis/

Ginnan NA. (2022-23). We Are… the Microbiome Center features. One Health Microbiome Center webpage. https://www.huck.psu.edu/institutes-and-centers/microbiome-center/we-are-the-microbiome-center

1. Luana Bresciani - April 25, 2023
2. Mallorie Smith - April 11, 2023
3. Josue Ceron - March 28, 2023
4. Victoria Pearce - March 14, 2023
5. Tarik Acevedo - February 22, 2023
6. Erica Ryu - January 31, 2023
7. Jenn Harris - January 17, 2023
8. Terry Torres-Cruz - December 13, 2022
9. Sterling Wright - December 6, 2022
10. Colin Howe - November 29, 2022
11. Taejung Chung - November 22, 2022

Ginnan NA. (2022). 2022 Top 10 Most Popular Microbiome Center News Articles. Penn State Huck Institutes of the Life Sciences eNews. https://www.huck.psu.edu/news/2022-top-10-most-popular-microbiome-center-news-articles

Rolshausen P, Dang T, Bodaghi S, **Ginnan NA**, Ruegger P, Peacock B, Roper MC, Borneman J, McCollum G, Vidalakis G, England GK. (2018). Correlating citrus tree health with microbes. *Citrograph*. 9:4, 52-56.

Internal Leadership & Service

UCR Graduate Student Association, UC Riverside

2017–18 **Vice President of Academic Affairs** *(paid elected position)*
Represented and advocated for >3,200 graduate students. Managed a team of 7 academic affairs officers. Oversaw the status, funding, and activities of 56 departmental graduate student organizations, an event/conference funding program, and an outreach funding program.

2015 –17 **Conference Travel Grant Coordinator** *(paid appointed position)*
Directed the conference travel grant program (budget ≈$250,000) by organizing, reviewing, and awarding hundreds of awards to individual graduate students.

2014–15 **Academic Affairs Officer** *(paid appointed position)*
Served as a liaison between the College of Natural and Agricultural Sciences and graduate student association.

Plant Pathology Graduate Student Association, UC Riverside

2016–19 **Co-founder & Communications Coordinator**, Outreach Committee
2014–20 **Member**, UCR Plant Pathology Graduate Student Association

Other Committees

2023– **Co-organizer,** The One Health Microbiome Symposium, University Park, PA (PSU)
2021–22 **Co-organizer,** Genomics Symposium, Center for Genomics Research (KU)
2017–18 **Graduate Rep**., Dean of Students Search Committee (UCR)
2015–18 **Graduate Rep.**, Faculty Academic Senate's Graduate Council (UCR)
2015–17 **Vice Chair**, Highlander Union Board of Governors (UCR)
2014–16 **Graduate Rep.**, Global Food Initiative, Food Security Committee (UCR)
2014–15 **Graduate Rep.**, Faculty Academic Senate's Extension Committee (UCR)

Invited Talks

2023 Corporate Council, American Society for Microbiology | Houston, TX
2023 Penn State University, Microbiome Center Seminar | State College, PA
2022 Phytobiome Conference | Denver, CO
2022 Oregon State University, Botany and Plant Pathology Seminar | Corvallis, OR
2021 Kansas Microbiomes of Aquatics, Plants, and Soils symposium | Virtual
2020 McGill University Plant Sciences seminar | Montreal, Quebec, Canada
2020 University of California Davis MMI seminar | Davis, CA
2019 USDA NIFA grant advisory meeting | Riverside, CA
2019 International Research Conference on HLB (IRCHLB) | Riverside, CA
2019 UCR Microbiome Initiative Symposium | Riverside, CA
2016 GradSlam Finals | Riverside, CA
2015 GradSlam Semi-finals | Riverside, CA
2013 LIU Faculty Research Seminar | Brookville, NY

Presentations

Talks

2022 Genetics of Maize-Microbe interactions research network | Virtual
2020 Genetics Seminar, Univ. of Kansas | Lawrence, KS
2019 UCR Plant Pathology seminar | Riverside, CA.
2017 UCR Plant Pathology seminar | Riverside, CA
2016 UCR Plant Pathology Seminar | Riverside, CA

Posters

2021 Nature Conferences: Harnessing the plant microbiome | Davis, CA
2019 Congress of Molecular Plant-Microbe Interactions | Glasgow, Scotland
2018 International Conference of Plant Pathology | Boston, MA
2018 Citrus Day | Riverside, CA
2017 EMBO Plant Microbiota Practical Course | Cologne, Germany
2017 Citrus Day | Riverside, CA
2016 Phytobiomes: From Microbes to Plant Ecosystems | Santa Fe, NM
2016 American Phytopathological Society Annual Meeting | Tampa, FL
2015 American Phytopathological Society Annual Meeting | Pasadena, CA
2015 Phytobiomes: New Paradigm for Crop Improvement | Washington, DC
2013 National Meeting of Ichthyologists and Herpetologists | Albuquerque, NM
2013 William Paterson University Scientific Research Symposium | Wayne, NJ
2013 Long Island University Research Symposium | Brookville, NY

Specialized Training

2021–22 Maize Genetics Industry Mentor Program (6 mo.), *Mentor: Chris Kafer, BASF Plant Sci.*
2021 Population Genetics Discussion Group (12 weeks), University of Kansas
2021 Software carpentry workshop, University of Kansas
2020 Microbial 'Omics Online Seminar Series (6 weeks), Univ. of Chicago
2018 Statistical modeling in R for Biologists, UC Riverside
2018 Science to Policy communications workshop, UC Riverside
2017 Plant Microbiota practical course, Max Planck Institute, Cologne, Germany
2-week course on experimental/computational techniques. Led by Paul Schulze-Lefert, Stephane Hacquard, and Ruben Garrido-Oter.
Competitive application process, received EMBO travel grant
2016 PMA/EMA-qPCR for quantifying bacterial cells in hosts, Lake Alfred, FL
led by Nian Wang.
2015 Programming in R workshop, UC Riverside

Professional Affiliations & Service

Manuscript review

International Society of Microbial Ecology (ISME) Journal; Plant Pathology Journal (x2); Phytobiomes Journal (x2); New Phytologist; Journal of Ecology; FEMS Microbiology Ecology (x2); Plant, Cell & Environment; FEMS Microbiology Letters (x2).

Grant review

2019 American Phytopathological Society travel grants (5 applications)

Moderator

2022 IS-MPMI Early career showcase (2-day virtual event)

Membership

2023– One Health Task Force, Commonwealth of Pennsylvania
Participate on the antimicrobial resistance and climate change subcommittees.

2020– Genetics of Maize-Microbe interactions research network

2020– International Society of Microbial Ecology (ISME)

2019– International Society for Molecular Plant-Microbe Interactions (IS-MPMI)

2017– UC Riverside Microbiome Initiative

2015– American Phytopathological Society (APS)
Participated on Graduate student committee, Bacteriology committee, and Early career professionals committee.

Outreach & Community Service

2023 **Guest Speaker**, Professional Development lunch, Penn State Microbes for Microbes Grad Student Organization, State College, PA

2023 **Moderator/Host**, Microbiome Expert Panel, The State Theatre, State College, PA

2022 **Scientific Poster Judge**, KU Molecular Biosciences Symposium, Lawrence, KS

2022 **Scientific Poster Judge**, KU Genomics Symposium, Lawrence, KS

2022 **Panelist**, Postdoc advice panel, MEE conference, Lawrence, KS

2021 **Guest Host**, Microbigals Podcast, "Do Plants have a Microbiome?"

2021, 2022 **Host**, Meet a Scientist, 6th graders, SC Central School, Sandy Creek, NY

2018 **Organizer & Presenter**, Plant Pathology Day - 100 High School Students invited to campus for a full day event about STEM careers and Plant Pathology. Organized and presented section on plant microbiomes.
Am. Phytopath. Soc. Mathre Education Endowment ($1,000)

2018 **Panelist**, STEM graduate student panel for high schoolers, UC Riverside

2016 **Co-organizer,** The Riverside Amazing College Race, Riverside, CA
Scholarship competition and higher education promotional event.

2016 **Volunteer**, STEM Sisters, middle school outreach program, UC Riverside

2014–17 **City Ambassador**, Riverside Mayor's College Forum, Riverside, CA
Collaborated with student leaders from all four regional colleges and the Mayor's office to improve relations between students and the city.

Teaching & Mentoring

Seminar Organizer:

2023 (Spring) Microbiome Center Seminar Series (MBIOM 550), Penn State University

Teaching assistant

2016 Introduction to Microbiology Laboratory (MCBL121L), UC Riverside
Received an Outstanding Teaching Assistant Award

Guest lecturer

2023 Current events in Biotechnology (Graduate level), Penn State University

2022 Introduction to Honors Research (BIOL 499; Undergraduate level), Univ. of Kansas

2018 Plant Virology and Bacteriology (PLPA 203; Graduate level), UC Riverside
2016 Arlington High School Biology Class, Riverside, CA

Undergraduate research mentor

1. Carmen Rodriguez | Univ. of Kansas 2021–present
2. Natalie Ford | Univ. of Kansas 2021–2022
3. Hannah Reid (REU student) | Univ. of Kansas 2021
4. Felicity Tso (transition into full-time technician) | Univ. of Kansas 2020–2022
5. Matthew Guevara | UC Riverside 2019–2020
6. Rohan Subramanian | UC Riverside 2019
7. Norma Itzel De Anda | UC Riverside 2018–2020
8. Tim Smith | UC Riverside 2018–2020
9. Yona Mizrahi | UC Riverside 2017
10. Hannah Way | UC Riverside 2016–2019
11. Anisah Kabbara | UC Riverside 2016–2017
12. Chi Lok Leung | UC Riverside 2015–2016

Mentoring Programs

2017 **Graduate Peer Mentor,** Grad. Success/Grad. Division, UC Riverside
Mentored incoming graduate students participating in the 3-month summer "GradEdge/Jump Start" program, which provides underrepresented STEM graduate students a "jump start" on professional/academic development.
Mentees:

i. Yair Sanchez Juarez (Mechanical Engineering)
ii. Aidan Shands (Plant Pathology)
iii. Pablo Unzueta (Chemistry)
iv. Daniel White (Chemical and Environmental Engineering)

2015–16 **High School Mentor**, Association for Women is Science, UC Riverside
Mentored high school students from rural areas through the Mecca Program

2012–13 **International Student Mentor**, Conversations Helping and Teaching Students (CHATS), Long Island University