

Ryan D. Ridenbaugh

University of Kentucky, Department of Biology, 195 Huguelet Drive, Lexington, KY, 40508

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EDUCATION

University of Kentucky

Lexington, KY

Ph.D. Biology

Expected Summer 2027

Dissertation Title: "The Genomic Architecture of the Primary Ovipositor: An Understudied Driver of Ecological Speciation".

Committee: Catherine Linnen (Advisor), David Weisrock, Rosana Zenil-Ferguson, Julian Dupuis

University of Central Florida

Orlando, FL

M.S. Biology

2020

Thesis Title: "The Effects of Plant Phytochemistry on Parasitoid (Hymenoptera: Braconidae) Niche Breadth"

Committee: Barbara Sharanowski (Advisor), Michelle Gaither, Chase Mason

B.S. Biology

2016

RESEARCH EXPERIENCE

Ph.D. Candidate, Department of Biology, University of Kentucky

Lexington, KY

Ph.D. Candidate, Linnen Laboratory

August 2020-present

Department of Biology, University of Central Florida

Orlando, FL

M.S. Student, Sharanowski Laboratory

May 2016-August 2020

HONORS & AWARDS

- W.D. Hamilton Award Finalist, (2023), Society for the Study of Evolution
- Department of Biology Merit Fellowship, (2021), University of Kentucky
- College of Arts and Sciences Royster Graduate Excellence Award, (2020), University of Kentucky
- Department of Biology Summer Fellowship, (2020), University of Kentucky
- Order of Pegasus inductee, (2020), University of Central Florida
- College of Graduate Studies Presentation Fellowship, (2019), University of Central Florida
- Eagle Scout, Troop 25, (2010), Boy Scouts of America

FUNDING

[Career total funding to date: \$193,073.38]

- United States Department of Agriculture National Institute of Food and Agriculture Predoctoral Fellowship, (2024), "Genetic and Developmental Mechanisms Underlying Insect Ovipositor Variation" (PI: **Ryan Ridenbaugh; \$180,000**)
- Gertrude Flora Ribble Research Fellowship, (2020), University of Kentucky. (**\$2,000**)

- SCION: Student Funding Agreement, (2017-2019) Principal Investigator, B. J. Sharanowski, R. D. Ridenbaugh (Co-PI). Title: Field work to identify natural enemies of *Paropsisterna variicollis* (Chrysomelinae), Eucalyptus Variegated Beetle, in Australia. Budget: Total: **(\$11,073.38)**

PEER REVIEWED PUBLICATIONS

(Undergraduate students^U under my supervision are underlined with appropriate superscripts, and my name in in bold. Co-first authorship is denoted with a circumflex^)

[9 to date; Citations: 205; h-index: 7; i10-index: 7; taken from Google Scholar (10/20/2026)]

- Glover, A.N., Sousa V.C., **Ridenbaugh, R.D.**, Sim, S.B., Geib, S.M., Linnen, C.R. (2024). Recurrent selection shapes the genomic landscape of differentiation between a pair of host-specialized haplodiploids that diverged with gene flow. *Molecular Ecology*, 33(18), e17509.
Role: Created a custom bioinformatic pipeline for estimating synonymous substitution rate across 10,686 orthologous gene groups to advance our understanding of the genetics of adaptation and speciation.
- Herrig, D.K., **Ridenbaugh, R.D.**, Vertacnik, K.L., Everson, K., Weisrock, D., Linnen, C.R. (2024). The Impact of Whole-Genome Subsampling on Species Trees: A Case Study in *Neodiprion* Sawflies. *Systematic Biology*, 73.5: 839-860.
Role: Constructed a framework for generating phylogenetic trees and summary statistics using whole genome data from 20 species of Neodiprion, revealing relationships and mechanisms underlying gene-tree discordance.
- **Ridenbaugh, R.D.**[^], Glover, A.N.[^], Linnen, C.R. (2023) First record of the pine sawfly *Neodiprion warreni* (Hymenoptera, Diprionidae) in the state of Tennessee and on *Pinus virginiana*. *Journal of Hymenoptera Research* 96: 937–947.
- Sharanowski, B.J., **Ridenbaugh, R.D.**, Piekarski, P.K., Stewart, G.^U, Deans, A.R., Lemmon, A.R., Lemmon, E.M., Broad, G.R., Whitfield, J., Hines, H.M. (2021). Phylogenomics of Ichneumonoidea (Hymenoptera) and implications for evolution of mode of parasitism and viral endogenization. *Molecular Phylogenetics and Evolution* 156: 107023.
Role: Utilized HTS Anchored Hybrid Enrichment data to provide insights into the evolution of viral acquisition, parasitism strategies, diversification, and host immune disruption mechanisms in agriculturally beneficial parasitic wasps.
- Nahrung, H.F., Lewis, A., **Ridenbaugh R.D.**, Allen, G.R., Reid C.A.M., McDougal, R., Withers, T.M. (2020) Expansion of *Paropsisterna cloelia* (Stål) (Coleoptera: Chrysomelidae) geographic range through synonymy and invasion. *Austral Entomology*, 59 (3), 619-629.
Role: Collaborated with an interdisciplinary international team (AUS & NZ) as the primary bioinformatician and evolutionary biologist to document the range expansion of a detrimental pest to Eucalyptus forestry crops in AUS.
- **Ridenbaugh, R.D.**, Barbeau, E.^U, & Sharanowski, B.J. (2018). Description of four new species of *Eadya* (Hymenoptera: Braconidae), parasitoids of the Eucalyptus Tortoise Beetle (*Paropsis charybdis*) and other Eucalyptus defoliating paropsine beetles. *Journal of Hymenoptera Research* 64: 141-175.
- Peixoto, L., Allen, G.R., **Ridenbaugh, R.D.**, Quarrell, S.R., Withers, T.M., & Sharanowski, B.J. (2018). When taxonomy and biological control researchers unite: species delimitation of *Eadya* parasitoids (Braconidae) and consequences for classical biological control of invasive paropsine pests of Eucalyptus. *PloS One* 13(8): e0201276.

Role: Collaborated with an interdisciplinary international team (AUS & NZ) as the primary bioinformatician and evolutionary biologist towards deploying a novel biological control agent in New Zealand which resulted in an estimated \$7.2M reduction in Eucalyptus production losses.

- Zhang, Y.M., **Ridenbaugh, R.D.**, Sharanowski, B.J. (2017). Integrative taxonomy improves understanding of native beneficial fauna: revision of the Nearctic *Peristenus pallipes* complex (Hymenoptera: Braconidae) and implications for release of exotic biocontrol agents. *Systematic Entomology*, 42(3): 596-608.
- Egan, S.P., Weinersmith, K.L., Liu, S., **Ridenbaugh, R.D.**, Zhang, Y.M., and Forbes, A.A. (2017). Description of a new species of *Euderus* Haliday from the southeastern United States (Hymenoptera, Chalcidoidea, Eulophidae): the crypt-keeper wasp. *Zookeys* 645: 37-49.

PUBLICATIONS IN REVIEW/REVISION

(Undergraduate students^U under my supervision are underlined with appropriate superscripts, and my name in in bold. Co-first authorship is denoted with a circumflex[^])

- **Ridenbaugh, R.D.**, Thomas, M., Limberg, S.H., Watts, J., Asher, M.^U, Call, L.^U, Carmichael, H.^U, Dobson, K.R.^U, Elsoeidi, J.^U, Foltz, D.^U, Halilovic, B.^U, Hughes, B.^U, Hutchinson, T.^U, Jessie, G.^U, Lin, W.^U, Maynard, R.^U, Ni, W.^U, Oldfield, A.^U, Schoenbachler, P.^U, Zheng, V.^U, Afzal, Z.^U, Barton, I.^U, Bentley, N.^U, Ferguson, K.^U, Howard, K.^U, Mabijish, H.^U, Rodriguez, R.R.^U, Shepherd, J.^U, Shepler, D.^U, Vittitoe, N.^U, Vorrier, S.^U, Zacarias, C.V.^U, Allocco, G.^U, Anderson, K.^U, Ajith, D.^U, Bates, K.^U, Espinosa, J.^U, Hall, A.^U, Lin, W.T.^U, Rieman, A.^U, Sony, N.^U, Suellentrop, T.^U, Anderbrant, O., Hedenström, E., Linnen, C.R. (in review). Decoupled host responses in males and females generate partial and asymmetric habitat isolation in *Neodiprion* sawflies. *Ecology Letters*.
Significance: Developed a novel bioinformatic tool to design polymerase-chain reaction (PCR) assays for species identification, which was successfully deployed in an undergraduate course-based research experience (CURE) at the University of Kentucky to identify over 1,300 samples.
- Bendall, E.E., **Ridenbaugh, R.D.**, Glover, A.N., Herrig, D.K., Dobson, K.R.^U, Keown, G.^U, Hirtle, J.^U, Sousa, V., Thompson, K., Sim, S., Geib, S., Bendesky, A., Linnen, C.R. (in revision). Barrier trait architectures, not recombination barriers, aid sympatric speciation in pine sawflies. *Science*.
Role: Created a custom geometric morphometric landmarking protocol for the sawfly ovipositor, facilitating creation of the first QTL association map for insect ovipositor traits key to host adaptation.

INVITED PRESENTATIONS

(Undergraduate students^U under my supervision are underlined with appropriate superscripts. My name is in bold, and the presenting author(s)* are denoted with appropriate superscripts)

- **Ridenbaugh, R.D.***, Thomas, M., Limberg, S.H., Watts, J., Anderbrant, O., Hedenström, E., Linnen, C.R., (2026). *Swipe right for white pine: do divergent host preferences generate prezygotic isolation in pine-feeding sawflies?* Session: Insect Genomics: Applications in Agriculture and Evolutionary Biology. Entomology, Columbus, Ohio, USA.

PRESENTATIONS

(Undergraduate students^U under my supervision are underlined with appropriate superscripts. My name is in bold, and the presenting author(s)* are denoted with appropriate superscripts)

- **Ridenbaugh, R.D.***, Thomas, M., Limberg, S.H., Watts, J., Anderbrant, O., Hedenström, E., Linnen, C.R. (2026). *PyPrimer: A Field-Tested Bioinformatic Pipeline for Creating Rapid, Accurate, and Cost-Effective Species Identification Assays*. Plant and Animal Genomes 33. San Diego, California, USA.
- **Ridenbaugh, R.D.***, Thomas, M., Asher, M.^U, Call, L.^U, Carmicheal, H.^U, Dobson, K.^U, Elsoueidi J.^U, Foltz, D.^U, Halilovic, B.^U, Hughes, B.^U, Hutchinson, T.^U, Jessie, G.^U, Lin, W.^U, Maynard, R.^U, Ni, W.^U, Oldfield, A.^U, Schoenbachler, P.^U, Zheng, V.^U, Linnen, C.R. (2023). *Swipe right for white pine: do divergent host preferences generate prezygotic isolation in pine-feeding sawflies?* Evolution, Albuquerque, NM, USA.
- **Ridenbaugh, R.D.***, Thomas, M., Asher, M.^U, Call, L.^U, Carmicheal, H.^U, Dobson, K.^U, Elsoueidi J.^U, Foltz, D.^U, Halilovic, B.^U, Hughes, B.^U, Hutchinson, T.^U, Jessie, G.^U, Lin, W.^U, Maynard, R.^U, Ni, W.^U, Oldfield, A.^U, Schoenbachler, P.^U, Zheng, V.^U, Linnen, C.R. (2023). *Swipe right for white pine: do divergent host preferences generate prezygotic isolation in pine-feeding sawflies?* Evolution, Virtual.
- **Ridenbaugh, R.D.***, Holland, W.^U, Rachan, V.^U, Radcliffe, W.^U, Linnen, C.R. (2022). *Evaluating the role of mechanosensation in host adaptation and reproductive success*. Evolution, Cleveland, Ohio, USA.
- Allen, G.R.*, Withers, T.M., Sharanowski, B.J., **Ridenbaugh, R.D.**, Quarrell, S.R., Pugh, A.R. (2019). *Australian Eadya (Braconidae) as larval endoparasitoids for classical biocontrol of globally invasive Paropsine leaf beetles*. Australian Entomological Society Conference. Brisbane, Queensland, Australia.
- **Ridenbaugh, R.D.***, Dowell, J., Head, M., Sharanowski, B.J., Withers, T.M. (2019). *Host with the most: The effects of phytochemistry on parasitoid (Hymenoptera: Braconidae) niche breadth*. Entomology. St. Louis, Missouri, USA.
- **Ridenbaugh, R.D.***, Peixoto, L.P., Allen, G.R., Quarrell, S.R., Withers, T.M., Barbeau, E.^U, Sharanowski, B.J. (2018). *A Model Study Showing the Benefits of Systematics in Biocontrol*. UCF College of Graduate Studies Graduate Research Forum, Orlando, Florida, USA.
- Peixoto, L.P., Allen, G.R., Quarrell, S.R., Withers, T.M., **Ridenbaugh, R.D.***. (2017). Sharanowski, B.J. *A model study showing the benefits of systematics in biocontrol*. Entomology. Denver, Colorado, USA.
- Zhang, Y.M.* , **Ridenbaugh, R.D.**, Sharanowski, B.J. (2017). *Integrative taxonomy improves understanding of native beneficial fauna: Revision of the Nearctic Peristenus pallipes complex (Hymenoptera: Braconidae) and implications for release of exotic biocontrol agents*. Entomology. Denver, Colorado, USA.
- Naranjo, S.M.* , **Ridenbaugh, R.D.**, Hogan, J.*^U, Kelly, S.L. (2017). *Bug Closet crawls with diversity*. Entomology. Denver, Colorado, USA.
- Y. Miles Zhang*, **Ryan D. Ridenbaugh**, D. Catalina Fernández, Barbara J. Sharanowski. (2016). *From population to speciation: Evolution of the Peristenus pallipes (Hymenoptera: Braconidae) complex*. International Congress of Entomology, Orlando, Florida, USA.
- Naranjo, S.M.* , Barbeau, E.*^U, Kelly, S.L., Silverman, B., **Ridenbaugh, R.D.** (2016). *Scope of University of Central Florida Collection of Arthropods: A growing collection*. International Congress of Entomology, Orlando, Florida, USA.
- **Ridenbaugh, R.D.***, King, J. (2016). *Ground beetles (Coleoptera: Carabidae) as bioindicators in pine flatwoods ecosystems*. University of Central Florida Showcase of Undergraduate Research Excellence, Orlando, Florida, USA.

SOFTWARE

- [PyPrimer](#) – A bioinformatic pipeline to identify intron length variation between multiple target species for the purpose of designing diagnostic multiplex PCR primers.

FIELD EXPEDITIONS

- Australia (ACT, New South Wales, Victoria). October 31st, 2018 – December 10th, 2018.
- Australia (ACT, New South Wales, Victoria). December 9th, 2017 – January 12th, 2018.
- Arizona, New Mexico, Colorado, and Utah. June 5th – 28th, 2017.

PROFESSIONAL DEVELOPMENT

- **Essential Leadership Academy**, University of Kentucky. August 2024 – May 2025.
- **Programming for Bioinformatics Summer Bootcamp**, Center for Computational Biology, University of California Berkley. June 14-18, 2021.
- **Data Carpentry Workshop: Genomics**, Emerging Pathogens Institute, University of Central Florida. April 11-12, 2019.

MEDIA COVERAGE OF RESEARCH

- [Daily Mail](#), “From a sea slug named 'Khaleesi' to a bee fly dubbed the 'Night King': The newly-discovered species named after Game of Thrones characters - as House of the Dragon premiere drops”, August 2022.
- [University of Tasmania](#), “Mother of Dragons wasp flying to New Zealand's aid”, June, 2020.
- The New York Times International Edition (Print) “This Wasp Is an Equal-Opportunity Head-Chewer”, October 19-20th, 2019.
- The New York Times (Print) “This Wasp Is an Equal-Opportunity Head-Chewer”, October 15th, 2019.
- [The New York Times](#), “There Are Parasitic Wasps, and Then There's the Crypt-Keeper”, September, 2019.
- [Science AAAS](#), “'Crypt keeper' wasp brainwashes far more victims than thought”, September, 2019.
- [SCION News and Media Release](#), “New biocontrol agent for Eucalyptus pest approved by EPA”, February, 2019.
- [Radio New Zealand](#), “Tiny wasps proposed as solution to eucalyptus tree production losses worth millions”, January, 2019.
- [SYFY Wire](#), “Game of Thrones' iconic dragons now have beetle species named after them”, January, 2019.
- [Radio New Zealand](#), “Predator wasp considered in eucalyptus-pest battle”, October, 2018.
- [Vanity Fair FR](#), “Des scientifiques baptisent une nouvelle espèce de guêpe Daenerys” July, 2018.

- [Le Parisien](#), “Une espèce de guêpe baptisée Daenerys, en hommage à l’héroïne de Game of Thrones”, July, 2018.
- [National Geographic](#), “New Crypt-Keeper Wasp Is Parasite That Bursts From Host's Head”, January, 2017.
- [Science AAAS](#), “Crypt keeper wasp is a parasite of a parasite”, January, 2017.
- [Popular Science](#), “This parasitic wasp forces other parasitic wasps to do its dirty work, then eats them”. January, 2017.
- [Daily Mail](#), “The terrifying zombie wasp that eats its victims alive from the inside out - before emerging from a hole in their HEAD”. January, 2017.

COURSES TAUGHT

- BIO380: Research in Evolutionary Biology, University of Kentucky, Spring 2024.
- BIO303H: Honors Introduction to Evolution, University of Kentucky, Fall 2023
- BIO380: Research in Evolutionary Biology, University of Kentucky, Spring 2023.
- BIO303: Introduction to Evolution, University of Kentucky, 2021-2022.
- BIO155: Lab for Intro Biology I, University of Kentucky, Fall 2020.
- ENY4004C: General Entomology Lab, University of Central Florida, Spring 2020.
- PCB4683L: Evolutionary Biology Lab (Primary Instructor of Record), University of Central Florida, 2019-2020.
- BSC2011C: Introductory Biology II Lab, University of Central Florida, 2017-2018.
- BSC2010C: Introductory Biology I Lab, University of Central Florida, 2017 Fall.

GRADUATE STUDENTS MENTORED

- Davide Dal Pos (Ph.D. Student). University of Central Florida, 2019-2020.
- Sandra Almanza (Ph.D. Candidate). Florida Atlantic University, Summer 2018.
- Udari Wanigasekara (Ph.D Candidate). University of Manitoba, Summer, 2017.

UNDERGRADUATE STUDENTS MENTORED

- Claire Walters (BIO395). University of Kentucky, 2026-present.
- Yazan Alfakhouri (BIO395). University of Kentucky, 2026-present.
- Shelby Hodge (BIO395). University of Kentucky, 2024-2026.
- Erika Hartman (BIO395). University of Kentucky, 2024-2026.
- Jack Hirtle (BIO395). University of Kentucky, 2024-2026.
- Jasmine Fletcher (BIO395). University of Kentucky, 2024-2026.
- Kayleigh Dobson (BIO395/Research Technician) University of Kentucky, 2023-2024.
- Graci Keown (BIO395). University of Kentucky, 2023-2024.
- Taina Speight (S-STEM Scholar). University of Kentucky, 2023-2024.
- Madeline Wilkinson (S-STEM Scholar). University of Kentucky, 2023-2024.
- Brenden Hughes (BIO395). University of Kentucky, 2023-2024.
- Destiny Addison (Federal Work Study). University of Kentucky, 2023.
- Luke Gazala (BIO395). University of Kentucky, 2023.
- Wynne Radcliffe (BIO395). University of Kentucky, 2021-2023.

- Vasav Rachan (BIO395). University of Kentucky, 2021-2023.
- Will Holland (BIO395). University of Kentucky, 2021-2023.
- Connor Padgett (S-STEM Scholar). University of Kentucky, 2022-2023.
- Connor Nicholas (S-STEM Scholar). University of Kentucky, 2022-2023.
- Sayahna Sneethan (S-STEM Scholar). University of Kentucky, 2022-2023.
- Hannah Anderson (S-STEM Scholar). University of Kentucky, 2022-2023.
- Salena Kasha (Volunteer). University of Central Florida, 2019-2020.
- Solanch Naranjo (Volunteer). University of Central Florida, 2019.
- Lindsey Bridges (Volunteer). University of Central Florida, 2019.
- Gloria Stewart (Student Researcher). University of Central Florida, 2018-2019.
- Dylan Grubb (UCF RAMP Scholar). University of Central Florida, 2017-2019.
- Joshua Hogan (Student Researcher). University of Central Florida, 2017-2019.
- Erin Barbeau (Student Researcher). University of Central Florida, 2016-2017.

HIGH SCHOOL STUDENTS MENTORED

- Angela Alvarez (Catalyst Intern). Orlando Science Center, Summer 2018.
- Shawn Carey (Catalyst Intern). Orlando Science Center, Summer 2018.
- Esha Gill (Catalyst Intern). Orlando Science Center, Summer 2018.
- Renee Gooden (Catalyst Intern). Orlando Science Center, Summer 2018.

COMMUNITY OUTREACH

- Biobonanza, University of Kentucky, 2024 Spring.
- College of Sciences myBiology Day, University of Central Florida, 2019 Fall.
- UCF PedsAcademy STEM day at Nemours Children's Hospital, 2019 Summer.
- College of Sciences myBiology Day, University of Central Florida, 2018 Fall.
- Orlando Science Center's Catalyst Internship Program, University of Central Florida, 2018 Summer.
- UCF Global/Shanghai University tours of the Sharanowski Lab/UCF Collection of Arthropods, University of Central Florida, 2018 Summer.
- The Orlando Science Center's Citizen Science Academy (K-12) field trip to the Sharanowski Lab/UCF Collection of Arthropods, University of Central Florida, 2018 Summer.
- COMPASS Program tours of the Sharanowski Lab/UCF Collection of Arthropods, University of Central Florida, 2018 Spring.

MEDIA COVERAGE OF COMMUNITY OUTREACH

- The Science Pawdcast. Season 5, Episode 7. Aired March 30th, 2023.
- A Mediocre Time with Tom and Dan Podcast. ACT Best Of (6-15 through 6-19). Aired June 27th, 2020.

- Real Radio 104.1 - A Corporate Time with Tom and Dan. Interview for “Weird Job Wednesday”. Aired June 17th, 2020.
- WTMO-CD Telemundo. Interview on Southern Flannel Moth/Puss Caterpillar. Aired October 23rd, 2019.
- [WUCF-TV: Sci Tech Central](#). “UCF Bug Closet”. Aired October 1st, 2015.

PROFESSIONAL SERVICES

- OUR Sustainability Poster Competition Judge, UK Office of Undergraduate Research, 2025
- Oswald Award Judge, UK Office of Undergraduate Research, 2025
- President, UK Biology Graduate Student Association, 2021-2022
- Oswald Award Judge, UK Office of Undergraduate Research, 2020
- TAMBL Grant Reviewer, UCF Biology Graduate Student Association 2018
- Secretary, Entomological Society of Central Florida, 2014-2015
- Vice President, Entomological Society of Central Florida, 2014

REVIEW SERVICES

- USDA, DiprionID, 2026.
- Royal Irish Academy, 2026.
- Systematic Entomology, 2025.
- Proceedings of the Royal Society B, 2022.
- Insect Systematics and Diversity, 2020.
- Zookeys, 2017.