Ari Grele
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Education

2019 - present: Ph.D; University of Nevada, Reno; Ecology, Evolution, and Conservation Biology, Department of Biology
Advisor: Dr. Lora Richards

2015 - 2019: B.S; Cornell University; Entomology with distinction in research
Senior honors thesis: “Bioactive components of a predaceous stink bug aggregation pheromone on Colorado Potato Beetle feeding”

Research Interests

Insect chemical ecology and behavior
Plant-insect interactions
Pollination ecology

Research Skills

Technical skills:	Insect dissection, vivisection, identification and preservation, analytical chemistry, experimental design, insect and plant rearing
Computer skills:	Fluency in R, Python; proficiency in JAGS, OpenGL, GDscript; mild proficiency in Javascript, C#, C++. Machine learning and computer vision algorithms using Pytorch Behavior analysis using B.O.R.I.S. software Image analysis using M.I.P.A.R. & ImageJ software
Statistical skills:	Quantitative analysis using Frequentist and Bayseian methods

Publications and Presentations

Grele A, Massad TJ, Uckele KA, Dyer L, Antonini Y, Braga L, Forister ML, Sulca-Garro L, Kato M, Lopez HG, Nascimento AR. Intra and interspecific diversity in a tropical plant clade alter herbivory and ecosystem resilience. bioRxiv. 2023:2023-03.

Massad T, Nascimento AR, Campos D, Simbaña W, Lopez HG, Garro LS, Lepesqueur C, Richards L, Forister M, Stireman J, Tepe E, **Grele, A**, Dyer L. Broad patterns in the distribution of herbivory are elusive due to the importance of local scale variation and differences between specialist and generalist herbivores. 2023

Getman-Pickering, ZL, Campbell, A, Aflitto, N, **Grele, A**, Davis, J, Ugine, TA. 2019. *LeafByte: A mobile application that measures leaf area and herbivory quickly and accurately*. Methods Ecol Evol; 00: 1– 7. https://doi.org/10.1111/2041-210X.13340

Grele, A., Richards, L, 2023. *Simulated herbivory increases plant fitness by altering floral traits and pollinator behavior*. Poster presented at the Plant - Herbivore Interactions Gordon Conference, Ventura, CA.

Grele, A, Richards, L, 2022. *Using machine learning to study pollination with high temporal and taxonomic resolution.* Poster presented at the annual meeting of the Entomological Society of America, Vancouver, BC.

Grele, A, Aflitto, N, Thaler, J. 2018. *Components of Podisus maculiventris Aggregation Pheromone Elicit Non-Consumptive Responses in Colorado Potato Beetles.* Poster presented at the annual meeting of the Entomological Society of America, Vancouver, BC.

Research Experience

2019 - present: PhD candidate | Richards lab, EECB, University of Nevada, Reno:
Dissertation research investigating the role of toxic nectar metabolites in affecting pollinator behavior, milkweed chemical assays, Drivers of herbivory and insect diversity

2017 - 2019: Research assistant | Thaler Lab, Entomology, Cornell University:
Assisted with insect bioassays and chemical assays, insect rearing, insect dissection and field assays of insect repellent and antifeedant semiochemicals.

2017, 2018 - 2019: Research assistant | Raguso Lab, Neurobiology and Behavior, Cornell University:
Assisted with data collection and behavioral analysis of recorded assays on multiple insect species.

Teaching experience

2023: Research design (EECB 750) | University of Nevada, Reno;
Lead lab course introducing graduate students to coding in R, quantitative analysis, frequentist and Bayesian statistics, data preparation and presentation.

Evolution (Biol 415 / 615) | University of Nevada, Reno;
Lead capstone course discussion sections introducing students to evolutionary concepts, application of evolutionary theory to conservation and human health, and science communication.

2019 - 2022: Principles of Biological Investigation (Biol 192) | University of Nevada, Reno;
Led lab course introducing students to biological concepts, experimental design, statistics and scientific writing.

2016 - 2016: Insect Biology (Entom 2120) | Cornell University;
Assisted lab course teaching students insect biology, taxonomy, identification and preservation.

Organizations

2022 - present: Developer and machine learning lead for Team Waponi; X-prize rainforest finalist team: Research to develop machine learning models for the rapid quantification of biodiversity at tropical sites

2023: Member of EECB graduate colloquium nominations committee: Solicit colloquium nominations from program members, act as point of contact for program members to facilitate the development of the semester colloquium calendar.

2016 - 2017: Vice President of Snodgrass and Wigglesworth, Undergraduate Entomology Club: Acted as stand in for president, organized club events, ensured club registration.

2015 - 2016: Secretary of Snodgrass and Wigglesworth, Undergraduate Entomology Club: Maintained club social media presence and club listserv, assisted with organizing outreach events.

Awards and grants

2023: XPRIZE Rainforest finalist award
XPRIZE and Alana foundation
$333,000

2022: Hitchcock Graduate Student Fellowship
University of Nevada, Reno, Hitchcock Center for Chemical Ecology

International travel award
University of Nevada, Reno, Graduate Student Association
$750

2021, 2023: Travel award
University of Nevada, Reno, Graduate Student Association
$500

2020: Research, Travel, and Materials Grant Program
University of Nevada, Reno, Graduate Student Association
$1550

References

Dr. Lora Richards (Graduate advisor); Professor, University of Nevada, Reno, 101 Sarah Fleischmann Building, Reno, NV, 89557; Email: Lorar@unr.edu; phone: 775-784-6141

Dr. Lee Dyer (Committee member); Professor, University of Nevada, Reno, 141 Fleischmann Agriculture Building, Reno, NV, 89557; Email: ldyer@unr.edu; phone: 775-784-1360

Dr. Thomas Walla (Collaborator); Professor, Colorado Mesa University, 221C Wubben Hall and Science Center, Grand Junction, CO, 81501; Email: twalla@coloradomesa.edu; phone: 970-248-1146