

## Education

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- 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

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Insect chemical ecology and behavior  
Plant-insect interactions  
Pollination ecology

## Research Skills

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- 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 Bayesian methods

## Publications and Presentations

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**A. Grele**, T. J. Massad, K. A. Uckele, L. Dyer, Y. Antonini, L. Braga, M. L. Forister, L. Sulca-Garro, M. Kato, and H. G. Lopez. 2023. Intra and interspecific diversity in a tropical plant clade alter herbivory and ecosystem resilience. bioRxiv:2023-03.

Massad, T., A. R. Nascimento, D. Campos, W. Simbaña, H. G. Lopez, L. S. Garro, C. Lepesqueur, L. Richards, M. Forister, J. Stireman, E. Tepe, K. Uckele, L. Braga, T. Walla, A. Smilanich, **A. Grele**, and L. Dyer. 2023. Variation in the strength of local and regional determinants of herbivory across the Neotropics.

Getman-Pickering, Z. L., A. Campbell, N. Aflitto, **A. Grele**, J. K. Davis, and T. A. Ugine. 2020. LeafByte: A mobile application that measures leaf area and herbivory quickly and accurately. *Methods in Ecology and Evolution* 11:215–221.

**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

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- 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

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- 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

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- 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

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- 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

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- Dr. Lora Richards (Graduate advisor); Professor, University of Nevada, Reno, 101 Sarah Fleischmann Building, Reno, NV, 89557; Email: [Lorar@unr.edu](mailto: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](mailto: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](mailto:twalla@coloradomesa.edu); phone: 970-248-1146