April 2021

T. Mason Linscott

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NSF Graduate Research Fellow
Bioinformatics and
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University of Idaho
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Education

Ph.D., Bioinformatics and Computational Biology **2021 (est.)**
University of Idaho, Moscow, Idaho
Dissertation – Resource Supply and Morphological Evolution: From Geology to Genomics
Research and Academic Advisor: Dr. Christine E. Parent

BSc. Biology; with honors, cum laude **2014**
University of Tulsa, OK

Research Goals and Perspectives

My research program is built around understanding the rules of life that control the expression and number of biological forms in nature, discovering how these rules affect biodiversity over micro- and macro-evolutionary scales, and exposing their relevance for the preservation of extant biodiversity. I approach these topics with the mentality of "there is always a tool available to address this question and I just need to learn it," which led to my acquisition of genomic, transcriptomic, morphological, ecological, statistical, and machine-learning tools during my dissertation, which I wish to communicate to my students and expand in the next phase of my research program.

Teaching Goals and Perspectives

My teaching philosophy is built on three pillars of biodiversity research: discovery, conservation, and education. My overarching approach is to teach students and the public of the value of each pillar for the preservation and understanding of biodiversity through direct experience with living or preserved organisms – to demonstrate the thrill and opportunity for discovery, the benefits of a healthy conserved ecosystem, and the power of education to elicit and sustain future discoveries and conservation policy. These pillars also guide my outreach as they provide a two-sided mandate for 1) the empowerment of underrepresented, rural communities (e.g. indigenous peoples) for research and academic opportunities as they are often the first to interact with endangered or threatened species and 2) the incorporation of local knowledge into policymaking and education as cultural connectedness to local biodiversity is a source of knowledge and experience which can guide future discovery and conservation.

Publications

Submitted or Published:

- **Linscott TM,** Recla NK, Parent CE. $CaCO_3$ availability constrains biomineralization expression and distribution of Mountainsnails (Oreohelix). 2021 (submitted). In Review.
- **Linscott TM,** Parent CE. De-novo hybrid genome assembly of a limestone endemic land snail (Oreohelix idahoensis) using linked- and long-reads. 2021. In Review.

- **Linscott TM**, Weaver K, Morales V, Parent CE. Assessing Species Number and Genetic Diversity of the Mountainsnails (Oreohelicidae). 2020. *Conservation Genetics 21, no. 6 (2020): 971-985.*
- Phillips JG, **Linscott TM**, Rankin AR, Kraemer AK, Shoobs NF, Parent CE, Archipelago-Wide Patterns of Colonization and Speciation Among an Endemic Radiation of Galápagos Land Snails. 2020. *Journal of Heredity*. DOI: 10.1093/jhered/esz068
- **Linscott TM**, Parent CE. Mitochondrial Genome Sequence of the Land Snail *Oreohelix idahoensis.* 2019. *Microbiology resource announcements*. DOI: 10.1128/MRA.01693-18

In Preparation:

- **Linscott TM**, Parent CE. Marine Mollusc Ornamentation and Ocean Acidification: Contrasting Effects of Climate Change. 2021 in prep for Glob. Chang. Biol.
- **Linscott TM**, Parent CE. Resource availability drives parallel evolution in *Oreohelix* land snails. 2021 in prep for Mol. Ecol.
- **Linscott TM**, Parent CE. Phylogenomics Reveals Substantial Genomic Discordance Underlying the Rapid Evolution and Diversification of Mountainsnails (*Oreohelicidae*). 2021 in prep for Sys. Bio.

Professional Presentations

- **Linscott TM,** Parent CE. *Recognizing and Predicting Global Patterns of Molluscan Shell Ornamentation Expression through Machine Learning*. IBEST lunch talk; 2020 Dec.
- **Linscott TM,** Parent CE. *Recognizing and Predicting Global Patterns of Molluscan Shell Ornamentation Expression through Machine Learning*. World Congress of Malacology; 2019 Aug. ****Best Student Presentation**
- Phillips JH, **Linscott TM**, Rankin AR, Kraemer AK, Shoobs NF, Parent CE, Archipelago-Wide Patterns of Colonization and Speciation Among an Endemic Radiation of Galápagos Land Snails. World Congress of Malacology; 2019 Aug.
- **Linscott TM,** Parent CE. *Recognizing Global Patterns of Molluscan Shell Ornamentation*. Institute for Bioinformatics and Evolutionary Studies Expo.; 2018 Sep.
- **Linscott TM,** Parent CE. *SnailTrails: A Collaborative Learning Platform for the Eduation, Conservation, and Discovery of Biodiversity*. Institute for Bioinformatics and Evolutionary Studies Expo.; 2018 Sep.
- **Linscott TM,** Parent CE. *SNPs, Snails, and Lime: Genomic and Geologic Patterns of Ornamentation*. American Malacological Society & Western Malacological Society joint meeting; 2018 Jun.
- **Linscott TM,** Parent CE. *SNPs, Snails, and Lime: Genomic and Geologic Patterns of Ornamentation*. Society of Systematic Biologists 2018, Stand-alone meeting; 2018 Jun.
- **Linscott TM,** Parent CE. *Phylogenomics of Lower Salmon River Oreohelicidae.* Western Society of Malacologists Annual Meeting; 2017 Jun. ****Best Student Presentation**
- **Linscott TM,** Parent CE. *SNPs, Snails, and Mountain Trails: Phylogenomics of Oreohelicidae*. University of Colorado Museum of Natural History, Boulder, CO; 2016 Oct.

- **Linscott TM**, Roche EA, Bonett RM. *The effects of diet, ecology, and physiology on the evolution of endothermic gastrointestinal tract lengths.* American Society of Mammalogists; 2014 Jun 6-10
- **Linscott TM**, Roche EA, Bonett RM. *The effects of diet, ecology, and physiology on the evolution of endothermic gastrointestinal tract lengths.* Society of Integrated and Comparative Biology, Austin, TX. 2014 Jan.

Awards & Honors

- USFWS Conservation Fund ($66,635) **2021**
- Templeton Foundation Big Ideas Challenge ($1,000) **2020**
- UI Bioinformatics and Computational Biology Fellowship ($19,000) **2019**
- World Congress of Malacology 2019: Student Presentation Award **2019**
- NSF EPSCoR GEM3 Seed Grant: "Uncovering the Role of Resource Availability: From Geology to Genomics" ($15,000) **2019**
- Society for the Study of Evolution: Program for Local Outreach Promoting the Understanding of Evolutionary Biology ($1,000) **2019**
- University of Idaho: COS Travel Award ($1,500) **2018**
- Western Society of Malacologists 2017 Meeting: Student Presentation Award **2017**
- Conchologists of America Research Award ($1,830) **2016**
- Western Society of Malacologists Research Award ($1,000) **2016**
- NSF Indigenous STEM (ISTEM) Scholar (program ended) **2016-2018**
- University of Idaho: Workshop Award ($1,500) **2016**
- University of Idaho: COS Travel Award ($1,500) **2016**
- NSF Graduate Research Fellowship ($138,000) **2015**
- Cherokee Nation Tribal Scholarship ($8000) **2010–2014**
- Miscellaneous Undergraduate Scholarships ($135,000) **2010–2014**

Service to the Community

SnailTrails: A Collaborative-Learning Platform for the Education, Conservation, and Discovery of Biodiversity **2019**

Two-Eyed Seeing: Indigenous Salmon River Mentorship Expedition **2018**
A mentorship expedition on the Middle Fork of the Salmon River

SNPs, Trails, and Mountainsnails **2016**
Palouse Science After Hours "Parent Lab Takeover!"

Snails of Idaho and the Pacific Northwest: Science at the University of Idaho **2016**
Outreach Presentation: Nez Perce Community Center Academic Fair

Graduate Student Advisor and Coordinator **2015**
Pacific Northwest Circle of Success: Mentoring Opportunities in STEM (COSMOS)

Graduate Student Advisor **2015**
Indigenous STEM Research and Graduate Education program (ISTEM)

Invited Lecture: *The significance of secondary flight loss across insect orders.* **2015**
Department of Biological Sciences; University of Idaho 2015(upcoming)

Graduate Member **2012**
Oklahoma Louis Stokes Alliance for Minority Participation (OK-LSAMP)

Teaching Experience

Teaching Assistant (Population Biology/Ecology) Spring **2021**
Teaching Assistant (Genetics) Fall **2020**
Graduate Student Mentor
Mentor of six undergraduate students evaluating species limits and shell morphology across *Oreohelix* species. **2014-2020**
Teaching Assistant (Dimensions of Biodiversity Course) Fall **2019**
Department of Biological Sciences, University of Idaho
Supervisor: Christine E. Parent
Teaching Assistant (Dimensions of Biodiversity Course) Fall **2018**
Department of Biological Sciences, University of Idaho
Supervisor: Christine E. Parent
Guest Fellowship Advisor: *Prestigious Fellowship Writing Workshop* **2015**
Office of Grant and Research Development, Washington State University
Teaching Assistant (Mammalogy Lab) **2014**
Department of Biological Sciences, University of Idaho
Supervisor: Jack Sullivan
Workshop Leader: *Exploring the utility of PGLS methods for quant. traits* **2014**
Department of Biology, University of Tulsa, 2014

Professional Memberships

American Society of Naturalists, Unitas Malcologica, Western Malacological Society, Society for the Study of Evolution, Society of Systematic Biologists, SACNAS