

SCOTT HOTALING

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EDUCATION and TRAINING

Updated: October 2019

- Sept., 2017-present **Postdoctoral Research Associate**, School of Biological Sciences, Washington State University, Pullman, WA
Advisor: Joanna L. Kelley
- August, 2017 **Ph.D.**, Department of Biology, University of Kentucky, Lexington, KY
Advisor: David W. Weisrock
- May, 2010 **B.S.**, Zoology, North Carolina State University, Raleigh, NC
Advisor: Nicholas M. Haddad

GRANTS and FELLOWSHIPS

Summary (as of September 2019): 27 awards; **Total:** \$925,308 (as PI: \$100,094); All values in USD.

- 2019-2021 NSF Office of Polar Programs (\$825,214; co-wrote proposal with PI Kelley)
- 2019 Journal of Experimental Biology Traveling Fellowship (\$1,770)
- 2019 U. of Montana Cooperative Ecosystem Studies Unit (\$6,201)
- 2019-2021 Raelyn Cole Editorial Fellowship, *Limnology & Oceanography Letters* (\$3,000)
- 2018-2019 NSF XSEDE Start-Up Allocation (\$2,315)
- 2018 Antarctic Science International Bursary (\$8,500)
- 2018 Mazamas Standard Research Grant (\$3,500)
- 2018 Society for the Study of Evolution Outreach Grant (\$1,000)
- 2016 Wyoming Governor's Office Research Grant (\$11,000)
- 2015 U. of Kentucky Gertrude Flora Ribble Graduate Fellowship (\$23,249)
- 2015 Teton Conservation District Research Grant (\$5,149)
- 2015-2019 U. of Wyoming-National Park Service Grants (Total: \$25,000, five awards)
- 2013 Society for Freshwater Science General Endowment Award (\$1,000)
- 2013 Society for the Study of Evolution Rosemary Grant Award (\$2,250)
- 2012, 2013, & 2014 U. of Kentucky Dept. of Biology Ribble Grants (Total: \$1,900, three awards)
- 2012 American Alpine Club Graduate Student Research Grant (\$300)
- 2012, 2013 Glacier Park Fund Discretionary Research Grants (Total: \$1,000, two awards)
- 2011 U. of Kentucky Ribble Summer Fellowship (\$2,000)
- 2010 North Carolina State University Undergraduate Research Award (\$1,000)

PUBLICATIONS

Summary (as of Oct. 1st, 2019): 21 publications (15 as lead or senior author); **Mean impact factor:** 4.6
Google Scholar (citations: >250; h-index: 8): <https://scholar.google.com/citations?user=r0-QHokAAAAJ>

Published (¹undergraduate co-author)

- Jordan S, Hand BK, **Hotaling S**, DelVecchia A, Malison R, Nissley C, Stanford J, Luikart G. (Accepted). Genomic data reveal similar genetic differentiation between species with vastly different dispersal capacities and life histories. *Biological Journal of the Linnnean Society*.
- Ren Ze*, Martyniuk N*, Oleksy IA*, Swain A*, **Hotaling S**[#]. (2019). Ecological stoichiometry of the mountain cryosphere. *Frontiers in Ecology & Evolution*. 7, 360. *contributed equally; [#]corresponding author

19. **Hotaling S**, Shain DS, Lang SA, Bagley RK, Tronstad LM, Weisrock DW, Kelley JL. (2019) Long-distance dispersal, ice sheet dynamics, and mountaintop isolation underlie the genetic structure of glacier ice worms. *Proceedings of the Royal Society B*. 286.
18. **Hotaling S**, Kelley JL, Weisrock DW. (2019) Nuclear and mitochondrial genomic resources for the meltwater stonefly, *Lednia tumana* (Ricker 1952). *Aquatic Insects*. DOI: <http://10.1080/01650424.2019.1639764>
17. **Hotaling S**, Foley ME¹, Zeglin L, Finn DS, Tronstad LM, Giersch JJ, Muhlfeld CC, Weisrock DW. (2019) Microbial assemblages reflect environmental heterogeneity in alpine streams. *Global Change Biology*. 8, 2576-2590.
16. **Hotaling S**, Kelley JL. (2019) The rising tide of high-quality genomic resources. *Molecular Ecology Resources*. 19, 567-569.
15. **Hotaling S**, Giersch JJ, Finn DS, Tronstad LM, Jordan SP, Serpa LE, Call RG, Muhlfeld CC, Weisrock DW. (2019) Congruent population genetic patterns but differing depths of divergence for three alpine stoneflies with similar ecology, geographic distributions, and climate change threats. *Freshwater Biology*. 64, 335-347.
14. **Hotaling S**, Quackenbush CR, Bennett-Ponsford J¹, New DD, Rodriguez LA, Tobler M, Kelley JL (2019) Bacterial diversity in replicated hydrogen-sulfide rich springs. *Microbial Ecology*. 77, 559-573.
13. **Hotaling S** (2018) Publishing papers while keeping everything in balance: Practical advice for a productive graduate school experience. *Ideas in Ecology & Evolution*. 11, 35-46.
12. Weisrock DW, Hime PM, Nunziata SO, Jones KS, Murphy MO, **Hotaling S**, Kratovil JD (2018) Surmounting the large-genome problem for genomic data generation in salamanders. In: Population Genomics: Wildlife, Editors: Hohenlohe P, Rajora O. Springer, New York
11. **Hotaling S**, Muhlfeld CC, Giersch JJ, Miller MR, Ali OA, Jordan SP, Luikart G, Weisrock DW (2018) Demographic modeling reveals a history of divergence with gene flow for a glacially-tied stonefly in a changing post-Pleistocene landscape. *Journal of Biogeography*. 45, 304-317
10. **Hotaling S**, Tronstad LM, Bish JC (2017) Macroinvertebrate diversity is lower in high-elevation lakes versus nearby streams: evidence from Grand Teton National Park, Wyoming. *Journal of Natural History*. 51, 1657-1669.
9. **Hotaling S***, Slabach BS*, Weisrock DW (2017) Next-generation teaching: a template for bringing genomic and bioinformatic tools into the classroom. *Journal of Biological Education*. 1, 1-13. *contributed equally
8. Tronstad LM, **Hotaling S** (2017) Long-term trends in aquatic insect bioassessment metrics are not influenced by sampling method: empirical evidence from the Niobrara River. *Knowledge and Management of Aquatic Ecosystems*. 418, 12.
7. **Hotaling S**, Hood E, Hamilton TL (2017) Microbial ecology of mountain glacier ecosystems: biodiversity, ecological connections, and implications of a warming climate. *Environmental Microbiology*. Invited Review. 19, 2935-2948.
6. **Hotaling S***, Finn DS*, Giersch JJ, Weisrock DW, Jacobsen D. (2017) Climate change and alpine stream biology: progress, challenges, and opportunities for the future. *Biological Reviews*. 92, 2024-2045. *contributed equally
5. Giersch JJ, **Hotaling S**, Kovach RP, Jones LA, Muhlfeld CC (2017) Climate-induced glacier and snow loss imperils alpine stream insects. *Global Change Biology*. 23, 2577-2589.
4. Hime PM*, **Hotaling S***, Grewalle RE¹, O'Neill EM, Voss SR, Shaffer HB, Weisrock DW (2016) The influence of locus number and information content on species delimitation: an empirical

test case in an endangered Mexican salamander. *Molecular Ecology*. 25, 5959-5974.

*contributed equally

3. **Hotaling S**, Foley M¹, Lawrence NM¹, Bocanegra J¹, Kappeler P, Yoder A, Weisrock DW (2016) Species discovery and validation in a cryptic radiation of endangered primates: coalescent-based species delimitation in Madagascar's mouse lemurs. *Molecular Ecology*, 25, 2029-2045.

Altmetric score = 249; #5 all-time for *Molecular Ecology* (of 4,034 studies).

Highlighted in *Popular Science*, *The Times of India*, *National Geographic España*.

2. Tronstad LM, **Hotaling S**, Bish JC (2016) Longitudinal change in stream invertebrate assemblages of Grand Teton National Park, Wyoming. *Insect Conservation and Diversity*. 9, 320-331.
1. Jordan S, Giersch JJ, Muhlfeld CC, **Hotaling S**, Fanning L¹, Luikart G (2016) Low genetic diversity and strong subdivision in an endemic alpine stonefly threatened by climate change. *PLOS ONE*. 11, e0157386.

In review (PDFs available upon request; in review or revision as noted)

Elser JJ, Wu C, Gonzalez AL, Shain DH, Smith HJ, Sommaruga R, Williamson CE, Brahney J, **Hotaling S**, Aizen E, Aizen V, Battin T, Camassa R, Dong Z, Feng X, Jiang H, Li J, Lu L, Qu JJ, Ren Z, Tan W, Vanderwall J, Wen J, Wen L, Woods HA, Xiong X, Xu J, Yu G, Yu, J, Saros JE, Harper JT. Rules of life and the fading alpine cryosphere: Impacts on mountain lakes and streams. Submitted, *Proceedings of the National Academy of Sciences*.

Hotaling S, Bartholomaeus TC, Gilbert SG. Rolling stones gather moss: Movement and longevity of moss balls on an Alaskan glacier. In review, *Polar Biology*.

Tronstad LM, Wilmot OJ, Thornburgh D, **Hotaling S**. To composite or replicate: how sampling method and protocol differences alter stream bioassessment metrics. In review, *Environmental Monitoring and Management*.

Hotaling S, Wimberger PH, Kelley JK, Watts HE. Ice worms: a key link between glacier and terrestrial food webs. In revision, *Ecology*.

Hotaling S*, Shah AA*, Dillon ME*, Giersch JJ, Tronstad LM, Finn DS, Kelley JL. Supercooling points of alpine stoneflies (Plecoptera: Nemouridae) vary across species, habitats, and populations in the Rocky Mountains. In revision, *Cryobiology*. *contributed equally

Tronstad LM*, **Hotaling S***, Giersch JJ, Wilmot OJ, Finn DS. Headwaters fed by subterranean ice: potential climate refugia for alpine stream communities? Revision submitted, *Hydrobiologia*. *contributed equally

POPULAR PRESS

PUBLISHED

2019 **Hotaling S**. A Sea of Red in a World of Ice. *Out There Magazine*.

2018 **Hotaling S**. Glacier Ice Worms: An Alpine Enigma. *Out There Magazine*.

2016 **Hotaling S**. Melting Mountains: Glaciers, Climate Change, and Biodiversity in the Teton Range. *Drive: The Magazine from Subaru*.

2013 **Hotaling S**. This Is Our Mountain. *Drive: The Magazine from Subaru*.

RADIO INTERVIEWS

2019 Live interview, "On The Island with Gregor Craigie". CBC Radio Victoria. 19 June 2019.

- 2018 “Scientists race to research stonefly species threatened by climate change.” Wyoming Public Radio.
<http://www.wyomingpublicmedia.org/post/scientists-race-research-stonefly-species-threatened-climate-change#stream/0>
- 2017 “Why study stoneflies? Climate change biologist Scott Hotaling explains.” 89.3 WFPL Louisville.
<https://wfpl.org/why-study-stoneflies-climate-change-biologist-scott-hotaling-explains/>

PHOTOGRAPHY CREDITS

2007-present 75+ photograph credits in regional, national, and international publications including 10 cover images. See my online portfolio at www.lightofthewild.com.

TECHNICAL REPORTS

- 2018 Tronstad LM, Giersch JJ, Hotaling S, Finn DS, Zeglin L, Wilmot OJ, Bixby RJ, Shah AA, Dillon ME. Assessing thermal tolerance of vulnerable alpine stream insects as part of a long-term monitoring project in the Teton Range, Wyoming. University of Wyoming-National Park Service Research Center Annual Report.
- 2017 Tronstad LM, Giersch JJ, **Hotaling S**, Zeglin L, Wilmot OJ, Bixby RJ, Finn DS. Establishing a long-term monitoring network assessing potential climatic refugia in cold alpine streams. University of Wyoming-National Park Service Research Center Annual Report.
- 2017 **Hotaling S**, Tronstad LM, Giersch JJ, Muhlfeld CC, Finn DS, Weisrock DW. Comparative population genetics confirms range-specific lineages of alpine stoneflies imperiled by climate change. United States Fish & Wildlife Service.
- 2016 Tronstad LM, Giersch JJ, **Hotaling S**, Finn DS, Zeglin L, Wilmot OJ, Bixby RJ. A unique “icy seep” aquatic habitat in the high Teton Range: potential refuge for biological assemblages imperiled by climate change. University of Wyoming-National Park Service Research Center Annual Report.
- 2016 Giersch JJ, **Hotaling S**, Kovach RP, Jones LA, Muhlfeld CC. Climate-change-induced glacier and snow loss threatens two endemic mountaintop invertebrates. United States Fish & Wildlife Service.
- 2016 Tronstad LM, **Hotaling S**. Comparing quantitative sampling techniques for aquatic invertebrates at Agate Fossil Beds National Monument. Natural Resource Data Series. National Park Service, Fort Collins, Colorado.
- 2015 Tronstad LM, **Hotaling S**, Giersch JJ, Finn DS, Wilmot OJ, Anderson MD. Characterizing biodiversity of alpine streams in Grand Teton National Park, Wyoming. University of Wyoming-National Park Service Research Center Annual Report, 35, 89-98.

AWARDS and HONORS

- 2019 WoodStoich4 Invitation and Travel Award
- 2019 Joint China-USA Fading Cryosphere Working Group Invitation and Travel Award
- 2018 Best Poster, Washington State University Postdoctoral Showcase
- 2018 Association for the Sciences of Limnology and Oceanography Early Career Travel Award
- 2017, 2018 Travel Awards, NSF Polar Genomics Workshop
- 2016 Runner-up, Best Oral Presentation in Applied Research, Society for Freshwater Science Annual Meeting
- 2015 U. of Kentucky Gertrude Flora Ribble Graduate Fellowship
- 2013 U. of Kentucky College of Arts & Sciences Outstanding TA Award
- 2013 3rd Place Oral Presentation, Kentucky Academy of Sciences Meeting
- 2012-2017 U. of Kentucky Graduate School Travel Awards

2012-2017 U. of Kentucky Department of Biology Ribble Travel Awards
 2012 People's Choice Award, Appalachian Mountain Photography Competition
 2010 Sigma Xi Outstanding Undergraduate Research Award
 2010 Dean's List, North Carolina State University
 2007- 2012 Multiple 1st place awards, NC Wildlife Nature Photography Competition

INVITED SEMINARS

- 2019 "Ecology and evolution of biodiversity in mountain ecosystems." University of Wyoming, Department of Zoology and Physiology, Laramie, WY, USA. *Scheduled for April 2020.*
- 2019 "Ecology and evolution of biodiversity in mountain ecosystems." University of Montana, Division of Biological Sciences, Missoula, MT, USA. *Scheduled for November 2019.*
- 2019 "Small body, big genome: Overcoming DNA input requirements for long-read genome assembly." PacBio Webinar.
- 2019 "Ecology and evolution of biodiversity in mountain ecosystems." University of Puget Sound, Department of Biology, Tacoma, WA, USA.
- 2019 "Being effective in graduate school: A practical guide for publishing papers while maintaining work-life balance." Washington State University, School of Biological Sciences, Pullman, WA.
- 2018 "Molecular ecology of alpine ecosystems from snowfields to rivers." Western Washington University, Department of Biology, Bellingham, WA.
- 2018 "Evolutionary and ecological perspectives on biodiversity at high-elevations and latitudes." Oregon State University, Department of Integrative Biology, Corvallis, OR.
- 2018 "Next-generation teaching: bringing genomic and bioinformatic tools into the classroom." Oregon State University, Department of Integrative Biology, Corvallis, OR.
- 2018 "Evolutionary and ecological perspectives on biodiversity at high-elevations and latitudes." Palouse Ecology, Evolutionary, and Systematics Group, Moscow, ID.
- 2017 "Genetic perspectives on biodiversity from North American alpine streams." Washington State University, Department of Entomology, Pullman, WA.
- 2017 "Humans and the Planet: An Unnatural History." IdeaFestival. Louisville, KY.
 Available online: <https://www.ket.org/episode/KSTAM%20000210/>
- 2017 "Genes in mountain streams: Perspectives on biodiversity from mostly North American headwaters." University of Kentucky, Department of Entomology, Lexington, KY.
- 2017 "Conservation: Biodiversity in a rapidly changing world." Wildlands Social Club, Lexington, KY.
- 2017 "Genes in mountain streams: Perspectives on biodiversity from mostly North American headwaters." Missouri State University, Department of Biology, Springfield, MO.
- 2016 "Genomic perspectives on biodiversity in alpine streams" University of Kentucky Department of Biology Doctoral Candidate Symposium, Lexington, KY.
- 2014 "Climate change in the Crown of the Continent: Glacier recession, genomics, and the fate of alpine species." EcoLunch Series, University of Kentucky Department of Biology, Lexington, KY
- 2013 "Climate change, glacier recession, and the fate of alpine species." Glacier National Park 'Brown Bag' Lecture Series, Glacier National Park, West Glacier, MT
- 2013 "Climate change in mountain systems." Paradise Inn, Mount Rainier National Park, WA.
- 2013 "Climate change in mountain systems." Cougar Rock Campground, Mount Rainier National Park, WA.

- 2013 “Landscape Photography, Finding Your Career Path, and the Impacts of Climate Change on High-Altitude Habitats.” Freshman Honors College Speaker Series, North Carolina State University, Raleigh, NC.

INVITED CONFERENCE TALKS

- 2019 **Hotaling S**, Shah AA, McGowan KL, Tronstad LM, Giersch JJ, Finn DS, Woods HA, Dillon ME, Kelley JL. Linking thermal tolerance to gene expression in alpine stoneflies imperiled my climate change. *Society for Freshwater Science Annual Meeting*, Salt Lake City, UT.
- 2019 **Hotaling S**. Links between biodiversity and the cryosphere in western North America. *Joint China-USA Fading Cryosphere Meeting*, Flathead Lake Biological Station, Polson, MT.
- 2018 **Hotaling S**, Giersch JJ, Tronstad LM, Zeglin L, Bixby R, Shah AA, Dillon ME, Kelley JL, Finn DS. Tracking climate change impacts on Rocky Mountain alpine streams with long-term data. *MtnClim*.
- 2018 **Hotaling S**. EvoEd-IN: Improving evolutionary education in rural communities of the Inland Northwest. *Palouse STEAM Summit*.
- 2018 **Hotaling S**. A century of alpine stream research: Where are we now? *Association for the Sciences of Limnology & Oceanography Annual Meeting*, Victoria, BC.
- 2016 **Hotaling S**, Giersch JJ, Muhlfeld CC, Jordan S, Miller MR, Luikart G, Weisrock DW. Demographic model testing reveals a history of divergence with gene flow for a glacially-tied stonefly in a post-Pleistocene landscape. *Society for Freshwater Science*, Milwaukee, WI.

CONTRIBUTED PRESENTATIONS

* Presenting researcher(s)

Oral

- 2019 Finn DS*, **Hotaling S**. Climate change in high-gradient mountain streams: Searching for refugia in a heterogeneous landscape. *Society for Freshwater Science Annual Meeting*, Salt Lake City, UT.
- 2019 Bixby R*, Hobbs Monika, Finn DS, Tronstad LM, **Hotaling S**. Icy seeps: A potential stronghold for algal stenotherm biodiversity. *Society for Freshwater Science Annual Meeting*, Salt Lake City, UT.
- 2019 Tronstad LM*, **Hotaling S**, Finn DS, Giersch JJ, Zeglin L. Icy seeps may act as a refuge for alpine stream invertebrates: Evidence from the central Rocky Mountains. *Society for Freshwater Science Annual Meeting*, Salt Lake City, UT.
- 2018 Tronstad LM*, **Hotaling S**, Giersch JJ, Finn DS, Wilmot OJ, Shah AA, Dillon ME. Alpine stoneflies of the Teton Range: habitat, distribution, and conservation status. *The Wildlife Society-Wyoming*.
- 2018 **Hotaling S***, Giersch JJ, Tronstad LM, Zeglin L, Bixby R, Shah AA, Dillon ME, Kelley JL, Finn DS. Tracking climate change impacts on Rocky Mountain alpine streams with long-term data. *MtnClim*.
- 2018 Finn DS*, Acosta R, Hampel H, Vázquez R, Tronstad LM, **Hotaling S**, Giersch JJ, Encalada AC. Vulnerability of high-altitude macroinvertebrates to climate change in tropical and temperate zones. *Congreso Ecosistemas Acuáticos Tropicales en al Anthropoceno*.
- 2018 Finn DS*, Tronstad LM, **Hotaling S**, Giersch JJ, Bixby RJ, Zeglin L. Alpine streams fed by subterranean ice as potential climate refugia for temperature-sensitive taxa. *Society for Freshwater Science*.
- 2018 Tronstad LM*, **Hotaling S**, Giersch JJ, Finn DS, Wilmot O. Aquatic invertebrate assemblages living in three alpine stream types in the Teton Range, Wyoming *American Fisheries Society*.

- 2018 **Hotaling S***, Giersch JJ, Finn DS, Tronstad LM, Muhlfeld CC, Weisrock DW. Conservation genomics of an alpine stonefly threatened by climate change. *Society for Integrative & Comparative Biology*.
- 2017 Finn DS*, **Hotaling S**, Tronstad LM, Giersch JJ, Zeglin L. Tetons alpine streams: unsung heroes of diversity and vulnerability. AMK Research Station Summer Seminar Series, Grand Teton National Park, Wyoming.
- 2017 **Hotaling S***, Finn DS, Giersch JJ, Tronstad LM, Muhlfeld CC, Weisrock DW. Conservation genomics of an alpine stonefly threatened by climate change. *Society for Freshwater Science*.
- 2015 Yoder AD*, **Hotaling S**, Foley M, Blanco M, Campbell CR, Larsen PA, Weisrock DW. Finding the trees in the forest: an integrative approach for exploring mouse lemur species diversity. *Mouse Lemur Working Group*.
- 2015 **Hotaling S***, Muhlfeld CC, Giersch JJ, Ali OA, Miller MR, Luikart G, Weisrock DW. Demographic model testing for a glacially-tied stonefly reveals a history of divergence with gene flow linked to a changing post-Pleistocene landscape. *Society for Freshwater Science*.
- 2015 Tronstad LM*, **Hotaling S**, Bish JC. An assessment of longitudinal change in stream invertebrate assemblages of Grand Teton National Park, Wyoming. *Society for Freshwater Science*.
- 2014 **Hotaling S***, Muhlfeld CC, Giersch JJ, Ali OA, Miller MR, Luikart G, Weisrock DW. Using RAD sequencing to illuminate demographic history of the meltwater stonefly (*Lednia tumana*) in Glacier National Park, MT. *Joint Aquatic Sciences Meeting*.
- 2014 **Hotaling S***, Muhlfeld CC, Giersch JJ, Ali OA, Miller MR, Luikart G, Weisrock DW. Using RAD sequencing to illuminate population genomic structure of the meltwater stonefly (*Lednia tumana*) in Glacier National Park, MT. *Midwest Ecology and Evolution Conference*.
- 2013 **Hotaling S***, Muhlfeld CC, Giersch JJ, Ali OA, Miller MR, Luikart G, Weisrock DW. Using RAD-sequencing to illuminate population genomic structure of the meltwater stonefly (*Lednia tumana*) in Glacier National Park, MT. *Kentucky Academy of Science*.
- 2013 **Hotaling S***, Muhlfeld CC, Giersch JJ, Ali OA, Miller MR, Luikart G, Weisrock DW. Illuminating population genetic structure of the meltwater stonefly (*Lednia tumana*) in Glacier National Park, Montana. *UK CEEB Symposium*.
- 2013 **Hotaling S***, Muhlfeld CC, Giersch JJ, Ali OA, Miller MR, Luikart G, Weisrock DW. Using RAD sequencing to illuminate demographic history of the meltwater stonefly (*Lednia tumana*) in Glacier National Park, MT. *Joint Aquatic Sciences Meeting*.
- 2013 **Hotaling S***, Muhlfeld CC, Giersch JJ, Ali OA, Miller MR, Luikart G, Weisrock DW. Using RAD sequencing to illuminate demographic history of the meltwater stonefly (*Lednia tumana*) in Glacier National Park, MT. *Evolution*.
- 2013 Hime PM*, **Hotaling S**, Shaffer HB, Weisrock DW. Coalescent species delimitation using NGS-scale data: a test case in Ambystomatid salamanders. *Evolution*.

Poster

- 2019 Hamilton TL*, Price T, **Hotaling S**, Finn DS, Zeglin L. Diverse microbial communities associated with ice, biofilms, and sediments in the high Teton Range. *Society for Freshwater Science Annual Meeting*, Salt Lake City, UT.
- 2018 **Hotaling S***, Shain DH, Lang SA, Tronstad LM, Weisrock DW, Kelley JL. Population genomics of the glacier ice worm, *Mesenchytraeus solifugus*. *Washington State University Computational Research Symposium*.

- 2018 Lins LSF*, Helou L, **Hotaling S**, Fiston-Lavier AS, Kelley JL. Evolutionary dynamics of the Type III antifreeze protein gene cluster in polar fish. *EVO-WIBO*.
- 2018 **Hotaling S***, Shain DH, Lang SA, Tronstad LM, Weisrock DW, Kelley JL. Population genomics of the glacier ice worm, *Mesenchytraeus solifugus*. *EVO-WIBO*.
- 2018 Lins LSF*, Helou L, **Hotaling S**, Fiston-Lavier AS, Kelley JL. Evolutionary dynamics of the Type III antifreeze protein gene cluster in polar fish. *Washington State University Showcase*.
- 2018 **Hotaling S***, Shain DH, Lang SA, Tronstad LM, Weisrock DW, Kelley JL. Population genomics of the glacier ice worm, *Mesenchytraeus solifugus*. *WSU Postdoctoral Showcase*.
- 2016 Foley ME*, **Hotaling S**, Foley ME, Zeglin L, Giersch JJ, Finn DS, Tronstad LM, Muhlfeld CC, Weisrock DW. Microbial diversity of alpine streams: a North American perspective. *Evolution*.
- 2016 Lawrence N*, **Hotaling S**, Weisrock DW. Coalescent-based species delimitation using Bayesian statistical analysis in Madagascar's mouse lemurs. *University of Kentucky Showcase of Undergraduate Scholars*.
- 2016 Dapore Z*, Elder T*, Pina J*, Redden C*, Grau E, Foley M, **Hotaling S**, Weisrock W. A comparative assessment of prokaryotic diversity among alpine stream environments within Grand Teton National Park, Wyoming. *U. of Kentucky Showcase of Undergraduate Scholars*.
- 2016 Price K*, Shen C*, Davis-Peterson I*, Watts A*, Grau E, Foley M, **Hotaling S**, Weisrock W. A comparative assessment of prokaryotic diversity among alpine stream environments within Glacier National Park, Montana. *University of Kentucky Showcase of Undergraduate Scholars*.
- 2013 Foley M*, Bocanegra J, **Hotaling S**, Blanco M, Weisrock DW. Using genetic markers to resolve the identity of a newly-discovered mouse lemur population in Madagascar. *University of Kentucky Undergraduate Research Symposium*.
- 2010 **Hotaling S***, Fields WR, Haddad NH. Using individual photographs and multivariate analysis to identify individual Eastern tiger salamanders. *North Carolina State University Undergraduate Research Symposium*.

MENTORSHIP

In addition to leading undergraduate research course (BIO 199, see below) and developing teaching tools designed to give students research experience, I have closely mentored a number of undergraduate and graduate students. I have published 4 manuscripts with 7 undergraduate co-authors.

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|--------------------|---|
| Angela Jones | I helped teach Angela a variety of computational and laboratory skills. We have a co-authored manuscript in preparation. Angela is currently an undergraduate at the University of Kentucky and received the prestigious Barry M. Goldwater undergraduate scholarship. |
| Kelly Sovacool | I mentored Kelly in modern species delimitation and computational techniques. Kelly is currently a PhD student at the University of Michigan. We have a co-authored manuscript in preparation. |
| Nicolette Lawrence | I advised Nicolette in a variety of molecular skills including PCR. We have co-authored one manuscript. Nicolette is currently an M.S. student at Bay Path University. |
| Richard Grewalle | I helped Richard learn how to collect multi-locus genetic data in the laboratory and advised him in computational tools relating to genome assembly and species delimitation. Richard and I co-authored one manuscript together. Richard is current a PhD student at Stanford University. |
| Mary Foley | I mentored Mary in a variety of molecular tools relating to both systematic and microbiological research. Mary and I have co-authored two manuscripts together. Mary is currently a PhD student at the University of Kentucky. |

TEACHING EXPERIENCE and INNOVATION

Innovation: In collaboration with Drs. David Weisrock and Brittany Slabach, I led an effort to develop a course-based undergraduate research experience (“CURE”) in microbial ecology, genomics, and bioinformatics. We implemented this CURE in 2014 and it has remained in use annually since. Complete details are reported in Hotaling *et al.*, (2017) *Journal of Biological Education*.

- 2017 Evolution (TA: spring semester). University of Kentucky. My role was to revise existing course materials and develop new lessons for the course recitation under the supervision of the course coordinator (Dr. Madhu Srinivisan).
- 2016 Honors Introductory Biology (TA: fall semester). University of Kentucky.
- 2016 Scholars Biology Research (co-instructor). University of Kentucky. I guided 11 students in an undergraduate research experience studying stream microbial.
- 2015 Principles of Genetics (TA: spring semester). University of Kentucky.
- 2014 Honors Introductory Biology (TA: fall semester). University of Kentucky.
- 2014 Principles of Genetics (TA: spring semester). University of Kentucky.
- 2013 Principles of Genetics (TA: fall semester). University of Kentucky.
- 2013 Introduction to Biology (TA: spring semester). University of Kentucky.
- 2012 Introduction to Biology (TA: fall semester). University of Kentucky.
- 2012 Introduction to Biology (TA: spring semester). University of Kentucky.
- 2011 Introduction to Biology (TA: fall semester). University of Kentucky.
- 2009-2016 Led nature photography tours which included extensive backcountry travel in harsh conditions with natural history and photo instruction.

OUTREACH and SERVICE

- 2019-present Member, Early Career Development Committee, Society for Freshwater Science
- 2019 Grant Reviewer, Universidad de Las Américas, Direccion de Investigacion
- 2019 Session Organizer & Chair, “Climate change in high-gradient mountain streams,” Society for Freshwater Science Annual Meeting, Salt Lake City, UT.
- 2018-present Founder, Evolutionary Education in the Inland Northwest (“EvoEd-IN”), a network to connect high school teachers with biologists to broaden exposure to evolutionary research in rural communities.
- 2018 Expert contributor, Ask Dr. Universe blog, Washington State University.
- 2017-present Founder/Coordinator, Palouse Science Happy Hour
- 2016 President, University of Kentucky Biology Graduate Student Association.
- 2016 Member, U. of Kentucky Dept. of Biology Chair Re-Appointment Committee.
- 2016 Session Organizer, Society for Freshwater Science Annual Meeting.
- 2015 Session Chair, Society for Freshwater Science Annual Meeting.
- 2014-2017 Founder/Coordinator, University of Kentucky Science Happy Hour
- 2014-present **Reviewer:** *Biological Journal of the Linnean Society, Diversity and Distributions, Freshwater Biology, Freshwater Science, GigaScience, Global Change Biology, Insects, Journal of Biogeography, Journal of Biological Education, Molecular Ecology, Molecular Ecology Resources, PLOS ONE, Royal Society Open Science, Systematic Biology*
- 2007-present Numerous photographs donated to conservation and outreach causes.
- 2007-2013 Gave 14 lectures on landscape photography, natural history, and global change biology to audiences across the United States.