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EDUCATION and APPOINTMENTS

Updated: February 2024

2022-present	Assistant Professor and Climate Resiliency Extension Specialist , Department of Watershed Sciences, Utah State University, Logan, UT
2017-2022	Postdoctoral Research Associate , School of Biological Sciences, Washington State University, Pullman, WA
2011-2017	Ph.D. , Department of Biology, University of Kentucky, Lexington, KY
2004-2010	B.S. , Zoology, North Carolina State University, Raleigh, NC

GRANTS and FELLOWSHIPS

Significant funding:

2024-2026	Canyonlands Natural History Association (\$24,756; PI)
2023-2025	Utah Agricultural Experiment Station Public Lands Initiative (\$59,940; PI)
2023-2025	ILWA/Utah Water Lab (\$14,971, PI). \$19,989 in matching funds secured from Utah Division of Water Resources.
2022-2025	USDA, Secure Water Future (\$10 million; co-PI), \$261,657 for my role
2022-2024	Teton Conservation District (\$18,000; co-PI)
2021-2022	NSF, Partnerships for Enhanced Engagement of Research (\$69,850); Co-wrote and developed with PIs P. Frandsen and T. Dorji
2020-2022	Seattle City Light Research Grant (\$44,683; co-PI)
2019-2022	NSF, Office of Polar Programs (\$825,214); Co-wrote/developed with PI J. Kelley
2018	Antarctic Science International Bursary Research Grant (\$8,500; PI)
2016	Wyoming Governor's Office Research Grant (\$11,000, co-PI)
2015-2022	University of Wyoming-National Park Service Research Grants (\$39,500; spread over eight awards; all co-PI)
2015	University of Kentucky Gertrude Flora Ribble Graduate Fellowship (\$23,249; PI)

Other funding:

2010-2023	21 awards totaling \$35,585 (all PI or co-I)
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PEER-REVIEWED PUBLICATIONS

Summary: 59 publications (34 as lead author) with 31 student co-authors; **Mean impact factor:** 6.5
[Google Scholar](https://scholar.google.com/citations?user=...): >1825 total citations (~540 citations in 2023), *h*-index = 22, *i10*-index = 36

In review

†undergraduate student; ‡graduate student

Asante CK, Hansen C, Hardy DR, **Hotaling S***. African contributions are missing from cryosphere research in Africa and worldwide. In review, *Nature Geoscience*. *corresponding author

Williamson C, Gabriella D, Berry N, Olson M, Palen W, Clauser A, Kessler K, Sanders R, Jeffrey W, Connelly S, **Hotaling S**, Overholt E. Ecological implications of the invisible: Variation in UV

damage and repair in freshwater organisms. In review, *Frontiers in Ecology and the Environment*.

Tronstad LM, Oleksy IA, Preston DL, Gianniny G, Cook K[†], Holley A[†], Farnes P, Koel T, **Hotaling S**. Despite a century of warming, increased snowfall has buffered the ice phenology of North America's largest high-elevation lake against climate change. In revision, *Environmental Research Letters*.

Jacobsen D, Catalan J, Füreder L, Schmeller D, Sommaruga R, Ventura M, **Hotaling S**, Lencioni V, Cantonatti M, Wang J, Robinson C, de Mendoza G, Gacia E, Tartarotti B, Cogalniceanu D, Filip M, Scotti A, Battin T, Mitchell E, Urbach D. Biodiversity in alpine waters: features, threats, needs, and challenges. In review, *Biological Reviews*.

Jorgenson K[‡], **Hotaling S**, Tronstad LM, Finn DS, Collins S. Trophic flexibility and hydrology structure alpine stream food webs: Implications for a fading cryosphere. In revision, *Ecology*.

Tronstad LM, Lindsteadt A[‡], **Hotaling S**. Integrating historical with contemporary data for Narrow-foot Hygrotus Diving beetle (*Hygrotus diversipes*): perspectives studying invertebrates of management and conservation concern. In review, *Western North American Naturalist*.

Published

59. **Hotaling S**, Boersma JP[‡], Paprocki NA[‡], Anderson A[‡], Whiles L[‡], Ogburn L[†], Kasper S[†], White C, Thornton DJ, Wimberger P. (2023) Human and wildlife use of mountain glacier ecosystems. *Northwest Science*.
58. Sproul JS*, **Hotaling S***, Heckenhauer J*, Powell A[†], Larracuenta AM, Kelley JK, Pauls SU, Frandsen PB. (2023) Repetitive elements in the era of biodiversity genomics: Insights from 600+ insect genomes. *Genome Research*. *contributed equally
57. Franco-Santos R, Falkenberg L, **Hotaling S**, Peck. (2023) Meeting the Raelyn Cole Fellows at the 2023 ASLO Aquatic Sciences Meeting: Perspectives on professional development, writing, and finding your academic superpower. *Limnology and Oceanography Bulletin*.
56. Frandsen PB, **Hotaling S**, Powell A[†], Heckenhauer JB, Kawahara, AY, Baker RH, Hayashi CY, Rios-Touma B, Holzenthal R, Pauls SU, Stewart RJ. (2023) Uncovering hidden genetic diversity: allelic resolution of insect and spider silk genes. *PNAS*.
55. Bell CM[‡], Tronstad LM, **Hotaling S**. (2023) Evaluating bee sampling protocols: vane traps, bee cups, and netting are not equal. *Agricultural and Forest Entomology*.
54. **Hotaling S**, Wilcox E, Heckenhauer J, Stewart RJ, Frandsen P. (2023) Realizing the promise of biodiversity genomics with highly accurate long reads. *BMC Genomics*.
53. Brooks WE, Boersma JP, Paprocki NA, Wimberger P, **Hotaling S**. (2023) Community science for enigmatic ecosystems: Using eBird to quantify avian biodiversity on glaciers and snowfields. *Journal of Field Ornithology*.
52. Zhang L, Delgado-Baquerizo M, **Hotaling S**, Chu Haiyan, Sun X, Xu Y. (2023) Habitat determines the vulnerability of the glacier microbiome to global environmental change. *Functional Ecology*.
51. Shah AA*, **Hotaling S***, Lapsansky A[‡], Malison RL, Birrell JH[‡], Keeley T[†], Giersch JJ, Tronstad LM, Woods HA. (2023) Warming undermines emergence success in a threatened alpine stonefly: a multi-trait perspective on vulnerability to climate change. *Functional Ecology*. *contributed equally
50. **Hotaling S**, Price TL[‡], Hamilton TL. (2022) Summer dynamics of microbial diversity on a mountain glacier. *mSphere*.

49. **Hotaling S**, Deemer BR, Poulson-Ellestad K, Falkenberg LJ. (2022) Taking steps to address inequities in open-access publishing through an early career publication honor. *Limnology & Oceanography Letters*.
48. Kawahara AY, Storer CG, Markee A, Heckenhauer J, Powell A, Plotkin D, **Hotaling S**, Cleland TP, Dikow RB, Dikow T, Kuranishi RB, Messcher R, Pauls SU, Stewart RJ, Tojo K, Frandsen PB. (2022) Long-read HiFi sequencing correctly assembles repetitive heavy fibroin silk genes in new moth and caddisfly genomes. *GigaScience*.
47. **Hotaling S**, Desvignes T, Sproul JS, Lins LSF, Kelley JK. (2022) Pathways to polar adaptation in fishes revealed by long-read sequencing. *Molecular Ecology*.
46. Devlin J[‡], Unfried L[‡], Lecheta M, McCabe E, Gantz JD, Kawarasaki Y, Elnitsky M, **Hotaling S**, Michel A, Convey P, Hayward S, Teets N. (2022) Simulated winter warming negatively impacts survival of Antarctica's only endemic insect. *Functional Ecology*.
45. Green MG[‡], Tronstad LM, Giersch JJ, Shah AA, Fallon CE, Blevins E, Kai TR[†], Muhlfeld CC, Finn DS, **Hotaling S**. (2022) Stoneflies in the genus *Lednia* (Plecoptera: Nemouridae): sentinels of climate change impacts on mountain stream biodiversity. *Biodiversity and Conservation*.
44. **Hotaling S**, Kelley JL, Frandsen PB. (2021) Towards a genome sequence for every animal: where are we now? *PNAS*.
43. Marks RA, **Hotaling S**, Frandsen PB, VanBuren R. (2021) Representation and participation across 20 years of plant genome sequencing. *Nature Plants*.
42. **Hotaling S***, Borowiec ML*, Lins LSF, Desvignes T, Kelley JL. (2021) The biogeographic history of eelpouts and related fishes: linking phylogeny, environmental change, and patterns of dispersal in a globally distributed fish group. *Molecular Phylogenetics and Evolution*. 162, 107211. *contributed equally
41. Everson KM, Gray LN, Jones AG[†], Lawrence NM[†], Foley ME[†], Sovacool KL[†], Kratovil JD, **Hotaling S**, Hime PM, Storfer A, Parra-Olea G, Aguilar-Miguel X, O'Neill EM, Zambrano L, Shaffer HB, Weisrock DW. (2021) Life history strategy does not reflect genetic differentiation in the tiger salamander species complex. *PNAS*. 118, e2014719118.
40. Brighenti S*, **Hotaling S***, Finn DS, Fountain AG, Hayashi M, Herbst D, Saros JE, Tronstad LM, Millar CI. (2021) Rock glaciers and related landforms: overlooked climate refugia for mountain biodiversity. *Global Change Biology*. 27, 1504-1517. *contributed equally
39. **Hotaling S**, Sproul JS, Heckenhauer J, Powell A[†], Larracuenta AM, Pauls SU, Kelley JL, Frandsen P. (2021) Long-reads are revolutionizing 20 years of insect genome sequencing. *Genome Biology and Evolution*. DOI: 10.1093/gbe/evab138
38. **Hotaling S**, Lutz S, Dial RJ, Anesio AM, Benning LG, Fountain AG, Kelley JL, McCutcheon J, Skiles SM, Takeuchi N, Hamilton TL. (2021) Biological albedo reduction on ice sheets, glaciers, and snowfields. *Earth-Science Reviews*. 220, 103728.
37. **Hotaling S***, Shah AA*, Dillon ME, Giersch JJ, Tronstad LM, Finn DS, Woods HA, Kelley JL. (2021) Cold tolerance of mountain stoneflies (Plecoptera: Nemouridae) from the high Rocky Mountains. *Western North American Naturalist*. 81, 5. *contributed equally
36. Deemer BD*, **Hotaling S***, Poulson-Ellestad K, Falkenberg LJ, Cloern JE, Soranno PA. (2021) Engaging the next generation of editorial talent through a hands-on fellowship model. *Ecology Letters*. DOI: 10.1111/ele.13758. *contributed equally
35. Elser JJ, Wu C, Gonzalez AL, Shain DH, Smith HJ, Sommaruga R, Williamson CE, Brahney J, **Hotaling S**, Vanderwall J, Aizen E, Aizen V, Battin T, Camassa R, Dong Z, Feng X, Jiang H, Li

- J, Lu L, Qu JJ, Ren Z, Tan W, Wen J, Wen L, Woods HA, Xiong X, Xu J, Yu G, Yu, J, Harper JT, Saros JE. (2020) Key rules of life and the fading alpine cryosphere: Impacts in alpine lakes and streams. *Global Change Biology*. DOI: 10.1111/gcb.15362
34. Muhlfeld CC, Cline TJ, Giersch JJ, Peitzsch E, Florentine C, Jacobsen D, **Hotaling S**. (2020) Specialized meltwater biodiversity persists despite widespread deglaciation. *PNAS*. 117, 12208-12214.
 33. Tronstad LM*, **Hotaling S***, Giersch JJ, Wilmot OJ, Finn DS. Headwaters fed by subterranean ice: potential climate refugia for alpine stream communities? (2020) *Western North American Naturalist*. 80, 11. *contributed equally
 32. **Hotaling S**, Kelley JL, Frandsen PB. (2020) Aquatic insects are dramatically underrepresented in genomic research. *Insects*. DOI: 10.3390/insects11090601
 31. Birrell JH[‡], Shah AA, **Hotaling S**, Giersch JJ, Williamson CE, Jacobsen D, Woods HA. (2020) Insects in high-elevation streams: life in extreme environments imperiled by climate change. *Global Change Biology*. DOI: 10.1111/gcb.15356
 30. **Hotaling S***, Shah AA*, McGowan KL[‡], Tronstad LM, Giersch JJ, Finn DS, Woods HA, Dillon ME, Kelley JL. (2020) Mountain stoneflies may tolerate warming streams: evidence from organismal physiology and gene expression. *Global Change Biology*. 26, 5524-5538. *contributed equally
 29. **Hotaling S**. Simple rules for concise scientific writing. (2020) *Limnology & Oceanography Letters*. DOI: 10.1002/lol2.10165
**Highest Altmetric score (965) and most downloaded article all-time for Limnology & Oceanography Letters (60,000+ downloads since publication in June 2020).*
 28. Tronstad LM, Wilmot OJ, Thornburgh D, **Hotaling S**. (2020) To composite or replicate: how sampling method and protocol differences alter stream bioassessment metrics. *Environmental Monitoring and Management*. 192, 1-15.
 27. Deemer BR, **Hotaling S**, Poulson-Ellestad K, Falkenberg LJ, Cloern JE. (2020) Virtual networking between editors and early career researchers: benefits, silver linings, and lessons learned. *Limnology and Oceanography Bulletin*. DOI: 10.1002/lob.10407.
 26. **Hotaling S**, Bartholomaeus TC, Gilbert SG. (2020) Rolling stones gather moss: Movement and longevity of moss balls on an Alaskan glacier. *Polar Biology*. 43, 735-744.
**Highest Almetric score all-time (931) for Polar Biology. Featured on NPR's "Morning Edition" national radio show.*
 25. Shah AA, Dillon ME, **Hotaling S**, Woods HA. (2020) High elevation insect communities face shifting ecological and evolutionary landscapes. *Current Opinion in Insect Science*. 41, 1-6.
 24. Stibal M, Bradley JA, Edwards A, **Hotaling S**, Zawierucha K, Cameron KA, Kohler TJ, Mikucki JA, Lutz S, Šabacká M, Anesio AM, Rosvold J. (2020) Glacial ecosystems are essential to understanding biodiversity responses to glacier retreat. *Nature Ecology & Evolution*. 4, 686-687.
 23. Poulson-Ellestad K, **Hotaling S**, Falkenberg L, Soranno P. (2020) Illuminating a black box of the peer review system: demographics, experiences, and career benefits of associate editors. *Limnology and Oceanography Bulletin*. 29, 11-17.
 22. **Hotaling S**, Wimberger PH, Kelley JL, Watts HE. (2020) Macroinvertebrates on glaciers: a key resource for terrestrial food webs? *Ecology*. 101, e02947.

21. Jordan S, Hand BK, **Hotaling S**, DelVecchia A, Malison R, Nissley C, Stanford J, Luikart G. (2020) Genomic data reveal similar genetic differentiation in aquifer species with different dispersal capacities and life histories. *Biological Journal of the Linnean Society*. 129, 315-322.
20. 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 and all earlier career researchers
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*. 40, 362-369.
17. **Hotaling S**, Foley ME†, 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 J†, 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. 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 RE[†], 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 M[†], Lawrence NM[†], Bocanegra J[†], 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.
**5th highest Altmetric score (248) all-time for Molecular Ecology.*
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 L[†], Luikart G (2016) Low genetic diversity and strong subdivision in an endemic alpine stonefly threatened by climate change. *PLOS ONE*. 11, e0157386.

SELECTED POPULAR PRESS

TV SERIES

- 2023 "Lift The Ice" (global) – Season 1, Episode 2: "The Ice is Alive". Premiered on April 20, 2023. Producer: Beach House Pictures. Aired on June 27, 2023. Available on [Curiosity Stream](#).
- 2022 "The Earth Unlocked (global) – Season 1, Episode 7: "Deep Freeze". Premiered on July 17, 2022 on *The Weather Channel*. Producer: The Weather Channel.

TV INTERVIEWS

- 2023 KUTV (state/regional) – "[Watermelon snow turning Utah mountains red and pink](#)." Aired on June 27, 2023.
- 2023 ABC4 Utah (state/regional) – "[Watermelon snow and its effect on Utah's water supply](#)." Aired on February 20, 2023.

PRINT, RADIO, AND PODCAST INTERVIEWS

- 2023 Utah Public Radio, "[Extension Education highlight: Record snowfall](#)." Aired on July 13, 2023.
- 2021 National Geographic, "[Meet the ice worm](#)" by Douglas Main. August 2021.
- 2021 NPR "Morning Edition" segment: "[It's summer, and that means the mysterious return of glacier ice worms](#)." July 2021.
- 2021 Podcast episode: "[The Mysterious Ice Worm](#)", NPR's *Short Wave*. July 2021.
- 2019 Live interview, "On The Island with Gregor Craigie". CBC Radio Victoria. June 2019.
- 2018 "[Scientists race to research stonefly species threatened by climate change](#)." Wyoming Public Radio.
- 2017 "[Why study stoneflies? Climate change biologist Scott Hotaling explains](#)." 89.3 WFPL Louisville.

ARTICLES AUTHORED

- 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.*

PHOTOGRAPHY CREDITS

2007-present 75+ photograph credits in regional, national, and international publications including 10 cover images.

WORKING GROUPS

- 2022-present Intermountain West Rock Glacier Working Group
Leader: Matthew Morriss, Utah Geological Survey
Membership: ~10 members from academic institutions, state agencies, and federal agencies.
- 2021-present Rosy-Finch Working Group
Leader: Janice Gardner, Sageland Collaborative
Membership: 45 members from academic institutions, non-profits, state agencies and federal agencies.
- 2020-2022 Elevation Dependent Climate Change Working Group
Leader: Nicholas Pepin, University of Portsmouth
Membership: ~100 members are included in from institutions around the world (but primarily in Europe/USA).
- 2020-present Teton Climate Change Working Group
Leader: Scott Hotaling, Utah State University
Membership: 7 members from academic institutions and the National Park Service.
- 2019-2021 USA-China Fading Cryosphere Working Group
Leader: Jim Elser, University of Montana
Membership: 26 members. Primarily from academic institutions and the USGS.

TECHNICAL REPORTS

- 2022 Tronstad LM, Tronstad B, Lindsteadt A, **Hotaling S.** Are Western Glacier Stoneflies (*Zapada glacier*) more widely distributed than previously known in Wyoming alpine streams? Report prepared for Region 2 of the U.S. Forest Service.
- 2020 Tronstad LM, **Hotaling S**, Jorgenson K, Price T, Weld S, Collins S, Hamilton TL, Bixby RJ, Finn DS. Understanding food web structure in high-elevation streams of the Teton Range. University of Wyoming-National Park Service Research Center Annual Report.
- 2019 Tronstad LM, Giersch JJ, **Hotaling S**, Shah AA, Zeglin LH, Bixby RJ, HA Woods, DS Finn. Long-term alpine stream monitoring in the Teton Range: Investigating multi-year patterns and thermal physiology. University of Wyoming-National Park Service Research Center Annual Report.
- 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 **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.
- 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.

- 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 (both years)
- 2016 Runner-up, Best Oral Presentation in Applied Research, Society for Freshwater Science Annual Meeting
- 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

- 2024 Brigham Young University, Department of Biology. Provo, UT, USA. *Planned*
- 2024 Utah State University, Department of Watershed Sciences, Logan, UT, USA. *Planned*
- 2023 Oregon State University, Department of Integrated Biology. *Planned*
- 2023 Utah Division of Water Resources, Salt Lake City, UT, USA.
- 2023 Greater Yellowstone Ecosystem Climate Adaptation Working Group. Virtual.
- 2023 Powder Mountain Sky Lodge, Eden, UT, USA.
- 2023 TIMELY Cryosphere Seminar. Virtual.
- 2023 UDWR-USU Brown Bag Lecture, Logan, UT, USA.
- 2022 University of Wyoming, Department of Zoology and Physiology, Laramie, WY, USA.
- 2022 National Snow and Ice Data Center. Boulder, CO, USA. Virtual.
- 2021 Simon Fraser University, School of Environmental Science. Burnaby, BC, Canada. Virtual.

- 2021 University of Washington, School of Aquatic and Fishery Sciences, Seattle, WA, USA. Virtual.
- 2020 University of British Columbia, Comparative Physiology Group, Vancouver, BC, Canada. Virtual.
- 2020 Western Kentucky University, Department of Biology, Bowling Green, KY, USA. *Canceled due to Covid-19.*
- 2020 University of Maine, School of Biology and Ecology, Orono, ME, USA. Virtual.
- 2019 University of Montana, Division of Biological Sciences, Missoula, MT, USA.
- 2019 Washington State University, College of Veterinary Medicine, Pullman, WA, USA.
- 2019 Pacific Biosciences Webinar.
- 2019 University of Puget Sound, Department of Biology, Tacoma, WA, USA.
- 2019 Washington State University, School of Biological Sciences, Pullman, WA, USA.
- 2018 Western Washington University, Department of Biology, Bellingham, WA, USA.
- 2018 Oregon State University, Dept. of Integrative Biology, Corvallis, OR, USA. *Research-focused
- 2018 Oregon State University, Dept. of Integrative Biology, Corvallis, OR, USA. *Teaching-focused
- 2018 Palouse Ecology, Evolutionary, and Systematics Group, Moscow, ID, USA.
- 2017 Washington State University, Department of Entomology, Pullman, WA, USA.
- 2017 IdeaFestival. Louisville, KY, USA. Online: <https://www.ket.org/episode/KSTAM%20000210/>
- 2017 University of Kentucky, Department of Entomology, Lexington, KY, USA.
- 2017 Wildlands Social Club, Lexington, KY, USA.
- 2017 Missouri State University, Department of Biology, Springfield, MO, USA.
- 2016 U. of Kentucky Department of Biology Doctoral Candidate Symposium, Lexington, KY, USA.
- 2014 EcoLunch, University of Kentucky, Department of Biology, Lexington, KY, USA.
- 2013 Glacier National Park 'Brown Bag' Series, Glacier National Park, West Glacier, MT, USA.
- 2013 Paradise Inn, Mount Rainier National Park, WA, USA.
- 2013 Cougar Rock Campground, Mount Rainier National Park, WA, USA.
- 2013 Freshman Honors College Speaker Series, North Carolina State University, Raleigh, NC, USA.

INVITED CONFERENCE TALKS

- 2023 Assoc. for the Sciences of Limnology & Oceanography Annual Meeting, Mallorca, Spain.
- 2023 "Spotlight for the Most Impactful Articles," Assoc. for the Sciences of Limnology & Oceanography Annual Meeting, Mallorca, Spain.
- 2022 Loewe-TBG, Translational Biodiversity Genomics. Virtual.
- 2020 Plant & Animal Genome XXVIII. San Diego, CA, USA.
- 2019 Society for Freshwater Science Annual Meeting. Salt Lake City, UT, USA.
- 2019 China-USA Fading Cryosphere Meeting. Flathead Lake Biological Station, Polson, MT, USA.
- 2018 MtnClim Bi-Annual Meeting. Gothic, CO, USA.
- 2018 Palouse STEAM Summit, Pullman, WA, USA.
- 2018 Assoc. for the Sciences of Limnology & Oceanography Annual Meeting, Victoria, BC, Canada.
- 2016 Society for Freshwater Science Annual Meeting, Milwaukee, WI, USA

CONTRIBUTED PRESENTATIONS

Oral

- 2013-2023 12 oral presentations at local, regional, and international conferences including *Evolution*, *Society for Freshwater Science*, and *Association for the Sciences of Limnology & Oceanography*
- 2013-2023 14 co-authored oral presentations at local, regional, and international conferences including *Evolution*, *Ecological Society of America*, and *American Geophysical Union*, *Society for Freshwater Science*

Poster

- 2010-2023 5 posters at local and regional conferences [see example conferences above].
- 2013-2019 8 co-authored posters at local, regional, and international conferences [see example conferences above].

GRADUATE STUDENT TRAINING and COMMITTEES

Graduate students (Advisor or co-advisor):

Anna Shampain	Ph.D., in progress	Utah State U., Dept. of Watershed Sciences
Josh Vollmer	M.S., in progress	Utah State U., Dept. of Watershed Sciences

Student committees:

Adrienne Stanley	Ph.D., in progress	Utah State U., Dept. of Watershed Sciences
Anna Lamborn	M.S., in progress	Utah State U., Plants, Soils, and Climate Dept.
Gabriela Sancho Juarez	Ph.D., in progress	Utah State U., Dept. of Watershed Sciences
Shelby Sawyer	M.S., in progress	Utah State U., Dept. of Watershed Sciences
Karen Jorgenson	M.S., 2022	U. of Wyoming, Dept. of Zoology and Physiology

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*.

- 2023 Guest Lecture, *Microbiology*, Utah State University.
- 2023 Guest Lecture, *Climate Adaptation*, University of Wyoming.
- 2023 Guest Lecture, *Aquatic Ecology*, University of Idaho.
- 2023 Guest Lecture, *Big Ideas in Watershed Sciences*, Utah State University.
- 2022 Guest Lecture, *2nd-Year Climate Adaptation Science Colloquium*, Utah State University.
- 2022 Guest Lecture, *Course: Natural Hazards and Society*, Utah State University.
- 2021 Guest Expert, *Course: Extreme Environments*, Carleton University.
- 2021 Guest Lecture on “*Science Writing*”, *Course: Population Genetics Graduate Seminar*, University of Montana.
- 2020 Guest Lecture, *Course: Climate Change Biology*, Roosevelt College. *Canceled due to Covid-19*.
- 2020 Guest Lecture, *Course: Professional Communication in Biology*, Washington State University.
- 2018-2022 Guest Lectures (x5) on *Climate Change Biology and Conservation*, *Course: Ecology*, University of Iowa. *Next lecture planned for April 2022*.

- 2017 Evolution (TA: spring semester). University of Kentucky. I revised existing course materials and developed new lessons 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

- 2023-present Co-chair, Consortium for Integrated Research in western Mountains (CIRMOUNT)
- 2023-2024 Search committee member, Assistant Professor position, Department of Watershed Sciences
- 2023-present Member, QCNR Undergraduate Research Committee
- 2023-present Chair/organizer, *Department of Watershed Sciences "WATS Jobs" Group* – Bi-monthly professional development group for postdocs and finishing graduate students.
- 2022-present Associate Editor, *Frontiers in Climate*
- 2021-present Associate Editor, *Limnology & Oceanography Letters*
- 2019-present In 2019, I helped create the *Limnology & Oceanography Letters* Early Career Publication Honor to provide a means for early career researchers, and particularly those from underrepresented groups, to publish their work in an open access journal. We solicited applications in summer 2020 and 13 honorees were awarded in September 2020. In 2021, we awarded six additional honorees. If manuscripts are accepted for publication in *Limnology & Oceanography Letters*, open-access fees will be covered by the award (a \$2500 value per honoree). As of January 2022, eight open-access publications from this honor have been published. Selections have been made for a 2nd round of honorees with publications expected in 2023.
- 2020 External Referee, The Rufford Foundation
- 2020 External Grant Reviewer, Swiss National Science Foundation, Division of Biology and Medicine
- 2019-present Member, Early Career Development Committee, Society for Freshwater Science
- 2019 External 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 External manuscript reviewer, U.S. Geological Survey
- 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:** *Arctic, Antarctic, and Alpine Research; Biodiversity and Conservation; Biological Journal of the Linnean Society; Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology; Current Biology; Diversity and Distributions; Ecology; Ecology & Evolution; Ecosphere; Environmental Microbiology; Environmental Microbiome; Food Webs; Freshwater Biology; Freshwater Science; Frontiers in Climate; Frontiers in Earth Science; G3: Genes, Genomes, Genetics; GigaScience; Global Change Biology; Insects; Insect Systematics and Diversity; iScience; Journal of Biogeography; Journal of Biological Education; Journal of Geophysical Research: Biogeosciences; Journal of Insect Conservation; Limnology & Oceanography; Limnology & Oceanography Letters; Molecular Ecology; Molecular Ecology Resources; Nature Ecology & Evolution; PLoS Genetics; PLoS ONE; Proceedings of the National Academy of Sciences; River Research and Applications; 3 Science of the Total Environment; Systematic Biology; The Holocene; Wellcome Open Research*
- 2007-present Many 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.