MERYL C. MIMS

University of Washington

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2011 - 2015

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EDUCATION

Ph.D., School of Aquatic and Fishery Sciences	2011 2010
University of Washington Master of Science, School of Aquatic and Fishery Sciences	2008 - 2010
Georgia Institute of Technology Bachelor of Science in Biology with High Honors	2003 - 2007
GRANTS AWARDED Lead Pl v	unless otherwise noted
VT Institute for Creativity, Arts, and Technology SEAD Grant, 2022-2023 "Acoustic Invasion: Multi-sensory Documentation and Measurement of Invasive S _I Impacts to Native Soundscapes"; Co-PI; \$16,500 to Mims Lab	\$23,000 pecies
US. Forest Service Participating Agreement, 2021-2025 "Simulating Metapopulations & Removal Tactics for Strategic Invasives Manage."	\$47,000 ment"
US. Fish and Wildlife Service Science Applications Award, 2020-2023 "Simulating Metapopulations & Removal Tactics for Strategic Invasives Manage."	\$474,550 ment"
U.S. Geological Survey Award, 2020-2022 "Assessing Fish Species Vulnerability to Streamflow and Water Temperature in t Pacific Northwest"; Co-PI; \$161,831 awarded total	\$18,812 The
U.S. Geological Survey Award, 2019-2022 "Scaling Climate Change Vulnerability: How Do Assessment Models Compare?"	\$300,000
National Science Foundation Macrosystems Biology Award, 2019-2023 "StreamCLIMES: Scaling Climate Connectivity and Communities in Streams" Co-PI; \$3.1 million awarded total	\$476,184
VT Global Change Center Faculty Seed Grant, 2018-2019 "Scaling Climate Change Vulnerability from Individuals to Species: How do Assessment Models Compare?"; Lead PI; \$12,884 to Mims Lab	\$19,810
U.S. Geological Survey Funding Opportunity, 2017-2018 "Rarity, Risk, and Uncertainty: Combining Traits and Rarity-Based Approaches for National Assessment of Sensitivity of Freshwater Fishes to a Changing Climate"	\$50,000 For a
Mendenhall Postdoctoral Research Fellowship, U.S. Geological Survey, 2015-2016	\$187,080
National Science Foundation Graduate Research Fellowship, 2010-2014	\$120,200

Hall Conservation Genetics Research Award, University of Washington, 2014	\$5,000
H. Mason Keeler Endowment for Excellence, University of Washington, 2009-2010	\$31,600
University of Washington Top Scholar Graduate Fellowship, 2008-2009	\$15,800
John N. Cobb Scholarship in Fisheries, University of Washington, 2008-2009	\$15,800

AWARDS AND FELLOWSHIPS

Diversity Fellowship, College of Science, Virginia Tech	2021
Outstanding Teaching Award, Department of Biological Sciences, Virginia Tech	2020
Outstanding Research Award, Department of Biological Sciences, Virginia Tech	2019
Project of the Year in Resource Conservation and Climate Change (co-award) U.S. Department of Defense, Strategic Environmental Research and Development Program	2015
Exceptional Promise in Graduate Research Award Ecological Society of America, Aquatic Ecology Section	2013
Graduate Dean's Medalist, College of the Environment, University of Washington	2012
Outstanding Student Research Award, Trout Unlimited Washington Council	2010
President's Undergraduate Research Award, Georgia Tech	2005

PUBLICATIONS

Mims Lab members: G = graduate student; U = undergraduate student; U = postdoctoral researcher

- x. Shadle, E.J. ^c, W.A. Hopkins, L.K. Belden, M.A. Hallmark ^v, **M.C. Mims**. Experimental warming and drying reveals complex relationships among key developmental traits for two amphibian species. In revision, *Freshwater Biology*.
- x. Silknetter, S.C.^{*G*}, A.L. Benson, J.A. Smith ^{*P*}, **M.C. Mims**. Biogeography and species traits drive scale-dependent patterns of intrinsic sensitivity for freshwater fishes of the United States. In revision, *Ecosphere*.
- x. DuBose, T.P.^p, V. Catalan^U, C.E. Moore^G, V.R. Farallo, A.L. Benson, J.L. Dade^U, W.A. Hopkins, **M.C. Mims**. Anuran Traits of the United States Thermal Data for Southeastern Species (ATraiU-TaDS): a database of thermoregulation trait values for 40 anuran species. In review.
- x. Hyman, A.P, J. Dunham, A. Lynch, A. Thompson, **M.C. Mims**. Exposure, Sensitivity, and Adaptive Capacity: A review of assessments that use two elements of the IPCC climate change vulnerability framework. In review.
- x. Gill, B.A., D.C. Allen, **M.C. Mims**, T.M. Neeson, A. Ruhi, C.L. Atkinson, A.J. Shogren, T.M. Apgar, Z.G. Compson, S. Cook, D.R. Trumbo^p, M.H. Busch, K.D. Hollien, K. Leathers, M.C. Malish, G.L. O'Malley^G, S.C. Silknetter^G, C.R. Smith, H. Dunleavy^U, M.T. Bogan. Combined benthic and stream edge sampling better represent macroinvertebrate assemblages than benthic sampling alone to varying extents across an aridity gradient. In review.
- 40. **Mims, M.C.**, J.C. Drake ^p, J.J. Lawler, J.D. Olden. In press. Simulating the response of a threatened amphibian to climate-induced reductions in breeding habitat. *Landscape Ecology*.
- 39. DuBose, T.P. ^p, C.E. Moore ^g, S.C. Silknetter ^g, A.L. Benson, T. Alexander ^y, G.L. O'Malley ^g, **M.C. Mims**. 2023. Mismatch between conservation status and climate change sensitivity leaves some anurans in the United States unprotected. *Biological Conservation*, 227:e109866.

- 38. Wenger, S.J., E.Stowe, K.Gido, M. Freeman, Y. Kanno, N. Franssen, J.D. Olden, L. Poff, A. Walters, P. Bumpers, **M.C. Mims**, M. Hooten. 2022. Simple statistical models for testing hypotheses to explain changes in species abundance through time. *Ecology and Evolution*, 12(9):e9339.
- 37. Krabbenhoft, C.A., G.H. Allen, P. Lin, S.E. Godsey, D.C. Allen, R.M. Burrows, A.G. DelVecchia, K.M. Fritz, M. Shanafield, A.J. Burgin, M. Zimmer, T. Datry, W.K. Dodds, C.N. Jones, **M.C. Mims**, C. Franklin, J.C. Hammond, S.C. Zipper, A.S. Ward, K.H. Costigan, H.E. Beck, J.D. Olden. 2022. Assessing placement bias of the global river gauge network. *Nature Sustainability*, 5:586-592.
- 36. Freeman, M.C., K.R. Bestgen, D. Carlisle, E.A. Frimpong, N.R. Franssen, K.B. Gido, E. Irwin, Y. Kanno, C. Luce, S.K. McKay, **M.C. Mims**, J.D. Olden, N.R. Poff, D.L. Propst, L. Rack, A.H. Roy, A. Walters, S.J. Wenger. 2022. Understanding streamflow effects on freshwater fishes. *Fisheries*, 47(7):290-298.
- 35. Gendreau, K.L. ^{G*}, V.L. Buxton ^P, C.E. Moore ^G, **M.C. Mims**. 2021. Temperature loggers capture intraregional variation of inundation timing for intermittent ponds. *Water Resources Research*, 57(11):e2021WR 029958. ^{G*} affiliated graduate student.
- 34. Zipper, S.C., J.C. Hammond, M. Shanafield, M. Zimmer, T. Datry, D.C. Allen, C.N. Jones, K.E. Kaiser, S.E. Godsey, R.M. Burrows, J.R. Blaszczak, M.H. Busch, A.N. Price, K.S. Boersma, A.S. Ward, K. Costigan, G.H. Allen, C.A. Krabbenhoft, W.K. Dodds, **M.C. Mims**, J.D. Olden, S.K. Kampf, A.J. Burgin. 2021. Pervasive changes in stream intermittence across the United States. *Environmental Research Letters*, 16(8):084033.
- 33. Moore, C.E.^G, J. Helmann^U, Y. Chen^U, S. St. Amour^U, L. Hughes^U, N. Wax^U, **M.C. Mims**. 2021. Anuran Traits of the United States (ATraiU): A database for anuran traits-based conservation, management, and research. *Ecology*, 102(3):e03261.
- 32. Hammond, J.C., M. Zimmer, M. Shanafield, K. Kaiser, S.E. Godsey, **M.C. Mims**, S.C. Zipper, R.M. Burrows, S.K. Kampf, W. Dodds, C.N. Jones, C.A. Krabbenhoft, K.S. Boersma, T. Datry, J.D. Olden, G.H. Allen, A.N. Price, K. Costigan, R. Hale, A.S. Ward, D.C. Allen. 2021. Spatial patterns and drivers of nonperennial flow regimes in the contiguous United States. *Geophysical Research Letters*, 48, e2020GL090794.
- 31. Allen, D., T. Datry, K. Boersma, M. Bogan, A. Boulton, D. Bruno, M. Busch, K. Costigan, W. Dodds, K. Fritz, S. Godsey, J. Jones, T. Kaletova, S. Kampf, **M.C. Mims**, T. Neeson, J.D. Olden, A. Pastor, N.L. Poff, B. Ruddell, A. Ruhi, G. Singer, P. Vezza, Paolo; A. Ward, M. Zimmer. 2020. River ecosystem conceptual models and non-perennial rivers: A critical review. *WIREs Water*, 7(5):e1473. 10.1002/wat2.1473.
- 30. **Mims, M.C.**, C.E. Moore ^a, E.J. Shadle ^a. 2020. Threats to aquatic taxa in an arid landscape: knowledge gaps and areas of understanding for amphibians of the American Southwest. *WIREs Water*, 7(4):e1449. 10.1002/wat2.1449.
 - <u>Accompanying article</u>: Shadle, E.J. ^a, C.E. Moore ^a, **M.C. Mims**. Amphibians of the American Southwest are in hot water will they thrive or dive? <u>Advanced Science News</u>, July 20, 2020.
- 29. Busch, M.H., K.H. Costigan, K.M. Fritz, T. Datry, C.A. Krabbenhoft, J.C. Hammond, M. Zimmer, J.D. Olden, R.M. Burrows, W.K. Dodds, K.S. Boersma, M. Shanafield, S.K. Kampf, **M.C. Mims**, M.T. Bogan, A. S. Ward, M. Perez Rocha, G.H. Allen, J.R. Blaszczak, C. Nathan Jones, D.C. Allen. 2020. What's in a name? Patterns and trends in the definition of non-perennial rivers and streams. *Water*, 12(7):1980. 10.3390/w12071980.
- 28. Zimmer, M., K. Kaiser, J. Blaszczak, S. Zimmer, J. Hammond, K. Fritz, K. Costigan, J. Hosen, S. Godsey, G. Allen, S. Kampf, R. Burrows, C. Krabbenhoft, W. Dodds, R. Hale, J. Olden, M. Shanafield, A. DelVecchia, A. Ward, **M.C. Mims**, T. Datry, M. Bogan, K. Boersma, M. Busch, C. Jones, A. Burgin, D. Allen. 2020. Zero or not? Causes and consequences of zero-flow stream gage readings. *WIREs Water*, 7:e1436. 10.1002/wat2.1436.

- 27. Shanafield, M., S. Godsey, T. Datry, R. Hale, S.C. Zipper, K. Costigan, C.A. Krabbenhoft, W.K. Dodds, M. Zimmer, D.C. Allen, M. Bogan, K. Kaiser, R. Burrows, J.C. Hammond, M. Busch, S. Kampf, **M.C. Mims**, A. Burgin, J.D. Olden. 2020. Why so slow? Accelerating our understanding and protection of non-perennial rivers. *Eos*, 101, 10.1029/2020E0139902.
- 26. Parsley, M.B. ^{G*}, M.L. Torres ^{G*}, S. Banerjee ^{G*}, Z. Tobias ^{G*}, C.S. Goldberg, M.A. Murphy, **M.C. Mims**. 2020. Combining landscape genetics and eDNA to inform functional connectivity in an amphibian metapopulation. *Landscape Ecology*, 10.1007/s10980-019-00948-y. ^{G*} affiliated graduate student.
- 25. Smith, J.A.^p, A.L. Benson, Y. Chen^u, S.A. Yamada, **M.C. Mims**. 2020. The power, potential, and pitfalls of open access biodiversity data in range size assessments: lessons from the fishes. *Ecological Indicators*, 100:105896.
- 24. Hamilton, A., R. Schäfer, M. Pyne, B. Chessman, K. Kakouei, K. Boersma, P. Verdonschot, R. Verdonschot, **MC. Mims**, K. Khamis, B. Bierwagen, J. Stamp. 2020. Limitations of trait-based approaches for stressor assessment: the case of freshwater invertebrates and climate drivers. *Global Change Biology*, 26:364-379.
- 23. Pyron, M., **M.C. Mims**, M. Minder, R. Schields, N. Chodkowski, C.C. Artz. 2019. Long-term fish assemblages of the Ohio River: modified trophic and life history strategies with hydrologic alteration and landuse modifications. *PLoS ONE*, 14(4):e0211848.
- 22. **Mims, M.C.**, C. Day, J.J. Burkhart, M. Fuller, J. Hinkle, A. Bearlin, J. Dunham, P.W. DeHaan, Z.A. Holden, E. Landguth. 2019. Simulating demography, genetics, and spatially-explicit processes to inform reintroduction of a threatened char. *Ecosphere*, 10:e02589.
- 21. **Mims, M.C.**, D.H. Olson, D.S. Pilliod, J.B. Dunham. 2018. Functional and geographic components of risk for climate sensitive vertebrates in the Pacific Northwest, USA. *Biological Conservation*, 228:183-194. *Accompanying article:* **Mims, M.C.**, D.H. Olson, D.S. Pilliod, J.B. Dunham. Considering the hidden threats of climate change: a new approach puts overlooked species on the conservation radar. *The Wildlife Professional*, May/June 2019.
- 20. **Mims, M.C.**, E.E. Hartfield Kirk, D.A. Lytle, J.D. Olden. 2018. Landscape genetics and multispecies conservation: the case for traits-based approaches. *Conservation Genetics*, 19:17-26.
- 19. **Mims, M.C.**, E.E. Hodgson, L.M. Kuehne, M.C. Siple. 2016. The benefits of workshopping graduate fellowships: a how-to guide for graduate students and early career scientists. *Ideas in Ecology and Evolution*, 9:24-39.
- 18. Guderyahn, L.B., A.P. Smithers, **M.C. Mims**. 2016. Assessing habitat requirements of pond-breeding amphibians in a highly urbanized landscape: implications for management. *Urban Ecosystems*, 19:1801-1821.
- 17. **Mims, M.C.**, L. Hauser, C.S. Goldberg, J.D. Olden. 2016. Genetic differentiation, isolation-by-distance, and indications of a metapopulation of the Arizona treefrog (*Hyla wrightorum*) in an isolated portion of its range. *PLoS ONE*, 11:e0160655.
- 16. **Mims, M.C.**, I.C. Phillipsen, J.D. Olden, E.E. Hartfield Kirk, D.A. Lytle. 2015. Ecological strategies predict associations between aquatic and genetic connectivity for dryland amphibians. *Ecology*, 96:1371-1382.
- 15. Hale, J.R.*, **M.C. Mims**, M.T. Bogan, J.D. Olden. 2015. Links between two interacting factors novel habitats and non-native predators and aquatic invertebrate communities in a dryland environment. *Hydrobiologia*, 746:313-326. **Undergraduate author for whom I was the primary advisor*.

- 14. Phillipsen, I.C., E.E. Hartfield Kirk, M.T. Bogan, **M.C. Mims**, J.D. Olden, D.A. Lytle. 2015. Dispersal ability and habitat requirements determine landscape-level genetic patterns in desert aquatic insects. *Molecular Ecology*, 24:54-69.
- 13. Kuehne, L.M., L.A. Twardochleb, K.J. Fritschie, **M.C. Mims**, D.J. Lawrence, P.P. Gibson, B. Stewart-Koster, and J.D. Olden. 2014. Practical science communication strategies for graduate students. *Conservation Biology*, 28: 1225-1235.
- 12. Olden, J.D., C.P. Konrad, T.S. Melis, M.J. Kennard, M.C. Freeman, **M.C. Mims**, E.N. Bray, K.B. Gido, N.P. Hemphill, D.A. Lytle, L.E. McMullen, M. Pyron, C.T. Robinson, J.C. Schmidt, J.G. Williams. 2014. Are large-scale flow experiments informing the science and management of freshwater ecosystems? *Frontiers in Ecology and the Environment*, 12:176-185.
- 11. Olden, J.D., L. Ray, **M.C. Mims**, M.C. Horner-Devine. 2013. Filtration rates of the non-native Chinese mystery snail (*Bellamya chinensis*) and potential impacts on microbial communities. *Limnetica*, 32:107-120.
- 10. **Mims, M.C.**, J.D. Olden. 2013. Fish assemblages respond to altered flow regimes via ecological filtering of life history strategies. *Freshwater Biology*, 58:50-62.
- 9. **Mims, M.C.**, J.D. Olden. 2012. Life history theory predicts fish assemblage response to hydrologic regimes. *Ecology*, 93:35-45.
- 8. Lawrence, D.J., E.R. Larson, C.A. Reidy Liermann, **M.C. Mims**, T.K. Pool, J.D. Olden. 2011. National parks as protected areas for U.S. freshwater fish diversity. *Conservation Letters*, 4:364-371.
- 7. Konrad, C.P., J.D. Olden, D.A. Lytle, T.S. Melis, J.C. Schmidt, E.N. Bray, M.C. Freeman, K.B. Gido, N.P. Hemphill, M.J. Kennard, L.E. McMullen, **M.C. Mims**, M. Pyron, C.T. Robinson, J.G. Williams. 2011. Large-scale flow experiments for managing river systems. *Bioscience*, 61:948-959.
- 6. **Mims, M.C.**, J.D. Olden, Z.R. Shattuck, N.L. Poff. 2010. Life history trait diversity of native freshwater fishes in North America. *Ecology of Freshwater Fish*, 19:390-400.
- 5. **Mims, M.C.**, C. D. Hulsey, B. M. Fitzpatrick, J. T. Streelman. 2010. Geography disentangles ancestral polymorphism from introgression in Lake Malawi cichlids. *Molecular Ecology*, 19:940-951.
- 4. Hulsey, C.D., **M.C. Mims**, N.F. Parnell, J.T. Streelman. 2010. Comparative rates of lower jaw diversification in cichlid adaptive radiations. *Journal of Evolutionary Biology*, 23:1456-1467.
- 3. Olden, J. D., E. R. Larson, **M. C. Mims**. 2009. Home-field advantage: native signal crayfish (*Pacifastancus lenisuculus*) out consumes newly introduced crayfishes for invasive Chinese mystery snail (*Bellamya chinensis*). *Aquatic Ecology*, 43:1073-1084.
- 2. Loh, Y. E., L.S. Katz, **M.C. Mims**, T.D. Kocher, S. Yi, J.T. Streelman. 2008. Comparative analysis of mosaic genomes among Lake Malawi cichlids. *Genome Biology*, 9:R113-113.12.
- 1. Hulsey, C.D., **M.C. Mims**, J.T. Streelman. 2007. Do constructional constraints influence cichlid craniofacial diversification? *Proceedings of the Royal Society (London) Series*, 274:1867-1875.

INVITED SEMINARS

- **Mims, M.C.** The power, potential, and pitfalls of opportunistic data for vulnerability assessments. United States Geologic Survey Science Analytics and Synthesis Group Virtual Seminar Series. 13 April 2022.
- **Mims, M.C.** University of North Texas, Department of Biological Sciences. BioFrontiers Seminar Series. 26 February 2021. *Virtual due to COVID-19.*

- **Mims, M.C.** Ohio University, Department of Biological Sciences. Seminar. 22 February 2021. *Virtual due to COVID-19.* **Selected and invited by the department's graduate students.**
- **Mims, M.C.** Clemson University, Department of Forestry and Environmental Conservation. Seminar. Spring 2020. *Cancelled due to COVID-19*.
- **Mims, M.C.** University of Arizona, School of Natural Resources and the Environment. Seminar. Tucson, AZ. 27 March 2019.
- **Mims, M.C.** University of Illinois, Natural Resources and Environmental Sciences. Seminar. Urbana, IL. 6 December 2018.
- Mims, M.C. University of Oklahoma, Department of Biology. Seminar. 26 September 2018.
- Mims, M.C. University of Georgia, Savannah River Ecology Lab. Seminar. Aiken, SC. 28 March 2018.
- **Mims, M.C.** Virginia Commonwealth University, Biology Department. Seminar. Richmond, VA. 19 March 2018.
- Mims, M.C. Graduate Women in Science, National Webinar Series. Virtual webinar. April 2017.
- **Mims, M.C.** U.S. Geological Survey, National Climate Change and Wildlife Science Center. Climate Change Science and Management Webinar Series. Virtual webinar. 22 September 2016.
- **Mims, M.C.** University of Washington, School of Environmental and Forest Sciences. Wildlife Seminar. Seattle, WA. 7 April 2014.

PRESENTATIONS AT PROFESSIONAL MEETINGS

- Mims Lab members, current and former: ^G = graduate student; ^U = undergraduate student; ^P = postdoctoral researcher O'Malley, G.^G, E. Kerr^U, E. Hotchkiss, **M.C. Mims**. 2022. Temporal dynamics of water chemistry in Southeastern Arizona. Invited Talk. Chiricahua Leopard Frog Arizona Steering Committee Meeting. Virtual
- Drake, J.C.^p, **M.C. Mims**, J. Lawler, J.D. Olden. 2022. Risk and resilience on a drying landscape: simulating amphibian response to breeding habitat reduction. Invited Talk. US-IALE Annual Meeting. Virtual.
- **Mims, M.C**, G.L. O'Malley^{*G*}, D. Trumbo^{*p*}, J.C. Drake^{*p*}, J. Kraft. 2022. Integrating monitoring, genetic, and simulation approaches for strategic bullfrog removal and control. Invited Talk. Southwest Non-Native Aquatic Species Community of Practice Meeting. Virtual.
- DuBose, T.P.^{p*}, C.E. Moore^{c*}, S.C. Silknetter ^{c*}, A.L. Benson*, T. Alexander ^v, G.L. O'Malley ^{c*}, **M.C. Mims***. 2022. Conservation lists miss some anuran species that are intrinsically sensitive to climate change. Invited Talk. Joint Aquatic Sciences Meeting, Grand Rapids, MI. *Special session co-chair, "Assessing and comparing climate change vulnerability of freshwater organisms."
- Moore, C.E.^c, **M.C. Mims**. 2022. The effects of temporal scale on landscape genetic inference in a dryland amphibian metapopulation. Contributed Talk. Joint Aquatic Sciences Meeting, Grand Rapids, MI.
- Silknetter, S.C.^{*G*}, Y. Martinez^{*U*}, D. Allen, M.A. Bogan, B.A. Gill, J.D. Olden, A. Ruhi, **M.C. Mims**. 2022. Patterns of genetic structure in freshwater invertebrates are scaled by biological and geographic drivers. Poster. Joint Aquatic Sciences Meeting, Grand Rapids, MI.
- O'Malley, G.L.^c, C. Tury^v, **M.C. Mims**. 2022. Can acoustic monitoring give new insights into the spatial and temporal distribution of a threatened amphibian? Poster. Joint Aquatic Sciences Meeting, Grand Rapids, MI
- Moore, C.E.^c, & **M.C. Mims**. 2022. Redundant or complementary? Identifying patterns of multifaceted anuran biodiversity in Virginia, USA. Talk. North American Congress for Conservation Biology, Reno, NV.

- DuBose, T.P.^p, V. Catalan^u, C.E. Moore^g, V.R. Farallo, **M.C. Mims**. 2022. ATraiU 2.0: a Database of physiological limits of anurans in the southeastern United States. Talk. Southeastern Partners in Amphibian and Reptile Conservation Meeting.
- Gill, B.A., D. Allen, T.M. Apgar, C.L. Atkinson, E. Cook, S.C. Cook, K. Hollien, K. Leathers, **M.C. Mims**, A. Ruhi, A.J. Shogren, S.C. Silknetter^c, Y. Martinez^v, C. Smith, M.A. Bogan. 2022. Does aridity influence differentiation of intermittent relative to perennial stream macroinvertebrate communities? Invited Talk. Joint Aquatic Sciences Meeting, Grand Rapids, MI.
- Ruhi, A., T.M. Apgar, S. Gao, B.A. Gill, D. Allen, C.L. Atkinson, E. Cook, S.C. Cook, K. Hollien, Y. Hong, K. Leathers, **M.C. Mims**, R.M. Mohammadi, A.J. Shogren, S.C. Silknetter ^G, C. Smith, M.A. Bogan. 2022. Examining support for the network position hypothesis via intermittent stream invertebrate metacommunities across a hydroclimatic gradient. Invited Talk. Joint Aquatic Sciences Meeting, Grand Rapids, MI.
- Datry, T., D. Allen, G.H. Allen, A. Burgin, M.H. Busch, R. Burrows, A.G. DelVecchia, W. Dodds, M. Fork, J. Hammond, K. Kaiser, C.J. Little, M. Messager, **M.C. Mims**, E. Moody, J.D. Olden, R. Sarremejane, R. Stubbington, J. Tonkin, A. Truchy, R.H. Walker, A. Walters, S. Yu, S.C. Zipper. 2022. Comparison of human-induced and naturally intermittent rivers: science, management, and policy implications. Invited Talk. Joint Aquatic Sciences Meeting, Grand Rapids, MI.
- Silknetter, S.C. ^c, A.L. Benson, J.A. Smith ^p, **M.C. Mims**. 2021. Scale dependencies of intrinsic climate sensitivity for freshwater fishes of the United States. Invited Talk. American Fisheries Society, Baltimore, MD.
- Silknetter, S.C. ^c, A.L. Benson, J.A. Smith ^p, **M.C. Mims**. 2021. Scale dependencies of intrinsic climate sensitivity for freshwater fishes of the United States. Contributed Talk. Society for Freshwater Science Virtual Meeting.
- Moore, C.E. ^G, T. Alexander ^U, **M.C. Mims**. 2021. Redundant or complementary? Identifying patterns of multifaceted frog and toad biodiversity in the eastern United States. Contributed poster. Society for Freshwater Science Virtual Meeting.
- Gendreau, K.^{G*}, V.L. Buxton^P, C.E. Moore^G, **M.C. Mims** (presenting). 2021. Timing is everything, but are we using the right clock? Temperature sensors measure precise inundation timing of temporary ponds. Invited Talk. Society for Freshwater Science Virtual Meeting. ^{G*} affiliated graduate student.
- **Mims, M.C**, G.L. O'Malley ⁶, J. Kraft. 2021. Integrating monitoring, genetic, and simulation approaches for strategic bullfrog removal and control. Invited Talk. Southwest Non-Native Aquatic Species Community of Practice Meeting. Virtual.
- **Mims, M.C.** G.L. O'Malley ^a, J. Kraft. 2020. Integrating monitoring, genetic, and simulation approaches for strategic bullfrog removal and control. Invited Talk. Chiricahua Leopard Frog Steering Committee Meeting. Virtual.
- Zipper, S., K Kaiser, S. Godsey, J. Hammond, N. Jones, J. Blaszczak, M. Shanafield, K. Costigan, M. Zimmer, D. Allen, T. Datry, G. Allen, K.S. Boersma, W. Dodds, S. Kampf, C.A. Krabbenhoft, **M.C. Mims**, J.D. Olden, A. Price, R. Burrows. 2020. Trends and drivers of changing stream intermittency across the United States. Poster. American Geophysical Union Annual Meeting. *Virtual due to COVID-19*.
- Hammond, J.C., M. Zimmer, M. Shanafield, **M.C. Mims**, J.D. Olden, M. Zimmer, K. Kaiser, S.K. Kampf, S.E. Godsey, S.C. Zipper, C.N. Jones, R. Hale, C.A. Krabbenhoft, D.C. Allen, G.H. Allen, R.M. Burrows, W. Dodds, M. Bogan, K.S. Boersma, K. Costigan, J. Hosen, T. Datry, A.N. Price, A.S. Ward. 2020. Assessing spatial

- patterns and drivers of intermittent flow in the contiguous U.S. Poster. American Geophysical Union Annual Meeting. *Virtual due to COVID-19*.
- Allen, G.H., J.D. Olden, C.A. Krabbenhoft, P. Lin, M. Shanafield, K.M. Fritz, C.N. Jones, W.K. Dodds, C. Franklin, R. Hale, S.C. Zipper, D.C. Allen, A.S. Ward, T. Datry, H.E. Beck, J.C. Hammond, A. Burgin, S.E. Godsey, R.M. Burrows, M. Zimmer, K.H. Costigan, **M.C. Mims**, A. Ruhi, A.G. DelVeccia. 2020. Is our finger on the pulse? Assessing placement bias of the global river gage network. Poster. American Geophysical Union Annual Meeting. *Virtual due to COVID-19*.
- **M.C.** Mims*, K. Gendreau^{G, affiliated}, C.E. Moore^G, V.L. Buxton ^P. Timing is everything, but are we using the right clock? Temperature sensors measure precise inundation timing of temporary ponds. Invited talk. American Society of Limnology and Oceanography and Society for Freshwater Science Joint Meeting. Cancelled due to COVID-19. *Co-organized special session: "Drying in freshwater systems: merging lotic and lentic perspectives in an era of global change". Cancelled due to COVID-19.
- Silknetter, S.C. ^G, A.L. Benson, J.A. Smith ^P, **M.C. Mims**. 2020. Scale dependencies of intrinsic risk for freshwater fishes of the United States. Invited Talk. American Society of Limnology and Oceanography and Society for Freshwater Science Joint Meeting. *Cancelled due to COVID-19*.
- Shadle, E.J. ^{*G*}, W.A. Hopkins, L.K. Belden, **M.C. Mims**. 2020. Disentangling the influence of temperature and drying on amphibian larvae in a changing world. Invited talk. American Society of Limnology and Oceanography and Society for Freshwater Science Joint Meeting. *Cancelled due to COVID-19*.
- Moore, C.E.^G, E.J. Shadle ^G, **M.C. Mims**. 2020. Threats to aquatic taxa in an arid landscape: knowledge gaps and areas of understanding for amphibians of the American Southwest. Poster. American Society of Limnology and Oceanography and Society for Freshwater Science Joint Meeting. *Cancelled due to COVID-19*.
- Perez Rocha, M., A. Ruhi, D. Kopp, M.T. Bogan, **M.C. Mims**, T.M. Neeson, K.H. Costigan, S. Gao, Z. Compson, S. Silknetter, D. Allen. 2020. The role of climatic variability in regulating stream community temporal dynamics. Invited Talk. American Society of Limnology and Oceanography and Society for Freshwater Science Joint Meeting. *Cancelled due to COVID-19*.
- Shadle, E.J.^{*G*}, W.A. Hopkins, L.K. Belden, **M.C. Mims**. 2020. Assessing the effects of warming and drying on amphibian larvae in an artificial pond experiment. Talk and Poster. Southeastern Partners in Amphibian and Reptile Conservation Annual Meeting. Nauvoo, AL.
- Hallmark, M.^{*U*}, E.J. Shadle^{*G*}, **M.C. Mims**. 2020. Exploring water chemistry variability in mesocosms and a natural wetland: how do abiotic cues stack up for amphibians? Poster. Southeastern Partners in Amphibian and Reptile Conservation Annual Meeting. Nauvoo, AL.
- Jackson, A.R. ^U, E.J. Shadle ^G, **M.C. Mims**. 2019. Assessing amphibians in a changing world: comparing water quality of experimental ponds to a natural wetland. Poster. Society for Freshwater Science. Salt Lake City, UT.
- Helmann, J. U , & **M.C. Mims**. 2019. Exploring dispersal and genetic connectivity through a newly discovered Arizona treefrog population. Poster. Society for Freshwater Science. Salt Lake City, UT.
- Moore, C.G, J. Helmann^U, Y. Chen^U, S. St. Amour^U, L. Hughes^U, N. Wax^U, & M.C. Mims. 2019. Anuran traits of the United States (ATraiU) Database: a multi-use tool for traits-based conservation, management, and research. Invited talk. Society for Freshwater Science. Stalk Lake City, UT.
- **Mims, M.C.**, S. Silknetter^{*G*}, J. Smith^{*P*}, & A. Benson. 2019. The power, potential, and pitfalls of opportunistic data for vulnerability assessments: lessons from the fishes. Invited talk. Society for Freshwater Science. Salt Lake City, UT.

- Moore, C. ^G, J. Helmann^U, Y. Chen^U, S. St. Amour^U, L. Hughes^U, N. Wax^U, & **M.C. Mims**. 2019. Anuran traits of the United States (ATraiU) Database: a multi-use tool for traits-based conservation, management, and research. Talk. Southeastern Partners in Amphibian and Reptile Conservation. Black Mountain, NC.
- **Mims, M.C.**, A. Bearlin, J.J. Burkhart, C.S. Day, M. Fuller, J. Hinkle, E. Landguth. 2018. The utility of simulations in understanding population dynamics in fresh waters: evaluating demography, genetics, and reintroduction of a threatened char. Invited Talk. Society for Freshwater Science. Detroit, MI.
- **Mims, M.C.**, K. Anlauf-Dunn, J.B. Dunham. 2017. Rarity, risk, and uncertainty: evaluating vulnerability and exposure of stream fishes to a changing climate and landscape in the Pacific Northwest, USA. Invited talk. American Fisheries Society. Tampa, FL.
- **Mims, M.C.**, J.J. Lawler, J.D. Olden. 2017. Risk and resilience on a drying landscape: simulating the response of a dryland amphibian to changes in spatial and temporal availability of breeding habitats. Invited talk. Society for Freshwater Science. Raleigh, NC.
- Mims, M.C., C. Day, E. Landguth, M. Fuller, A. Bearlin, J. Burkhart, J. Hinkle, J. Dunham. 2017. Simulating the reintroduction and population genetics of bull trout in the Lower Pend Oreille River. Invited talk. United States chapter of the International Association of Landscape Ecology. Baltimore, MD.
- **Mims, M.C.**, D.H. Olson, D.S. Pilliod, J.B. Dunham. 2016. Using rarity and traits to inform regional species vulnerability: Oregon's vertebrate ectotherms as a test case. Talk. North American Congress for Conservation Biology. Madison, WI.
- **Mims, M.C.**, D.H. Olson, D.S. Pilliod, J.B. Dunham. 2016. Using rarity and traits to inform regional species vulnerability: Oregon's vertebrate ectotherms as a test case. Invited talk. Society for Freshwater Science. Sacramento, CA.
- **Mims, M.C.**, D.H. Olson, D.S. Pilliod, J.B. Dunham. 2016. Designing a regional framework for multispecies vulnerability assessment: Oregon's ectotherms as a test case. Invited talk. Meeting of the OR/WA Bureau of Land Management fisheries biologists, Oregon Chapter Meeting, American Fisheries Society. Seaside, OR.
- **Mims, M.C.,** C. Day, E. Landguth, M. Fuller, A. Bearlin, J. Burkhart, J. Hinkle, J. Dunham. 201. Simulating the reintroduction and population genetics of bull trout in the Lower Pend Oreille River. Talk. *Salvelinus confluentus* Curiosity Society. Rimrock, WA.
- **Mims, M.C.**, A. Bearlin, J. Burkhart, C. Day, M. Fuller, J. Hinkle, E. Landguth. 2015. Simulating the reintroduction and population genetics of bull trout in the Lower Pend Oreille River. Invited talk. International Association of Landscape Ecology. Portland, OR.
- Mims, M.C.*, I.C. Phillipsen, J.D. Olden, E.H. Kirk, D.A. Lytle. 2014. Do life history strategies explain differential population structure of three desert amphibians? Joint Aquatic Sciences Meeting, Portland. *Organized and chaired a special session, entitled: "Structural and functional connectivity in dryland aquatic habitats: from genes to communities."
- **Mims, M.C.***, I.C. Phillipsen, J.D. Olden, E.H. Kirk, D.A. Lytle. 2013. Diverse patterns of functional connectivity parallel behavior and life history strategies in three desert amphibians. Talk. 24th Annual Graduate Student Symposium, School of Aquatic and Fishery Sciences, University of Washington. Seattle, WA. *Awarded Best Oral Presentation.
- **Mims, M.C.**, J.D. Olden, I.C. Phillipsen, D.A. Lytle. 2013. Do life history strategies explain differential population structure of three desert amphibians? Talk. ESA Annual Meeting. Minneapolis, MN.
- **Mims, M.C.**, J.D. Olden, M.A. Schlaepfer, I.C. Phillipsen, D.A. Lytle. 2012. Population structure and the landscape genetics of a common desert anuran. Talk. Madrean Conference. Tucson, AZ.

- **Mims, M.C.***, J.D. Olden. 2011. Does hydrology determine population connectivity and persistence of desert anurans? Poster. 22nd Annual Graduate Student Symposium, School of Aquatic and Fishery Sciences, University of Washington. Seattle, WA. *Awarded Best Poster.
- **Mims, M.C.**, J.D. Olden. 2011. Fish life history strategies determine assemblage responses to altered flow regimes. Poster. American Fisheries Society 141st Annual Meeting. Seattle, WA.
- **Mims, M.C.**, J.D. Olden. 2010. Fish life history strategies determine assemblage responses to altered flow regimes. Talk. American Society of Limnology and Oceanography and North American Benthological Society Joint Meeting. Santa Fe, NM.
- Mims, M.C., J.D. Olden. 2010. Link between hydrologic variability and freshwater fish life histories in the United States. Talk. Annual General Meeting of the Washington-British Columbia Chapter of the American Fisheries Society. Nanaimo, BC, Canada.
- **Mims, M.C.**, C.D. Hulsey, J.T. Streelman. 2007. Do constructional constraints influence cichlid craniofacial diversification? Poster. Institute for Bioengineering and Bioscience. Atlanta, GA.

RESEARCH AND PROFESSIONAL EXPERIENCE

Assistant Professor, Virginia Tech

2016 - Present

Tenure-track assistant professor with the Department of Biological Sciences at Virginia Tech. Member of the Virginia Tech Global Change Center.

Dry Rivers Research Coordination Network, National Science Foundation

2018 - Present

Steering committee member for this Research Coordination Network advancing intermittent river ecology and hydrology.

Powell Center Working Group, U.S. Geological Survey

2018 - Present

Working group participant synthesizing multiple long-term datasets to test flow-ecology relationships for freshwater fishes.

Postdoctoral Research, U.S. Geological Survey, Advised by Dr. Jason Dunham

2015 - 2016

Developed a framework for regional multispecies assessment of climate change vulnerability based on rarity and species traits. Project scope included vertebrate ectotherms in the state of Oregon with the goal of producing a framework applicable to other species and regions.

Riverscape Genetics: Simulated Bull Trout Reintroduction to the Pend Oreille River

2014 - 2017

Collaborative project simulating the demographic and genetic effects of a proposed reintroduction of bull trout in the Pend Oreille Basin in Washington.

Graduate Research, University of Washington, Advised by Dr. Julian Olden

2008 - 2015

PhD: Implications of environmental and landscape change for population connectivity and the persistence of aridland amphibians; MS: Life history theory predicts fish assemblage response to hydrologic regimes

Characterizing Amphibian Communities in a Highly Urbanized Landscape

2012 - 2014

Worked with natural resource managers from Gresham, OR, to characterize amphibian communities and their relationships with local and landscape factors in the city of Gresham.

Evaluating United States National Parks as Freshwater Protected Areas

2010 - 2011

Collaborative effort to quantify the protection of native freshwater fishes in U.S. National Parks.

National Center for Ecological Analysis and Synthesis Flow Ecology Working Group

2009 - 2010

One of three graduate students among 18 flow ecology experts developing guidelines for freshwater flow experiments worldwide.

Salmon Intrinsic Potential (IP) Model Research Crew

Ecotrust, 2009

Performed fieldwork to validate an IP model for salmon habitat in the Copper River Basin, Alaska.

Urban Lakes Survey Crew Leader

University of Washington, 2008

Organized and led lake surveys in the Puget Sound region to help evaluate effects of non-native aquatic species through observational and experimental methods.

Glacier National Park Snowshoe Hare Research Crew

University of Montana, 2007

Field technician for a study that evaluated occupancy and abundance of snowshoe hares in Glacier National Park in order to assess habitat suitability for the threatened Canada lynx.

Mars Desert Research Station Crew 47

Georgia Tech, 2005 - 2006

Crew biologist, wilderness safety training coordinator, and greywater and greenhouse systems analyst for the Georgia Tech field research team at the Mars Desert Research Station in Utah.

Undergraduate Research, Georgia Tech, Advised by Dr. Todd Streelman

2005 - 2008

President's Undergraduate Research Award

Examined phylogenetic underpinnings of biomechanical jaw complexity and biomechanical plasticity for Neotropical and African cichlid fishes.

Undergraduate honors thesis and post-graduate researcher

Tested the relative importance of hybridization and ancestral polymorphisms in the mosaic genomes of Lake Malawi cichlids; post-graduate full-time lab manager and researcher.

MENTORING

Postdoctoral Researcher Mentoring and Advising

2018 - Present

Advising postdoctoral researchers in my lab and serving as an informal mentor for postdoctoral researchers in VT's Stream Team and Integrative Organismal Biology (IOB) communities.

Current postdoctoral researchers

Dr. Traci DuBose, began 2020

Dr. Joe Drake, began 2021

Postdoctoral alumni

Dr. Amanda Hyman, 2022-2023

Dr. Daryl Trumbo, 2021-2023

Dr. Valerie Buxton, 2019

Dr. Jennifer Smith, 2018

Graduate Student Mentoring and Advising

2017 - Present

Advising PhD and MS students within my lab and serving on the committees of graduate student at VT and beyond. Informal mentor for students in VT's Stream Team and IOB communities.

Current graduate students

Graduate student alumni

Chloe E. Moore[†], PhD candidate, began 2018

Sam Silknetter, PhD candidate, began 2019

Grace O'Malley, PhD student, began 2021

Elizabeth J. Shadle[‡], MS, 2018-2020

†NSF GRFP Honorable Mention 2018, 2020; 2021 VT Interfaces of Global Change Graduate Research Fellow. \$2020 VT College of Science Outstanding Masters Student.

*2022 VT Interfaces of Global Change Graduate Research Fellow.

Undergraduate Research Mentoring and Advising

2012 - Present

My research lab at Virginia Tech includes 3-5 undergraduate researchers per semester. Undergraduates from the lab have won travel and research awards and are encouraged to present their research at local, regional, and national conferences. For current undergraduate researchers and a complete list of alumni (N=26 to-date), please see the lab's website.

Faculty co-coordinator, VT Stream Team and Integrative Organismal Biology Group 2017 - Present

Rotate with other VT faculty to coordinate interdisciplinary meetings with two groups at VT: Stream Team and Integrative Organismal Biology (IOB). Both groups serve as important inter-lab and interdepartmental research networks, prioritizing student and postdoctoral mentoring.

TEACHING

Creator and Instructor, Graduate Research Fellowship Proposal Writing Workshop 2011 - Present

I designed and teach a proposal writing workshop students applying for the National Science Foundation Graduate Research Fellowship Program. The workshop design, including instructions for implementation, is described in a peer-reviewed, open access paper in *Ideas in Ecology and Evolution*.

Graduate Population and Community Ecology

2018 - Present

Teaching the principles of population and community ecology for graduate students at Virginia Tech. Practicing interactive and dynamic learning techniques, including hands-on experience with data analysis in R and individual-based simulation modeling platforms.

Undergraduate Evolutionary Biology

2017 - Present

Teaching the principles of evolutionary biology for \sim 150 undergraduate biology majors at Virginia Tech. Practicing interactive and dynamic learning techniques for engagement with the material in and outside the classroom.

Landscape Genetics Distributed Graduate Seminar, Faculty Affiliate

2018, 2022

Affiliated faculty with the Landscape Genetics Distributed Graduate Seminar, and group lead for student project combining landscape genetics and eDNA for the Arizona treefrog. Co-mentored student group to publish findings in 2020 in *Landscape Ecology*.

Trainee, University Teaching: Theory and Practice

2013

Received training on elements of teaching in Higher Education, including syllabus development, teaching large undergraduate classes, accommodation of different learning styles and diverse backgrounds, and meaningful learning assessment.

SCIENCE COMMUNICATION, SERVICE, AND LEADERSHIP

Reviewer and Panelist, National Science Foundation

2019 - Present

Ad hoc reviewer and panelist for proposal review for the National Science Foundation (3 panels todate).

Associate Editor, Freshwater Science

2018 - Present

Associate editor for *Freshwater Science* with a focus on population and landscape genetics studies of freshwater organisms.

Long-Range Planning Committee, Society for Freshwater Science

2017 - Present

Guiding the Society's investments and commitments to long-range goals and aiding in developing the Society's five-year strategic plan.

Departmental and University Service at Virginia Tech

2017 - Present

Service on the College of Science Inclusion and Diversity Committee (2022-present), Department of Biological Sciences Diversity Committee (2023-present), Department of Biological Sciences Graduate Review Committee (2017-2021), Executive Committee (2020-2021), Global Change Center Seed Grant Review Committee (chair: 2020), Undergraduate Research Committee (2017-2019). Departmental representative for development of the interdisciplinary Water Graduate Degree (lead: Dr. Stephen Schoenholtz; 2018-present). Ad-hoc committee member for the VT Graduate School to improve preand post-fellowship award support for VT graduate students (lead: Dr. Kevin Edgar).

Peer Reviewer 2012 - Present

Peer reviewer for various journals including American Naturalist, Conservation Biology, Ecological Applications, Ecology, Fisheries, Freshwater Biology, Frontiers in Ecology and the Environment, Global Ecology and Conservation, Heredity, Journal of Wildlife Management, Molecular Ecology, Nature Communications, and Oikos.

Co-Organizer, Hidden Rivers film, Blacksburg, VA

2019

Organized a free, public viewing of Freshwaters Illustrated's film "Hidden Rivers" at the Lyric Theater in Blacksburg, VA, with an audience of $\sim\!300$ people of all ages. Chaired a panel discussion of freshwater scientists, non-profit directors, and film makers following the film to discuss freshwater conservation in the New River Valley.

Speaker, Science on Tap Celebrates Women in Science, Blacksburg, VA

2019

One of 6 speakers at a public event at Rising Silo Brewery, with an audience of ~100 of all ages.

Co-Chair, Early Career Committee, Society for Freshwater Science

2016 - 2018

Guided the Society's efforts to best serve its early career members, including providing professional training, network and development opportunities, and support for a range of members occupying diverse positions as early career scientists.

Mentor, Graduate Women in Science

2017 - 2018

Mentor for women graduate students, including hosting a national webinar to discuss negotiation strategies and career transitions for women in academia and research.

Climate Change Science and Management Webinar Series

2016

Virtually hosted by the National Climate Change and Wildlife Science Center. Presented my research on multispecies vulnerability to climate change to an audience of over 80 wildlife managers, biologists, and conservation practitioners throughout the United States.

Science Communication Guide for Graduate Students

2012 - 2014

Co-author on a collaborative, student-led strategic plan for graduate students seeking to incorporate science communication training and practice into their graduate research. The final product was published 2014 in *Conservation Biology*.

Volunteer Naturalist 2008 - 2014

Volunteer interpreter for public programs at the Seattle Pacific Science Center (2008-2010) and for the Seattle Aquarium's Beach Naturalist Program (2009, 2010, 2013, 2014).

Student Panelist, National Science Board Meeting, Seattle, WA

2013

One of eight University of Washington graduate students selected to meet with the National Science Board to discuss recruitment, training, and retention of diverse future leaders in STEM fields.

Society for Freshwater Science, "Making Waves" Podcast interview

2013

Interviewed about my Masters research for a monthly podcast distributed to the members of the Society for Freshwater Science and available to the public.

Paws-On Science, University of Washington and Pacific Science Center

2013 - 2015

Paws-On Science connects scientists from the University of Washington with the public; I helped lead development and implementation of freshwater conservation and ecology outreach activities.

Guest contributor, The Sonoran Herpetologist, Volume 25, November 2012

2012

First author, natural history article for Tucson Herpetological Society's monthly magazine. Article title: "What can the flow of water and genes tell us about desert anuran populations?"

Co-chair, SAFS Graduate Invited Speaker Search Committee

2009 - 2011

Co-Chair for the annual SAFS Graduate Invited Speaker Series.

American Fisheries Society, University of Washington Student Chapter

2008 - 2011

Served as President of the AFS University of Washington student chapter (2009-2010) and served as a Student Organizer for the 2011 National Meeting in Seattle attended by over 4,000 participants.

CV last updated January 2023.