

Cornelia W. Twining, PhD

Contact Information	<p>cornelia.twining@eawag.ch Eawag, Department of Fish Ecology and Evolution Seestrasse 79, Kastanienbaum CH-6047 Switzerland</p> <p><i>Mobile:</i> +41 (0) 79 465-9653 <i>ORCID:</i> 0000-0002-4346-8856 <i>Website:</i> cornelia-twining.squarespace.com</p>	July 2021-present
Employment	<p>Marie Skłodowska Curie Postdoctoral Fellow Eawag, Dept. of Fish Ecology and Evolution</p> <p>Alexander von Humboldt Fellow Max Planck Institute of Animal Behavior (formerly Institute of Ornithology), and University of Konstanz, Limnological Institute</p>	<p>July 2021-present</p> <p>August 2018-July 2021</p>
Education	<p>Cornell University, Ithaca, NY • Doctor of Philosophy in Ecology and Evolutionary Biology</p> <p>Yale University, New Haven, CT • School of Forestry & Environmental Studies, Master of Environmental Science</p> <p>Yale University, New Haven, CT • Bachelor of Arts in Environmental Studies, <i>Cum Laude</i></p>	<p>May 2018</p> <p>May 2012</p> <p>May 2011</p>
Awards	<ul style="list-style-type: none">• Lamont C. Cole Award, May 2017: award for outstanding paper published by a graduate student in the Cornell Department of Ecology and Evolutionary Biology.• Robert H. Whittaker Award, December 2016: award for best student oral presentation at the Cornell Department of Ecology and Evolutionary Biology Symposium.• Gaylord Donnelley Prize in Studies in the Environment, May 2011: award for most distinguished piece of interdisciplinary scholarship written by a senior in the Yale Environmental Studies program	
Publications	<p>Accepted Publications</p> <p>31. Twining, C.W.¹, J.R. Shipley¹, M.D. McCue, I. Pokrovsky, A. Gregoire, B. Faivre, M. Wikelski, and J. Partecke. In Press. Energetics and fuel use vary with migration strategy across populations of Common Blackbirds. <i>Functional Ecology</i>.</p>	

30. McFadden, **C.W. Twining**, et al. Linking human impacts to community processes in terrestrial and freshwater ecosystems. 2023. *Ecology Letters* 26(2): 203-218 DOI: 10.1111/ele.14153
29. Zavorka, L., A. Blanco, F. Chagauceda, J. Cucherousset, S.S. Killen, C. Lienart, M. Mathieu-Resuge, P. Nemec, M. Pilecky, K. Scharnweber, **C.W. Twining**, and M.J. Kainz. 2023. The role of vital dietary biomolecules in eco-evo-dynamics. *Trends in Ecology and Evolution* 38(1): 72-38 DOI: 10.1016/j.tree.2022.08.010
28. Fehlinger, L., M. Mathieu-Resuge, M. Pilecky, T.P. Parmar, **C.W. Twining**, D. Martin-Creuzburg, and M.J. Kainz. 2022. Export of dietary lipids via emergent insects from eutrophic fish ponds. *Hydrobiologia*. DOI: 10.1007/s10750-022-05040-2
27. Shipley, J.R., **C.W. Twining**, C.C. Taff, M.N. Vitousek, and D.W. Winkler. 2022. Selection counteracts developmental plasticity in body-size responses to climate change. *Nature Climate Change* 12: 863-868. DOI: 10.1038/s41558-022-01457-8
- Highlighted in:** Ryding, S., and A. McQueen. 2022. Swallows shrink as climate warms. *Nature Climate Change* DOI: 10.1038/s41558-022-01463-w
26. Parmar, T.P., A.L. Kindinger, M. Mathieu-Resuge, **C.W. Twining**, J.R. Shipley, M.J. Kainz, and D. Martin-Creuzburg. 2022. Fundamental differences in fatty acid composition between emergent aquatic and terrestrial insects. *Frontiers in Ecology and Evolution*. DOI: 10.3389/fevo.2022.952292
25. Havird, J.C., P.M. Brannok, R.M. Yoshioka, R.C. Vaught, K. Annandale, C.B. Edwards, A.M. Tracy, **C.W. Twining**, Y. Zheng, A. Wilson, N.G. Hairston, and S.R. Santos. 2022. Grazing by an endemic atyid shrimp controls microbial communities in the Hawaiian anchialine ecosystem. *Limnology and Oceanography* 67: 2012-2017. DOI: 10.1002/lno.12184
24. **C.W. Twining**, J.R. Shipley, and B. Matthews. 2022. Climate change creates nutritional phenological mismatches. *Trends in Ecology and Evolution* 37(9): 736-739. DOI: 10.1016/j.tree.2022.06.009
23. Shipley, J.R.¹, **C.W. Twining**¹, M. Mathieu-Resuge, T.P. Parmar, M.J. Kainz, D. Martin-Creuzburg, C. Weber, D.W. Winkler, C.H. Graham, and B. Matthews. 2022. Climate change shifts the timing of nutritional flux from aquatic insects. *Current Biology* 32(6): 1342-1349.e3. DOI: 10.1016/j.cub.2022.01.057

- Highlighted in:** Clark, R, and K. Hobson. 2022. Climate change: Aerial insectivores struggle to keep pace with earlier pulses of nutritious aquatic foods. *Current Biology* **32**(6): R267-R269. DOI: 10.1016/j.cub.2022.01.076
22. Albertson, L.K., M. Briggs, Z. Maguire, S. Swart, W.F. Cross, **C.W. Twining**, J.S. Wesner, C.V. Baxter, and D.M. Walters. 2022. Dietary composition and fatty acid content of giant salmonflies (*Pteronarycs californica*) in two Rocky Mountain rivers. *Ecosphere* 13(1): e3904. DOI: 10.1002/ecs2.3904
21. Mathieu-Resuge, M., M. Pilecky, **C.W. Twining**, D. Martin-Creuzburg, T. Preet Parmar, S. Vitecek, and M.J. Kainz. 2022. Dietary availability determines metabolic conversion of long-chain polyunsaturated fatty acids in spiders: a dual compound-specific stable isotope approach. *Oikos* 7. DOI: 10.1111/oik.08513
20. Mathieu-Resuge, M., D. Martin-Creuzburg, **C.W. Twining**, T. Preet Parmar, H.H. Hager, and M.J. Kainz. 2021. Taxonomic composition and lake morphometry predict fatty acid export via emerging insects from lakes. *Freshwater Biology* 66(12): 2199-2209. DOI: 10.1111/fwb.13819
19. **Twining, C.W.**, T.P. Parmar, M. Mathieu-Resuge, M.J. Kainz, J.R. Shipley, and D. Martin-Creuzburg. 2021. Use of fatty acids from aquatic prey varies with foraging strategy. *Frontiers in Ecology and Evolution*. DOI: 10.3389/fevo.2021.735350
18. **Twining, C.W.**, J.R. Bernhardt, A.M., Derry, C.M. Hudson, A. Ishikawa, N. Kabeya, M.J. Kainz, J. Kitano, C. Kowarik, S.N. Ladd, M.C. Leal, K. Scharnweber, J.R. Shipley, and B. Matthews. 2021. The evolutionary ecology of fatty-acid variation: implications for consumer adaptation and diversification. *Ecology Letters* 24(8):1709-1731. DOI: 10.1111/ele.13771 (**2021 Ecology Letters Early Career Award Top Five Finalist**)
17. Linek, N.B., T. Volkmer, J.R. Shipley, **C.W. Twining**, Zúñiga, D., M. Wikelski, and J. Partecke. 2021. A songbird adjusts its heart rate and body temperature in response to season and fluctuating daily conditions. *Philosophical Transactions of the Royal Society B: Biological Sciences* 376(1830):20200213. DOI: 10.1098/rstb.2020.0213
16. **Twining, C.W.**, N.R. Razavi, J.T. Brenna, S.A. Dzielski*, S.T. Gonzalez*, P. Lawrence, L. Cleckner, and A.S. Flecker. 2021. Emergent freshwater insects serve as a subsidy of methylmercury and beneficial fatty acids for riparian predators across an agricultural gradient. *Environmental Science and Technology* 55(9):5868-5877. DOI: 10.1021/acs.est.0c07683

15. Shipley, J.R., **C.W. Twining**, C.C. Taft, M.N. Vitousek, A. Flack, and D.W. Winkler. 2020. Climate, timing, and reproductive performance: advancing early birds face novel threats. *PNAS* **117**(41):25590-25594. DOI: 10.1073/pnas.2009864117 (*won award for best Cornell EEB student paper in 2020*)
14. **Twining, C. W.**, S. J. Taipale, L. Ruess, A. Bec, D. Martin-Creuzburg, and M. J. Kainz. 2020. Stable isotopes of fatty acids: current and future perspectives for advancing trophic ecology. *Philosophical Transactions of the Royal Society B: Biological Sciences* **375**:20190641. DOI: 10.1098/rstb.2019.0641
13. Shipley, J. R., and **C. W. Twining**. 2020. Seasonal dietary niche contraction in coexisting Neotropical frugivorous bats (Stenodermatinae). *Biotropica* **52**:749-757. DOI: 10.1111/btp.12784
12. Dzielski, S.A.*, **C.W. Twining**, V.G. Rohwer, L.B. Cleckner, and N.R. Razavi. 2019. What's in a feather? Reconstructing methyl mercury concentrations through time using museum specimens from New York State. *Ecotoxicology*. DOI: 10.1007/s10646-019-02123-0
11. Flecker, A. S., **C. W. Twining**, O. J. Schmitz, S. J. Cooke, and N. Hammerschlag. 2019. Aquatic Predators Influence Micronutrients: Important but Understudied. *Trends in Ecology & Evolution*. DOI: 10.1016/j.tree.2019.07.006
10. **Twining, C.W.**, J.T. Brenna, P. Lawrence, D.W. Winkler, A.S. Flecker, and N.G. Hairston. 2019. Aquatic and terrestrial resources are not nutritionally reciprocal for consumers. *Functional Ecology* **33**(10):2042-2052. DOI: 10.1111/1365-2435.13401 (*2019 Haldane Prize shortlist*)

Highlighted in: Allen, D. C. 2019. Nutritional hotspots? Prey from one ecosystem provide key fatty acids required for consumers in multiple ecosystems. *Functional Ecology* **33**:1816-1817. DOI: 10.1111/1365-2435.13436
9. **Twining, C.W.**¹, J.R. Shipley¹, and D.W. Winkler. 2018. Aquatic insects drive breeding success in a riparian aerial insectivore. *Ecology Letters* **21** (12): 1812-1820. DOI: 10.1111/ele.13156
8. **Twining, C.W.**, P. Lawrence, D.W. Winkler, A.S. Flecker, and J.T. Brenna. 2018. Conversion efficiency of alpha-linolenic acid to omega-3 highly unsaturated fatty acids in aerial insectivore chicks. *Journal of Experimental Biology* **221**(3). DOI: 10.1242/jeb.165373

- Highlighted in:** Knight, K. 2018. Tree swallow chicks construct long-chain omega-3 fatty acids from building blocks. *Journal of Experimental Biology* 221.
7. **Twining, C.W.**, C.E. Kraft, D.C. Josephson, J.T. Brenna, P. Lawrence, and A.S. Flecker. 2017. Fatty acid composition and food web structure in an Adirondack Stream. *Freshwater Science* 36(4): 877-892. DOI: 10.1086/694335
 6. **Twining, C.W.**, E.P. Palkovacs, D.J. Hasselman, M.A. Friedman, and D.M. Post. 2017. Nutrient loading by anadromous fishes: species-specific contributions and the effects of diversity. *Canadian Journal of Fisheries and Aquatic Sciences* 74: 609-619. DOI: 10.1139/cjfas-2016-0136
 5. Wang, D. H., J. R. Jackson, **C. Twining**, L. G. Rudstam, E. Zollweg-Horan, C. Kraft, P. Lawrence, K. Kothapalli, Z. Wang, and J. T. Brenna. 2016. Saturated Branched Chain, Normal Odd-Carbon-Numbered, and n-3 (Omega-3) Polyunsaturated Fatty Acids in Freshwater Fish in the Northeastern United States. *Journal of Agricultural and Food Chemistry* 64:7512-7519. DOI: 10.1021/acs.jafc.6b03491
 4. **Twining, C.W.**, J.T. Brenna, J.R. Shipley, P. Lawrence, T. Tollefson, and D.W. Winkler. 2016. Long-chain omega-3 fatty acid availability is more important than food availability for an aerial insectivore. *PNAS*. 113 (39): 10920-10925. DOI: 10.1073/pnas.1603998113 (**won award for best Cornell EEB student paper in 2016**)
- Highlighted in:** Martinez del Rio, C., and S. R. McWilliams. 2016. How essential fats affect bird performance and link aquatic ecosystems and terrestrial consumers. *PNAS* 113:11988-11990.
3. **Twining, C.W.**, J.T. Brenna, N.G. Hairston, Jr., and A.S. Flecker. 2016. Highly unsaturated fatty acids in nature: what do we know and what do we still need to learn? *Oikos*. 125: 749-760. DOI: 10.1111/oik.02910
 2. **Twining, C.W.** and D.M. Post. 2013. Cladoceran remains reveal presence of a keystone size-selective planktivore. *Journal of Paleolimnology*. 49(2): 253-266. DOI: 10.1007/s10933-012-9672-8
 1. **Twining, C.W.**, D.C. West, and D.M. Post. 2013. Historical changes in nutrient inputs from humans and anadromous fishes in New England's coastal watersheds. *Limnology and Oceanography*. 58 (4):1286-1300. DOI: 10.4319/lo.2013.58.4.1286

Outreach Publications

1. **Twining, C.W.**, C. Weber, C. Kowarik, M.M. Gossner, C.H. Graham, B. Matthews, and J.R. Shipley. 2022. Zum fressen gern: unsere Gewässer auss der Vogelperspektive. *Wasser Energie Luft* **114** (2): 68-75.

*Undergraduate senior thesis mentee.

¹Co-first authors.

Grants & Fellowships

Pending Grants

- SNSF Starting Grant, Submitted February 2023 (1.8 million CHF, Swiss ERC replacement funding)

Fellowships

- Marie Skłodowska Curie Fellowship, European Commission, July 2021-July 2023 (151,632 CHF fellowship, 19200 CHF research)
- Postdoctoral Research Fellowship, Alexander von Humboldt Foundation, August 2018-2021 (95,400€ fellowship, 19,200€ research)
- Distinguished Active Learning Teaching Assistant Fellowship, Cornell Center for Teaching Innovation, Fall 2017/Spring 2018 (\$1000)
- NSF Graduate Research Fellowship, June 2014-2017 (\$105,000)
- Cornell Fellowship, 2012-2013 Fall 2012/Spring 2013 (\$27,730)

Research Grants and Fellowships | Total Raised during PhD \$95,650

- 2015- 2017: NSF Doctoral Dissertation Improvement Grant (\$20,150)
- 2014- 2017: USDA Hatch Grant awarded to committee member Dr. J. T. Brenna in support of PhD work (\$60,000)
- 2016: Cornell Lab of Ornithology Athena Fund Grant (\$1500), Cornell College of Agriculture and Life Sciences Mellon Research Grant (\$500), Cornell E&EB Department Feeny Summer Research Grant (\$1200)
- 2015: Cornell Lab of Ornithology Athena Fund Grant (\$2500), Cornell College of Agriculture and Life Sciences Mellon Research Grant (\$1000)
- 2014: Cornell E&EB Department Feeny Summer Research Grant (\$1200), Cornell Sigma Xi Research Grant (\$600)
- 2013: Kieckhefer Adirondack Fellowship (\$5000), Cornell E&EB Department Feeny Summer Research Grant (\$1200), Cornell Sigma Xi Research Grant (\$800)
- 2011: The Sounds Conservancy/Quebec Labrador Foundation Grant (\$1000), F&ES Summer Globalization Internship and Research Fund (\$3000)
- 2010-2011: Yale Institute for Biospheric Studies/Yale Environmental Studies Fellowship (\$2000), Mellon Undergraduate Research Grant (\$450)
- 2009-2010: Environmental Fellowship for Study and Research (\$2200), Richter Fellowship (\$800), Environmental Fellowship for Study and Research (\$2000)

Travel Awards

- American Ornithology Society Meeting Travel Grant to attend the International Ornithological Congress, August 2018 (\$1000)
- Waterbird Society Meeting Travel Grant to attend the International Ornithological Congress, August 2018 (\$450)
- Cornell Graduate School Travel Award to attend the Society for Integrative and Comparative Biology meeting, January 2018 (\$440)
- Cornell Graduate School Travel Award to attend the Ecological Society of America meeting, August 2016 (\$360)
- Aquatic Section Student Travel Award to attend the Ecological Society of American meeting, August 2016 (\$300)
- Wilson Ornithological Society Student Travel Award to attend the North American Ornithological Conference, August 2016 (\$105)

- Presentations**
25. **Twining, C.W.**, B. Matthews, M. Gossner, T.P. Parmar, D. Martin-Creuzburg, M. Mathieu-Resuge, M. Kainz, R. Oester, C. Graham, and J.R. Shipley. Arthropod biodiversity increases energy and nutrient availability across aquatic and terrestrial food webs. Intecol, Geneva, Switzerland, September 2022. (Co-organized session)
 24. **Twining, C.W.**, B. Matthews, M. Gossner, T.P. Parmar, D. Martin-Creuzburg, M. Mathieu-Resuge, M. Kainz, R. Oester, C. Graham, and J.R. Shipley. Arthropod biodiversity increases energy and nutrient availability across aquatic and terrestrial food webs. SIL, Berlin, Germany, February 2022. (Co-organized session)
 23. **Twining, C.W.**, J.R. Shipley, M.D. McCue, M. Wikelski, and J. Partecke. Energetics and fuel use vary with migration strategy. Biology22, Basel, Switzerland, February 2022.
 22. **Twining, C.W.** Food webs in dynamic environments: a nutritional adaptation perspective. Eawag, Zurich Switzerland, December 2021. (Invited seminar)
 21. **Twining, C.W.**, T.P. Parmar, M. Mathieu-Resuge, M. Kainz, D. Martin-Creuzburg. Use of fatty acids from aquatic prey varies with foraging strategy. Aquatic Food Webs Workshop Lammi, Lammi Biological Station/virtual, November 2021. (Invited presentation)
 20. **Twining, C.W.**, J.R. Shipley, M. Mathieu-Resuge, T.P. Parmar, M.J. Kainz, D. Martin-Creuzburg, C. Weber, D.W. Winkler, C.H. Graham, and B. Matthews. Climate change shifts the phenology of non-reciprocal aquatic nutrients. AOS & SCO-SOC Annual Meeting, virtual, August 2021 (Invited oral symposium presentation)
 19. **Twining, C.W.** Understanding the eco-evo-physiology of nutrition through stable isotopes. IsoEcol, virtual, May 2021. (Invited plenary)

18. **Twining, C.W.** Food web eco-evo-physiology: where, when, and why does food quality matter? University of Notre Dame, Department of Biology, South Bend, Indiana/virtual, January 2021. (Invited seminar)
17. **Twining, C.W.** How does food web ecology influence physiology? University of New Brunswick, Department of Biology, Fredericton, New Brunswick, Canada/virtual, June 2020. (Invited seminar)
16. **Twining, C.W.** How do food quality differences between aquatic and terrestrial prey influence breeding success for riparian aerial insectivores? Aerial Insectivore Working Group, Environment and Climate Change Canada, University of Saskatchewan, Saskatoon, Canada/virtual, March 2020. (Invited working group presentation)
15. **Twining, C.W.** How trophic ecology can influence nutritional physiology – a story of two riparian birds. Wassercluster Lunz Seminar Series, Lunz-am-See, Austria, February 2020. (Invited seminar)
14. **Twining, C.W.** Ornithology for the limnologist: how freshwater fats can benefit birds. Eawag Fish Ecology Group Seminar Series, Kastanienbaum, Switzerland November 2018. (Invited seminar)
13. **Twining, C.W.** Limnology for the ornithologist: how freshwater fats can benefit birds. Max Planck Institute for Ornithology Seminar Series, Radolfzell, Germany October 2018. (Oral presentation)
12. **Twining, C.W., J.T. Brenna, D.W. Winkler, J.R. Shipley, A.S. Flecker, and N.G. Hairston.** Limnology for the ornithologist: freshwater fatty acids provide a vital nutritional subsidy for riparian birds. International Ornithological Congress, Vancouver, BC, Canada August 2018. (Invited oral symposium presentation)
11. **Twining, C.W., P. Lawrence, D.W. Winkler, A.S. Flecker, and J.T. Brenna.** Conversion efficiency of alpha linolenic acid to omega-3 long-chain fatty acids in aerial insectivore chicks. Society of Integrative and Comparative Biology Annual Meeting, San Francisco, CA January 2018. (Oral presentation)
10. **Twining, C.W. and J.R. Shipley.** Functional fats facilitate fledging fitness – evidence from 30 years of data in a natural laboratory. Cornell Lab of Ornithology Seminar Series, Ithaca, NY October 2017. (Oral presentation)
9. **Twining, C.W.** Emergent aquatic insects provide a high quality fatty acid subsidy to riparian insectivores. Cornell EEB Annual Symposium, Ithaca,

NY December 2016. (Oral presentation; *won award for best Cornell EEB student oral presentation*)

8. **Twining, C.W.** Emergent aquatic insects provide a high quality fatty acid subsidy to riparian insectivores. Cornell Lab of Ornithology Seminar Series, November 2016 (Oral presentation)
7. **Twining, C.W., J.T. Brenna, J.R. Shipley, P. Lawrence, T. Tollefson, and D.W. Winkler.** When less is more: Long-chain omega-3 fatty acid availability is more important than food availability for an aerial insectivore. North American Ornithological Conference, Washington, DC, August 2016. (Oral presentation)
6. **Twining, C.W., J.T. Brenna, P. Lawrence, S.T. Gonzalez, and A.S. Flecker.** Emergent aquatic insects provide a high quality fatty acid subsidy to a riparian insectivore. Ecological Society of America Annual meeting, Fort Lauderdale, FL, August 2016 (Oral presentation)
5. **Twining, C.W., J.T. Brenna, J.R. Shipley, P. Lawrence, T. Tollefson, and D.W. Winkler.** When less is more: Long-chain omega-3 fatty acid availability is more important than food availability for an aerial insectivore. Cornell EEB Annual Symposium, Ithaca, NY December 2015. (Oral presentation)
4. **Twining, C.W., A.S. Flecker, C.E. Kraft, and D.C. Josephson.** Patterns of allochthony and autochthony in Adirondack stream food webs: a stable isotope mixing model approach. Ecological Society of America meeting, Baltimore, MD, August 2015. (Oral presentation)
3. **Twining, C.W., and A.S. Flecker.** The effects of seasonality, light, and pH on Adirondack stream food quality and food web structure. Adirondack Research Symposium, Old Forge, NY February 2014. (Oral presentation)
2. **Twining, C.W., D.C. West, D.M. Post, and C. Geiss.** The ecological history of freshwaters in coastal Connecticut: linking paleoecology and nutrient loading models. Cornell EEB Annual Symposium, Ithaca, NY December 2012. (Oral presentation)
1. **Twining, C.W., D.C. West, D.M. Post, and C. Geiss.** Past ecosystem dynamics in Connecticut's coastal watersheds: linking paleoecology and nutrient loading models. Ecological Society of America meeting, Portland, OR, August 2012. (Oral presentation)

**Teaching and
Mentoring**

Teaching Experience

University of Konstanz, Konstanz, Germany

- *Limnology*, Guest Lecturer: University of Konstanz, Limnological Institute, June 2019.

Cornell University, Ithaca, NY

- *Physiological Ecology*, Guest Lecturer: Cornell Department of Ecology & Evolutionary Biology, February 2018
- *Ornithology*, Teaching Assistant: Department of Ecology & Evolutionary Biology and Cornell Writing in the Majors Program, Spring 2018
- *Stream Ecology*, Teaching Assistant: Department of Ecology & Evolutionary Biology, Fall 2017
- *Limnology Lab*, Teaching Assistant: employed by the Cornell Department of Ecology & Evolutionary Biology, Fall 2014
- *Limnology*, Teaching Assistant: Cornell Department of Ecology & Evolutionary Biology, Spring 2014.
- *Stream Ecology*, Teaching Assistant: Cornell Department of Ecology & Evolutionary Biology, Fall 2013

Yale University, New Haven, CT

- *Ecosystem Ecology*, Teaching Fellow: Yale Department of Ecology & Evolutionary Biology, Fall 2011

Teaching Development

- Conferences and Workshops:
 - Cornell Connecting Teaching and Research Conference, May 2018 (Oral presentation)
 - Cornell Center for Teaching Excellence (CTE) University-Wide Teaching Conference, Fall 2016 (Participant)
 - Inclusive Teaching Institute, February 2016 (Participant by application)
- Formal Coursework at Cornell University:
 - Teaching as Research (ALS 6016): weekly course including a semester-long teaching as research project, Spring 2018
 - Teaching in Higher Education (ALS 6015): weekly course, Fall 2016
 - Building Mentoring Skills: bi-weekly course, Spring 2016
- Teaching Workshop Certificates at Cornell University:
 - Enhancing Teaching with Technology, Spring 2018
 - Innovative Approaches to Pedagogy, Spring 2018
 - Understanding Undergraduate Learners, Fall 2016
 - Inclusive Teaching in STEM, May 2016
 - Building Mentoring Skills, Spring 2016
 - Assessment Practices for the STEM Classroom, Spring 2015

Undergraduate Mentoring

- *Sarah Dzielski*, Cornell '17: Fall 2015-Spring 2021. BS thesis mentee.
- *Diamond Oden*, Cornell '17: Fall 2013-Spring 2017. BS thesis mentee.
- *Sara Gonzalez*, Cornell '16: Fall 2014-Spring 2021.

- *Vivien Ikwuozom*, Cornell '17: Summer 2015.
- *Rachel Corona*, Cornell '16: Summer 2015.
- *Jake Sousa*, Cornell '17: Summer 2014-Spring 2015.
- *Jake Leiby*, Cornell '16: Spring 2014.
- *Keren Bitan*, Cornell '14: Fall 2013-Spring 2014. BA thesis mentee.

Professional Activities

Workshop and Conference Organization

- Untangling food web and ecosystem effects of reciprocal subsidies, with Amanda Subalusky, Therese Frauendorf, Carmen Kowarik, Tarn-Preet Parmar, Dominik Martin-Creuzburg, Martin Kainz; ALSO 2023, Mallorca, Spain, June 2023
- Aquatic to terrestrial food web connections: reciprocal risks or biodiversity benefits; Intecol 2022, Geneva, Switzerland, August 2022
- Emergent aquatic insects as valuable inland water subsidies and ecosystem service providers, with Dominik Martin-Creuzburg, Martin Kainz, Tarn Preet Parmar, and Margaux Mathieu-Resuge; SIL 2022, Berlin, August 2022
- Scientific Exchange Grant from Swiss National Science Foundation with Blake Matthews: The evolutionary ecology of essential fatty acids; Kastanienbaum, Switzerland, November 2019

Institutional Service

- Eawag CEEB Women's Mentoring Group, founding member: Fall 2021-Present
- Cornell EEB Quantitative Ecologist Search Committee: committee member, Fall 2016-Spring 2017
- Cornell Graduate School Ambassador: Fall 2016-Spring 2018
- Cornell EEB Diversity Committee: Winter 2016-Spring 2018
- Cornell EEB Recruitment Committee: Fall 2012-Spring 2018

Society Memberships

- Ecological Society of America, ESA Aquatic Section
- Association for the Sciences of Limnology and Oceanography
- American Ornithological Society
- Society for Integrative and Comparative Biology

Reviewing

Global Change Biology, Functional Ecology, Journal of Animal Ecology, American Journal of Physiology, Comparative Biochemistry and Physiology, Journal of Experimental Zoology, Journal of Experimental Biology, Limnology and Oceanography, Freshwater Biology, Freshwater Science, Science of the Total Environment, Environmental Reviews, Aquatic Sciences, Marine Ecology Progress Series, Oecologia, Molecular Ecology, Ecological Monographs, Philosophical Transactions B

**Outreach
Activities**

- Eawag, Kastanienbaum, Switzerland 2022: Presentations to teachers from Pädagogischen Hochschule Luzern (in German)
- Cornell Enviro-Mentors Program, Ithaca, NY 2014- 2017. Graduate student leader.
- Cornell Expanding Your Horizons Conference, Ithaca, NY, 2014- 2017: volunteer (2014); workshop leader, (2015-2016); workshop leader, (2017)
- Cornell 4H Conference Stream Ecology Workshops, Ithaca, NY 2014-2015
- Radio Interview on Ithaca Public Radio, Ithaca, NY, 2014
- Showtime! Presentations, Ithaca Sciencenter, Ithaca, NY 2014-July 2015: Presented information on stream food webs and introduced elementary school children to local fish and invertebrates.
- Trout in the Classroom, Ithaca, NY, 2014: Introduced elementary school children to macroinvertebrates and stream ecology research.
- Rogers Lake Fishway Committee, Old Lyme, CT: 2013- 2014.
- Undergraduate Outreach Research Presentations, Spring 2011: Presented undergraduate senior thesis findings to the Old Lyme Land Trust and Old Lyme Town Conservation Commission; the Linsley Lake Association; the Branford Land Trust at the Branford Land Trust Annual Meeting; and the Rogers Lake Authority.

Languages

- **French** (conversational, 7 years of pre-collegiate study including AP French language and literature exams, 0.5 of college study)
- **Chinese** (普通话; conversational, equivalent of 3 years of college study including summer intensive program through Harvard Beijing Academy, Beijing, China)
- **German** (B1 level, intensive program through Goethe Institute, Freiburg, Germany)