

Dr. Jacqueline R. Gerson

Assistant Professor, Cornell University
Riley Robb Hall, 111 Wing Drive, Ithaca, NY 14853
jacqueline.gerson@cornell.edu
<http://gersonlab.weebly.com>

RESEARCH INTERESTS

I am a watershed biogeochemist and ecosystem ecologist. I study how humans impact biogeochemical cycling in terrestrial and aquatic ecosystems. I am particularly interested in how landscape change, acid deposition, climate change, and the introduction of contaminants alter elemental movement, microbial processing of elements, and the resulting impacts on wildlife and people.

ACADEMIC APPOINTMENTS

2024-present	Assistant Professor, <i>Biological and Environmental Engineering</i> – Cornell University
2023-2024	Assistant Professor, <i>Earth and Environmental Sciences</i> – Michigan State University
2023-2024	Assistant Professor, <i>Kellogg Biological Station</i> – Michigan State University
2022-2023	Postdoctoral Scholar, <i>Cooperative Institute for Research in Environmental Sciences</i> – University of Colorado Boulder
2021-2022	Postdoctoral Scholar, <i>Environmental Science, Policy, and Management</i> – University of California Berkeley

EDUCATION

University Program in Ecology, Duke University – Durham, NC

2016-2021 Ph.D. Ecology, College Teaching Certificate, Global Health Doctoral Certificate
Advisor: Dr. Emily Bernhardt

College of Civil and Environmental Engineering, Syracuse University – Syracuse, NY

2014-2016 M.S. Environmental Engineering Science
Advisor: Dr. Charles Driscoll

Colgate University – Hamilton, NY

2007-2011 B.A. Biochemistry, Minor: Environmental Studies, *Magna Cum Laude*
Advisor: Dr. Ephraim Woods, III

MAJOR ACADEMIC AWARDS

2024	<i>SN 10: Scientists to Watch</i> – Science News
2021	<i>Earth Sciences Postdoctoral Research Fellowship</i> – National Science Fellowship
2020-2021	<i>Jo Rae Wright Fellowship for Outstanding Women in Science</i> – Duke University Graduate School (1 of 2 selected)
2020-2021	<i>F.K. Weyerhaeuser Fellowship</i> – Forest History Society (1 selected)
2018-2021	<i>Duke Global Health Institute Doctoral Scholar</i> – Duke University

- 2015-2020 *Graduate Research Fellowship* – National Science Foundation
 2016 *Outstanding Graduate Student in Civil and Environmental Engineering* – Syracuse University (1 selected)
 2015-2016 *Selected Professions Fellowship* – American Association of University Women (\$18,000)
 2014-2016 *Syracuse University Graduate Fellowship* – Syracuse University
 2011 *Award for Excellence in Environmental Studies* – Colgate University (1 selected)

INVITED CONFERENCE PRESENTATIONS AND SEMINARS

I have given a total of 70 talks at national and international meetings and seminars in my career, including 27 invited talks.

- 2024 Ohio State University, Department of Earth Sciences
 2024 Cornell University, Department of Biological and Environmental Engineering
 2024 Indiana University, School of Public and Environmental Affairs
 2024 Wayne State University, Biology Department Seminar
 2023 University of Notre Dame, Biology Department Seminar
 2023 Western Michigan University, Geological and Environmental Sciences Department Seminar
 2023 Colgate University, Biology Department Seminar
 2023 Central Michigan University, Earth Science Department Seminar
 2023 University of Colorado – Boulder, Environmental Engineering Department Seminar
 2023 Regis University, Biology Department Seminar
 2022 University of Wisconsin – Madison, Department of Soil Science Seminar
 2022 University of California Santa Cruz, Earth and Planetary Sciences Department Seminar
 2022 Michigan State University, Earth and Environmental Sciences Department Seminar
 2022 planetGOLD Global Forum on Artisanal and Small-Scale Gold Mining, Symposium
 2022 University of Wisconsin – Madison, Water Science Seminar
 2022 Conservación Amazónica (Peru), Symposium
 2021 California State University – Northridge, Geological Sciences Department Seminar
 2021 Society for Freshwater Science, Conference
 2021 Dartmouth College, Environmental Studies Program Seminar
 2021 Society of Environmental Toxicology and Chemistry, Conference
 2020 Inter-American Symposium on Mercury (Sin Mercurio), Symposium
 2019 Mercury research priorities in the Amazon, Symposium
 2018 Syracuse University, Civil and Environmental Engineering Department Seminar
 2018 Wake Forest University, Ecology and Evolutionary Biology Seminar
 2017 Cheikh Anta Diop University of Dakar (Senegal), Environmental Science Seminar
 2017 University of North Carolina – Greensboro, Biology Department Seminar
 2017 American Association of Geographers, Conference

PEER-REVIEWED PUBLICATIONS

Publications authored by students I have mentored are underlined. § indicates co-first authors

22. Marchese MJ, Gerson JR, Berky AJ, Driscoll CT, Fernandez LE, Hsu-Kim H, Lansdale KN, Letourneau E, Montesdeoca M, Pan WK, Robie E, Vega C, and Bernhardt ES. 2024. Diet choices determine mercury exposure risks for people living in gold mining regions of Peru.

Environmental Research Health. DOI: 10.1088/2752-5309/ad3d79

Also available in Spanish

21. **Chen A**, Danfakha F, Hausermann H, and **Gerson JR**. 2023. Education and equipment distribution lead to increased mercury knowledge and retort use in artisanal and small-scale gold mining communities in Senegal. *Journal of Cleaner Production Letters* 5: 100050. DOI: 10.1016/j.clpl.2023.100050
Also available in French
20. **Gerson JR** and Hinckley ES. 2023. Managing sulfur use in agricultural systems to meet crop needs and reduce environmental consequences. *Earth's Future* 11. DOI: 10.1029/2023EF003723
Received the EOS Editor's Highlight
19. Sayers C, Evers DC, Ruiz-Gutierrez V, Adams E, Vega CM, Pisconte J, Tejeda V, Regan K, Lane OP, Tear TH, Ash AA, Cal R, Reneau S, Martínez W, Welch G, Hartwell K, Teul M, Tzul D, Arendt W, Tórrez MA, Watsa M, Erkenwick G, Moore CE, **Gerson JR**, Sánchez V, Pérez Purizaca R, Martínez AE, Bernhardt ES, Taylor RJ, and Fernandez LE. 2023. Mercury exposure in Neotropical birds: A review and prospectus on 15 years of exposure data. *Ecotoxicology* 32(8): 1096-1123. DOI: 10.1007/s10646-023-02706-y
18. Waters MN, Bernhardt ES, and **Gerson JR**. 2023. The impacts of dam construction on elemental deposition in a reservoir receiving mountaintop coal mining materials. *Lake and Reservoir Management* 39(3): 246-258. DOI: 10.1080/10402381.2023.2230470
17. Helton AM, Morse JL, Sudduth EB, Ardon M, Bier R, Voss KA, Ross MRV, Blaszcak JR, Brandt JE, Simonin M, Rocca JD, Carter A, **Gerson JR**, Ury EA, and Vlah MJ. 2023. At the interfaces of the hydrologic sciences: Connecting water, elements, ecosystems, and people through the major contributions of Dr. Emily Bernhardt. *Journal of Hydrology*: 129251. DOI: 10.1016/j.jhydrol.2023.129251
16. Nordseth EA, § **Gerson JR**, § Aguilar LK, Dunham A, Gentles A, Neale Z, and Rebol E. 2022. The Fieldwork Wellness Framework: A new approach to field research in Ecology, Evolution, and Conservation Biology. *Frontiers in Ecology and the Environment*. DOI: 10.1002/fee.2649
15. Estien CO, Chapman M, Schell CJ, Lowy N, and **Gerson JR**. 2022. Demystifying the graduate school application process. *Bulletin of the Ecological Society of America* 104(1). DOI: 10.1002/bes2.2029
Among top 10% most downloaded papers in the journal
14. **Gerson JR**, Szponar N, Almeyda Zambrano A, Bergquist B, Broadbent E, Driscoll CT, Erkenwick G, Evers DC, Fernandez LE, Hsu-Kim H, Inga G, Lansdale KN, Marchese MJ, Martinez A, Moore C, Pan WK, Pérez Purizaca RO, Sánchez V, Silman M, Ury EA, Vega C, Watsa M, and Bernhardt ES. 2022. Amazon forests capture high levels of atmospheric mercury pollution from artisanal gold mining. *Nature Communications* 13(559). DOI: 10.1038/s41467-022-27997-3
Covered by media outlets including the *New York Times*, *BBC World News*, *Mongabay*, and *Science News*
Also available in Spanish

13. Naslund LC, **Gerson JR**, Brooks AC, Rosemond AD, Walters DM, and Bernhardt ES. 2021. Ecosystem modification and network position impact contaminant fluxes from a mountaintop mining-impacted river network. *Environmental Pollution* 291: 118257. DOI: 10.1016/j.envpol.2021.118257
12. Jin L, **Gerson JR**, Rocca JD, Bernhardt ES, and Simonin M. 2021. Alkaline mine drainage drives stream sediment microbial community structure and function. *Science of the Total Environment* 805: 150189. DOI: 10.1016/j.scitotenv.2021.150189
11. Simonin M, Rocca JD, **Gerson JR**, Moore E, Brooks A, Czaplicki L, Ross MRV, Fierer N, Craine JM, and Bernhardt ES. 2021. Consistent declines in aquatic biodiversity across diverse domains of life in rivers impacted by surface coal mining. *Ecological Applications* 31(6): e02389. DOI: 10.1002/eap.2389
10. **Gerson JR**, Dorman R, Eagles-Smith CA, Bernhardt ES, and Walters DM. 2021. Lethal impacts of selenium counterbalance the potential reduction in mercury bioaccumulation for freshwater organisms. *Environmental Pollution* 287: 117293. DOI: 10.1016/j.envpol.2021.117293
9. **Gerson JR**,[§] Topp SN,[§] Vega CM, Gardner JR, Yang X, Fernandez LE, Bernhardt ES, and Pavelsky T. 2020. Artificial lake expansion amplifies mercury pollution from gold mining. *Science Advances*. 6: eabd4953. DOI: 10.1126/sciadv.abd4953
Also available in Spanish
8. **Gerson JR**, Walters DM, Eagles-Smith CA, Bernhardt ES, and Brandt JE. 2020. Do two wrongs make a right? Persistent uncertainties regarding environmental mercury-selenium interactions. *Environmental Science and Technology*. 54(15): 9228-9234. DOI: 10.1021/acs.est.0c01894
7. **Gerson JR**, Naslund LC, Hsu-Kim H, Driscoll CT, Walters DM, and Bernhardt ES. 2020. Mercury and selenium loading in mountain-top mining impacted alkaline streams and riparian food webs. *Biogeochemistry*. 150(1): 109-122. DOI: 10.1007/s10533-020-00690-7
6. Naslund LC, **Gerson JR**, Brooks AC, Walters DM, and Bernhardt ES. 2020. Contaminant subsidies to riparian food webs in Appalachian streams impacted by mountaintop removal coal mining. *Environmental Science and Technology*. 54(7): 3951-3959. DOI: 10.1021/acs.est.9b05907
Received the ACS Editors' Choice Award
5. **Gerson JR**, Driscoll CT, Hsu-Kim H, and Bernhardt ES. 2018. Senegalese artisanal gold mining leads to elevated total and methylmercury concentrations in soils, sediments, and rivers. *Elementa: Science of the Anthropocene*. 6(1): 11. DOI: 10.1525/elementa.274
Also available in French
4. **Gerson JR**, Driscoll CT, Demers JD, Sauer AK, Blackwell BD, Montesdeoca MR, Shanley JB, and Ross DS. 2017. Deposition of mercury in forests across a montane elevation gradient: Elevational and seasonal patterns in methylmercury inputs and production. *JGR Biogeosciences*. 122(8): 1922-1939. DOI: 10.1002/2016JG003721

3. **Gerson JR** and Driscoll CT. 2016. Is mercury in a remote forested watershed of the Adirondack Mountains responding to recent decreases in emissions? *Environmental Science and Technology*, 50(20): 10943-10950. DOI: 10.1021/acs.est.6b02127
2. **Gerson JR**, Driscoll CT, and Roy KM. 2016. Patterns of nutrient dynamics in Adirondack lakes recovering from acid deposition. *Ecological Applications*, 26(6): 1758-1770. DOI: 10.1890/15-1361.1
1. Woods III E, Yi C, **Gerson JR**, and Zaman RA. 2012. Uptake of pyrene by NaCl, NaNO₃, and MgCl₂ aerosol particles. *The Journal of Physical Chemistry A*, 116.15: 4137-4143. DOI: 10.1021/jp3014145

In Review

Gerson JR. Accepted. The role of contaminant risk landscapes in the Anthropocene. *Frontiers in Ecology and the Environment*.

Gerson JR, Lehnherr I, Luu T, and Porter TJ. In review. *Ficus insipida* tree-rings as quantitative passive samplers for gaseous elemental mercury in the artisanal gold mining-impacted Peruvian Amazon. *Earth and Space Chemistry Letters*.

Szponar N, Vega C, **Gerson JR**, McLagan DS, Pillaca M, Antoni S, Nason K, Rahman N, Fernandez LE, Bernhardt ES, Kiefer A, Mitchell CPJ, Wania F, and Bergquist BA. In review. Atmospheric mercury from artisanal and small-scale gold mining isotope insights. *Environmental Science and Technology*.

PUBLISHED DATASETS

Publications authored by students I have mentored are underlined.

4. Marchese MJ, **Gerson JR**, Berky AJ, Chen A, Driscoll CT, Fernandez LE, Hsu-Kim H, Lansdale KN, Lee A, Letourneau E, Machicao M, Montesdeoca M, Pan WK, Robie E, Vega C, and Bernhardt ES. 2024. Tracking gold mining derived mercury pollution into human diets in the Madre de Dios region of Peru. *Dryad*. DOI: 10.5061/dryad.cnp5hqcbh
3. **Gerson JR**, Szponar N, Agostini A, Alotaibi R, Bergquist B, Chen A, Fernandez LE, Lansdale KN, Lee AH, Machicao MF, Marchese MJ, Topp SN, Vega C, and Bernhardt ES. 2022. Chemistry of surface water, precipitation, throughfall, leaves, sediment, soil, and air near artisanal gold mining in Madre de Dios, Peru. *Ecology Data Papers*. DOI: <https://doi.org/10.1002/ecy.3666>
2. **Gerson JR**, Walters DM, Eagles-Smith CA, and Dorman RA. 2021. Survival, growth, behavior and mercury concentrations of mayflies exposed to elevated dietary methylmercury and aqueous selenium. *U. S. Geological Survey Data Release*. DOI: <https://doi.org/10.5066/P9WFOU5L>
1. **Gerson JR**, Moore E, Naslund L, Rocca J, and Simonin M. 2020. Chemistry of streams draining mined and unmined watersheds in the mountaintop mined landscape of Central Appalachia, USA. *Ecology Data Papers*. DOI: <https://doi.org/10.1002/ecy.3093>

POPULAR PRESS ARTICLES AND TECHNICAL REPORTS

Publications authored by students I have mentored are underlined.

11. **Gerson JR**. 2024. Senegal's small scale gold miners still use poisonous mercury: how to reduce the harm. *The Conversation*. Online. <<https://theconversation.com/senegals-small-scale-gold-miners-still-use-poisonous-mercury-how-to-reduce-the-harm-218934>>
10. Valdez U, Arauco RP, and **Gerson JR**. 2023. A rainforest with a gold chain? The impacts of gold mining on the trophic web of an Amazonian rainforest of SE Peru. *Online Content for Experiential Learning of Tropical Systems (OCELOTS)*. Online. <https://qubeshub.org/community/groups/ocelots/publications?id=4513&tab_active=about&v=1>
9. **Gerson JR**, Szponar N, Almeyda Zambrano A, Bergquist B, Broadbent E, Driscoll CT, Erkenwick G, Evers DC, Fernandez LE, Hsu-Kim H, Inga G, Lansdale KN, Marchese MJ, Martinez A, Moore C, Pan WK, Pérez Purizaca RO, Sánchez V, Silman M, Ury EA, Vega C, Watsa M, and Bernhardt ES. 2022. Amazon forests near small-scale and artisan gold mining capture high levels of mercury atmospheric pollution. *CINZIA Research Brief Series*. Online. <http://cincia.wfu.edu/publicaciones/bosques-amazonicos-cercanos-a-la-actividad-minera-de-oro-artesanal-y-de-pequena-escala-capturan-altos-niveles-de-contaminacion-atmosferica-por-mercurio/>
8. **Gerson JR**. 2022. Gold mining is poisoning Amazon forests with mercury. *Scientific American: Opinion*. Online. <https://www.scientificamerican.com/article/gold-mining-is-poisoning-amazon-forests-with-mercury/>
7. **Gerson JR**,[§] Topp SN,[§] Vega CM, Gardner JR, Yang X, Fernandez LE, Bernhardt ES, and Pavelsky T. 2020. Artisanal gold mining ponds amplify mercury risk in the Peruvian Amazon. *CINZIA Research Brief Series*. Online. <http://cincia.wfu.edu/publicaciones/pozas-abandonadas-por-la-mineria-aurifera-artesanal-aumentan-el-riesgo-de-contaminacion-por-mercurio-en-la-amazonia-peruana>
[§] co-first authors
6. **Gerson JR**, Wadle A, Parham J, Agostini A, Alotaibi R, Chen A, Lee A, Machicao MF, and Marchese M. 2020. Gold rush, mercury legacy: Small-scale mining for gold has produced long-lasting toxic pollution, from 1860s California to modern Peru. *The Conversation*. Online. <https://theconversation.com/gold-rush-mercury-legacy-small-scale-mining-for-gold-has-produced-long-lasting-toxic-pollution-from-1860s-california-to-modern-peru-133324>
5. **Gerson JR**, Lansdale K, and Marchese M. 2018. The poisoning of the Amazon. *National Geographic Voices*. Online. <https://web.archive.org/web/20210315195951/https://blog.nationalgeographic.org/2018/10/02/the-poisoning-of-the-amazon/>
4. **Gerson JR**. 2018. "Wild, wonderful" West Virginia's decapitated mountains and deformed fish. *Scientific American: Observations*. Online. <https://blogs.scientificamerican.com/observations/wild-wonderful-west-virginias-decapitated-mountains-and-deformed-fish/>
3. **Gerson JR**, Simonin M, Beye M, and Bernhardt ES. 2017. Le mercure et l'orpaillage artisanal au Sénégal. Technical Report.

2. **Gerson JR.** 2017. The dirty secrets of gold mining in Senegal. *National Geographic Voices*. Online. <https://web.archive.org/web/20210522003634/https://blog.nationalgeographic.org/2017/07/19/the-dirty-secrets-of-gold-mining-in-senegal/>
1. **Gerson JR.** 2017. Living the science: Place-based education as a model for scientific learning. *Voices for Biodiversity*. Online. <http://voicesforbiodiversity.org/articles/living-the-science-place-based-education-as-a-mode>

GRANTS

Funding Since 2023 (\$2,408,755 total; \$100,797 awarded to Gerson)

Coupled cycling of mercury and greenhouse gases across a Michigan watershed (\$16,000), Michigan DISES: Investigating mercury biogeochemical cycling via mixed-methods in complex artisanal gold mining landscapes and implications for community health (\$1,537,666), National Science Foundation DISES, Jan 2024-Dec 2028, H Hausermann, **J Gerson**, and R. Amankwah. (\$739,078 to Gerson/Cornell as the lead biogeochemist PI)

State University Ecology and Evolutionary Biology Seed Grant, May 2024-Aug 2025, K Aho and **J Gerson**. (\$16,000 to MSU)

GALS Arizona and Michigan: Girls on outdoor Adventure for Leadership and Science in Arizona and Michigan, (\$199,913), USDA NIFA Women and Minorities in STEM (WAMS), Sep 2023-Aug 2024, E Gornish and **J Gerson**. (\$121,623 to Gerson/MSU)

Toward sustainable crop sulfur use: Probing the link between high sulfur applications and methylmercury production (\$655,176), USDA NIFA, Jan 2022-Dec 2025, E Hinckley, P Weiss, and **J Gerson**. (\$130,696 to Gerson/MSU)

Funding in Review

Long-term patterns and drivers of trace and ultratrace elements in boreal streams (\$749,945 requested), National Science Foundation Hydrological Sciences, Sep 2024-Aug 2027, **J Gerson** and Y Pokhrel. (\$749,945 to MSU)

RaMP: Sustaining biodiversity through integrating Training, Interning, and Mentoring (STIM-bio): A field station and STEM stakeholders working together to grow a diverse workforce (\$2,999,938 requested), National Science Foundation RaMP, Jan 2025-Dec 2028, A Bronikowski, J Conner, S Evans, S Fitzpatrick, **J Gerson**, K Gilbert, N Haddad, C Kozakiewicz, F Janzen, P Robertson, A Shah, C Sprunger, and L Sullivan. (\$2,999,938 to MSU)

Research Funding Prior to 2023 (\$335,679 total)

Beyond aquatic systems and miners' health: A mixed methods approach to assessing mercury in crops adjacent to artisanal gold mining, and implications for community health (\$15,000), Colorado School of Public Health and Colorado State University Aug 2022-June 2023, H Hausermann and **J Gerson**.

Trace and ultratrace elements in boreal streams: quantifying long-term trends and evaluating impacts across scales (\$174,000), National Science Foundation Earth Sciences Postdoctoral Fellowship (NSF EAR) Sep 2021-Aug 2023, Awarded but I declined, **J Gerson**.

Animal transport and transformation of trace elements across ecosystem boundaries (\$255,000), National Science Foundation Biology Postdoctoral Fellowship Sep 2021-Aug 2024, Meritorious, **J Gerson**.

Evaluating Knowledge and Behaviors Associated with Mercury Emissions from Artisanal Gold Mining in Senegal (\$2,505), World Connect, Oct 2020-Mar 2021, **J Gerson** and F Danfakha.

Seasonal Changes in Mercury Inputs from Artisanal Gold Mining (\$1,000), Duke Biology Grant in Aid, June 2020-May 2021, **J Gerson**.

Hands-on Dendrochronology Training to Determine Long-Term Patterns in Mercury Concentration (\$4,150), Duke Graduate School Training and Enhancement Grant (GSTEG), July 1, 2019-June 30, 2020, **J Gerson**.

The Impact of Selenium on Mercury Accumulation in Diatoms and Mayflies (\$1,000), Duke Biology Grant in Aid, June 2019-May 2020, **J Gerson**.

Environmental Implications of Artisanal Gold Mining in the Peruvian Amazon (\$30,000), Duke Bass Connections, March 2019-May 2020, ES Bernhardt and **J Gerson**.

Reducing Health and Environmental Impacts of Mercury from Artisanal Gold Mining in Senegal (\$3,780), World Connect, Feb 2019-Dec 2019, **J Gerson** and F Danfakha.

Quantifying Historical and Current Levels of Atmospheric Mercury Pollution from Artisanal Gold Mining in the Peruvian Amazon (\$2,000), Duke Trent Foundation, Jan 2019-Dec 2019, ES Bernhardt and **J Gerson**.

Is Selenium protective against mercury exposure in aquatic and riparian food webs? (\$5,000), National Science Foundation Graduate Research Internship Program (GRIP), June 2018-May 2019, **J Gerson**.

The Fate and Transport of Mercury from Artisanal Gold Mining in Madre de Dios, Peru (\$12,500), Duke Global Health Institute Dissertation Fieldwork Grant, May 2018-June 2019, **J Gerson**.

Environmental Epidemiology in Latin America: Identifying the Impacts of Artisanal Gold Mining on Forest Reserves and Native Populations in the Peruvian Amazon (\$30,000), Duke Bass Connections, March 2018-May 2019, ES Bernhardt, W Pan, and **J Gerson**.

Quicksilver in the Waters: Tracing Mercury Contamination from Artisanal Gold Mining from Its Source through the Environment in Madre de Dios, Peru (\$5,000), Lewis and Clark Fund for Exploration and Field Research Field Scholar, Feb 2018-July 2018, **J Gerson**.

Mapping the Fate of Quicksilver: Mercury Contamination from Artisanal Small-Scale Gold Mining in Senegal (\$990), Sigma Xi Grants in Aid of Research, Jan 2018-Dec 2018, **J Gerson**.

Ecosystem Assessment of Mercury from Gold Mining in Madre de Dios, Peru (\$1,752), Geological Society of America, July 2017-June 2018, **J Gerson**.

Tracing Mercury from Artisanal Gold Mining into Agricultural Soils and Crops (\$1,000), Duke Biology Grant in Aid, June 2017-May 2018, **J Gerson**.

Quicksilver in the Waters: Tracing Mercury Contamination from Artisanal Gold Mining from Its Source through the Environment (\$3,000), Exploration Fund Grant: Mamont Scholar, June 2016-Dec 2016, **J Gerson**.

Engaging policy makers and local communities in understanding research findings on mercury artisanal gold mining in Senegal (\$3,992), Duke Policy Bridge Funds for Policy Engagement, April 2017-April 2018, **J Gerson** and ES Bernhardt.

Nutrient dynamics in Adirondack lakes recovering from acidification by acid deposition (\$40,000), New York State Energy Research and Development Authority, Jan 2015-Aug 2016, CT Driscoll and **J Gerson**.

Outreach Funding Prior to 2023 (\$196,497 total)

Girls on outdoor Adventure for Leadership and Science (\$10,000), REI Force of Nature Grant, May 2020-Dec 2021, **J Gerson**, L Dollar, B Dixon, K Flanigan, and N Teasley.

Girls on outdoor Adventure for Leadership and Science (\$120,354), Burroughs Wellcome Fund Student Science Enrichment Program, Feb 2020-Aug 2022, **J Gerson**, E Levy, and E Ury.

Girls on outdoor Adventure for Leadership and Science (GALS) Summer Program (\$10,000), REI Force of Nature Grant, Sep 2018-Aug 2019, **J Gerson**, E Levy, E Ury, and N Cagle.

Girls on outdoor Adventure for Leadership and Science (GALS) Summer Program (\$6,990), American Association of University Women, July 2018-June 2019, **J Gerson**.

Girls on outdoor Adventure for Leadership and Science (GALS) Summer Program (\$20,000), REI Force of Nature Grant, July 2017-June 2018, **J Gerson**, E Levy, and N Cagle.

Girls on outdoor Adventure for Leadership and Science (GALS) Summer Program (\$15,000), The North Face Explore Fund, July 2017-June 2018, **J Gerson**, E Levy, and ES Bernhardt.

Girls on outdoor Adventure for Leadership and Science (GALS) Network (\$14,153), Duke Support for Interdisciplinary Graduate Networks (D-SIGN), May 2017-May 2018, **J Gerson**, E Levy, and N Cagle.

STUDENT GRANTS, FELLOWSHIPS, AND AWARDS IN LAB

2024	Samantha Davies, NSF Graduate Research Fellowship, Honorable Mention
2024	Samantha Davies, Michigan State University Distinguished Fellowship (\$67,000)
2024	Samantha Davies, Michigan State University College of Natural Science Early Start Fellowship (\$6,000)
2023	Jenna Hynes, Michigan State University Distinguished Fellowship (\$67,000)
2023	Jenna Hynes, Michigan State University College of Natural Science Early Start Fellowship (\$6,000)

SCHOLARSHIPS AND TRAVEL GRANTS

2024	<i>TUNDRA Award</i> – Toolik Field Station (\$1,200)
2020-2021	<i>Duke Biology One Semester Departmental Fellowship</i> – Duke University (1 semester tuition + stipend)
2020	<i>Mulholland Endowment Award for Biogeochemical Research</i> – Society for Freshwater Science (\$1,000)
2020	<i>Duke University Summer Research Fellowship</i> – Duke University (\$5,500)
2017	<i>Center for Latin American and Caribbean Studies Conference Travel Grant</i> – Duke University (\$500)

- 2017/18/19 *Center for Latin American and Caribbean Studies Tinker Research Travel Grant Award* – Duke University (\$4,100 total)
- 2019 *Duke University Graduate School Conference Travel Award* – Duke University (\$750)
- 2019 *International Dissertation Travel Award* – Duke University (\$3,000)
- 2018/19 *Duke University Graduate School Conference Travel Award* – Duke University (\$2,000 total)
- 2018 *Duke University Center for International and Global Studies Research and Training Grant* – Duke University (\$1,000)
- 2017 *Student Travel Grant* – International Conference on Mercury as a Global Pollutant (\$925)
- 2016 *Student Travel Award* – Northeast Geologic Society of America (\$90)
- 2015, 2016 *Graduate Student Organization Travel Grant* – Syracuse University (\$667 total)
- 2015 *Richard A. Herbert Memorial Scholarship* – American Water Resources Association (\$2,000)
- 2015 *Nunan Graduate Student Travel Grant* – Syracuse University (\$1,000)

OTHER CONFERENCE PRESENTATIONS AND SEMINARS (2017-present)

Gerson JR, Eagles-Smith C, and Walters D. June 2024. “The role of contaminant risk landscapes in the Anthropocene.” Society for Freshwater Science. Oral Presentation. Philadelphia, PA.

Gerson JR, Driscoll CT, and Hinckley ES. December 2023. “Beyond NPK: It is time to develop sustainable sulfur management for agricultural systems.” American Geophysical Union. Oral Presentation. San Francisco, CA.

Gerson JR, Calvin N, Castro D, Lamborg C, Weiss-Penzias P, and Hinckley ES. July 2022. “Potential connection between agricultural sulfur use and mercury methylation in vineyards.” Goldschmidt. Oral Presentation. Lyon, France.

Hinckley, ES and **Gerson JR** (joint presentation). December 2022. “What are the consequences of sulfur applications to Napa Valley vineyards for wetlands of the San Pablo Bay?” Napa-Sonoma Marshes Restoration Group Meeting. Oral Presentation. Virtual.

Gerson JR, Topp, SN, Szponar N, Almeyda Zambrano A, Bergquist B, Broadbent E, Driscoll CT, Erkenwick G, Evers DC, Fernandez LE, Gardner JR, Hsu-Kim H, Inga G, Lansdale K, Marchese MJ, Martinez A, Moore C, Pan W, Silman M, Ury EA, Vega C, Watsa M, Yang X, Pavelsky T, and Bernhardt ES. August 2022. “High levels of mercury in Peruvian forests from artisanal gold mining.” Ecological Society of America. Poster Presentation. Montreal, Canada.

Gerson JR, Topp, SN, Szponar N, Almeyda Zambrano A, Bergquist B, Broadbent E, Driscoll CT, Erkenwick G, Evers DC, Fernandez LE, Gardner JR, Hsu-Kim H, Inga G, Lansdale K, Marchese MJ, Martinez A, Moore C, Pan W, Silman M, Ury EA, Vega C, Watsa M, Yang X, Pavelsky T, and Bernhardt ES. July 2022. “Gold mining in the Peruvian Amazon leads to high levels of mercury deposition in forests and enhanced methylation in aquatic ecosystems.” International Conference on Mercury as a Global Pollutant. Oral Presentation. Virtual.

- Gerson JR**, Topp SN, Vega CM, Gardner JR, Yang X, Fernandez LE, Bernhardt ES, and Pavelsky TM. August 2021. "Gold mining in the Peruvian Amazon increases mercury bioavailability through artificial lake expansion." Ecological Society of America. Oral Presentation. Virtual.
- Gerson JR**, Pan W, Vega C, Fernandez L, Szponar N, Bergquist B, Driscoll CT, Hsu-Kim H, and Bernhardt ES. August 2020. "High mercury input from artisanal and small-scale gold mining disproportionately threatens intact forests in the Peruvian Amazon." Ecological Society of America. Oral Presentation. Virtual.
- Gerson JR**, Topp SN, Vega CM, Gardner JR, Yang X, Fernandez LE, Bernhardt ES, and Pavelsky TM. June 2020. "Illegal gold mining in the Peruvian Amazon increases mercury bioavailability through landscape 'lentification.'" Society for Freshwater Science. Poster Presentation. Virtual.
- Gerson JR**, Pan W, Vega C, Fernandez L, Szponar N, Bergquist B, Driscoll CT, Hsu-Kim H, and Bernhardt ES. September 2019. "Forest structure impact on mercury movement from artisanal gold mining in the Peruvian Amazon." Duke University Program in Ecology Symposium. Oral Presentation. Beaufort, NC.
- Gerson JR**, Pan W, Vega C, Fernandez L, Szponar N, Bergquist B, Driscoll CT, Hsu-Kim H, and Bernhardt ES. September 2019. "Atmospheric and hydrologic transport and transformation of mercury from artisanal gold mining in the Peruvian Amazon." International Conference on Mercury as a Global Pollutant. Oral Presentation. Krakow, Poland.
- Gerson JR**, Brandt J, Eagles-Smith C, Bernhardt ES, and Walters D. September 2019. "A critical review of mercury-selenium interactions and their relationship to toxicity risk in aquatic food webs." International Conference on Mercury as a Global Pollutant. Poster Presentation. Krakow, Poland.
- Gerson JR**, Walters D, Eagles-Smith C, Driscoll CT, Hsu-Kim H, and Bernhardt ES. September 2019. "Patterns in mercury and selenium concentrations in water, sediment, biofilm, and invertebrate in streams draining mountaintop coal mining." International Conference on Mercury as a Global Pollutant. Poster Presentation. Krakow, Poland.
- Gerson JR**, Naslund L, Walters D, Eagles-Smith C, and Bernhardt ES. May 2019. "Loading and Bioaccumulation of Selenium and Mercury from Mountaintop Coal Mining into Streams and Riparian Food Webs." Society for Freshwater Science. Oral Presentation. Salt Lake City, UT.
- Gerson JR**, Naslund L, Hsu-Kim H, and Bernhardt ES. May 2018. "The Interaction of Mercury and Selenium Across Environmental Compartments." Society of Environmental Toxicology and Chemistry Europe. Rome, Italy.
- Gerson JR**, Hsu-Kim H, Bernhardt ES, and Driscoll CT. April 2018. "Mercury Contamination from Artisanal Gold Mining in Senegal." Duke University Program in Ecology Oosting Symposium. Oral Presentation. Durham, NC.
- Gerson JR**, Hsu-Kim H, and Bernhardt ES. February 2018. "The Interaction of Mercury and Selenium Across Environmental Media." Duke University Nicholas School of the Environment PhD Symposium 3-Minute Competition. Durham, NC.

Gerson JR, Hsu-Kim H, Bernhardt ES, and Driscoll CT. July 2017. “Mercury Contamination from Artisanal Gold Mining in Senegal.” International Conference on Mercury as a Global Pollutant. Poster Presentation. Providence, RI.

Gerson JR, Driscoll CT, Demers JD, Sauer AK, and Montesdeoca MR. July 2017. “Elevational and Seasonal Patterns in Methylmercury Inputs and Production Across a Montane Forest Elevation Gradient,” International Conference on Mercury as a Global Pollutant. Oral Presentation. Providence, RI.

Gerson JR and Bernhardt ES. May 2017. “Are Mercury Methylation and Selenate Reduction Independent Processes in Aquatic Ecosystems?” Society for Freshwater Science. Poster Presentation. Raleigh, NC.

UNIVERSITY TEACHING EXPERIENCE

2024 Instructor, *Communicating Science Beyond Academia* – Michigan State University
2022 Co-Instructor, *Quantifying Soil Carbon Sequestration for Policy Decisions Graduate Seminar* – University of California Berkeley
2020 Teaching Assistant, *Ecology for a Crowded Planet* – Duke University
2019-2020 Instructor for Yearlong Course, *Environmental Implications of Artisanal Gold Mining in the Peruvian Amazon* – Duke University
2019 Guest Lecturer on “Mercury and sulfur,” Graduate Level Biogeochemistry course – Duke University
Summer 2019 Teaching Assistant, *Tropical Ecology Field Course* – Wake Forest in Peru
2018-2019 Instructor for Yearlong Course, *Environmental Epidemiology in Latin America: Identifying the Impacts of Artisanal Gold Mining on Forest Reserves and Native Populations in the Peruvian Amazon* – Duke University

PROFESSIONAL SERVICE

2024-present Board of Readers, *Biogeochemistry*
2022-present Member, *Endowment Committee* – Society for Freshwater Science
2022-present Member, *Early Career Committee* – Society for Freshwater Science
2022-present Panelist – National Science Foundation (2022, 2023, 2024)
2021-present Ad Hoc Proposal Reviewer – National Science Foundation (2021, 2022, 2023)
2021-present STEM Ambassador, *AAUW Outreach Program* – American Association for University Women
2017-present Science presenter, *Skype a Scientist* – various elementary schools across the US
2016-present Co-founder and board member, *Girls on outdoor Adventure for Leadership and Science (GALS; <http://sciencegals.org>)*
2023 Outstanding student presentation award (OSPA) liaison, *American Geophysical Union* – San Francisco, California
2023 Session convener, *American Geophysical Union* – San Francisco, California
2023 Session convener, *Goldschmidt* – Lyon, France
2021-2023 Mentor, *SEEDS Program* – Ecological Society of America
2015-2021 Founder and coordinator, *Exploring Our World: 4th Grade Science Day* – Somerville, NJ

2020-2021	PhD Representative, <i>Environmental Communication, Outreach, and Education (ECOE) Group</i> – Duke University
2019-2021	Board member, <i>Building Outdoor Leaders at Duke (BOLD)</i> – Duke University
2019-2020	Committee Member, <i>Biology Graduate Inclusion, Diversity, Equity, and Anti-Racism (IDEA) Committee</i> – Duke University
2017-2019	Co-coordinator, <i>Duke Ecology Seminar</i> – Duke University
2016-2019	Committee Member, <i>Duke Biology Outreach Committee</i> – Duke University
2017-2018	Faculty Liaison, <i>Duke Nicholas PhD Advocacy Council</i> – Duke University
2016-2017	Mentor, <i>Females Excelling More in Math Engineering and Science</i> – Duke University
2016-2017	Mentor, <i>Durham Women and Mathematics Mentoring Program</i> – Duke University
2016	Co-organizer, <i>Duke Ecology Symposium</i> – Duke University
2015-2017	STEM Mentor, <i>1000 Girls, 1000 Futures</i> – New York Academy of Sciences
2015-2017	Biogeochemistry Liaison, <i>ESA Student Section</i> – Ecological Society of America
2015-2016	Founder and Coordinator, <i>Biogeochemistry Journal Group</i> – Syracuse University
2014-2016	Mentor, <i>Big Brothers Big Sisters</i> – Syracuse, NY
2014-2016	STEM Mentor, <i>Science Corps</i> – Syracuse University

UNIVERSITY AND DEPARTMENTAL SERVICE

2024	DEI Committee – Ecology and Evolutionary Biology Program, MSU
2023-2024	Graduate Affairs Committee – Earth and Environmental Science Department, MSU
2023-2024	Faculty Search Committee – Earth and Environmental Science Department, MSU

GRADUATE RESEARCH MENTORING

2024-present	Samantha Davies (University Fellow, Earth and Environmental Science Department (Primary advisor)
2023-present	Jenna Hynes (University Fellow, Earth and Environmental Science Department (Primary advisor)

GRADUATE STUDENT COMMITTEE PARTICIPATION

2024-present	Nudrat Fatima, Earth and Environmental Science Department, MSU
2024-present	Holden Nelson, Integrative Biology Department, MSU
2024-present	Katie Quinlan, Earth and Environmental Science Department, MSU
2023-present	Sophie Huss, Earth and Environmental Science Department, MSU
2023-present	Cheyenne Kleiner, Earth and Environmental Science Department, MSU
2023-present	Andrea Saavedara, Earth and Environmental Science Department, MSU
2022-present	Rose Parham, Ecology Program, Colorado State University

UNDERGRADUATE RESEARCH MENTORING

2023-2024	Daniel Kurylo – Undergraduate technician
2022-2023	Mia Williams – Undergraduate research project
2020-2022	Arabella Chen – Undergraduate research project
2018-2021	Melissa Marchese – Senior Honors thesis in Environmental Science
2016-2019	Laura Naslund – Senior Honors thesis in Biology

2018-2019 Kelsey Lansdale – Senior Honors thesis in Environmental Science
2018-2019 Claire Thomas – Senior Honors thesis in Biology

PROFESSIONAL DEVELOPMENT

2024 Preventing Harassment in Field Settings, FieldFutures
2024 Media Training Workshop, MSU
2024 Creating Inclusive Spaces for Students with Autism, MSU
2024 Diversity, Equity, and Inclusion in the Classroom, MSU
2023 The Dynamics and Influence Trust and Power Have in Community
2022-present Headwaters Leadership Academy, Society for Freshwater Science
2022 Active Bystander Training, Ecological Society of America
2021 Critical Engagements in Anti-Racist Environmental Scholarship (ESPM 290),
University of California Berkeley
2021 Latinx Challenges (2-day workshop), Racial Equity Institute
2021 Racial Equity and Environment Workshop, Lighthouse Strategy Consulting
2021 Communicating Your Research to Non-Experts, Duke University
2020-2021 Racial Equity Learning Arc, Equity Paradigm
2020-2021 Environmental Impact Fellowship, Duke University
2020 Writing for Impact and Influence, American Institute of Biological Sciences
2020 Becoming an Ally Training, Duke University
2019 College Teaching and Course Design (GS 755), Duke University
2019 Phase I Training (2-day workshop), Racial Equity Institute
2018 Groundwater Training, Racial Equity Institute
2018 Writing from the Reader's Perspective, Duke University
2018 SciComm Science Communication Workshop, North Carolina State University
2017 Pursuing Respect, Inclusion, Diversity, and Equity (P.R.I.D.E.), Duke University
Center for Sexual and Gender Diversity
2017 Teaching Biology (BIO 705S), Duke University
2017 Fundamentals of College Teaching (GS 750), Duke University
2016 Implicit Bias Workshop, Duke University
2016 Education Model Program on Water-Energy Research, Syracuse University and
National Science Foundation National Research Traineeship
2016 Presenting Data and information, Edward Tufte Workshop

PROFESSIONAL EXPERIENCE

2011/2014/2016 Summer Trip Leader, *Wilderness Adventures* – Alaska, Washington, Wyoming
2012-2014 Peace Corps Volunteer, *Health and Environmental Education Extension Agent* –
Senegal
Fall 2011 Environmental Sciences Teacher, *Nature's Classroom* – Groton, MA
2008-2011 Writing Consultant, *Writing Center* – Colgate University
2008-2011 Staff Member, *Outdoor Education* – Colgate University

CERTIFICATIONS

Teaching English as a Foreign Language (TEFL)
Wilderness First Responder (WFR) and Cardiopulmonary Resuscitation (CPR)

PROFESSIONAL MEMBERSHIP

American Geophysical Union (AGU)
Earth Science Women's Network (ESWN)
Ecological Society of America (ESA)
European Association of Geochemistry
Society of Environmental Toxicology and Chemistry (SETAC)
Society for Freshwater Science (SFS)

REVIEWER

Applied Geochemistry, Biogeochemistry, Ecosphere, Ecotoxicology, Environmental Monitoring and Assessment, Environmental Pollution, Environmental Science and Pollution Research, Environmental Science: Nano, Environmental Science: Processes and Impacts, Environmental Science and Technology, Journal of Geophysical Research: Biogeosciences, Limnologica, Nature, Proceedings of the National Academy of Sciences, Science, Science of the Total Environment, Water Environment Research