

## CURRICULUM VITAE

### **Zsuzsanna Balogh-Brunstad, Ph.D.**

Professor of Geology and Environmental Sciences

Coordinator of the Environment, Sustainability, and Society Program

Hartwick College, One Hartwick Drive, JSC 239, Oneonta, NY, 13820

Tel: 1-607-431-4734 (o); 1-607-287-9420 (c)

Email: [balogh\\_brunz@hartwick.edu](mailto:balogh_brunz@hartwick.edu); or [zbb Brunstad@gmail.com](mailto:zbb Brunstad@gmail.com)

### ***My Interests and Specialization***

Biogeochemistry of soil, sediment, and water, microbe-mineral-water interactions, biofilm processes, soil formation, watershed-based hydrochemistry, environmental health, and quality. Instrumental and analytical experience in environmental geochemistry (examples - atomic absorption spectroscopy, ion chromatography, inductively coupled plasma-optical emission spectrometry, x-ray diffraction, x-ray fluorescence, scanning electron microscopy, and atomic force microscopy).

### ***Professional Preparation***

**Ph.D. Geology**, 2006, Department of Geology, Washington State University, Pullman, WA, USA;

Dissertation title: Chemical Hydrology of Vascular Plant Growth: Role of Root-Fungus Associations,

Advisors: Drs. C. K. Keller; J. T. Dickinson; R. A. Gill; and D. Bezdicek

**M.S. Geography**, 1999, conferred in 2000, with a teaching certificate (grades 9-12 equivalent), University of

Pécs, Hungary. Thesis title: Relationship between surface development and anthropogenic impacts in the

Villány Mountains and the Baranya Hills Area, Advisor: Dr. Gy. Lovász.

**B.S. Mathematics**, 1998, conferred in 2000, with math education track, University of Pécs, Hungary.

### ***Professional Experience***

**Professor** (Aug 2023 – *present*), Department of Geology and Environmental Sciences, Hartwick College, Oneonta, NY. Teaching courses and supervising research projects in hydrogeology, geochemistry, environmental chemistry, soil, biogeochemistry, and various environmental science-related subjects.

**Coordinator (Chair)** (July 2020 – *present*), ***Environment, Sustainability, and Society Major***, Hartwick

College, Oneonta, NY; overseeing and managing the program budget, academic requirements for

majors/minors, assessment of the program, reporting, coordinating adjunct hires, and course teaching

assignments among affiliated teaching faculty in the program, organizing and executing program committee

meeting, events, recruiting, and evaluations, advising majors, required internships and capstone projects, in

addition to regular teaching, scholarship, and committee service duties of my fulltime appointment.

**Interim Chair** (Feb 2023 – June 2023), ***Department of Geology and Environmental Sciences***, Hartwick

College, Oneonta, NY; overseeing and managing the program budget, academic requirements for

majors/minors, assessment of the program, reporting, coordinating adjunct hires, and organizing and

executing events, recruiting, and evaluations, advising majors, and capstone projects, in addition to

coordinating the ENSS major, regular teaching, scholarship, and committee service duties of my fulltime

appointment.

**Associate Professor** (July 2018 – July 2023), Department of Geology and Environmental Sciences, Hartwick College, Oneonta, NY.

**Visiting Scholar** (July 2017 – June 2018), Department of Soil, Water and Environmental Science, University of Arizona, Tucson, AZ; laboratory to field scale projects on investigating the impact of moisture availability on incipient soil formation, and along a climate gradient, NSF funded.

**Associate Professor** (Aug 2015 – June 2018), Departments of Chemistry, and Geology and Environmental Sciences, Hartwick College, Oneonta, NY.

**Assistant Professor** (Aug 2008 – July 2015), Departments of Chemistry, and Geology and Environmental Sciences, Hartwick College, Oneonta, NY.

**Marie Curie Intra-European Postdoctoral Fellow** (July 2010 – June 2012), Department of Chemistry, NanoGeoScience Group, University of Copenhagen, Denmark; laboratory to field scale projects on

biological weathering, focusing on the role of ectomycorrhizal fungi and biofilm; further training on scanning electron microscope in all modes and on atomic absorption spectroscopy; new training on atomic force microscopy and force-volume mapping.

**Postdoctoral Research and Teaching Associate** (Aug 2006 – July 2008), School of Earth and Environmental Sciences, Washington State University, Pullman, WA; Professors C. K. Keller; R. A. Gill – Carbon cost of ectomycorrhizal weathering; C<sup>13</sup>-CO<sub>2</sub> labeling; phospholipid fatty acid markers; teaching introductory geology.

**Research Assistant** (June 2003 – May 2006), Department of Geology, Washington State University, Pullman, WA; completed Ph.D. project. Operated and maintained ion chromatograph, atomic absorption chromatography, dissecting, and petrographic light microscopes, scanning electron microscopes (field-emission, environmental, backscattering), energy dispersive spectrometer, and inductively coupled argon plasma spectrometer; learned and applied basic environmental-microbiologic techniques for handling ectomycorrhizal fungi and their bacterial associates in pure and symbiotic cultures.

**Teaching Assistant** (Jan 2002 – May 2003 and June 2006 – July 2006), Department of Geology, Washington State University, Pullman, WA; I taught introductory geology laboratory. Teaching quality in all courses is monitored by course evaluation questionnaires and my student feedback was excellent.

**Technical Assistant** (Feb 2001 – Dec 2001), Geoanalytical Laboratories, Department of Geology, Washington State University, Pullman, WA; I contributed to X-ray Fluorescence and Inductively Coupled Plasma – Mass Spectrometer analyses with the preparation of rock and soil samples for XRF, ICP, and Loss on Ignition measurements.

**Mathematics teacher** (Sept 1998 – June 1999), Jurisics Miklós Elementary and Middle School, Pécs, Hungary; I taught mathematics for 6<sup>th</sup> and 7<sup>th</sup> graders, prepared lesson plans and syllabi, and designed a tutoring program.

## Courses Taught at the University Level

### Geology Courses

- *Geochemistry with a 4-hr lab*
- *Groundwater Hydrology with a 3-hr lab*
- *Soils and the Rhizosphere (Introductory Soil Science) with a 2-hr lab – cross-listed with ENSS*
- *Global Environment with a 2-hr lab (introductory course with environmental focus)*
- *Climate Change/Global Environmental Change – cross with ENSS*
- *Pre-thesis research*
- *Geology in Art of Hungary, Off-campus/field January term course (co-directed with art)*
- *Geology and Natural History of Hawaii, Off-campus/field January term course (co-directed)*
- *Introductory Geology Lecture and Lab (non-major course)*
- *Physical Geology Lecture and Lab*
- *Environmental Geology (non-major course)*
- *Environmental Health and Safety with a 3-hr lab – cross with ENSS*
- *Environmental Analysis*
- *First Year Seminar: Water – Will we run out?*
- *Honor's Seminar - Reading the elements*
- *Senior Thesis Research*
- *Independent Study in Geology*
- *Directed Study in Geology*

### Chemistry Courses

- *Environmental Chemistry with a 4-hr lab*
- *Chemistry in Today's Society - "The chemistry of everything"*
- *Chemistry in Today's Society with a 2-hour lab – "Forensic Chemistry"*
- *General Chemistry I. and II.; and Labs*
- *Senior Thesis Research in Chemistry, Environmental Chemistry, and Biochemistry*
- *Independent Study in Chemistry, Environmental Chemistry, and Biochemistry*
- *Directed Study in Chemistry, Environmental Chemistry, and Biochemistry*

### Interdisciplinary Courses

- *Environmental Health Sciences – a cross-listed PUBH & ENSS course*
- *Senior Project Course for the Environment, Sustainability, and Society Majors*
- *Internship Advising Course for the Environment, Sustainability, and Society Majors*
- *The Fossil Age: Geology, Economics, and Culture (co-taught with economics and education)*
- *Mysteries of a Kettle Lake (Pre-semester Awakening Program for first-year students)*
- *Flight Path: First-year seminar - Water*
- *Flight Path: Art and Science of the Human Landscape (first-year course)*

## Scholarship (last 5 years)

### Peer-Reviewed Publications

- Dohnalkova, A. C., Tfaily, M. M., Chu, R. K., Smith, A. P., Brislawn, C. J., Varga, T., Crump, A. R., Kovarik, L., Thomashow, L. S., Harsh, J. B., Keller, C. K., & **Balogh-Brunstad, Z.** (2022). Effects of Microbial-Mineral Interactions on Organic Carbon Stabilization in a Ponderosa Pine Root Zone: A Micro-Scale Approach. *Frontiers in Earth Science*, 10, 799694. <http://dx.doi.org/10.3389/feart.2022.799694>
- Dontsova, K., **Balogh-Brunstad, Z.**, and Le Roux, G. (2021), Evaluating the impact and reach of biogeochemical cycles, *Eos*, 102, <https://doi.org/10.1029/2021EO163024>. Published on 20 September 2021.
- Dontsova, K., **Balogh-Brunstad, Z.**, Le Roux, G. (2020) Biogeochemical Cycles: Ecological Drivers and Environmental Impacts, *Geophysical Monograph Series* (Book 248), American Geophysical Union, 1<sup>st</sup> ed. <https://doi.org/10.1002/9781119413332>
- Balogh-Brunstad, Z.**, Smart\*, K. E., Dohnalkova, A. C., Saccone, L., Smits, M. M (2020) Micro- and nano-scale techniques to explore bacteria and fungi interactions with silicate minerals. *Chapter 4*, pp. 81-101, <https://doi.org/10.1002/9781119413332.ch4> in: Dontsova, K., Balogh-Brunstad, Z., Le Roux, G. (eds.) Biogeochemical Cycles: Ecological Drivers and Environmental Impacts, *Geophysical Monograph Series* (Book 248), American Geophysical Union, 1<sup>st</sup> ed.
- Dontsova, K., **Balogh-Brunstad, Z.**, Chorover, J. (2020) Plants as Drivers of Rock Weathering. *Chapter 2*, pp. 33-58, <https://doi.org/10.1002/9781119413332.ch2> in: Dontsova, K., Balogh-Brunstad, Z., Le Roux, G. (eds.) Biogeochemical Cycles: Ecological Drivers and Environmental Impacts, *Geophysical Monograph Series* (Book 248), American Geophysical Union, 1<sup>st</sup> ed.
- Dontsova, K., **Balogh-Brunstad, Z.**, Le Roux, G. (2020). Ecological Drivers and Environmental Impacts of Biogeochemical Cycles: Challenges and Opportunities. *Chapter 15*, pp. 301-306, <https://doi.org/10.1002/9781119413332.ch15> in: Dontsova, K., Balogh-Brunstad, Z., Le Roux, G. (eds.) Biogeochemical Cycles: Ecological Drivers and Environmental Impacts, *Geophysical Monograph Series* (Book 248), American Geophysical Union, 1st ed.
- Balogh-Brunstad, Z.**, Keller, C. K., Shi, Z., Wallander, H., & Stipp, S. L. (2017). Ectomycorrhizal Fungi and Mineral Interactions in the Rhizosphere of Scots and Red Pine Seedlings. *Soils*, 1(1), 5. <https://doi.org/10.3390/soils1010005>
- Brantley, S. L., Eissenstat, D. M., Marshall, J. A., Godsey, S. E., **Balogh-Brunstad, Z.**, Karwan, D. L., Papuga, S. A., Roering, J., Dawson, T. E., Evaristo, J., Chadwick, O., McDonnell, J. J., and Weathers, K. C. (2017). Reviews and syntheses: on the roles trees play in building and plumbing the critical zone, *Biogeosciences*, 14, 5115-5142, <https://doi.org/10.5194/bg-14-5115-2017>

### Conference Abstracts (\* denotes current and former students)

- Stauss\*, S., **Balogh-Brunstad, Z.** (2023) Hydrochemical Characterization and Quality Assessment of the Whippany River at Morristown, New Jersey. *Geological Society of America Annual Meeting, Pittsburgh, PA, Oct 15-18*. GSA Abstracts with Programs. Vol. 55, No. 6, 2023, doi: 10.1130/abs/2023AM-392866
- Balogh-Brunstad, Z.** (2023) Fungal-Mineral Interactions – Biotite Weathering. *The Joint Northeastern and Southeastern Section Meeting of the Geological Society of America, Reston, VA, March 17-19*. GSA Abstracts with Programs. Vol. 55, No. 2; doi: 10.1130/abs/2023SE-386055
- Ike\*, H., **Balogh-Brunstad, Z.** (2023) Organic carbon content of soil at a no-till farm in the Finger Lakes Region, New York. *The Joint Northeastern and Southeastern Section Meeting of the Geological Society of America, Reston, VA, March 17-19*. GSA Abstracts with Programs. Vol. 55, No. 2; doi: 10.1130/abs/2023SE-386081
- Stauss\*, S., **Balogh-Brunstad, Z.** (2023) Assessment of Water Quality in the Whippany River Near Morristown, New Jersey. *The Joint Northeastern and Southeastern Section Meeting of the Geological Society of America, Reston, VA, March 17-19*. GSA Abstracts with Programs. Vol. 55, No. 2; doi: 10.1130/abs/2023SE-386096

- Teitelbaum\*, L., **Balogh-Brunstad, Z. (2023)** A Geochemical Analysis of Charlotte Creek Watershed, New York. *The Joint Northeastern and Southeastern Section Meeting of the Geological Society of America, Reston, VA, March 17-19*. GSA Abstracts with Programs. Vol. 55, No. 2; doi: 10.1130/abs/2023SE-386068
- Balogh-Brunstad, Z., & Dohnalkova, A. (2022)** Mineral Associated Organic Carbon Stabilization in a Ponderosa Pine Root Zone: A Mesh Bag Study. *ASA, CSSA, SSSA International Annual Meeting, Baltimore, MD, Oct 29 – Nov 1*. <https://scisoc.confex.com/scisoc/2022am/meetingapp.cgi/Paper/145040>
- Balogh-Brunstad, Z., (2022)** Mineral alterations by ectomycorrhizal fungi in response to water and nutrient availability. *Geological Society of America Annual Meeting, Denver, CO, Oct 9-12*. GSA Abstracts with Programs. Vol 54, No. 5, doi: 10.1130/abs/2022AM-381136
- Balogh-Brunstad, Z., Drapaniotis\*, V., Smith\*, T. S., Clements, J. (2022)** Evaluating the effectiveness of forested riparian buffer zones and nitrate removal from the subsurface. *Geological Society of America Northeastern Section Meeting, Lancaster, PA, March 20-22*. GSA Abstracts with Programs, v. 54, no. 3, <https://doi.org/10.1130/abs/2022NE-375344>
- Walsh\*, K., McRee\*, E., **Balogh-Brunstad, Z. (2022)**. A survey of lead and cadmium content of soils from urban gardens in the city of Oneonta, New York. *Geological Society of America Northeastern Section Meeting, Lancaster, PA, March 20-22*. GSA Abstracts with Programs, v. 54, no. 3, <https://doi.org/10.1130/abs/2022NE-375351>
- McRee\*, E., Walsh\*, K., **Balogh-Brunstad, Z. (2022)**. Response of nutrient and sediment concentrations to rain events in the Charlotte Creek Watershed, New York. *Geological Society of America Northeastern Section Meeting, Lancaster, PA, March 20-22*. GSA Abstracts with Programs, v. 54, no. 3, <https://doi.org/10.1130/abs/2022NE-375363>
- McRee\*, E., **Balogh-Brunstad, Z. (2022)**. Impacts of Rain Events on Nutrient and Sediment Transport in the Charlotte Creek Watershed, New York. *American Chemical Society Annual Spring Meeting, San Diego, CA, March 20-24*.
- Nathan\*, R., **Balogh-Brunstad, Z. (2019)**. Quantifying soil development in hemlock-dominated forests. *Geological Society of America Northeastern Section Meeting, Portland, ME, March 17-19*. GSA Abstracts with Programs. Vol. 51. No. 1. doi: 10.1130/abs/2019NE-328572
- Balogh-Brunstad, Z. (2019)**. Mica-fungi interface: A mesh bag study in spruce forest soils. GSA Abstracts with Programs. Vol. 51. No. 1. doi: 10.1130/abs/2019NE-328574
- Hubbard\*, V. L., LeDone\*, K. J., Piefer, A., Chorover, J., **Balogh-Brunstad, Z. (2018)**. How does water availability impact mineral weathering by mycorrhizal fungi? *Geological Society of America Annual Meeting, Indianapolis, IN, Nov. 4-7*. Geological Society of America Abstracts with Programs. Vol. 50, No. 6. doi: 10.1130/abs/2018AM-322449
- Nathan\*, R., Forbes\*, I. C., **Balogh-Brunstad, Z. (2018)**. Basalt surface alteration during incipient soil formation. *Geological Society of America Annual Meeting, Indianapolis, IN, Nov. 4-7*. Geological Society of America Abstracts with Programs. Vol. 50, No. 6. doi: 10.1130/abs/2018AM-322379
- Balogh-Brunstad, Z., Smart\*, K. E. (2018)** Fungal Weathering of Micaceous in Spruce forest Soils. *Goldschmidt Conference, Boston, USA, Aug 12-17*. Goldschmidt Abstracts, 2018.
- Hubbard\*, V. L., LeDone\*, K. J., Piefer, A., Chorover, J., **Balogh-Brunstad, Z. (2018)**. Fungal weathering across a moisture gradient at the Santa Catalina Critical Zone Observatory. *Geological Society of America Northeastern Section Meeting, Burlington, VT, March 18-20*. GSA Abstracts with Programs. Vol. 50, No. 2. doi: 10.1130/abs/2018NE-310960
- Forbes\*, I. C., Sengupta, A., **Balogh-Brunstad, Z. (2018)**. Micro- and Nano-Scale Weathering of Basalt in Incipient Soils. *Geological Society of America Northeastern Section Meeting, Burlington, VT, March 18-20*. GSA Abstracts with Programs. Vol. 50, No. 2. doi: 10.1130/abs/2018NE-310988
- Karson\*, E. G., Redder\*, B. W., **Balogh-Brunstad, Z. (2018)**. Water Chemistry of a Hemlock Forest in the Robert V. Riddell State Park of New York. *Geological Society of America Northeastern Section Meeting, Burlington, VT, March 18-20*. GSA Abstracts with Programs. Vol. 50, No. 2. doi: 10.1130/abs/2018NE-311002

## ***Seminar Presentations***

- Living in a Desert: How Do Symbiotic Fungi Respond to Water Limitations? Faculty Lecture Series at Hartwick College, Oneonta, NY (October 2020)
- Visualization of microbe-mineral interactions in LEO basalt and the Catalina Mountain CZO soils, Environmental Biogeochemistry Group Seminar, Department of Soil, Water and Environmental Science, University of Arizona, Tucson, AZ (April 2018)

## ***Other Publications***

**Audio File/SCIPOD** - Getting to the Root of Plant-Fungi Symbiosis (2022) <https://www.scipod.global/dr-zsuzsanna-balogh-brunstad-getting-to-the-root-of-plant-fungi-symbiosis/>

Pimentel Almonte\*, J. M., **Balogh-Brunstad, Z.** (2017) Impact of crude oil pollution on marine dimethyl sulfide production. *50th Annual Report* of the Biological Field Station, SUNY College at Oneonta, pp. 215-228; non-peer reviewed; available at

<http://www.oneonta.edu/academics/biofld/PUBS/ANNUAL/2017/26%20Pimentel%20Brunstad%20algae.pdf>

## **Other Relevant Activities**

### ***Updating in your field through conferences and workshop attendance (last 2 years)***

**The Joint Northeastern and Southeastern Section Meeting of the Geological Society of America**, Reston, VA, *March 17-19, 2023*. Participant.

**The Geoscience Workforce - Today and Future Trajectories**, this webinar was organized by the American Geosciences Institute (AGI) and it explored the state of geoscience employment and education and looked at the trends that are likely to form the geoscience profession for the rest of the century; *February 9, 2023*.

**The Food-Energy-Water Nexus: Using Hydroviz to Support Undergraduate Student Learning**, CUAHSI, Cyberseminars, <https://www.cuahsi.org/cyberseminars/series/the-food-energy-water-nexus-using-hydroviz-to-support-undergraduate-student-learning>, professional development for water science educators, *Jan 30, 2023*.

**Making Waves in Water Science: Open-Source Tools for Water Science**, CUAHSI, Cyberseminars, <https://www.cuahsi.org/cyberseminars/series/making-waves-in-water-science-open-source-tools>, professional development for water science educators.

*a. Nov 1, 2022*, Pipelines, Portals, and Visualizations - Four speakers present tools for hydrologic data pipelines, democratizing steam metabolism, open water models, and experimenting with National Water Model data.

*b. Nov 8, 2022*, Data and computing accessibility across scales - Three speakers present tools for data retrieval, macrosheds, and glacial thickness estimation.

*c. Nov 15, 2022*, Novel Model Approaches - Four speakers present tools for web-based programming, models for coupled Natural Human systems, Python tools for evaluating Hydrologic models, and the National Snow Model.

**ASA, CSSA, SSSA International Annual Meeting**, Baltimore, MD, *Oct 29 – Nov 1, 2022*, Participant.

**Geological Society of America Annual Meeting**, Denver, CO, *Oct 9-12, 2022*, Participant.

**CZNet - Climate Change in the Critical Zone Educator Workshop**, professional development for science educators, participant, online, *Aug 11, 2022*

**CZNet - Water in the Critical Zone Educator Workshop**, professional development for science educators, participant, online, *Aug 4, 2022*

**EMSL Summer School: Soils Exposed**, a week-long short course, hosted by the Environmental Molecular Sciences Laboratory (EMSL) and the National Microbiome Data Collaborative (NMDC), this event featured lectures on new technologies, software, and data analysis related to soil science, participant, online, *July 18-22, 2022*

**CZNet - Carbon in the Critical Zone Educator Workshop**, professional development for science educators, participant, online, *July 14, 2022*

**NNCI Nanoscience in the Earth and Environmental Sciences Research Community Virtual Workshop**, a two-day workshop to demonstrate the practical aspects of applying the tools and knowledge of

nanoscience to study planetary and environmental samples.; hosted by NanoEarth (The Virginia Tech National Center for Earth and Environmental Nanotechnology Infrastructure) in coordination with MONT, NCI-SW, and nano@stanford, *May 16-17, 2022*.

**Geological Society of America Northeastern Section Meeting**, Lancaster, PA, *March 20-22, 2022*. Participant.

#### **Sessions Organized for**

- Geological Society of America National Conference, *October 2023*, Pittsburgh, PA (the session title: Emerging Voices in Soil and Paleosol Science)
- Geological Society of America Joint Southeastern & Northeastern Geographical Section Conference, *March 2023*, Reston, VA (the session title: Soil, Water, and Biogeochemical Interactions)
- Geological Society of America National Conference, *October 2022*, Denver, CO (two sessions, titles: Recent Advances in Soil and Paleosol Science, and Emerging Voices in Soil and Paleosol Science)
- Geological Society of America Northeastern Geographical Section Conference, *March 2022*, Lancaster, PA (the session title: Soil Processes and Biogeochemical Interactions)

#### **Professional Affiliations**

- Soil Science Society of America (2011-present)
- Geochemical Society (2004-present)
- Geological Society of America (2003-present)
- American Geophysical Union (2003-present)

#### **Other**

**M.S. Thesis on-sight advisor/committee member** – Jordan Clements “Adaptive Management of Riparian Buffer Zones in The Upper Susquehanna River, Otsego County, New York: A long term monitoring program of the effectiveness of Forested Buffers on Water Quality in Resource Management” *M.S. in Natural Resources Conservation at Paul Smith’s College*, NY. 2020-21.

**Joint Technical Program Committee Member** for the *Geological Society of America National Conference* representing the Soils and Soil Processes Division of GSA (2016-2019)

**Division Officer** of the Soils and Soil Processes Division, Geological Society of America (2016-2019, Chair of the division 2017-2018)

#### **Peer reviewer for**

- *Journals*: Applied Clay Science, Applied Microbiology, Biogeochemistry, Biogeosciences, Chemical Geology, Ecosystem Services, ELEMENTA, Environmental Science and Technology, European Journal of Soil Science, Frontiers in Fungal Biology, Fungal Biology, Geochemica at Cosmochimica Acta, Geochemistry, Geophysics, Geosystems (GCubed Journal), Geoderma, Geomicrobiology Journal, Journal of Soils and Sediments, Journal of the Soil Science Society of America, MDPI-Microorganisms, MDPI-Minerals, MDPI-Forests, MDPI-Water, MDPI-Separations, MDPI-Land, MDPI-Energies, Mycologia, Nature Geoscience, Nature Scientific Reports, Nature Journal – Materials Degradation, Northeastern Geoscience, PeerJ, Pedosphere, Plant and Soil, Rhizosphere, Science of the Total Environment, Scientific Research Essays, and The Proceedings of the National Academy of Sciences.
- *Book publishers* (Wiley, Pearson, Cengage, Jones & Bartlett Learning, Waveland Press) in topics of environmental geology, biogeochemistry, chemistry, and microbiology.
- *NSF grant proposals* for the Division of Earth Sciences (EAR).
- *Tenure and promotions* at other colleges and universities as an external referee.

#### **Honors, Awards, and Published Acknowledgements (last 5 years)**

**Editorial Acknowledgment to Reviewers of Land in 2022**, Land Editorial Office, MDPI AG, St. Alban-Anlage 66, 4052 Basel, Switzerland; Land 2023, 12(2), 266; <https://doi.org/10.3390/land12020266>

**Editorial Acknowledgment to Reviewers of Energies in 2022**, Part I, Energies Editorial Office, MDPI AG, St. Alban-Anlage 66, 4052 Basel, Switzerland; Energies 2023, 16(3), 1184; <https://doi.org/10.3390/en16031184>

**Editorial Acknowledgment to Reviewers of Separations in 2021**, Separations Editorial Office, MDPI AG, St. Alban-Anlage 66, 4052 Basel, Switzerland; *Separations* 2022, 9(2), 30; <https://doi.org/10.3390/separations9020030>

**Editorial Acknowledgment to Reviewers of Water in 2021**, Water Editorial Office, MDPI AG, St. Alban-Anlage 66, 4052 Basel, Switzerland; *Water* 2022, 14(3), 430; <https://doi.org/10.3390/w14030430>

**AGU Collection COP26**, 2021, selected our book “Biogeochemical Cycles: Ecological Drivers and Environmental Impacts”, Geophysical Monograph Series (Book 248) for the free virtual book showcase in support of the 2021 COP conferences in Milan and Glasgow. Each book publisher contributed four titles about climate change and sustainability. <https://institutions.exacteditions.com/cop26>

**AAP Prose Award Nomination in Environmental Sciences**, 2020, John Wiley & Sons, Inc. for the “Biogeochemical Cycles: Ecological Drivers and Environmental Impacts”, Geophysical Monograph Series (Book 248).

### Funded Research Grants (last 5 years)

**National Science Foundation, 2017-2018**, EAGER (Early-concept Grants for Exploratory Research): How does soil moisture content affect fungal weathering, diversity, and abundance? PI, Awarded \$29,816. NSF/EAR 1742941.

### Research Visits

**Hamilton Analytical, Lab, Hamilton College** - (AY 2018-19), sample preparation for X-ray Fluorescence analysis of soil samples from the Robert V. Riddell State Park, for a Freedman Project.

**SWES, University of Arizona** – (AY 2017-18), sabbatical research at the Catalina and Jemez Critical Zone Observatories and the Biosphere 2 Landscape Evolution Observatory, collaborations with Drs. Chorover, Dontsova, Gallery, and Sengupta.

### Work in collaboration with Hartwick students (Last 2 years)

Collaborative Work			
Year	Student Name	Project/Thesis Title	Funding
Summer 2021	Erin McRee (CHEM and ISP)	Investigating the Impacts of rain events on nutrient and sediment transport in the Charlotte Creek Watershed, New York	Environment Scholarship (Pine Lake Award), and Geology and Chemistry Departmental Funds
Summer 2021	Vasiliki Drapaniotis (ENCH and ENSS)	Examining the Effectiveness of Riparian Buffer Zone on Nitrate Transport	Environment Scholarship (Pine Lake Award), and Geology and Chemistry Departmental Funds
AY 2021-22	Walsh, Kiera (GEOL)	Testing Soils for Legacy Lead and Cadmium in the City of Oneonta, NY [+Thesis]	Freedman Award in Applied Geoscience; and Geology and Chemistry Departmental Funds
AY 2021-22	Erin McRee (CHEM and ISP)	Investigating the Impacts of rain events on nutrient and sediment transport in the Charlotte Creek Watershed, New York [+Thesis]	Research in Science & Health Fund Award; Chemistry Departmental Workstudy and Flighpath Funding
AY 2021-22	Vasiliki Drapaniotis (ENCH and ENSS)	Examining the Effectiveness of Riparian Buffer Zone on Nitrate Transport [two-year project]	Chemistry Departmental Workstudy and Flighpath Funding
AY 2021-22	Alyssa Schaeffer (GEOL)	Lab Assistant	Geology Departmental Workstudy
SP 2022	Meyer, Thomas (ENSS)	The Illegal Fishermen Never Had It So Good [Thesis]	none
SP 2022	Godard, Gillian (ENSS)	Microplastics in Upstate New York Farm Soil [Thesis]	Geology, Chemistry, and Biology Departmental Funds for analysis and lab work



			Transportation is paid from own pocket (ZBB and student)
SP 2022	Riordan, Jack (ENSS)	How Middle and Primary School Students Are Taught Environmental Awareness and Eco-Friendly Behavior [Thesis]	none
Summer 2022	Vasiliki Drapaniotis (ENCH and ENSS)	Examining the Effectiveness of Riparian Buffer Zone on Nitrate Transport [two-year project]	Environment Scholarship (Pine Lake Award), and Geology and Chemistry Departmental Funds
FA 2022	Carmody, Ryan (ENSS)	Road Salt Impact on the Charlotte Creek Watershed, New York [+Thesis]	Flightpath Funding for Work Experience, Workstudy, and Geology and Chemistry Departmental Funds
FA 2022	Teitelbaum, Lia (ENSS+minor GEOL)	Charlotte Creek's Water Quality: Lead and Cadmium Analysis [+Thesis]	Flightpath Funding for Work Experience; ENSS, Geology and Chemistry Departmental Funds
FA 2022	Savio, Julia (ENSS)	Directed Study: Environmental Techniques	none
FA 2022	Allen, Azyhkei (ENSS)	Independent Study: Hemlock Woolly Adelgid Survey	none
SP 2023	Allen, Azyhkei (ENSS)	Surveying Hemlock Woolly Adelgid in Robert V. Riddell State Park [Thesis]	ENSS program fund, FORCES club, and New York State Park assistance
JA 2023 and SP 2023	Cass Markel (GEOL)	Directed Study: Water Analytical Techniques	Geology and Chemistry Departmental Funds
AY 2022-23	Stauss, Sebastian (ENSS+GEOL)	Assessment of Water Quality in the Whippany River near Morristown, New Jersey [+Thesis]	Freedman Award in Applied Geoscience; Research in Science & Health Fund Award; and Geology and Chemistry Departmental Funds
AY 2022-23	Ike, Holton (GEOL)	Organic Carbon Content of Soil at a No-Till Farm in the Finger Lakes Region, New York [+Thesis]	Freedman Award in Applied Geoscience; and Geology and Chemistry Departmental Funds
AY 2022-23	Alyssa Schaeffer (GEOL)	Lab Assistant	Geology Departmental Workstudy

### Internal Grants written and/or received (last 2 years)

#### *Funded Student Collaborative Research Grants*

1. *Clay Cooking Pots – Material Science*, Ella Van Engen (Art) and Megan Bryla (Art and ENSS), in collaboration with Stephanie Rozene, Freedman Prize in Applied Geoscience, Hartwick College, Oneonta, 2023-24, \$4960.
2. *Effect of Water and Nutrient Availability on Ectomycorrhizal Weathering of Minerals*, Cass Markel (Geology), Freedman Prize in Applied Geoscience, Hartwick College, Oneonta, 2023-24, \$4285.
3. *Water Quality Assessment of the Whippany River near Morristown, New Jersey*, Sebastian Stauss (Geology and ENSS), Freedman Prize in Applied Geoscience, Hartwick College, Oneonta, 2022-23, \$1305.
4. *Water Quality Assessment of the Whippany River*, Sebastian Stauss (Geology and ENSS), Research in Science & Health Fund Award, Hartwick College, Oneonta, NY, 2022-23, \$1118.50.
5. *Determine the Organic Carbon Content of Soils from the Ike Farm*, Holton Ike (Geology), Freedman Prize in Applied Geoscience, Hartwick College, Oneonta, 2022-23, \$1169.
6. *Monitoring Water Chemistry in Riparian Buffer Zones in Otsego and Delaware Counties*, Vasiliki Drapaniotis (Env. Chem. And ENSS), Pine Lake Environment Scholarship, Hartwick College, Oneonta, NY, summer 2022, \$6,806.
7. *Impacts of Rain Events on Nitrogen and Phosphorus Loads in Charlotte Creek, West Davenport, New York*, Erin McRee (Chemistry and ISP-Env. Health and Safety), Pine Lake Environment Scholarship, Hartwick College, Oneonta, NY, summer 2021, \$4107.



8. *Monitoring Nutrient Transport in Riparian Buffer Zones in Otsego and Delaware Counties*, Vasiliki Drapaniotis (Env. Chem. And ENSS), Pine Lake Environment Scholarship, Hartwick College, Oneonta, NY, summer 2021, \$5392.
9. *Lead and Cadmium contamination in soils, and its effects on food and human health*, Kiera Walsh (Geology), Freedman Prize in Applied Geoscience, Hartwick College, Oneonta, NY, 2021-2022, \$4517.
10. *The impacts of rain events on nitrogen and phosphorus loads in Charlotte Creek, West Davenport, New York*, Erin McRee (Chemistry and ISP-Env. Health and Safety), Research in Science & Health Fund Award, Hartwick College, Oneonta, NY, Spring 2021, \$1750.

***Contributions/service to the College, Profession, and/or Wider Community***

1. *Environment, Sustainability, and Society Major Coordinator*, Hartwick College, July 2020-present.
2. *Interim Chair of Geology*, Hartwick College, Spring 2023.
3. *Freedman Prize Competition Coordinator*, Spring 2023-present.
4. *Steering Committee of “Environment, Sustainability, and Society” Major*, Hartwick College, 2015-present
5. *Committee on Appointments, Tenure, and Promotion*, Feb 2022-present.
6. *Sustainability Committee*, 2022-2023.
7. *Search Committee Chair for Geology 3-year position*, Spring 2022 (canceled search).
8. *F.O.R.C.E.S* (Friend of Recreation, Conservation, and Environmental Stewardship) Club, Hartwick College, advisor, 2015-present
9. *ΔΔG, Geology Club*, Hartwick College, member, and co-advisor, Fall 2008-present
10. *Equipment and Lab Maintenance and Work-study supervision*, Fall 2008-present
11. *Professional affiliations*: Geological Society of America (2003-present); American Geophysical Union (2003-present); Geochemical Society (2004-present); Soil Science Society of America (2011-present)
12. *Peer reviewer* (one manuscript a month) for 1) several *journals*: Biogeochemistry, Biogeosciences, Chemical Geology, Environmental Science and Technology, Frontiers in Fungal Biology, Geochemica at Cosmochimica Acta, Journal of the Soil Science Society of America, MDPI-Microorganisms, MDPI-Minerals, MDPI-Forests, MDPI-Water, MDPI-Separations, MDPI-Land, MDPI-Energies, Nature Scientific Reports, Nature Journal – Materials Degradation, Plant and Soil, Rhizosphere, Science of the Total Environment, and The Proceedings of the National Academy of Sciences; 2) several *book* publishers in topics of environmental geology, biogeochemistry, and microbiology; and 3) NSF grant proposals.
  - a. *Some of this work was acknowledged by the Journals; see the published lists*
    - i. *Editorial Acknowledgment to Reviewers of Land in 2022*, Land Editorial Office, MDPI AG, St. Alban-Anlage 66, 4052 Basel, Switzerland; Land 2023, 12(2), 266; <https://doi.org/10.3390/land12020266>
    - ii. *Editorial Acknowledgment to Reviewers of Energies in 2022, Part I*, Energies Editorial Office, MDPI AG, St. Alban-Anlage 66, 4052 Basel, Switzerland; Energies 2023, 16(3), 1184; <https://doi.org/10.3390/en16031184>
    - iii. *Editorial Acknowledgment to Reviewers of Separations in 2021*, Separations Editorial Office, MDPI AG, St. Alban-Anlage 66, 4052 Basel, Switzerland; Separations 2022, 9(2), 30; <https://doi.org/10.3390/separations9020030>
    - iv. *Editorial Acknowledgment to Reviewers of Water in 2021*, Water Editorial Office, MDPI AG, St. Alban-Anlage 66, 4052 Basel, Switzerland; Water 2022, 14(3), 430; <https://doi.org/10.3390/w14030430>
13. *Session/Symposium Organizer for National and Regional Conferences of the Geological Society of America*. Five sessions in 2022 and 2023.

14. *Groundwater Issues* Consulting Volunteer in the Catskill Region, 2021; Habitat for Humanity, 2023
15. *Good Year Lake Association (GYLA)*, member, volunteer, Spring 2014-present
16. *Otsego County Conservation Association (OCCA)*, member, volunteer, Spring 2013-present
17. *Otsego County Soil and Water Conservation District*, collaborator in the surface water quality assessment, Fall 2012-present

***Recent Collaborators and Co-Editors***

Alice Dohnalkova (EMSL-PNNL, Richland, WA); Katerina Dontsova (University of Arizona, AZ); Gaël Le Roux (Lab. Eco & Environment CNRS - Université de Toulouse); Jon Chorover (University of Arizona, AZ); Loredana Saccone (University of Bristol, UK); Mark Smits (Hasselt University, Belgium); Håkan Wallander (Lund University, Sweden); Edith Hammer (Lund University, Sweden); Susan Brantley (PSU, PA); Andrew Piefer (Hartwick College, NY); David Griffing (Hartwick College, NY); Eric Johnson (Hartwick College, NY); Keith Brunstad (SUNY Oneonta, NY); Pavel Kram (Czech Geological Survey, Czech Republic); Kimberly Dalby (University of Copenhagen, Denmark); Tue Hassenkam (University of Copenhagen, Denmark); Rachel Gallery (University of Arizona, AZ); Aditi Sengupta (PNNL, Richland, WA).

***Graduate Supervisor***

C. Kent Keller (School of the Environment, Washington State University, Pullman, WA)

***Post Doc Supervisors***

Richard A. Gill (now at Bingham Young University, Provo, UT); Susan L. S. Stipp (University of Copenhagen, Denmark)

***Student Supervising and Mentoring of Research Projects***

- At WSU (2004-2008), Geology – high school (1), undergraduate (2), graduate (2).
- At Hartwick College (2008-present), undergraduates – geology (36), chemistry (9), environmental chemistry (8), biochemistry (6), environment, sustainability, and society (17), biology (6), math (2), education (2), independent student programs (3), high school (1).
- Other Colleges (2008-present) – undergraduate (6), and graduate (2).

*Last modified: Nov 2023.*