

**Trista J. Vick-Majors**  
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## Education

Ph.D., Ecology and Environmental Sciences, Montana State University (2016)

Advisor: Dr. John Priscu

Dissertation: *Biogeochemical processes in Antarctic aquatic environments: linkages and limitations*

M.S., Land Resources and Environmental Sciences, Montana State University (2010)

Advisor: Dr. John Priscu

Thesis: *Bacterioplankton dynamics in stratified lakes of the Taylor Valley, Antarctica, during the transition to Polar Night*

B.A., Biology, Colorado College (2003)

## Research Interests

- Linking aquatic microbial ecology and biogeochemistry
- Quantifying relationships between microbial growth and quality of energy sources
- Identifying linkages between the physical environment and microbial processes
- Quantifying microbiological responses to physical environmental change
- Microbial ecology of the cryosphere

## Appointments

2019-present. Assistant Professor, Department of Biological Sciences, Michigan Technological University, USA

2017-2019. Postdoctoral Research Associate, *Microbial ecology and metabolism in oligotrophic environments*, University of Montana, Flathead Lake Biological Station, USA.  
Supervisor: Matthew Church

2016-2017. Postdoctoral Research Associate, *Linking carbon and microorganisms in northern aquatic ecosystems*, Université du Québec à Montréal, Canada. Supervisor: Dr. Paul del Giorgio

## Peer-reviewed publications

Michaud, A.B., **Vick-Majors, T.J.**, Achberger, A.A., Skidmore, M.L., Christner, B.C., Tranter, M., Priscu, J.C. (2020). Environmentally clean access to Antarctic subglacial aquatic environments. *Antarctic Science*. 1-12. doi: 10.1017/S0954102020000231

**Vick-Majors, T.J.**, Michaud, A.B., Skidmore, M.L., Turetta, C., Barbante, C., Christner, B.C., Dore, J.E., Christianson, K., Mitchell, A.C., Achberger, A.A., Mikucki, J.A., Priscu, J.C. (2020). Biogeochemical connectivity between freshwater ecosystems beneath the West Antarctic Ice Sheet and the sub-ice marine environment. *Global Biogeochemical Cycles*. 34:e2019GB006446. doi:10.1029/2019gb006446

Santibáñez, P., Michaud, A.B., **Vick-Majors, T.J.**, D'Andrilli, J., Chiuchiolo, A., Hand, K.P., Priscu, J.C. (2019). Preferential incorporation of bacteria into lake ice covers during freezing. *Journal of Geophysical Research-Biogeosciences*. 124:585-600. doi: 10.1029/2018JG004825

- Vick-Majors, T.J.** and Priscu, J.C. (2019). Inorganic carbon fixation in lakes of the McMurdo Dry Valleys. *Antarctic Science*. 31:123-132. doi:10.1017/S0954102019000075
- Hindshaw R., Mariash, H., **Vick-Majors, T.J.**, Thornton, A.E., Pope, A., Zaika, Y., Lenz, J., Nielsen, H., Fugmann, G. (2019). A decade of shaping the futures of polar early career researchers: A legacy of the International Polar Year. *Polar Record*. 54:312-323. doi:10.1017/S0032247418000591
- Liu, Y., Priscu, J.C., Yao, T., **Vick-Majors, T.J.**, Michaud, A.B., Sheng, L. (2018) Culturable bacteria isolated from seven high altitude ice cores on the Tibetan Plateau. *Journal of Glaciology*. 65:29-38. doi:10.1017/jog.2018.86
- Stelmach, K.B., Neveu, M., **Vick-Majors, T.J.**, Mickol, R., Chou, L., Webster, K.D., Tilley, M., Zacchei, F., Escudero, C., Flores, Martinez, C.L., Labrado, A., Fernandez, E.J.G. (2018). Secondary electrons as an energy source for life. *Astrobiology*. 18:73-85. doi: 10.1089/ast.2016.1510
- Michaud, A.B., Dore, J.E., Achberger, A.M., Christner, B.C., Priscu, J.C., Skidmore, M.L., **Vick-Majors, T.J.** (2017). Microbial oxidation as a methane sink and energy source beneath the West Antarctic Ice Sheet. *Nature Geoscience*. 10:582-586. doi:10.1038/ngeo2992 (Alphabetical after first two).
- Liu, Y., **Vick-Majors, T.J.**, Priscu, J.C., Yao, T., Kang, S., Liu, K., Cong, Z., Xiong, J., Li, Y. (2017). Biogeography of cryoconite bacterial communities on glaciers of the Tibetan Plateau. *FEMS Microbiology Ecology*. 93:fix072. doi:10.1093/femsec/fix072
- Vick-Majors, T.J.**, Mitchell, A.C., Achberger, A.M., Christner, B.C., Dore, J.E., Michaud, A.B., Mikucki, J.A., Purcell, A.M., Skidmore, M.L. and Priscu, J.C. (2016). Physiological ecology of microorganisms in Subglacial Lake Whillans. *Frontiers in Microbiology*. 7:1705. doi: 10.3389/fmicb.2016.01705
- Bowman, J.S., **Vick-Majors, T.J.**, Morgan-Kiss, R., Takacs-Vesbach, C., Ducklow, H.W., Priscu, J.C. (2016). Contrasting carbon and microbial community dynamics in two polar extremes: The lakes of the McMurdo Dry Valleys and the West Antarctic Peninsula marine ecosystem. *Bioscience*. 66:829-847. doi:10.1093/biosci/biw103
- Achberger, A.M., Christner, B.C., Michaud, A.B., Priscu, J.C., Skidmore, M.L. and **Vick-Majors, T.J.** (2016). Microbial Community Structure of Subglacial Lake Whillans, West Antarctica. *Frontiers in Microbiology*. 7:1457. doi: 10.3389/fmicb.2016.01457 (Alphabetical after first author).
- Michaud, A.B., Skidmore, M.L., Mitchell, A.C., **Vick-Majors, T.J.**, Barbante, C., Turetta, C., vanGelder, W., Priscu, J.C. (2016). Solute sources and geochemical processes in Subglacial Lake Whillans, West Antarctica. *Geology*. 5:G37639.1. doi: 10.1130/G37639.1
- Liu, Y., Priscu, J., Xiong, J., Conrad, R., **Vick-Majors, T.**, Chu, H., Hou, J. (2016). Salinity drives archaeal distribution patterns in high altitude lake sediments on the Tibetan Plateau. *FEMS Microbiology Ecology*. 92(3):fiw033. doi: 10.1093/femsec/fiw033
- Liu, Y., Yao, T., Priscu, J.C., **Vick-Majors, T.J.**, Xu, B., Jiao, N., Santibáñez, P., Huang, S., Wang, N., Greenwood, M., Michaud, A.B., Kang, S., Wang, J., Gao, Q., Yang, Y. (2016). Bacterial responses to environmental change in the Tibetan Plateau over the past half-century. *Environmental Microbiology*. 18:1930-1941. doi: 10.1111/1462-2920.13115
- Mikucki, J.A., Lee, P.A., Ghosh, D., Purcell, A.M., Mitchell, A.C., Mankoff, K.D., Fischer, A.T., Tulaczyk, S., Carter, S., Siegfried, M., Fricker, H.A., Hodson, T., Coen, J., Powell, R.,

- Scherer, R., **Vick-Majors, T.**, Achberger, A., Christner, B.C., Tranter, M., and the WISSARD Science Team (2016). Subglacial Lake Whillans biogeochemistry: A synthesis of current knowledge. *Philosophical Transactions of the Royal Society A*. 374:20140290 doi:10.1098/rsta.2014.0290.
- Vick-Majors, T.J.**, Achberger, A., Santibáñez, P., Dore, J.E., Hodson, T., Michaud, A.B., Christner, B.C., Mikucki, J., Skidmore, M.L., Powell, R., Adkins, W.P., Barbante, C., Mitchell, A., Scherer, R., Priscu, J.C. (2016). Biogeochemistry and microbial diversity in the marine cavity beneath the McMurdo Ice Shelf, Antarctica. *Limnology and Oceanography*. 61:572-586. doi:10.1002/lno.10234
- Christner, B.C., Priscu, J.C., Achberger, A., Barbante, C., Carter, S.P., Christianson, K., Mikucki, J.A., Michaud, A.B., Mitchell, A., Skidmore, M.L., **Vick-Majors, T.J.**, and the WISSARD Science Team (2014). A microbial ecosystem beneath the West Antarctic Ice Sheet. *Nature*. 512:310-313. (Alphabetical after first two authors).
- Xu, Y., **Vick-Majors, T.J.**, Morgan-Kiss, R., Priscu, J.C., Amaral-Zettler, L. (2014). Ciliate diversity, community structure, and novel taxa in lakes of the McMurdo Dry Valleys, Antarctica. *Biological Bulletins*. 227:175-190.
- Liu, Y., Priscu J., Yao, T., **Vick-Majors, T.**, Michaud, A., Jiao, N., Hou, J., Tian, L., Hu, A., Chen, Z. (2014). A comparison of pelagic, littoral, and riverine bacterial assemblages in Lake Bangongco, Tibetan Plateau. *FEMS Microbiology Ecology*. 89:211-221.
- Purcell, A.M., Mikucki, J.A., Achberger, A., Alekhina, I., Barbante, C., Christner, B.C., Ghosh, D., Michaud, A.B., Mitchell, A.C., Priscu, J.C., Scherer, R., Skidmore, M., **Vick-Majors, T.J.**, and the WISSARD Science Team (2014). Microbial sulfur transformations in Subglacial Lake Whillans sediments. 19:594. *Frontiers in Microbiology*. doi: 10.3389/fmicb.2014.00594 (Alphabetical after first two authors).
- Vick-Majors, T.J.**, Priscu, J.C., Amaral-Zettler, L. (2014). Modular structure suggests community plasticity during the transition to polar night in ice-covered Antarctic lakes. *The ISME Journal*. 8:778-789. doi:10.1038/ismej.2013.190.
- Priscu, J.C., Achberger, A.M., Cahoon, J., Christner, B., Edwards, R.L., Jones, W., Michaud, A.B., Siegfried, M.R., Skidmore, M., Siegel, R.H., Switzer, G., Tulaczyk, S., **Vick-Majors, T.J.** (2013). A microbiologically clean strategy for access to the Whillans Ice Stream Subglacial Environment. *Antarctic Science*. 25:637-647. doi:10.1017/S0954102013000035 (Alphabetical after first author).
- Vick, T.J.** and Priscu, J.C. (2012). Bacterioplankton responses to the polar night transition in lakes of the Taylor Valley, Antarctica. *Aquatic Microbial Ecology*. 68:77-90. doi:10.3354/ame01604
- Thurman, J., Parry, J., Hill, P., Priscu, J., **Vick, T.**, Chiuchiolo, A., Laybourn-Parry, J. (2012). Microbial dynamics and flagellate grazing during transition to winter in Lakes Hoare and Bonney, Antarctica. *FEMS Microbiology Ecology*. 82:449-458. doi:10.1111/j.1574-6941.2012.01423.x
- Vick, T.J.**, Dodsworth, J.A., Costa, K.C., Shock, E.L., Hedlund, B.P. (2010). Microbiology and geochemistry of Little Hot Creek, a hot spring environment in the Long Valley Caldera. *Geobiology*, 8:140-154. doi:10.1111/j.1472-4669.2009.00228.x

## Other publications

- Vick-Majors, T.J.**, Patterson, M., Schmidt, B., Makinson, K., Hewagama, T., Mikucki, J., Harwood, D., Winebrenner, D., Siegfried, M.R., Michaud, A.B., Tulaczyk, S. Access Drilling Priorities in the Ross Ice Shelf Region. Ice Drilling Program Subglacial Access Working Group Science Planning Workshop, March 29-30, 2019, Herndon, Virginia, USA, 1-8. White paper.
- Alexander, J.K., Fidler, D.P., Hubbard, G.S., Lopes, R.M., Marinova, M., Melosh, H.J., Siebach, K., Smith, C., **Vick-Majors, T.J.**, Young, A.T. Assessment of the Report of NASA's Planetary Protection Independent Review Board. National Academies Press, 2020. Consensus report.
- Vick-Majors, T.J.**, Achberger, A.M., Michaud, A.B., Priscu, J.P. Metabolic and biological diversity in Antarctic subglacial environments. in: *Life in Extreme Environments: Insights into Biological Capability*. British Ecological Society/Cambridge University Press. In Press. Book chapter.
- Achberger, A.M., Michaud, A.B., **Vick-Majors, T.J.**, Christner, B., et al. Microbiology of Subglacial Environments. in *Psychrophiles: from biodiversity to biotechnology*. Springer-Verlag. 2017. Book chapter.
- Vick-Majors, T.J.**, Engelbertz S., Fugmann G. (2016). Focus on the Future of Polar Research. *Eos*. 97, doi:10.1029/2016EO042993. Commentary.

## Refereed publications (in process)

- Priscu, J.C., Kalin, J., Winans, J., Campbell, T., Siegfried, M.R., Skidmore, M., Dore, J.E., Leventer, A., Harwood, D., Duling, D., Zook, R., Burnett, J., Gibson, D., Krula, E., Mironov, A., McManis, J., Roberts, G., Rosenheim, B.E., Christner, B.C., Kasic, K., Fricker, H.A., Lyons, W.B., Barker, J., Bowling, M., Collins, B., Davis, C., Gagnon, A., Gardner, C., Gustafson, C., Li, W., Michaud, A., Patterson, M., Tranter, M., Venturelli, R., **Vick-Majors, T.J.**, and the SALSA Science Team. Scientific Access into Mercer Subglacial Lake: Scientific Objectives, Drilling Operations, and Initial Observations. *In review at Annals of Glaciology*.
- Vick-Majors, T.J.**, Stadler, M., Guillemette, F., del Giorgio, P. Linkages between organic matter and microbial communities along a river-reservoir continuum. *In preparation*.
- Vick-Majors, T.J.**, Guillemette, F., del Giorgio, P. Dissolved organic matter transformations along a boreal aquatic continuum. *In preparation*.
- Ruiz González, C., Stadler, M., Niño-García, J.P., Hotchkiss, E.R., **Vick-Majors T.J.** del Giorgio, P.A. The “rare biosphere” of freshwater bacterioplankton reflects metacommunity dynamics across the landscape. *In preparation*.

## Teaching

- Fall 2020. Special Topics in Microbial Ecology. Michigan Technological University.
- Spring 2020. Limnology (BL 4450). Michigan Technological University.
2012. Graduate Teaching Assistant, Nutrient Cycling (ENSC 351). Montana State University.
- 2007 – 2008. Graduate Teaching Assistant, Microbial Ecology, University of Nevada, Las Vegas.

## Guest Lectures

2018. Principles and Applications of Genetics. *Microbial ecology in Antarctica: Taking molecular biology to the extreme*, Salish Kootenai College.

2018. Microbial Ecology, Diversity and Evolution. *Life under ice: Microbial ecology in Antarctic subglacial environments*. University of Montana.
2013. Study Abroad in Antarctica Program. *Microbial processes and biogeochemistry in Antarctica*. University of Georgia (online).
2012. Nutrient Cycling. *The Nitrogen Cycle*. Montana State University.
2011. Examining Life in Extreme Environments. *Microbial life in Antarctic lakes*. Master of Science in Education Program, Montana State University.

### Grants and Fellowships

- 2019-2020\*. **Co-PI**. Open Research Fund of the Key Laboratory of Tibetan Environmental Changes and Land Surface Processes, Chinese Academy of Sciences. *Microbial carbon cycling and community ecology at the three poles*. Awarded to Y. Liu and T. Vick-Majors. 80,000 Yuan. \*travel-dependent work delayed due to COVID-19.
2015. Institute on Ecosystems Graduate Research Fellowship. *Stable isotopic investigation of subglacial carbon biogeochemistry*.
- 2014-2015. American Association of University Women Dissertation Fellowship.
2014. **Co-PI**. Census of Deep Life. *Dark energy in the deep, cold ecosystem of Subglacial Lake Whillans, West Antarctica*. Sequencing of 3 microbial metagenomes.
2014. Institute on Ecosystems Graduate Research Fellowship. *Stable isotopic investigation of nitrogen cycling in subglacial aquatic environments*.
2009. Montana Space Grant Consortium Graduate Fellow. *Microbial and carbon dynamics during the Polar Night transition in Antarctic lakes*.
- 2007-2008. Nevada STARS Fellowship. *Microbiology and geochemistry of Great Basin Hot Springs*.

### Honors and Awards

2016. Scientific Committee on Antarctic Research, Women of the Antarctic Wikibomb honoree. [https://en.wikipedia.org/wiki/Trista\\_Vick-Majors](https://en.wikipedia.org/wiki/Trista_Vick-Majors).
2015. American Society for Microbiology Travel Award.
2014. US Scientific Committee on Antarctic Research Travel Award.
2012. International Polar Year Early Career Travel Award.
2010. American Geophysical Union Chapman Student Travel Award.
2009. Scientific Committee on Antarctic Research Travel Award.
2007. Student Association Travel Award, University of Nevada, Las Vegas.
2007. BIOS Symposium Best Oral Presentation. University of Nevada, Las Vegas.

### Conference Presentations

- Vick-Majors, T.J.**, Li, W., Barker, J., Skidmore, M.L., Dore, J.E., Davis, C.L., Christner, B.C., Priscu, J.C. (2019). Physiological ecology of microbial communities in Antarctic subglacial aquatic environments. American Geophysical Union Fall Meeting, San Francisco, CA. Poster.
- Li, W., **Vick-Majors, T.J.**, Barker, J., Dore, J.E., Steigmyer, A.J., Skidmore, M.L., Davis, C.L., Christner, B.C., Priscu, J.C. (2019). New insights into microbial ecosystems in Antarctic subglacial lake environments. American Geophysical Union Fall Meeting, San Francisco, CA.

- Bodmer, P. Rust, F., Casas Ruiz, J. P., Couturier, M., Gérardin, M.L., Hotchkiss, E.R., Stadler, M., **Vick-Majors, T.J.**, del Giorgio, P.A. (2019). Processes contributing to the maintenance of CO<sub>2</sub> and CH<sub>4</sub> super-saturation in a large boreal river. Symposium for European Freshwater Sciences, Zagreb, Croatia.
- Vick-Majors, T.J.**, Ruiz-Gonzalez, C., Guillemette, F., del Giorgio, P. (2018). Linkages between microbial communities and dissolved organic matter along a boreal aquatic continuum. Association for the Sciences of Limnology and Oceanography. Victoria, BC.
- Vick-Majors, T.J.**, Ruiz-Gonzalez, C., Guillemette, F., del Giorgio, P. (2017). Functional perspectives on community assembly along a boreal aquatic continuum. Society for Aquatic Microbial Ecology. Zagreb, Croatia.
- Vick-Majors, T.J.**, Guillemette, F., del Giorgio, P. (2017). Dissolved organic matter transformations along a boreal aquatic continuum. Groupe de Recherche Interuniversitaire en Limnologie et en environnement aquatique (GRIL): Symposium Annuel. Jouvence, QC.
- Vick-Majors, T.J.**, Michaud, A., et al., (2016). Subglacial carbon and nutrient fluxes fertilize the Southern Ocean under the Ross Ice Shelf. Association for the Sciences of Limnology and Oceanography, Santa Fe, NM.
- Vick-Majors, T.J.**, Achberger, A., et al., (2016). Microbial physiology in subglacial aquatic environments: an unexplored part of the low-energy biosphere. International Society for Microbial Ecology 16, Montréal, QC.
- Vick-Majors, T.J.**, Michaud, A., et al., (2015). Limitations on heterotrophic activity in Subglacial Lake Whillans, West Antarctica. Microenergy 2015, Sandbjerg, DK. Poster.
- Vick-Majors, T.J.**, Achberger, A., et al., (2015). Sources and sinks of carbon and nitrogen in Antarctic subglacial aquatic environments. American Society for Microbiology Meeting, New Orleans, LA. Poster.
- Vick-Majors T.J.**, Priscu, J., Achberger, A., et al., (2014). Microbial nutrient cycling and physiology in Subglacial Lake Whillans, Antarctica. Scientific Committee on Antarctic Research Open Science Conference, Auckland, NZ.
- Vick-Majors T.J.**, Michaud, A., Priscu, J., et al. (2013). Physiological Ecology of Bacteria in the water column of Subglacial Lake Whillans, Antarctica. Polar and Alpine Microbiology Conference, Big Sky, MT.
- Vick-Majors T.J.**, Achberger, A., Priscu, J., et al., (2013). Biogeochemical characteristics of sub-Ross Ice Shelf waters near McMurdo Sound, Antarctica. Polar and Alpine Microbiology Conference, Big Sky, MT. Poster.
- Vick, T.**, Amaral-Zettler, L., Priscu, J. (2012). Variations in Bacterial, Archaeal, and Eukaryal Communities during the Polar Night Transition in Lakes of the McMurdo Dry Valleys, Antarctica. Scientific Committee on Antarctic Research Open Science Conference, Portland, OR.
- Kelly, S., Michaud, A., **Vick, T.**, Priscu, J. (2012). Science is cool: The Crow Education Partnership. Scientific Committee on Antarctic Research Open Science Conference, Portland, OR. Poster.
- Vick, T.**, Amaral-Zettler, L., Priscu, J. (2012). Microbial Diversity during the Polar Night Transition in Lakes of the McMurdo Dry Valleys, Antarctica. International Polar Year Conference, Montréal, QC.

- Vick, T.J.**, Priscu, J.C. (2011). Life in the Cold and Dark: Carbon-cycling in a permanently ice-covered Antarctic Lake. Montana Space Grant Consortium Symposium, Bozeman, MT.
- Vick, T.**, Amaral-Zettler, L., Priscu, J. (2010). Microbial diversity during the polar night transition in lakes of the McMurdo Dry Valleys. McMurdo LTER Meeting, Fort Collins, CO. Poster.
- Vick, T.J.**, Priscu, J.C. (2010). Microbial responses during the transition to polar night in permanently ice-covered Antarctic lakes. AGU Chapman Conference on the Exploration of Antarctic Subglacial Environments, Baltimore, MD. Poster.
- Vick, T.J.**, Priscu, J.C. (2009). The response of microplankton in Antarctic lakes during the transition to polar night. LTER All Scientists Meeting, Estes Park, CO. Poster.
- Vick, T.J.**, Priscu, J.C., Mikucki, J.A. (2009.) Microbial dynamics in lakes of the McMurdo Dry Valleys during the transition to polar night. SCAR Biology Symposium, Sapporo, Japan.
- Vick, T.J.**, Hedlund, B.P. (2008). Microbiology and Geochemistry at Little Hot Creek. Thermal Biology Institute Symposium, Bozeman, MT.
- Vick, T.J.**, Costa, K.C., Shock, E.L., Hedlund, B.P. (2007). Geochemical and Microbiological Characterization of Little Hot Creek. Best presentation award. BIOS Symposium, Las Vegas, NV.
- Vick, T.J.**, Costa, K.C., Shock, E.L., Hedlund, B.P. (2007). Microbiology and Geochemistry of Little Hot Creek Hot Springs, Long Valley Caldera, California. General Meeting of the American Society for Microbiology, Toronto, ON. Poster.
- Vick, T.J.**, Costa, K.C., Shock, E.L., Hedlund, B.P. (2007). Microbiology and Geochemistry of Little Hot Creek Hot Springs, Long Valley Caldera, California. Arizona/Nevada Regional Meeting for the American Society for Microbiology, Flagstaff, AZ.

### **Invited Presentations and Seminars (\*public)**

2019. Michigan Technological University Environmental Engineering Seminar Series., Houghton, MI.
2019. Subglacial Access Working Group (NSF-IDPO) Meeting, Washington, D.C.
2016. University of Quebec at Montréal, Department of Biological Sciences, Ecology and Evolution Seminar Series, Montréal, QC.
2016. University of Quebec at Montréal, Department of Biological Sciences, Aquatic Seminar Series, Montréal, QC.
2015. National Radio Astronomy Observatory Lecture Series, Greenbank, WV.
2015. Montana Tech. Department of Chemistry and Biochemistry Seminar Series, Butte, MT.
- \*2015. Colorado Springs Science Festival, Colorado Springs, CO.
- \*2013. Colorado Springs Science Festival, Colorado Springs, CO.
- \*2007. Clark County School District Summer Science Teachers Institute, Las Vegas.

### **Students Supervised (Graduate)**

Maci Quintanilla, Michigan Technological University, Biological Sciences, PhD Student. (2020-present). Topic: *Microbial ecology in the cryosphere*.

### **Students Supervised (Undergraduate)**

Vanessa Cubillos, Michigan Technological University, Biological Sciences, Lab Assistant (2019-present).

Madylyn Sherman, Michigan Technological University, Undergraduate Research Internship Program, (2019-2020). Topic: *Quality of dissolved organic matter under ice in a north-temperate bog*.

Madeline Glad, University of Montana, (Summer 2018; co-supervised with M. Church). Topic: *Methane oversaturation in oxygenated waters of an oligotrophic lake*.

Kimberly Rousch, Montana State University, Lab Technician, (2015-2016; co-supervised with J. Priscu).

Courtney Thurner, Montana State University, (2011). Topic: *Genetic investigation of chemoautotrophic carbon-fixation in permanently ice-covered Antarctic lakes*.

Hayden Wilson, Montana State University, Lab Technician, (2010-2012; co-supervised with A. Chiuchiolo).

Andrew Baber, Montana State University, Lab Technician, (2008; co-supervised with J. Priscu).

Cameron Ball, University of Nevada, Las Vegas, REU student, (2007; co-supervised with B. Hedlund).

### **Student Advisory Committee Member**

Laura Schaerer: Ph.D. (2020-present), Biological Sciences, Michigan Tech. Dissertation topic: *Participation of naturally occurring microorganisms in recycling plastic*. Chair: S. Techtmann.

### **Recent Collaborations**

Dr. Hilary Dugan, University of Wisconsin, Madison, Center for Limnology. Organic matter processes under ice in north temperate lakes.

Dr. John Priscu and the SALSA (Subglacial Antarctic Lakes Scientific Access) project. Antarctic subglacial lake biogeochemistry and microbial ecology (ongoing).

Dr. Yongqin Liu, Institute of Tibetan Plateau Research, Chinese Academy of Sciences. Microbial communities on the Tibetan Plateau, and microbial carbon cycling in the Arctic, Antarctic, and at the Third Pole (ongoing).

### **Working Groups, Panels, and Workshops**

2020-pres. Cooperative Institute for Great Lakes Research working group. "Oil spills under ice – Challenges and solutions".

2019-2020. National Academies of Sciences *ad hoc* Committee of the Space Studies Board. "Review of the Report of the NASA Planetary Protection Independent Review Board". <https://www.nationalacademies.org/our-work/review-of-the-report-of-the-nasa-planetary-protection-independent-review-board>

2019. Invited panelist, Workshop: Understanding and responding to global health security risks from microbial threats in the Arctic. Sponsored by: United States National Academies of Sciences, Engineering, and Medicine in cooperation with the InterAcademy Partnership and the European Academies Science Advisory Council. Hanover, Germany.

2019. Invited representative (early-career, Biology), Workshop: Subglacial Access Working Group. Sponsored by: Ice Drilling Program Office Subglacial Access Working Group.



Washington, DC. <https://icedrill.org/library/white-paper-subglacial-access-working-group-access-drilling-priorities-ross-ice-shelf>

## **Short Courses and Professional Development**

2014. NASA Astrobiology Institute International Astrobiology summer school, Spanish National University, Santander, Spain.

2012. Center for Microbial Oceanography Summer Course, Honolulu, HI.

2011. Bioinformatics Programming with Python, Montana State University.

2010. Teaching in Biology, Montana State University.

## **Service**

### **National or International Committees**

2020-present. Member, U.S. Ice Drilling Program Science Advisory Board.

2020-present. Member, National Academics of Sciences Space Studies Board Committee on Planetary Protection.

### **University**

2020-present. Charter Review Committee, Michigan Technological University, Department of Biological Sciences.

2019-present. Undergraduate Enrollment Committee, Michigan Technological University, Department of Biological Sciences.

2014-2015. Secretary/Treasurer, Graduate Employee Organization, Montana State University.

2012-2013. Vice President, Graduate Employee Organization, Montana State University.

2011-2012. President, Women in Science and Engineering, Montana State University.

2009-2011. Chair and founder of Land Resources and Environmental Sciences Graduate Student Organization, Montana State University.

2008. Secretary, BIOS Club, University of Nevada, Las Vegas.

2007-2008. Secretary and Co-founder, Las Vegas Student Chapter of the American Society for Microbiology.

### **Scientific Societies**

2017-2018. Council Ex-officio, Association of Polar Early Career Scientists.

2016-2017. Executive Committee Ex-officio, Association of Polar Early Career Scientists.

2015-2016. Executive Committee Member, Association of Polar Early Career Scientists.

2014-2015. Executive Committee Member, Association of Polar Early Career Scientists.

2012-2016. Council Member, Association of Polar Early Career Scientists.

2012. Co-chair, Research Activities Council, Association of Polar Early Career Scientists.

### **Conference Special Sessions and Organizing Committees**

2020\*. Co-convener, *Biogeochemical dynamics in glacial ecosystems driven by climate change*, Fall Meeting of the American Geophysical Union (with primary convener M. Winkel and co-conveners T. Hamilton and J. Hawkings). \**virtual meeting due to COVID-19*.

2020\*. Convener, *Limnological processes beneath ice cover*, Society for Freshwater Science and Association for the Sciences of Limnology and Oceanography joint meeting, Madison, USA. (with co-conveners J. Priscu and A. Michaud). \**meeting cancelled due to COVID-19*.

2018. Co-convener, *Linkages between microorganisms and carbon biogeochemistry along aquatic continuums*, Association for the Sciences of Limnology and Oceanography Summer Meeting, Victoria, Canada. (with primary convener S. Crevecoeur and co-convener P. Reis).
2016. Co-convener, *Subglacial Aquatic Environments*. Scientific Committee on Antarctic Research Open Science Conference, Kuala Lumpur. (with primary convener M. Siegert and co-convener I. Alekhina).
2014. International Scientific Organizing Committee Member, Scientific Committee on Antarctic Research Open Science Conference, Auckland, NZ.
2013. Local Organizing Committee, Polar and Alpine Microbiology International Conference (PAM5). Bozeman, USA.
2012. Co-convener, *Polar Microbes, Genetics and Molecular Biology*. International Polar Year Conference, Montréal, Canada.

### **Peer Review, Journal Articles**

Astrobiology, ISME Journal, Biogeochemistry, Nature Scientific Reports, Proceedings of the National Academy of Sciences, Environmental Research Letters, FEMS Microbiology Ecology, Microorganisms, Climate of the Past, Hydrobiologia, Soil Biology and Biochemistry, Environmental Microbiology, Antonie van Leeuwenhoek, Applied Soil Ecology, Science of the Total Environment, Frontiers in Microbiology

### **Peer Review, Research Grant Proposals**

Panel Reviewer, National Aeronautics and Space Administration (NASA), USA  
 External Reviewer, Australian Antarctic Division (AAS), Australia  
 External Reviewer, Chilean Antarctic Institute (INACH), Chile

### **Community Education and Outreach**

2015. Wrote and performed the piece “Life in Antarctica” for the podcast, “Out There: A Podcast About the Outdoors”. <https://goo.gl/Bz4gkS>
2015. Presenter, Polar Regions and Climate Workshop. Workshop for Montana science teachers.
2015. Colorado Springs Science Festival. Presented in public lecture series and gave presentations for >100 students, grades 5-12. Colorado Springs, CO.
2014. JASON Learning, STEM Mentoring program. Video E&O sessions about Antarctica and Microbiology with elementary schools.
2014. JASON Learning Mentor. Live Role Model Program. <http://goo.gl/sVv2uQ>
2013. Scientific Advisor for Montana Space Public Outreach Teams “Life in the Universe”.
2013. Colorado Springs Science Festival. Presented in public lecture series and school visits with grades K-12. Colorado Springs, CO.
2013. Peaks and Potentials Summer Camp. School group mentor. Montana State University.
- 2012-2013. Exploring Antarctica. I designed a series of E&O presentations for grades 5-8 at Montana schools.
2012. Teaching the Environmental Literacy Framework (NOAA). Presenter at Climate Education Workshop for teachers. Montana State University.
2012. Climate Change Student Summit (C2S2). Student mentor. Hardin, MT.

2011. Clues to the Cryosphere: Lessons from the Ice. National Science Teachers Association Symposium, San Francisco, CA. Workshop for teachers.

2011. Montana Regional Science Fair Mentor. Bozeman, MT.

2010. Peaks and Potentials Summer Camp. School group mentor. Montana State University.

2010. Science Olympiad Judge. Montana State University.