

Jennifer B. Glass, Ph.D.

Jean “Chris” Purvis Professor | School of Earth and Atmospheric Sciences
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Education

B.S. Earth and Space Sciences	2003-2006	University of Washington
B.S. Oceanography	2003-2006	University of Washington
Ph.D. Geological Sciences	2006-2011	Arizona State University

Employment History

2025-present	Full Professor with Tenure, School of Earth & Atmospheric Sciences, Georgia Tech
2025-present	Associate Chair of Undergraduate Affairs, Earth & Atmospheric Sciences, Georgia Tech
2025-present	Founder and Co-Director, Astrobiology Undergraduate Minor Program, Georgia Tech
2023-2025	Director, Environmental Science Undergraduate Major Program, Georgia Tech
2019-present	Founder and Co-Director, Astrobiology Graduate Certificate Program, Georgia Tech
2019-2025	Associate Professor with Tenure, School of Earth & Atmospheric Sciences, Georgia Tech
2013-2019	Assistant Professor, School of Earth & Atmospheric Sciences, Georgia Tech
2013-present	Courtesy Faculty, School of Biological Sciences, Georgia Institute of Technology
2011-2013	Postdoctoral Fellow, California Institute of Technology

Selected Honors and Awards

2025	Jean “Chris” Purvis Professorship
2024	Faculty Development Grant, Visiting Scholar in MWW Adams Lab (Univ Georgia)
2021	AGU Thomas Hilker Early Career Award for Excellence in Biogeosciences
2021	ASM Alice C. Evans Award for Advancement of Women
2020	Scialog Fellow, Signatures of Life in the Universe Initiative
2019	Georgia Tech College of Sciences Immel Teaching Award
2018, 2022	Kavli Fellow
2011-2013	NASA Astrobiology Postdoctoral Fellowship
2010-2011	PEO Scholar Award
2007-2010	NSF Graduate Research Fellowship in Geosciences-Geochemistry

Research Experience

The Glass Lab integrates field and laboratory studies to explore connections between biological and abiotic mechanisms of greenhouse gas cycling and interactions with critical elements and redox active metals. We seek to characterize novel uncultivated microbes for new metabolisms and protein functions. We are also passionate about science communication, and diversity, inclusion, equity, and representation in STEM.

Selected Scientific Leadership and Service

Editor, *Applied and Environmental Microbiology* (2021-present)
 NASA Planetary Science Advisory Committee (2020-2023)
 Local Organizing Chair, Astrobiology Science Conference, Atlanta, GA (2022)
 Member (2021-present); Co-Chair (2025-2026), AGU Biogeosciences Section, Diversity Inclusion and Equity Committee
 Founder and Chair, Southeastern Biogeochemistry Symposium (2014, 2015, 2020)

Selected Publications (2015-present) *indicates trainee author from Glass Lab

Scopus h-index=24; 67 documents; total citations: 2,554 in 2,124 documents

Glass JB, LN Wartens*, A Alajlan* (2025) Diel cycle of lanthanide-dependent methylotrophy by TMED127/Methylaequorales bacteria in oligotrophic surface seawater. *Applied & Environmental Microbiology* 91:e01181-25

- Glass JB, SM Hörst (2025) The once and future gas: methane's multifunctional roles in Earth's evolution and potential as a biosignature. *Annual Reviews in Earth & Planetary Sciences* 53:283-304
- Elbon CE*, FJ Stewart, JB Glass (2024) Novel Alphaproteobacteria transcribe genes for nitric oxide transformation at high levels in a marine oxygen deficient zone. *Applied & Environmental Microbiology* 90(4):e02099-23
- Huard DJE, AM Johnson*, Zixing Fan, LG Kenney, M Xu*, R Drori, JC Gumbart, S Dai, RL Lieberman, JB Glass (2023) Molecular basis for inhibition of methane clathrate growth by a deep subsurface bacterial protein. *PNAS Nexus* 2(8): pgad268
- Glass JB (2023) What is the role of microbes in gas hydrate formation and stability? *Environmental Microbiology* 25:45–48
- Glass JB, CE Elbon*, LD Williams (2023) Something old, something new, something borrowed, something blue: the anaerobic microbial ancestry of aerobic respiration. *Trends in Microbiology* 31(2): 135-141
- Glass JB, P Ranjan, CB Kretz*, BL Nunn, AM Johnson*, M Xu*, J McManus, FJ Stewart (2021) Microbial metabolism and adaptations in *Atribacteria*-dominated methane hydrate sediments. *Environmental Microbiology* 23(8):4646-4660
- Johnson AM*, DJE Huard, J Kim, P Raut, S Dai, RL Lieberman, JB Glass (2020) Mainly on the plane: deep subsurface bacterial proteins bind and alter clathrate structure. *Crystal Design & Growth* 20(10): 6290-6295.
- Szeinbaum N*, BL Nunn, AR Cavazos*, SA Crowe, FJ Stewart, TJ DiChristina, CT Reinhard, JB Glass (2020) Novel insights into the taxonomic diversity and molecular mechanisms of bacterial Mn(III) reduction. *Environmental Microbiology Reports* 12(5): 583-593
- Cavazos AR*, JB Glass (2020) Simul-staining manganese oxides and microbial cells. *Limnology & Oceanography Methods* 18:362-373
- Bray MS*, TK Lenz, JW Haynes, JC Bowman, AS Petrov, AR Reddi, NV Hud, LD Williams, JB Glass. (2018) Multiple prebiotic metals mediate translation. *PNAS* 115:12164-12169
- Stanton CL*, CT Reinhard, JF Kasting, NE Ostrom, JA Haslun, TW Lyons, JB Glass (2018) Nitrous oxide from chemodenitrification: a possible missing link in the Proterozoic greenhouse and the evolution of aerobic respiration. *Geobiology* 16(6):597-609
- Cavazos AR*, M Taillefert, Y Tang, JB Glass (2018) Kinetics of nitrous oxide production from hydroxylamine oxidation by birnessite in seawater. *Marine Chemistry* 202:49-57
- Warren MJ*, X Lin, JC Gaby, CB Kretz*, M Kolton, J Pett-Ridge, PL Morton, DJ Weston, CW Schadt, JE Kostka, JB Glass (2017) Molybdenum-based diazotrophy in a *Sphagnum* peatland in northern Minnesota. *Applied & Environmental Microbiology* 83:e01174-17
- Bray MS*, J Wu*, CB Kretz*, JA Brandes, BC Reed, KM Belli, RL Simister, C Henny, FJ Stewart, TJ DiChristina, DA Fowle, SA Crowe, JB Glass (2017) Shifting microbial communities sustain multi-year iron reduction and methanogenesis in ferruginous sediment incubations. *Geobiology* 15:678-689
- Zhu-Barker X, AR Cavazos*, NE Ostrom, WR Horwath, JB Glass (2015) The importance of abiotic reactions for nitrous oxide production. *Biogeochemistry* 126:251-267
- Glass JB, CB Kretz*, S Ganesh, P Ranjan, SL Seston, KN Buck, WM Landing, PL Morton, JW Moffett, SJ Giovannoni, KL Vergin, FJ Stewart (2015) Meta-omic signatures of microbial metal and nitrogen cycling in marine oxygen minimum zones. *Frontiers in Microbiology* 6:998

Professional Memberships

- American Geophysical Union, 2005-present
- Geochemical Society, 2013-present
- American Society of Microbiology, 2014-present
- International Society of Microbial Ecology, 2024-present
- American Association of University Professors, 2025-present