

ALEXIS S. TEMPLETON

Department of Geological Sciences, University of Colorado at Boulder, CO 80309-0399

alexis.templeton@colorado.edu

ORCID ID: 0000-0002-9670-0647

EDUCATION

2002 Ph.D. in Aqueous and Environmental Geochemistry, Stanford University
1996 M.S. in Geochemistry, Dartmouth College
1993 A.B. with high honors in Earth Sciences, Dartmouth College

POSITIONS HELD

2019-present **Professor**
Department of Geological Sciences, University of Colorado at Boulder
2023-2024 **Head Geochemist**
Eden GeoPower, Sommerville MA
2017-2019 **Associate Chair, Graduate Program**
Department of Geological Sciences, University of Colorado at Boulder
2012-2019 **Associate Professor**
Department of Geological Sciences, University of Colorado at Boulder
2013 **Visiting Professor**
Institut de Minéralogie et de Physique des Milieux Condensés, France
Institut de Physique du Globe à Paris, France
2005-2012 **Assistant Professor**
Department of Geological Sciences, University of Colorado at Boulder
2002-2005 **NSF Postdoctoral Fellow, Microbial Biology**
Scripps Institution of Oceanography, Marine Biology Research Division
1995-1997 **Senior Research Associate, Center for Isotope Geochemistry**,
Earth Sciences Division, Lawrence Berkeley National Laboratory

AWARDS AND HONORS

2019 University of Colorado “College Scholar” award
2017 Mineralogical Society of America Fellow
2012 Geobiology & Geomicrobiology Division Award, Geological Society of America
2011 Department of Energy Early Career Research Award
2006 David and Lucille Packard Foundation Fellowship in Science and Engineering
2006 F.W. Clarke Medal, Geochemical Society
2004 Rosalind Franklin Young Investigator Award, Advanced Photon Source
2002-2004 National Science Foundation Microbial Biology Postdoctoral Fellowship
1999 Wolf Vishniac Award, International Symposium Environmental Biogeochemistry
1997-2000 Eugene Holman Stanford Graduate Fellowship, Stanford University
1993 John Ebers & Upham Prizes for excellence in Earth Sciences, Dartmouth College

INVITED PRESENTATIONS (2021-present)

2024 US Arctic Research Commission Geological Hydrogen workshop, Fairbanks, AK
2024 Keynote, Goldschmidt International Geochemistry Meeting, Chicago, IL
2024 International Geobiology Course, Penn State, State College, PA
2024 MIT Energy Initiative, Geological Hydrogen Symposium, Boston, MA
2024 Geological Hydrogen Academic-Industry Partnerships, Golden, CO
2024 AAAS Meeting, “Scientific Breakthroughs” session, Denver, CO
2023 CSIRO Cutting Edge Hydrogen Workshop, Perth, Australia
2023 Natural Hydrogen World Summit (HNAT’23), Perth, Australia
2023 Goldschmidt International Geochemistry Conference, France
2023 Princeton University Geosciences Department, NJ
2023 Dartmouth College Earth Sciences Department, NH
2022 Astrobiology Science Conference 2022, Atlanta, GA
2021 University of Nevada, Reno, NV

PUBLICATIONS (“underline” denotes an early career scientist advised by Templeton at CU-Boulder).

- Colman, D.R., **Templeton, A.S.**, Spear, J.R., Boyd, E.S., The microbial ecology of serpentinite-hosted biospheres. *ISME Journal* (in press).
- Hara, E., and **Templeton, A.S.**, Cyanide storage on ferroan brucite: implications for prebiotic chemistry, 2025. *Minerals* 15, 141; <https://doi.org/10.3390/min15020141>
- Chimiak, L., Hara, E., Sessions, A., **Templeton, A.S.**, 2024. Glycine synthesis from nitrate and glyoxylate mediated by ferroan brucite: a new abiotic pathways for amine synthesis. *Proceedings of the National Academy of Sciences*. 10.1073/pnas.2408248121
- Caro, T.A., Kashyap, S., Brown, G., Chen, C., Kopf, S.K., and **Templeton, A.S.**, 2024. Quantitative measure of microbial growth rate with Raman microspectroscopy. *FEMS Microbiology Ecology* <https://doi.org/10.1093/femsec/fiae110>
- Hara, E., and **Templeton, A.S.**, 2024. Releasing cyanide from ferrocyanide through carbon monoxide ligand exchange in alkaline aqueous environments. *ACS Earth and Space Chemistry* <https://doi.org/10.1021/acsearthspacechem.4c00038>
- Templeton, A.S.**, Ellison, E.T., Kelemen, P.K., Leong, J., Boyd, E.S., Colman, D., and Matter, J.M., 2024. Low-temperature hydrogen production and consumption in partially-hydrated peridotites in Oman: implications for stimulated hydrogen production. *Frontiers in Geochemistry*, <https://doi.org/10.3389/fgeoc.2024.1366268>
- Boyd, E.S., **Templeton, A.S.**, Colman, D., 2024. Microbial hydrogen metabolism in rock-hosted ecosystems. *Frontiers in Energy Research: Hydrogen Production and Storage* <https://doi.org/10.3389/fenrg.2024.1340410>
- Zhou, A., **Templeton, A.S.**, Johnson, J.E., 2024. Dissolved silica influences the bulk iron redox state and transformation products of photoferrotrophy. *Geobiology journal* <https://doi.org/10.1111/gbi.12587>
- Rempfert, K.R., Kraus, E.A., Nothaft, D.B., Spear, J.R., Dildar, N., Sepúlveda, J., and **Templeton, A.S.**, 2023. Intact polar lipidome and membrane adaptations of microbial communities Inhabiting serpentinite-hosted fluids. *Frontiers in Extreme Microbiology* <https://doi.org/10.3389/fmicb.2023.1198786>
- Templeton, A.S.** and Caro, T.C., 2023. The Rock Hosted Biosphere. *Annual Reviews in Earth and Planetary Sciences*, <https://doi.org/10.1146/annurev-earth-031920-081957>
- Thieringer, P.H., Boyd, E.S., **Templeton, A.S.**, and Spear, J.R., 2023, Metapangenomic investigation provides insight into niche differentiation of methanogenic populations from the subsurface serpentinizing environment, Samail Ophiolite, Oman. *Frontiers in Extreme Microbiology*. <https://doi.org/10.3389/fmicb.2023.1205558>
- Rempfert, K. R., Nothaft, D.B., Evans, D., Kraus, E.A., Asamoto, C., Spear, J.R., Matter, J.M., Kopf, S.H., and **Templeton, A.S.**, 2023. Subsurface Cycling of Nitrogen in the Actively Serpentinizing Samail Ophiolite, Oman. *Frontiers in Extreme Microbiology* <https://doi.org/10.3389/fmicb.2023.1139633>
- Munro-Ehrlich, M., Nothaft, D.B., Fones, E., Matter, J.M., **Templeton, A.S.**, and Boyd, E.S., 2023. Parapatric speciation of *Meiothermus* in serpentinite-hosted aquifers in Oman. *Frontiers in Extreme Microbiology* <https://doi.org/10.3389/fmicb.2023.1138656>.
- Kelemen, P.K., Matter, J.M., Teagle, D.A., Coggon, J.A., Goddard, M., Michibayashi, K., Takazawa, E., **Templeton, A.S.**, Williams, K., Al Sulamani, Z., 2023, Special Issue on Ophiolites and Oceanic Lithosphere. *Journal of Geophysical Research Solid Earth* <https://doi.org/10.1029/2023JB026677>
- Seyler, L.M., Kraus, E.J., McClean, C., Spear, J., Schrenk, M.O., and **Templeton, A.S.**, 2023, A untargeted metabolomics approach to characterize dissolved organic matter in the Samail Ophiolite. *Frontiers in Extreme Microbiology* <https://doi.org/10.3389/fmicb.2023.1093372>

- Colman, D., Kraus, E., Thieringer, P., Rempfert, K., **Templeton, A.S.**, Spear, J.R., and Boyd, E., 2022, Deep-branching acetogens in serpentinized subsurface fluids of Oman. *Proceedings of the National Academy of Sciences*, <https://doi.org/10.1073/pnas.2206845119>
- Lima-Zaloumis, J., Neubeck, A., Ivarsson, M., Bose, M., Greenberger, R., **Templeton, A.S.**, Czaja, A., Kelemen, P.B., Edvinsson, T. and the Oman Drilling Project Science Party, 2022. Microbial biosignature preservation from serpentinizing systems: evidence from the Oman ophiolite. *Nature Communications*. <https://doi.org/10.1038/s43247-022-00551-1>
- Fones, E.S., Mogk, D., **Templeton, A.S.**, Boyd, E., 2022, Transformation of low molecular weight organic acids by microbial endoliths in subsurface mafic and ultramafic igneous rock. *Environmental Microbiology* <https://doi.org/10.1111/1462-2920.16041>
- Lau, G., Trivedi, C.B., Grasby, S.G., Spear, J.R., Cosmidis, J., and **Templeton, A.S.**, 2022. Sulfur and iron rich mineralogical features preserved in permafrost in the Canadian High Arctic: analogs for the astrobiological exploration of Mars. *Frontiers in Earth and Space Science* <https://doi.org/10.3389/fspas.2022.825019>
- Hand, K.P., Phillips, C., Maize, E., Reeves, G., Hurst, K., Krajewski, J., Craft, K. et al., 2022. Science goals and mission architecture of the Europa Lander Mission Concept. *Planetary Science Journal* <https://doi.org/10.3847/PSJ/ac4493>
- Kelemen, P.B., Leong, J.A., de Obeso, J.C., Matter, J.M., **Templeton, A.S.**, Nothaft, D.B., Elsami, A., Evans, K., Goddard, M., Coggon, J.A., Warsi, N.H., Pezard, P., Choe, S., Teagle, D.A., Michibayashi, K., Takazawa, E., Al Sulaimani, Z. and the Oman Drilling Project Science Team, 2021. Initial results from the Oman Drilling Project Multiborehole Observatory: Petrogenesis and Ongoing alteration of mantle peridotite. *Journal of Geophysical Research, Solid Earth* <https://doi.org/10.1029/2021JB022729>.
- Templeton, A.S.**, Ellison E.T., Glombitza, C., Morono, Y., Rempfert, K.R., Hoehler, T.M., Zeigler, S.D., Spear, J.R., Kraus, E., Nothaft, D.B., Fones, E.S., Munro-Ehrlich, M., Boyd, E.B., Mayhew, L.E., Cardace, D., Matter, J., Kelemen, P.K., and the Oman Drilling Project Science Party, 2021. Accessing the subsurface biosphere within rocks undergoing active low-temperature serpentinization in the Samail Ophiolite (Oman Drilling Project) *Journal of Geophysical Research, Biogeosciences*. <https://doi.org/10.1029/2021JG006315>
- Nothaft, D.B., **Templeton, A.S.**, Rhim, J.H., Wang, D.T., Labidi, J., Miller, H.M., Boyd, E.S., Matter, J.M., Ono, S., Young, E.D., Kopf, S.H., Kelemen, P., Conrad, M.E., Fierer, N., The Oman Drilling Project Science Team, 2021a. Geochemical, biological and clumped isotopologue evidence for substantial methane production under carbon limitation in serpentinites of the Samail Ophiolite, Oman. *Journal of Geophysical Research, Biogeosciences*, <https://doi.org/10.1029/2020JG006025>
- Nothaft, D.B., **Templeton, A.S.**, Boyd, E.S., Matter, J.M., Stute, M., Van Keuren, A.N.P., and the Oman Drilling Project Science Team, 2021b. Aqueous geochemical and microbial variation across discrete depth intervals in a peridotite aquifer assessed using a packer system in the Samail Ophiolite, Oman. *Journal of Geophysical Research, Biogeosciences*, <https://doi.org/10.1029/2021JG006319>
- Ellison, E.T., **Templeton, A.S.**, Mayhew, L.E., Ziegler, S.D., Kelemen, P.B., Matter, J.M., and the Oman Drilling Project Phase II Science Party, 2021. Low-temperature hydrogen formation during aqueous alteration of serpentinized peridotite in the Samail ophiolite. *Journal of Geophysical Research, Solid Earth*, <https://doi.org/10.1029/2021JB021981>
- Hinz, I.L., Nims, C., Theuer, S., **Templeton, A.S.**, Johnson, J.E., 2021. Ferric iron triggers greenalite formation in simulated Archean seawater. *Geology*, DOI: [10.1130/G48495.1](https://doi.org/10.1130/G48495.1)

- Glombitza, C., Putnam, L.I., Rempfert, K.R., Kubo, M.D., Schrenk, M.O., **Templeton, A.S.**, Hoehler, T.M., 2021, Active microbial sulfate reduction in serpentinizing fluids of the continental subsurface. *Communications Earth and Environment*, <https://doi.org/10.1038/s43247-021-00157-z>
- Nims, C., Lafond, J., Alleon, J., **Templeton, A.S.**, Cosmidis, J., 2021, Preservation of organic biomorphs through silicification: questioning the early microfossil record. *Geology*, <https://doi.org/10.1130/G48152.1>
- Kraus, E.A., Stamps, B.W., Nothaft, D.B., Rempfert, K.R., Ellison, E., Matter, J.M., **Templeton, A.S.**, Boyd, E.S., Spear, J.R., 2021, Molecular evidence for an active microbial methane cycle in subsurface serpentinite-hosted groundwaters in the Samail Ophiolite. *Applied and Environmental Microbiology*, doi: [10.1128/AEM.02068-20](https://doi.org/10.1128/AEM.02068-20)
- Trivedi, C.B., Stamps, B.W., Lau, G.E., Grasby, S.E., **Templeton, A.S.**, Spear, J.R., 2020, Metagenomic insights into microbial metabolisms of a sulfur-influenced glacial ecosystem. *mSystems* doi: [10.1128/mSystems.00504-20](https://doi.org/10.1128/mSystems.00504-20)
- Ellison, E.T., Mayhew, L.E., Miller, H.M., **Templeton, A.S.**, 2020, Quantitative microscale Fe redox imaging by multiple energy X-ray fluorescence mapping at the Fe K pre-edge. *American Mineralogist*, <https://doi.org/10.2138/am-2020-7359>.
- Fones, E.M., Colman, D.R., Kraus, E.A., Stepanauskas, S., **Templeton, A.S.**, Spear, J.R., Boyd, E.S., 2020, Diversification of methanogens into hyperalkaline serpentinizing environments through adaptations to minimize oxidant limitation. *ISME journal*, <https://doi.org/10.1038/s41396-020-00838-1>.
- Scicchitano, M.R., Spicuzza, M.J., Ellison, E.T., Tuschel, D., **Templeton, A.S.**, Valley, J.W., 2020, In situ oxygen isotope determination of serpentine minerals by ion microprobe: matrix effects and new insights on serpentinization in hole BA1B (Samail Ophiolite, Oman). *Geostandards and Geoanalytical Research*, <https://doi.org/10.1111/ggr.12359>.
- McCollom, T.M., Klein, F., Moskowitz, B., Berquo, T., Bach, W. and **Templeton, A.S.**, 2020, Hydrogen generation and iron partitioning during experimental serpentinization of olivine-pyroxene mixtures (*Geochimica et Cosmochimica Acta*, v. 282, p. 55-76. <https://doi.org/10.1016/j.gca.2020.05.016>
- Templeton, A.S.**, and Ellison, E.T., 2020, Formation and loss of metastable brucite: does Fe(II)-brucite support microbial activity in serpentinizing ecosystems? *Phil Trans R. Soc A* v. 378: 20180423. <http://dx.doi.org/10.1098/rsta.2018.0423>
- Boyd, E.S., Amenabar, M.J., Poudel, S., and **Templeton, A.S.**, 2020, Bioenergetic constraints on the origin of autotrophic metabolism. *Phil Trans R. Soc A* v. 378: 20190151. <http://dx.doi.org/10.1098/rsta.2019.0151>.
- Fones, E.M., Coleman, D.R., Kraus, E.A., Nothaft, D.B., Poudel, S., Rempfert, K.R., Fox, N.R., Spear, J.S., **Templeton, A.S.**, and Boyd, E.S., 2019, Physiological adaptations to serpentinization in the Samail Ophiolite, Oman (*International Society of Microbial Ecology*, <https://doi.org/10.1038/s41396-019-0391-2>.
- Zeyen, N., Benzerara, K., Menguy, N., Brest, J., **Templeton, A.S.**, Webb, S.M., Gerard, E., Moreira, D., Lopez-Garcia, P., Tavera, Rosaluz, Morin, G., 2019, Fe-bearing phases in modern lacustrine microbialites from Mexico. *Geochimica Cosmochimica Acta*, <https://doi.org/10.1016/j.gca.2019.03.021>
- Cosmidis, J., Nims, C., Diercks, D., and **Templeton, A.S.**, 2019, Sulfur organomineralization: a new S(0) formation mechanism. *Geochimica Cosmochimica Acta*, v. 247, 59-82. <https://doi.org/10.1016/j.gca.2018.12.025>
- Yung, Y., Chen, P., Nealson, K., Atreya, S., Beckett, P., Blank, J., Ehlmann, B., Eiler, J., Etiope, G., Ferry, J., Forget, F., Gao, P., Kleinbohl, P., Klusman, R., Lefevre, F., Miller, C., Mischna, M., Mumma, M., Newman, S., Oehler, D., Okumura, M., Oremland, R., Orphan, V., Popa, R., Russell, M., Shen, L.,

- Sherwood-Lollar, B., Stamenkovic, V., Staehle, R., **Templeton, A.**, Vandaele, A., Viscardy, S., Webster, C., Wennberg, P., Wong, M., Worden, J., 2018. Methane on Mars and Habitability: Challenges and Responses, *Astrobiology Journal*, v.18. <https://doi.org/10.1089/ast.2018.1917>
- Miller, H.M., Chaudhry, N., Conrad, M.E., Bill, M., Kopf, S. and **Templeton, A.S.**, 2018, Large carbon isotope variability during alkaline methanogenesis. *Geochimica et Cosmochimica Acta*, v. 237, p. 18-31. <http://dx.doi.org/10.1016/j.gca.2018.06.007>
- Trivedi, C.B., Lau, G., Grasby, S.E., Templeton, A.S., and Spear, J.R., 2018, Low-temperature sulfidic ice microbial communities, Borup Fiord Pass, Canadian High Arctic. *Frontiers in Extreme Microbiology*. doi: 10.3389/fmicb.2018.01622
- Johnson, J.E., Muhling, J.R., Cosmidis, J., Rasmussen, B., and **Templeton, A.S.**, 2018, Low Fe(III) greenalite was a primary precipitate from Neoproterozoic Oceans. *Geophysical Research Letters* v45, <https://doi.org/10.1002/2017GL076311>
- Mayhew, L.E., Ellison, E.T., Miller, H.M., Kelemen, P.K., and **Templeton, A.S.**, 2018, Iron transformations during low-temperature alteration of serpentinized rocks from the Samail Ophiolite, Oman. *Geochimica et Cosmochimica Acta*, v. 222, p. 704-728. <https://doi.org/10.1016/j.gca.2017.11.023>
- Miller, H.M., Mayhew, L.E., Kelemen, P.K., Ellison, E., Kubo, M. and **Templeton, A.S.**, 2017, Low temperature hydrogen production during hydration of partially-serpentinized peridotite. *Geochimica et Cosmochimica Acta*. <http://dx.doi.org/10.1016/j.gca.2017.04.022>
- Sudek, L.A., Wanger, G., **Templeton, A.S.**, Staudigel, H., and Tebo, B.M., 2017, Basaltic glass colonization by the heterotrophic Fe(II)-oxidizing and Siderophore-producing deep sea bacteria *Pseudomonas stutzeri* VS-10: the potential role of basalt in enhancing growth. *Frontiers in Extreme Microbiology* <https://doi.org/10.3389/fmicb.2017.00363>
- Rempfert, K., Miller, H.M., Matter, J.M., Kelemen, P., Fierer, N., **Templeton, A.S.**, 2017, Geochemical and Hydrologic Controls on Subsurface Microbial Life in the Samail Ophiolite, Oman. *Frontiers in Extreme Microbiology* <https://doi.org/10.3389/fmicb.2017.00056>
- Lau, G.E., Cosmidis, J., Grasby, S.E., Trivedi, C.B., Spear, J.R., and **Templeton, A.S.**, 2017, Low-temperature formation and stabilization of rare allotropes of cyclooctasulfur (β -S₈ and γ -S₈) in the presence of organic carbon at a sulfur-rich glacial site in the Canadian High Arctic. *Geochimica et Cosmochimica Acta* v. 200, p. 217-231. <http://dx.doi.org/10.1016/j.gca.2016.11.036>
- Miller, H.M., Matter, J.M., Kelemen, P.K., Ellison, E., Conrad, M., Tominaga, M. and **Templeton, A.S.**, 2017. Methane origin in the Samail ophiolite: Reply to comment on "Modern water/rock reactions in Oman hyperalkaline peridotite aquifers and implications for microbial habitability". *Geochimica et Cosmochimica Acta*, v. 197, p.471-473. <http://dx.doi.org/10.1016/j.gca.2016.11.011>
- Cosmidis, J. and **Templeton, A.S.**, 2016, Self-assembly of biomorphic C/S microstructures in sulfidic environments. *Nature Communications*, article 12812, [doi:10.1038/ncomms12812](https://doi.org/10.1038/ncomms12812)
- Miller, H.M., Matter, J.M., Kelemen, P.K., Ellison, E., Conrad, M., Tominaga, M. and **Templeton, A.S.**, 2016, Modern water/rock reactions in Oman hyperalkaline serpentine aquifers and implications for microbial habitability. *Geochimica et Cosmochimica Acta*, v. 179, p. 217-241, <http://dx.doi.org/10.1016/j.gca.2016.01.033>
- McCollom, T.M., Klein, F., Robbins, M., Moskowitz, B., Berquo, T., Jons, N., Hoehler, T., Bach, W. and **Templeton, A.S.**, 2016, Temperature trends for reaction rates, hydrogen generation and partitioning of iron during experimental serpentinization of olivine. *Geochimica et Cosmochimica Acta* v. 181, p. 175-200. <http://dx.doi.org/10.1016/j.gca.2016.03.002>
- Mayhew, L.E., Lau, G.E., and **Templeton, A.S.**, 2016, Distinct geochemistries of water-basalt-Fe⁰ reactions in the presence versus absence of CO₂-driven microbial methanogenesis. *Chemical Geology* v. 428, p. 92-105. <http://dx.doi.org/10.1016/j.chemgeo.2016.02.028>

Templeton, A.S. & Benzerara, K., 2015, Emerging frontiers in Geomicrobiology. *Elements* v.11, 423-429.

Mayhew, L.E., Ellison, E., McCollom, T.M., Trainor, T.P., and **Templeton, A.S.**, 2013, Hydrogen production during low temperature water-rock reactions. *Nature Geoscience*, v.6, p. 478-484. doi.org/10.1038/ngeo1825

Knowles, E.J., Staudigel, H., and **Templeton, A.S.**, 2013, Geochemical characterization of putative biosignatures in subseafloor basalt glass. *Earth and Planetary Science Letters*, v. 34, p. 239-250.

Wright, K.E., Williamson, C., Grasby, S.E., Spear, J.S., and **Templeton, A.S.**, 2013, Metagenomic evidence for sulfur lithotrophy by Epsilonproteobacteria as the major energy source for primary productivity in a sub-aerial arctic glacial deposit, Borup Fiord Pass. *Frontiers in Extreme Microbiology*, v4, Article 63.

Knowles, E.J., Wirth, R., **Templeton, A.S.**, 2012, A comparative analysis of potential biosignatures in basalt glass by FIB-TEM, *Chemical Geology*, v. 330-1, p. 165-175.

Toner, B., Berquo, T., Michel, M., **Templeton, A.S.**, Sorenson, J.V., and Edwards, K.J., 2012, Mineralogy of iron microbial mats from Loihi Seamount. *Frontiers in Biological Chemistry*, v. 3, p. 1-18.

Fliegel, D., Knowles, E., Wirth, R., Staudigel, H., **Templeton, A.S.**, and Furnes, H., 2012, Characterization of alteration textures in Cretaceous oceanic crust (pillow lava) from the N-Atlantic (DSDP hole 418) by spatially resolved spectroscopy. *Geochimica et Cosmochimica Acta* v. 96, p. 80-93.

Gleeson, D.F., Pappalardo, R.T., Anderson, M.S., Grasby, S.E., Wright, K.E. and **Templeton, A.S.**, 2012, Life detection at an Arctic analog to Europa. *Astrobiology Journal* v. 12, p. 135-150.

Swanner, E.D., and **Templeton, A.S.**, 2011, Potential for nitrogen fixation and nitrification in the granite-hosted subsurface at Henderson Mine, CO. *Frontiers in Extreme Microbiology* 2:254.

Mayhew, L.E., Webb, S.M., and **Templeton, A.S.**, 2011, Microscale imaging and identification of Fe speciation and distribution during fluid-mineral interactions under highly reducing conditions. *Environmental Science and Technology*, v. 45, p. 4468-4472.

Swanner, E.D., Nell, R., and **Templeton, A.S.**, 2011, *Ralstonia* species mediate Fe-oxidation in circumneutral, metal-rich subsurface fluids of Henderson Mine, CO. *Chemical Geology*, v. 284, p. 339-350.

Gleeson, D.F., Williamson, C.H.D., Grasby, S.E., Spear, J.R., Pappalardo, R.T., **Templeton, A.S.**, 2011, Low temperature S⁰ biomineralization at a supraglacial spring system in the Canadian High Arctic, *Geobiology Journal*, v. 9, p. 360-375.

Templeton, A.S., Geomicrobiology of Fe in extreme environments, 2011, *Elements*, v. 7, p. 95-100.

Templeton, A.S., Knowles, E.J., Eldridge, D.L., Arey, B.W., Dohnalkova, A., Webb, S.M., Bailey, B.E., Tebo, B.M., Staudigel, H.S., 2009, A seafloor microbial biome hosted within incipient ferromanganese crusts. *Nature Geoscience*, v.2, p. 872-876.

Sudek, L., **Templeton, A.S.**, Staudigel, H., Tebo, B.M., 2009, Microbial ecology of Fe-rich mats & basaltic rock from Vailulu'u Seamount, American Samoa. *Geomicrobiology Journal*, v. 26, p. 581-596.

Bailey, B., **Templeton, A.S.**, Staudigel, H., Tebo, B.M., 2009, Utilization of substrate components during basaltic glass colonization by *Pseudomonas* & *Shewanella* isolates. *Geomicrobiology Journal*, v. 26, p. 648-656.

Connell, L., **Templeton, A.S.**, Barrett, A., Staudigel, H., 2009, Diversity of fungi associated with an active deep-sea volcano. *Geomicrobiology journal*, v. 26, p. 597-605.

- Homann, V., Tincu, A., **Templeton, A.S.**, Tebo, B.M., Butler, A., 2009, Loihichelins A-F, a Suite of amphiphilic siderophores produced by the marine bacterium *Halomonas* LOB-5. *Journal of Natural Products*, v. 72, p. 884-888.
- Templeton, A.**, and Knowles, E., 2009, (Peer-Invited-Review) Microbial transformations of minerals and metals: recent advances in Geomicrobiology derived from synchrotron-based x-ray spectroscopy and x-ray microscopy. *Annual Reviews in Earth and Planetary Sciences*, v. 37, p. 367-391.
- Mayhew, L.E., Swanner, E.D., Martin, A.P., **Templeton, A.S.**, 2008, Phylogenetic relationships and functional genes: distribution of a Mn-oxidizing gene (*mnxG*) in *Bacillus* sp.. *Applied and Environmental Microbiology*, v. 74, p. 7265-7271.
- Staudigel, H., Furnes, H., McLoughlin, N., Banerjee, N., Connell, L., **Templeton, A.**, 2008, 3.5 Billion years of glass bioalteration: volcanic rocks as a basis for microbial life? *Earth Science Reviews*, v. 89, p. 156-178.
- Sahl, J., Schmidt, R., Swanner, E., Mandernack, K., **Templeton, A.**, Kieft, T., Smith, R., Mitton, J., 2008, Subsurface microbial diversity in deep granitic fracture water, Colorado, USA. *Applied and Environmental Microbiology*, v.74, p. 143.
- Templeton, A.S.**, Chu, K.H., Alvarez-Cohen, L., Conrad, M.E., 2006, Metabolic controls on the carbon isotope fractionations expressed by methane-oxidizing bacteria. *Geochimica et Cosmochimica Acta*, v. 70, p.1739-1752. <http://dx.doi.org/10.1016/j.gca.2005.12.002>
- Staudigel, H., Hart, S., Pile, A., Bailey, B. Baker, E., Brooke, S., Connelly, D.P., Haucke, L., German, C., Hudson, I., Jones, D., Koppers, A., Konter, J., Lee, R., Pietsch, T., Tebo, B., **Templeton, A.S.**, Zierenberg, R., and Young, C., 2006, Vailulu'u Seamount, Samoa: Life and Death on an Active Submarine Volcano. *Proceedings of the National Academy of Sciences*, v.103, p. 6448-6453.
- Trainor, T.P., **Templeton, A.S.**, Eng, P.J., 2006, Structure and reactivity of environmental interfaces: Application of grazing-angle x-ray spectroscopy and long-period x-ray standing waves. *Journal of Electron Spectroscopy and Related Phenomena*, v. 150, p. 66-85
- Tebo, B.M., **Templeton, A.S.**, Johnson, H.A., McCarthy, J., 2005, Geomicrobiology of Mn(II)-biomineralization. *Trends in Microbiology*, v. 13, 421-428.
- Brown, G.E. Jr., **Templeton, A.S.**, Catalano, J. G., Trainor, T.P., Bostick, B., Kendelewicz, T., Doyle, C.S., Morin, G. Juillot, F., Calas, G., 2005, Environmental interfaces, heavy metals and microbes: Applications of XAFS spectroscopy to environmental science, *Physica Scripta* T115, p. 80-87.
- Templeton, A.S.**, Staudigel, H., Tebo, B.M., 2005, Diverse Mn(II)-oxidizing bacteria isolated from submarine basalts at Loihi Seamount *Geomicrobiology Journal*, v. 22, p. 129-137.
- Templeton, A.S.**, Trainor, T.P., Spormann, A.M., Brown, G.E., Jr., 2003, Selenium speciation at *Burkholderia cepacia*/Al₂O₃ interfaces. *Geochimica Cosmochimica Acta*, v. 69, p. 3547-3557.
- Templeton, A.S.**, Spormann, A.M., Brown, G.E. Jr., 2003, Speciation of Pb sorbed by *B. cepacia*/goethite composites. *Environmental Science and Technology*, v. 37, p. 2166-2172.
- Templeton, A.S.**, Trainor, T.P., Spormann, A.M., Newville, M., Sutton, S.R., Dohnalkova, A., Gorby, Y., Brown, G.E., Jr., 2003, Sorption vs. biomineralization of Pb(II) within *Burkholderia cepacia* biofilms. *Environmental Science and Technology*, v. 37, p. 300-307.
- Trainor, T.P., **Templeton, A.S.**, Parks, G.A., Brown, G.E. Jr., 2002, Application of the long-period x-ray standing wave approach to surface reactivity: Pb(II) Sorption at α -Al₂O₃ /aqueous solution interfaces in the presence and absence of Se(VI). *Langmuir*, v. 18, p. 5782-5791.
- Bhupathiraju, V.K., Krauter, P., Holman, H-Y. N., Conrad, M.E., **Templeton, A.S.**, Hunt, J.R., Hernandez, M.R., Alvarez-Cohen, L., 2002. Assessment of in-situ bioremediation at a refinery waste-contaminated site and an aviation gasoline contaminated site. *Biodegradation*, v. 13, p. 79-90.

- Templeton, A.S.**, Trainor, T.P., Traina, S.J., Brown, G.E. Jr., 2001, Pb(II) distributions at biofilm/metal-oxide interfaces. *Proceedings of the National Academy of Sciences*, v. 98, p. 11897-11902.
- Trainor, T.P., Fitts, J.P., **Templeton, A.S.**, Grolimund, D.G., Brown, G.E. Jr., 2001, Grazing-incidence study of aqueous Zn(II) sorption on α -Al₂O₃ single crystals. *Journal of Colloid and Interface Science*, v. 244, p. 239-244.
- Templeton, A.S.**, Trainor, T.P., Ostergren, J.D., Foster, A.L., Traina, S.J., Spormann, A., Brown, G.E. Jr., 1999, XAFS and XSW study of Pb sorbed to biofilms on α -Al₂O₃ and α -Fe₂O₃ surfaces. *Journal of Synchrotron Radiation*, v. 6, p. 642-644.
- Conrad, M.E., **Templeton, A.S.**, Daley, P.F., Alvarez-Cohen, L., 1999, Seasonally-induced fluctuations in microbial production and consumption of methane derived from aged refinery wastes, *Environmental Science and Technology*, v.33, p. 3836-3844.
- Conrad, M.E., **Templeton, A.S.**, Daley, P.F., Alvarez-Cohen, L., 1999, Isotopic evidence for biological controls on the migration of petroleum hydrocarbons, *Organic Geochemistry*, v. 30, p. 843-859.
- Templeton, A.S.**, Craw, D., Chamberlain, C.P., Koons, P.O., 1999, Near surface expression of an active mesothermal gold mineralizing system, New Zealand, *Mineralium Deposita*, v. 34, p. 163-172.
- Templeton, A.S.**, Chamberlain, C.P., Koons, P.O., Craw, D., 1998, Stable isotopic evidence for tectonically driven mixing between midcrustal and surface-derived fluids during Recent uplift of the Southern Alps, New Zealand, *Earth and Planetary Science Letters*, v. 154, p. 73-92.
- Koons, P.O., Upton, P., Craw, D., **Templeton, A.S.**, Chamberlain, C.P., 1998, Fluid-flow during active oblique convergence; A Southern Alps model from mechanical and geochemical observations, *Geology*, v. 26, p. 159-162. doi: 10.1130/0091-7613(1998)
- Templeton, A.S.**, Manske, J. H., Sweeney, J. F., Tilghman, J. F., Calhoun, S., Violich, A. Chamberlain, C. P., 1995, Fluids and the Heart Mountain Fault revisited, *Geology*, v. 23, no. 10, p. 929-932.

Peer-Reviewed Teaching Publications

- Arthurs, L. and **Templeton, A.S.**, 2009, Coupled collaborative in-class activities and homework promote interactive engagement and improve student-learning outcomes in a college-level Environmental Geology course. *Journal of Geoscience Education* v. 57, p. 357-372.

Papers in Review

- Caro, T.A., Kashyap, S., Maloney, A.E., Hoyt, D.W., Hoehler, T.M., **Templeton, A.S.**, Massive variation in microbial carbon assimilation and energy flux in actively serpentinizing rocks (*in review*).

Technical Reports & White Papers

- Hand, K., Murray, A., Garvin, J., Brinkerhoff, W., Christner, B., Edgett, K., Ehlmann, B., German, C., Hayes, A., Hoehler, T., Horst, S., Lunine, J., Nealson, K., Parnicas, C., Schmidt, B., Smith, D., Rhoden, A., Russell, M., **Templeton, A.S.**, Willis, P., Yingst, R., Philips, C., Cable, M., Hoffman, A., Nordheim, T., Pappalardo, R., and the Project Engineering Team (2017). Europa Lander Study Report: Europa Lander Mission Science Definition Team. NASA, Washington D.C., <https://europa.nasa.gov/resources/58/europa-lander-study-2016-report/>
- Willis, P., Mora, M.F., Noell, A., Creamer, J., Kehl, F., Zamuruyev, K., Jaramillo, E., Kok, M., Cieslarova, Z., Santos, M.S.F., Oborny, N., Drevinskas, T., Badescu, M., Simcic, J., Waller, S., Madzunkov, S., Lindensmith, C., Brinkerhoff, W., Hoehler, T., Quinn, R., Ricco A., Lunte, S. and Templeton, A.S. (2021) How to search for chemical biosignatures on Ocean Worlds. <https://doi.org/10.3847/25c2cf8a770808>

FUNDING HISTORY (2006-present)

Department of Energy ARPA-E Program. Electric-based Mechanical & Thermal Stimulation to Increase Geologic Hydrogen Reaction Rates. Alali, A (PI), **Templeton, A.S.** (co-PI). \$900K. 6/15/2024 to 11/30/2025.

Department of Energy ARPA-E Program. Geophysical characterization and site-scale real-time monitoring in stimulated hydrogen. Zhang, M. (PI), Li, Y. (co-PI), Ellis, G. (co-PI), **Templeton, A.S.** (funded collaborator). \$1.5M. 5/18/2024 to 5/17/2026.

Colorado Geological Hydrogen Joint Industry Program (Ellis, PI). Subcontract to **Templeton, A.S.** \$71K awarded 4/15/2024 to 8/31/2024; \$199K pending 9/1/24-8/30/25.

Jet Propulsion Laboratory: Strategic University Research Partnerships (SURP). Life detection in serpentinizing systems relevant to current and future astrobiology missions. Mora, F. (PI), **Templeton, A.S.** (co-PI). \$180K. 1/1/2024 to 12/31/2027.

Grantham Foundation for the Protection of the Environment: “Rock-Hydrogen: Stimulated Hydrogen Production from Ultramafic Rocks”. **Templeton, A.S.** (PI), Matter, J.M, Boyd, E.S., Kelemen, P.K. (co-Is). \$1.9M awarded from 7/1/23 to 6/30/26; >\$2.6M pending 4/1/25-3/31/27.

NASA ICAR Program: “Engine of Innovation”. Rosenzweig, R.F. (PI), Copley, S (co-I), Wing, B. (co-I), **Templeton, A.S.** (co-I), Cameron, J. (co-I), Orphan, V. (co-I), McCutcheon, J., Goldford, J., \$5.99M 10/1/2023-9/30/2028.

NASA Exobiology Program: “Methanogenic activity and isotope biosignatures under carbon limitation”. Hoehler, T. (PI), **Templeton, A.S.** (co-I), Kopf, S.R (co-I), Howells, A. (co-I). \$1.2M: 10/1/2022-9/30/2025.

NASA Exobiology Program: “Targeted Life Detection in Subsurface Serpentinities”. **Templeton, A.S. (PI)**, Boyd, E.B. (co-I). \$789K: 1/1/2021-12/31/2025.

NASA Solar System Workings Program: “Tracing serpentinization across the solar system”. Ehlmann, B. (PI), **Templeton, A.S.**, (co-I). \$596K: 10/1/2021-9/30/2025.

Jet Propulsion Laboratory: Geomicrobiology Investigations to support the development of the Ocean Worlds Life Surveyor (OWLS) capabilities. **Templeton, A.S.** (PI), \$245K: 1/1/20 to 10/1/2022

Simons Foundation: Life Sciences - Simons Collaboration on the Origin of Life Investigator Award, **Templeton, A.S. (PI)**. \$738K: 1/1/2020 to 12/31/2024.

NASA Exobiology Program: “Ancient Iron Silicates: deciphering mineral clues of early life”. Johnson, J.E. (PI), **Templeton, A.S. (co-I)** \$493K: 9/1/18 to 8/31/21.

NASA Astrobiology Institute Cooperative Agreement: “Rock-Powered Life: Revealing mechanisms of Energy Flow from the Lithosphere to the Biosphere”. **Templeton, A.S. (PI)**, Mayhew, L. (co-PI), McCollom, T. (co-PI), Spear, J., (co-PI), Boyd, E., (co-PI), Shock, E., (co-PI), Cardace, D. (co-PI), Tominaga, M. (co-PI), Ono, S. (co-PI), Brazelton, W. (co-PI), Schrenk, M. (co-PI), Hoehler, T. (co-PI). \$7M: 1/1/2015-12/31/2019

Advanced Industries Accelerator: “Multidimensional sulfur-carbon networks for optimized cathodes in next-generation Li-S batteries”. **Templeton, A.S. (PI)**, Cosmidis, J. (co-I). \$79K: 4/1/2016-9/1/2018.

NASA Director’s Discretionary Fund: “Probing the isotope systematics of low-temperature serpentinities”, **Templeton, A.S. (PI)** \$50K, 1/1/2016 to 12/31/2016.

DOE Basic Energy Sciences: “Defining Fe and H speciation during olivine carbonation under highly reducing conditions”. **Templeton, A.S. (PI)** \$759K: 7/1/2011-6/30/2017.

NASA Exobiology Program: “Elemental sulfur deposits as an astrobiological target: formation and

preservation of elemental sulfur in low-temperature springs relevant to Mars and Europa". **Templeton, A.S. (PI)**, Spear, J. (co-I) \$609K: 6/1/13 to 5/31/16.

NSF Ocean Sciences: "Experimental study of hydrogen generation during serpentinization of ultramafic rocks". McCollom, T.M. (PI), **Templeton, A.S. (co-PI)**. \$446K: 1/2010 -12/2012.

NASA Director's Discretionary Fund: "Geomicrobiology of a Unique Ice-Sulfur Spring Ecosystem in the High Canadian Arctic: A Testbed for Europa Exploration". **Templeton A.S. (PI)**, Pappalardo, R. (co-PI), Spear, J. (co-PI), Grasby, S. (co-PI). \$135K; 6/2007-10/2008.

David and Lucile Packard Fellowship in Science and Engineering. **Templeton, A.S. (PI)** \$775K: 10/2006 to 10/2011.

CU VCR Innovative Seed Grant Program, "Development of novel technologies for real-time studies of microbial biofilms". Palmer, A.E. (PI), **Templeton, A.S. (co-PI)**. \$49K, 6/2007-6/2008.

NSF Biology: "Isolation of novel metal-oxidizing bacteria at a deep subsurface oxic/anoxic interface". **Templeton, A.S. (PI)** \$50K: 8/2006 to 8/2007.

NSF "The role of Fe and Mn oxidizing bacteria in the submarine bioalteration of the oceanic crust". Staudigel, H. (PI), Tebo, B.M. (co-PI), **Templeton, A.S. (co-PI)**. \$458K: 6/2006-10/2007.

TEACHING ACTIVITIES

GEOL 1150: Water, Energy and Environment

Introductory-level course with a mix of lecture and recitation format for non-STEM majors. Developed with Prof David Budd and the WEE teaching cohort. Fall 2018, 2021.

GEOL 2100: Environmental Geology

Introductory-level course for non-STEM majors. Developed in close-collaboration with the Science Education Initiative to design and implement interactive teaching strategies. Taught Fall 2007, 2008, 2009, 2010, 2011, 2015.

GEOL 3320: Introduction to Geochemistry

Course for GEOL Majors that applies concepts of equilibrium thermodynamics to chemical differentiation of the Earth, chemical weathering and redox biogeochemistry. Spring 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2019, 2021, 2022, 2023, 2024, 2025.

GEOL 4716/5716: Environmental Field Geochemistry

Upper division field course for GEOL majors and early graduate students focusing on laboratory and field-based measurements and data interpretation for problems in aquatic chemistry, acid-mine drainage and subsurface bioremediation. Taught Spring 2012, Fall 2014, 2017, 2020, 2022, 2024.

GEOL 5280: Aqueous and Environmental Geochemistry

Graduate-level interdisciplinary course on aquatic chemistry, redox processes, mineral weathering and metal cycling with students from GEOL, CEAE, GEOG, EBIO, MCDB and CHEM. Taught Fall 2006, Spring 2009, Fall 2013, Fall 2016.

GEOL 5700: Geomicrobiology

Graduate-level interdisciplinary course integrating aqueous geochemistry, microbial physiology and biomineralization processes with students from GEOL, CEAE, MCDB and CHEM. Spring 2008.

GEOL 5700: Geobiology

Graduate-level interdisciplinary course on early-Earth geochemistry and evolution of biogeochemical processes with students from GEOL, EBIO and ESE at Colorado School of Mines. Taught Spring 2009 with Prof. Steven Mojzsis.

GEOL 5700: Geochemical Principles

Graduate-level seminar to apply equilibrium thermodynamics to chemical differentiation of the Earth, chemical weathering and redox biogeochemistry. Spring 2016, 2017, 2019, 2021, 2022, 2023.

GEOL 5845: Undergraduate Independent Study

Nabil Chaudhry (2016), Toby Halamka (2018), Rudy Peterson (2022).

Graduate PhD thesis committee membership

Corey Lawrence (GEOL), Nicole Cates (GEOL), Jason Sahl (Colorado School of Mines), Chase Gerbig (CEAE), Lindsey Link (GEOL), Timothy Dittrich (CEAE), Audrey Norvell (CEAE), Miori Yoshino (GEOL), Janice Brahney (GEOL), Katherine Eilers (EBIO), Sanjay Mohanty (CEAE), Emma Marcucci (GEOL/APS), Stephen Glaser (GEOL), Joseph Mills (GEOG), Sarah Black (GEOL), Sarah Hirner (GEOL), Rachel Gabor (CEAE), Valerio Pasini (IPGP, France), Paul Le Campion (IPGP, France), Brad Bailey (Scripps Institution of Oceanography), Lisa Sudek (Scripps Institution of Oceanography), Chris Trivedi (Colorado School of Mines), Emily Kraus (Colorado School of Mines), Alexandra Mlosweska (University of Alberta), Elizabeth Fones (Montana State University), David Wren (CHEM), Audrey Norvell (CEAE), Brett Poulin (CEAE), Brigitta Rongstad (GEOL), Rebecca Simon (GEOL), Laura Beckerman (GEOL), Anne Fetrow (GEOL), Ciara Asamoto (GEOL), Patrick Thieringer (Colorado School of Mines), Tyler Lincoln (GEOL), Harry Allbrook (GEOL), Ruth Quispe Pilco (EBIO), Denise Mondragon (GEOG), Briana Prado (GEOG).

MENTORING

Postdoctoral Researchers

Dr. Julie Cosmidis	Sulfur “biomineralization” and the self-assembly of C/S microstructures
Dr. Jena Johnson	Fe-silicate mineralization under Archean ocean conditions
Dr. Elle Chimiak	Mineral-driven amino acid synthesis
Dr. Srishti Kashyap	Subsurface rock-hosted microbial life detection
Dr. Valentine Combaudon	Geological hydrogen in the US mid-continent rift system.

Professional Research Associates

Dr. Lisa Mayhew	Mars2020 Return Sample Scientist
Eric Ellison	Hydrogen scientist
Jessica Hankins	Raman microspectroscopy lab manager
Carson Cucarola	Geomicrobiology research assistant

Principal Dissertation Advisor

Damhnait Gleeson	PhD December 2009 (co-advised with Dr. Bob Pappalardo). “ <i>Microbial life in cold sulfur-rich environments.</i> ” Postdoctoral Scientist Jet Propulsion Laboratory; Scientist with the European Space Agency; now Program Manager Science Foundation Ireland.
Elizabeth Swanner	PhD June 2011. “ <i>Microbially-mediated geochemical cycling of iron and nitrogen within the granite-hosted subsurface of Henderson Mine, CO.</i> ” NSF Postdoctoral Fellow, University of Tübingen, Germany; now Assistant Professor, Iowa State.
Lisa Mayhew	PhD May 2012. “ <i>Geological hydrogen production and microbial consumption during low-temperature water-rock reactions.</i> ” Postdoctoral Scientist University of Alaska, Fairbanks. Now Research Scientist at CU-Boulder.
Katherine Wright	PhD (in MCDB) August 2012. “ <i>Sulfur energetics and metagenomics at a terrestrial analogue for Europa.</i> ” Postdoctoral Scientist at University of Bristol, UK; now Head Space Science, UK Space Agency.
Emily Knowles	PhD December 2012. “ <i>Interpreting physical and chemical biosignatures in basalt.</i> ” Postdoctoral Scientist at the Jet Propulsion Laboratory; now Instructor at Johnson & Wales University.
Hannah Miller	PhD May 2017. “ <i>Low temperature hydrogen production and habitability of a hyperalkaline serpentinite aquifer in the Samail ophiolite.</i> ” Now postdoctoral Scientist at Colorado State University.

Graham Lau	PhD August 2017. “ <i>Modern and ancient cold spring sulfur deposits in the High Arctic</i> ”. Now Communications Director, Blue Marble Space Institute.
Tyler Kane	M.S. December 2018. “ <i>Mechanisms of uranium immobilization during in-situ phosphate injections</i> ”. Now Research Scientist U.S. Geological Survey.
Daniel Nothhaft	PhD December 2020. “Subsurface Microbial Ecosystems and the Origin of Methane in Serpentinites of the Samail Ophiolite, Oman”. Now a postdoctoral scientist at University of Pennsylvania.
Kaitlin Rempfert	PhD May 2021. “Influence of Geology and Geochemistry on Microbial Dynamics and Associated Lipid Biosignatures in a Subsurface, Serpentinite-Hosted Ecosystem”. Now a postdoctoral scientist at EMSL.
Ellie Hara	PhD December 2023. “Cyanide dynamics in serpentinizing systems: implications for prebiotic chemistry”. Now a postdoctoral scientist at RPI.
Tristan Caro	PhD August 2023. “From Soil to Subsurface: tracking microbial growth under energy limitations”. Now a postdoctoral fellow at Caltech.
Harpreet Batther	PhD candidate (current)
Harry Brodsky	PhD candidate (current)
Jacob Tidwell	PhD candidate (current)

Undergraduate Advisor (*and co-author for peer-reviewed papers)

Daniel Eldridge	GEOL honors thesis advisee. Graduated Summa Cum Laude, May 2009.
Ryan Nell*	GEOL mentor program and research assistant.
Rachael Hoover	GEOL UROP advisee and research assistant.
Graham Lau*	GEOL UROP advisee and research assistant.
Eric Ellison*	GEOL mentor program and research assistant.
Michael Leitshuh	GEOL geochemistry research assistant.
Julia Dziennik	GEOL/ENVS UROP advisee and research assistant.
Katherine Ebeling	GEOL honors thesis advisee. Graduated Magna Cum Laude May 2014.
Nabil Chaudhry*	GEOL UROP advisee and research assistant
Christine Nims*	GEOL geochemistry research assistant
Isaac Hinz*	GEOL honors thesis advisee. Graduated Magna Cum Laude May 2018.
Spencer Zeigler*	GEOL petrology and geochemistry research assistant
Josie Marquez	GEOL honors thesis advisee. Graduated Magna Cum Laude May 2021.
Rudy Peterson	GEOL undergraduate research assistant
Dani Buchheister	GEOL undergraduate research assistant
Grant Peterson	GEOL undergrad research assistant
Carson Cucarola	BIOCHEM undergrad research assistant
Luciana Barigt	GEOL undergrad research assistant

Undergraduate Learning or Peer Assistant Mentor

Katherine Anarde (2009), Andrew Parker (2009), Trevor Mills (2009), Rachael Hoover (2010), Laura Schafenacker (2010), (2011), Gordon Bowman (2015), Helle Sketjne (2015).

SERVICE ACTIVITIES

Service to National or International Organizations

2024-present	IEA Task 49 Geological Hydrogen Committee
2023-2025	Ingerson & Endowed Biogeochemistry Lecture Committee, Geochemical Society
2023	U.S. Bureau of Educational and Cultural Affairs Speakers Program
2022-2025	Board of Directors, Geochemical Society
2022	Panelist, NASA PSTAR Program
2021-present	NASA Network for Life Detection (NFOLD) Steering Committee
2021-present	Stanford Synchrotron Radiation Lightsource Environmental Science Committee
2021	Panelist, NASA Exobiology Program
2019-2021	Geochemical Society, Endowed Biogeochemistry Lecture Selection Committee
2018-2021	Guest Editor, Journal of Geophysical Research - Biogeosciences
2016-2017	Europa Lander Science Definition Team
2015-2020	ICDP Oman Drilling Project Steering Committee & Lead for Biogeosciences
2015-2020	NASA Astrobiology Institute Executive Council

2015-2020	NASA Serpentinizing Systems Science Working Group Lead
2013-2016	Stanford Synchrotron Radiation Lightsource Proposal Review Committee
2013-2016	Geochemical Society, Patterson Award Committee (Chair & Member)
2013	Participant, NSF Workshop to evaluate the field of “Microbial Geochemistry”
2012-2020	ICDP Oman Drilling Project participant and proponent
2012-2013	Goldschmidt 2013 International Conference Theme co-organizer
2011-2018	Review Editor, <i>Frontiers in Microbiology: Microbial Chemistry</i> .
2011	Program Committee “Geochemistry of the Earth’s Surface 9” Intl. Conference
2011	Panelist, NASA Exobiology and Evolutionary Biology Program
2010	Co-convenor “Sulfur Biogeochemistry Past and Present”, Goldschmidt 2010
2009	Department of Energy: Environmental Remediation Sciences Program Strategic Planning workshop in “Subsurface Complex System Science”
2009-2014	Editorial Board & ad-hoc Subject Editor: <i>Geobiology Journal</i>
2006	Panelist, NSF-EAR Low-Temperature Geochemistry and Geobiology
2006	IODP strategic workshop participant “Exploring Subseafloor Life”
2005-2009	Member: NSF Seamount Biogeosciences Research Coordination Network
2005-present	Funding proposal reviews: <i>DOE Basic Energy Sciences</i> ; <i>NASA Exobiology and Evolutionary Biology</i> ; <i>NSF Low-Temperature Geochemistry and Geobiology</i> , <i>NSF Instrumentation and Facilities</i> ; <i>American Chemical Society Petroleum Research Fund</i> , <i>Louisiana Board of Regents</i> .
2005-present	Stanford Synchrotron Radiation Lightsource proposal reviews.
2005-present	Manuscript reviews: <i>Geochimica et Cosmochimica Acta</i> , <i>Science</i> , <i>Frontiers In, Applied & Environmental Microbiology</i> , <i>Geobiology Journal</i> , <i>Environmental Science & Technology</i> , <i>American Mineralogist</i> , <i>Geomicrobiology Journal</i> , <i>Chemical Geology</i> , <i>Water Resources</i> , <i>Reviews in Environmental Science & Biotechnology</i> , <i>Journal of Geophysical Research – Biogeosciences</i> , <i>Elements Magazine</i> , <i>Nature Geoscience</i> , <i>Geology</i> .
Affiliations	<i>Geochemical Society</i> , <i>Mineralogical Society of America</i> , <i>American Geophysical Union</i> .

Service to the University of Colorado

2024	Executive Committee, Geological Sciences
2023	Lucas. J. Kimes Postdoctoral Fellowship Committee, Geological Sciences
2023	Graduate Admissions Committee, Geological Sciences
2022-2024	Salary Equity and Grievance Committee, Geological Sciences
2022-2024	Undergraduate Curriculum Committee, Geological Sciences
2020-present	Chair, Space and Analytical Facilities Committee, Geological Sciences
2017-2019	Associate Chair for Graduate Studies, Department of Geological Sciences
2017-2019	University of Colorado Academic Futures Visioning Committee
2017-2019	Executive Committee, Department of Geological Sciences
2016-2017	CU Nanomaterials Electron Microscopy Faculty advisory board
2016-2017	Center for Water, Environment, and Science Center Executive Council.
2015-2017	Chair, Analytical Facilities and Space Committee, Geological Sciences
2015-6	Chair, Geobiology Faculty Search Committee, Geological Sciences
2014-2021	Member, BioFrontiers Task Force
2014	Environmental Sciences Curriculum Committee, School of the Environment
2014	Core Curriculum Committee, Dean of Arts and Sciences
2013-4	Member, Organic Geochemistry Search Committee
2008-present	Packard Fellowship Selection Committee, Vice Chancellor for Research
2009-2018	Space & Analytical Facilities Committee, Geological Sciences (Chair & Member)
2010-2013	Undergraduate Peer Learning Assistant Coordinator, Geological Sciences
2010	Science Education Initiative Postdoctoral Review Committee
2005-6; 2007-8	Departmental Admissions Committee, Geological Sciences
2006-7	Undergraduate Curriculum Committee, Geological Sciences
2006	SEI Postdoctoral Interview Committee
2006	Biology Committee, Henderson Underground Science and Engineering Project
2006-present	Faculty Member, Center for Astrobiology

