Samuel McNichol

PhD Student in Earth and Planetary Sciences
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RESEARCH INTERESTS

Oceanographic and environmental research in chemistry and geochemistry, exploring the role that microbial processes play in geochemical cycles.

EDUCATION

2019 **B.A., Chemistry**
Oberlin College
Advisor: Albert Matlin

RELEVANT COURSE WORK

Organic Chemistry, Bioorganic Chemistry, Analytical Chemistry, Inorganic Chemistry, Quantum Chemistry and Kinetics, Thermodynamics, Organic Mechanisms and Synthesis, Trace Analysis (Analytical Chemistry Seminar and Advanced Laboratory), Mechanics and Relativity, Electricity and Magnetism, Multivariable Calculus, Organismal Biology, Coral Reefs: Biology, Geology and Politics

MEMBERSHIP & AWARDS

2019 Phi Beta Kappa

EMPLOYMENT

2019-2021 **Spivak Coastal Biogeochemistry Laboratory, Research Technician/Laboratory Manager**
Establishing a new biogeochemistry lab for analysis of carbon cycling in coastal marshes, collection and processing of field samples, analysis of data from collected samples, training graduate and undergraduate researchers in field and analytical techniques

RESEARCH EXPERIENCE

2018 **Summer Student Fellow, Ward Aquatic Geochemistry Laboratory, Woods Hole Oceanographic Institution Marine Chemistry and Geochemistry Department**
Collection of local water samples to study the coupled photochemical and microbial breakdown of DOM in surface waters, creation of presentation and poster from collected data

2017 **Pearson Molecular Biogeochemistry and Organic Chemistry Lab, Harvard University Department of Earth and Planetary Sciences**
Preparation of samples for lipid extractions (freeze-drying, operating MARS microwave system) for GDGT study

2017 **Spivak Coastal Biogeochemistry Lab, Woods Hole Oceanographic Institution Marine Chemistry and Geochemistry Department**
Experimental design and set-up for project modeling ocean acidification to study its effects on isolated variables, purchasing materials

2016 **Spivak Coastal Biogeochemistry Lab, Woods Hole Oceanographic Institution Marine Chemistry and Geochemistry Department**
Set-up and maintenance of mesocosm system for studying the effects of grazing on nutrient cycling in salt marsh systems, ^{13}C and ^{15}N labeling, water column and sediment sampling, operation of GC-MS system, analysis of compound specific ^{13}C data for fatty acid methyl esters

2016 **Spivak Coastal Biogeochemistry Lab, Woods Hole Oceanographic Institution Marine Chemistry and Geochemistry Department**
PLFA extractions, GC-MS analysis of fatty acid methyl esters

TEACHING EXPERIENCE

2017 **Oberlin Workshop and Learning Session (OWLS) Leader**
Organic Chemistry, conducting workshops and review sessions for students

PUBLICATIONS

2021 Wu, F., Pennings S. C., Ortals, C., Ruiz, J., Farrel, W.R., **McNichol, S.M.**, Angelini, C., Spivak, A.C., Alber, M. and Tong, C. (2021) Disturbance is complicated: headward-eroding saltmarsh creeks produce multiple responses and recovery trajectories. *Limnol Oceanogr.* https://doi.org/10.1002/lno.11867

PRESENTATIONS

2021 McNichol, S.M., Luk, S.Y., Eagle, M.E., Mariotti, G. and Spivak, A.C. Distance from tidal creek is an important factor affecting the ecology and biogeochemistry in ditched and natural salt marshes. AGU Fall 2020 Meeting. (Poster)

2019 Spivak, A.C., McNichol, S.M., Wankel, S.D., Fulweiler, R.W. and Karolewski, J.C. Benthic microalgae help retain detrital marsh grass carbon and nitrogen in estuarine sediments. Coastal and Estuarine Research Foundation Meeting 2019, Mobile, AL.