

Michigan Geophysical Union

**MGPU April 17
2019**

Research Symposium

Michigan League Ballroom

Morning Poster Session

9:30 - 11:30 AM

Afternoon Poster Session

1:00 - 3:00 PM

Science Advocacy Panel

Vandenburg Room

3:30 - 4:30 PM

Michigan League, 2nd Floor



Morning Session p. 2-5
Afternoon Session p. 6-10

Morning Session

No.	Presenting Author		Title	Section
1	Lee	Jamy	Wildfire Smoke Influence on Cloud Water Chemistry at Whiteface Mountain, New York	Chemistry
9	Chen	Yi-Hsuan	The Effect of Ice Cloud Longwave Scattering on the Simulated Climate in the Arctic	CLaSP - Climate
5	Fair	Zach	Detection of monitoring of supraglacial lakes using laser altimetry	CLaSP - Climate
2	Huber	Daniel	Agricultural NO _x emissions and their Contribution to Regional Ozone	CLaSP - Climate
7	Wang	Tianlin	Integration of CYGNSS Wind and Wave Observations with the WaveWatch III Numerical Model	CLaSP - Climate
3	Watkins	Ray	Bumps Ahead: An investigation into the Roughness of Ice Shelves through Spectral Methods	CLaSP - Climate
19	Brandt	Daniel	Using Orbit Determination to Characterize Magnetospheric Energy Input into the Thermosphere	CLaSP - Space
11	Jenkins	Geoffrey	A Comparison of Martian Thermospheric Constituent Densities as Observed by MAVEN and Simulated by the MGITM	CLaSP - Space
12	McCuen	Brett	Characterizing Transient Geomagnetic Fluctuations and Associated Rapid Ionospheric Currents	CLaSP - Space
18	Ponder	Brandon	Solving for the Thermal Conductivity Coefficients Experimentally	CLaSP - Space
23	Andrews	James	Anatomy of the earliest occurring crown squirrelfish (Teleostei: Holocentridae) from near the Cretaceous-Paleogene boundary of New Jersey	EARTH - Climate, Environment, and Paleontology
36	Bowen	Jenny	Iron increases the oxidation of permafrost carbon to CO ₂ by sunlight	EARTH - Climate, Environment, and Paleontology

No.	Presenting Author		Title	Section
55	Crowther	Elizabeth	Using Mercury Stable Isotopes to Assess Re-mobilization of Legacy Mercury in an Industrially Contaminated Stream	EARTH - Climate, Environment, and Paleontology
34	Du	Xiaojing	ENSO-related precipitation changes in Southern California over the past 9000 years	EARTH - Climate, Environment, and Paleontology
44	Dzombak	Rebecca	New record shows terrestrial phosphorus stable since Precambrian	EARTH - Climate, Environment, and Paleontology
38	Grim	Sharon	Meta-omics of sulfur cycling bacteria in distinct microbial mat morphotypes	EARTH - Climate, Environment, and Paleontology
31	Huth	Tyler	Dramatic Holocene ecosystem change on the Colorado Plateau inferred from a laminated pedogenic carbonate record	EARTH - Climate, Environment, and Paleontology
29	Kilgore	Tianna	Designing and Building an Automated Sample Delivery Device for Clumped Isotope Analysis	EARTH - Climate, Environment, and Paleontology
56	Loughney	Katharine	Vegetation and habitat change in southern California through the middle Miocene Climatic Optimum: Paleoenvironmental records from the Barstow Formation, Mojave Desert	EARTH - Climate, Environment, and Paleontology
46	Ng	Molly	Plant physiological response to climate within Cupressaceae	EARTH - Climate, Environment, and Paleontology

No.	Presenting Author		Title	Section
49	Rico	Kathryn	Redox chemistry and molybdenum burial in a Mesoproterozoic lake	EARTH - Climate, Environment, and Paleontology
42	Saulsbury	James	Progress in stalkless crinoid systematics	EARTH - Climate, Environment, and Paleontology
37	Trusiak	Adrianna	Iron mediated oxidation of dissolved organic carbon in arctic soils	EARTH - Climate, Environment, and Paleontology
21	Veitch	Meg	A 'deeper' understanding: The role of regeneration in assessing injury rates in bathyal stalked crinoids	EARTH - Climate, Environment, and Paleontology
25	Wang	Yi	Bulk sediment $\delta^{15}\text{N}$ responses to remote forcing in Northeast Pacific for the past two millennia	EARTH - Climate, Environment, and Paleontology
63	Cook	Madelyn	Iodine distribution and redox speciation in the Southern Ocean	EARTH - Geophysics, Geochemistry, and Tectonics
57	Han	Guolei	Compartmentalization and timing of gas generation in the Eagle Ford shale, south Texas – A noble gas investigation	EARTH - Geophysics, Geochemistry, and Tectonics
64	La Cruz	Nikita	Magnetite geochemistry as a tool for exploration in Guyana	EARTH - Geophysics, Geochemistry, and Tectonics
71	Liu	Meichen	Stress drop estimates of deep earthquakes based on empirical Green's function analysis	EARTH - Geophysics, Geochemistry, and Tectonics

No.	Presenting Author		Title	Section
61	Rodriguez Mustafa	Maria Alejandra	Evidence for the continuum from iron oxide-copper-gold (IOCG) to iron oxide-apatite (IOA) deposits	EARTH - Geophysics, Geochemistry, and Tectonics
70	Pease	Allison	Solidification of the Martian core	EARTH - Geophysics, Geochemistry, and Tectonics
59	Ramos	Marlon D.	Earthquake rupture dynamics across the Cascadia Plate boundary fault	EARTH - Geophysics, Geochemistry, and Tectonics
65	Thakur	Prithvi	Magnitude-frequency distribution of simulated earthquake cycles in damaged fault zones	EARTH - Geophysics, Geochemistry, and Tectonics
74	Townsend	Kirk	The co-evolution of rock strength and relief during the early stages of mountain building	EARTH - Geophysics, Geochemistry, and Tectonics
60	Wang	Yingwei	Effects of solution pH and polyethylene oxide concentrations on the interaction forces between molybdenite, kaolinite, and quartz	EARTH - Geophysics, Geochemistry, and Tectonics
73	Wrage	Jackie	Sulfur mobility in arc magmatic systems: Implications for porphyry ore deposits	EARTH - Geophysics, Geochemistry, and Tectonics
58	Yao	Dongdong	Comprehensive analysis of the 2010 Mw7.2 El Mayor-Cucapah foreshock sequence	EARTH - Geophysics, Geochemistry, and Tectonics

Afternoon Session

No.	Presenting Author		Title	Section
10	Balasubramaniam	Rajeswari	Understanding the impact of rain on L1 GNSS-R measurements	CLaSP - Climate
4	Berg	Brandon	Damage advection in a Nye's Zero Stress Calving Model for Full Stokes Glacier Flow	CLaSP - Climate
6	Ward	Jamie	Impacts of Greenland Blocking on low-level liquid cloud formation over the Greenland Ice Sheet	CLaSP - Climate
8	Whitcomb	Morgan	Simulating Pine Island Glacier Extents Under Multiple Forcing Scenarios Using Damage Mechanics	CLaSP - Climate
20	Alterman	Ben	Variation of Solar Wind Helium Across Two Solar Cycles	CLaSP - Space
17	Mukhopadhyay	Agnit	Predicting Auroral Conductance in Global MHD	CLaSP - Space
16	Petersen	Alicia	Now-Casting Interplanetary Coronal Mass Ejections Using Observations of Solar Wind Heavy Ions	CLaSP - Space
14	Rivera	Yeimy	Identifying spectral lines in the visible and infrared to investigate CME substructure in the lower corona	CLaSP - Space
13	Webster	Kyle	Current Sheet Crossings in Saturn's Magnetosphere - Findings from Cassini	CLaSP - Space
22	Aron	Phoebe	A comparison of isotopic and ecohydrologic techniques to partition evapotranspiration in a northern Michigan forest	EARTH - Climate, Environment, and Paleontology
50	Capobianco	Alessio	Saber-toothed giant anchovies (Teleostei: Engrauloidea) from the early-middle Eocene of Belgium and Pakistan	EARTH - Climate, Environment, and Paleontology

No.	Presenting Author		Title	Section
33	Gilbert	Lydia	Ensemble probability program for backward trajectories from the University of Michigan Biological Station (UMBS) based on the relative abundance of ^{18}O	EARTH - Climate, Environment, and Paleontology
52	Hardy	Fabian	Temporal distribution and tectonic association of vertebrate fossils in the middle Miocene Dove Spring Formation, California	EARTH - Climate, Environment, and Paleontology
26	Heaman	Rebecca	Carbonate clumped isotopic composition of gastropod shells	EARTH - Climate, Environment, and Paleontology
45	Hoffman	Jonathan J.	Paleotemperature and water chemistry estimates from the Western Interior Seaway during Oceanic Anoxic Event 2 and the mid-Cretaceous thermal maximum	EARTH - Climate, Environment, and Paleontology
24	Katz	Sarah	Assessing modern Andean hydroclimate using the oxygen and hydrogen isotopic composition of waters in a Peruvian watershed	EARTH - Climate, Environment, and Paleontology
30	Macarewich	Sophia	Decoupling of ancient epicontinental sea and ocean $\delta^{18}\text{O}$ in a water isotope-enabled Earth system model	EARTH - Climate, Environment, and Paleontology
53	Packard	Natalie	Clumped and Triple Oxygen ($\Delta^{17}\text{O}$) Isotope Signatures of Evaporation at Bear Lake, Utah since the Last Glacial Maximum	EARTH - Climate, Environment, and Paleontology
41	Page	Mara	Mysteries from the missing million: exploring environmental change in Kenya during the emergence of <i>Homo sapiens</i>	EARTH - Climate, Environment, and Paleontology

No.	Presenting Author		Title	Section
28	Pandey	Dhurba Raj	Controls on the photochemical production of hydrogen peroxide yields in Lake Erie	EARTH - Climate, Environment, and Paleontology
48	Quirk	Zack	Reading the leaves: developing a quantitative approach to improve interpretation of fossil monocot leaf systematics and ecology	EARTH - Climate, Environment, and Paleontology
47	Rivero-Vega	Rafael A.	Probing the phylogenetic murkiness of the water-to-land transition using Concatenation, Coalescent, and Gene Genealogy Interrogation methods	EARTH - Climate, Environment, and Paleontology
32	Robbins	Mark	End-summer seasonal hydrochemical changes at Kiattuut Sermiat, Greenland	EARTH - Climate, Environment, and Paleontology
27	Scholz	Serena	Clumped isotope calibration for marine gastropods	EARTH - Climate, Environment, and Paleontology
39	Shirley	Ethan	MicroCT of a tropical South American gomphothere tooth shows repeated radiodensity features: implications for research on life histories	EARTH - Climate, Environment, and Paleontology
54	Stein	Rebekah	Using Historical Isotope Chemistry to Look at Modern and Future Biosphere-Atmosphere Interactions	EARTH - Climate, Environment, and Paleontology
40	Thompson	Alexander	Model-Data intercomparison of precipitation and soil water δD with iCESM: a case study in mid-Holocene Northern Africa	EARTH - Climate, Environment, and Paleontology

No.	Presenting Author		Title	Section
51	Vogel	Sonya	Seasonal nutrient cycling in Michigan wetlands	EARTH - Climate, Environment, and Paleontology
43	Wood	Melissa	New material of <i>Palaeoamasia kansui</i> (Mammalia, Embrithopoda) and implications for Embrithopod evolution	EARTH - Climate, Environment, and Paleontology
76	Yancey	Colleen	Determining the spatial and temporal variation in natural product distribution in western Lake Erie HABs: insights into <i>Microcystis</i> bioactive compound production potential	EARTH - Climate, Environment, and Paleontology
35	Zhang	Jade	Investigating interglacial climate in Bermuda through oxygen isotope measurement and sub-annual carbonate clumped isotope analysis of gastropod <i>Cittarium pica</i>	EARTH - Climate, Environment, and Paleontology
75	Chen	Sha	Volatile content in lunar melt inclusions	EARTH - Geophysics, Geochemistry, and Tectonics
69	Hinz	Isaac	Recreating the ancient ocean in a borosilicate bottle	EARTH - Geophysics, Geochemistry, and Tectonics
68	Kim	Sooyeon	Quantum-mechanical derivation of the kinetics of multistep reduction of actinyl-EDTA complexes	EARTH - Geophysics, Geochemistry, and Tectonics
62	Medwedeff	William	Geophysical investigation of bedrock weathering in the Nepal Himalaya	EARTH - Geophysics, Geochemistry, and Tectonics
72	Midttun	Nikolas	Strike-slip faulting dominates the response of the Lesser Caucasus to the Arabia-Eurasia continent collision.	EARTH - Geophysics, Geochemistry, and Tectonics

No.	Presenting Author		Title	Section
66	Theuer	Samantha	Paleoenvironmental implications of iron-rich clay synthesis for early Earth and Mars	EARTH - Geophysics, Geochemistry, and Tectonics
67	Tye	Alex	Paleoseismic slip recorded by rock strength variation in bedrock normal fault scarps	EARTH - Geophysics, Geochemistry, and Tectonics

Acknowledgements

MGU is made possible by the hard work of the Organizing Committee, composed of student volunteers, faculty, and administrative staff. The Organizing Committee would like to thank the Department of Climate and Space Sciences and Engineering and the Department of Earth and Environmental Sciences for their financial contributions to this symposium. The Organizing Committee would also like to thank our volunteer judges and, especially, our presenters without whom this symposium would not be possible.

Organizing Committee Members

Anthony Torres, Zach Butterfield, Mark Flanner, Laura Hopkins, Jessica Pfund, Zach Fair, Colten Peterson, Camilla Harris, Yi Wang, Jackie Wrage, Bian Wang, Rebecca Dzombak, Larry Ruff, Anne Hudon, Allison Pease