

7th Annual Earth & Environmental Sciences Student Research Symposium

February 16, 2024

9 am – 4 pm

Generator Room (Room 2110)
STEM Teaching & Learning Facility

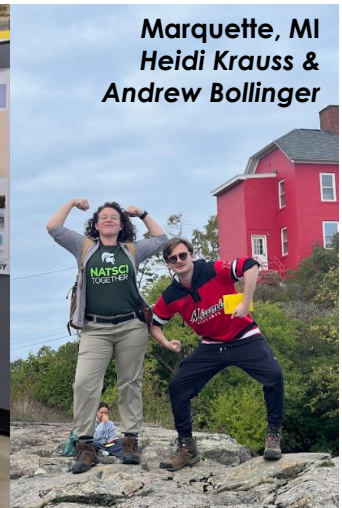
MICHIGAN STATE
UNIVERSITY

Department of Earth and Environmental Sciences



Agenda

9:00 – 9:45	Bagels & Coffee
9:45 – 10:00	Welcoming Remarks
10:00 – 11:00	Oral Session I
11:00 – 12:00	Poster Session I
12:00 – 12:45	Lunch
12:45 – 2:00	Oral Session II
2:00 – 3:00	Poster Session II
3:00 – 3:45	Outreach Demos
3:45 – 4:00	Closing Remarks
5:00 – 7:00	Department Social (HopCat)



Oral Session I 10:00 – 11:00 am

Using a ModEx Approach to Investigate Nitrate Legacies in Groundwater

Brent Heerspink

Towards Understanding the Megathrust Earthquake Slip Behavior and Postseismic Mechanisms

Zechao Zhuo ⚡

Experimental Techniques in High Pressure Research and our Recent Findings

Allison Pease ⚡

STEM Success at CAMP: Peer Mentoring to Increase Interest and Persistence in STEM and Research Among Michigan State University's CAMP Students

Andrea Saavedra ⚡

Vertical Motions of the Hawaiian Islands and Other Pacific Sites Compared to Models of Global Ice and Ocean Loading

Katarina Vance ⚡

Recording Arctic Change Through a River's Lens

Amelia Grose ⚡

Iodine Redox Species Distribution and Mass Balance from GEOTRACES Pacific Meridional Transects

Alexi Schnur



Poster Session I 11:00 – 12:00 pm

Exploring the Depths: Unveiling the Secrets of the Tonga-Samoa Region with SaLOON

Yurong Zhang

Hybrid Approach Combining Machine Learning with Remote Sensing and Process-Based Models Data to Predict Nitrous Oxide Flux in a Cropping System

Prateek Sharma

Rates and Pathways of Euphotic Iodine Redox Transformations Across the Atlantic Meridional Transect (AMT-30)

Kirsten Fentzke

Tracing Nitrogen and Phosphorous Routes Among Lakes and Coastal Wetlands

Samin Abolmaali

Earthquake clustering and statistics at the Alaska Peninsula

Yaqi Jie

A New Low-Cost CO₂ Measuring System for Streams and Rivers

Sage Stockdale

Art-Geoscience Intersections in the Geoscience Classroom

Emily Pasek

How a Nuanced Model of Habitability Can Inform the Search for Life Beyond Earth

Césarine Graham

Stable Isotope Evolution during Multi-Stage Core Formation

Gabriel Nathan

Thermal conductivity of MgO using FD-PBD technique

Devika Padmakumar

Oral Session II 12:45 – 2:00 pm

Transboundary Basin: Building Groundwater Modeling Accuracy for the Great Lakes Region

Madeline Sigler ⚡

Redistribution of Marine Oxygen Deficient Zones During the Mid-Miocene

Jana Burke

The Direct Formation of Contact Binary Planetesimals

Jackson Barnes ⚡

Stuck in the Muck: Challenges and Lessons for Working in Wetlands

Caroline Weidner ⚡

Assessing Velocity Deviations from GPS Stations in the Great Lakes Region

Helio L Guerra Neto ⚡

Place-Based Education Engages Geoscience Students, Faculty, and Communities in Collaboration

Cheyenne Kleiner

Novel & Traditional Methods for Quantifying Ontogenetic Heterodonty in Recent & Fossil Sharks, Including *Carcharodon carcharias*, *megalodon*, & *angustidens*, and their Application in the Identification of Paleo-Nurseries

Ryan McKeeby ⚡

Slab Morphology, Dehydration, and Sub-Arc Melting beneath the Alaska Peninsula Revealed by Body-Wave Tomography

Fan Wang ⚡

Exploring the Role of Groundwater in Creating and Maintaining Thermal Refugia in Cold-Water Streams

Noah Bohl ⚡

Poster Session II 2:00 – 3:00 pm

Structure of Liquid Iron and Iron-Nitrogen Alloys up to 7 GPa and 2100 K

Jack Piper

An Integrated Seismic and Geodetic Perspective on Tectonic Deformation in the Northern Canadian Cordillera

Connor Drooff

Are There Differences in Microbial Community Composition Within the Saginaw Aquifer, the Predominant Source of Drinking Water for Mid-Michigan?

Mio Hogan

Sodium in the Earth's Lower Mantle: Role of Iron in Ferropericlase

Luisa Chavarria

Constraining the Redox State of the Mesoproterozoic Ocean

Keyi Cheng

Finding Common Ground(water): Considering Hydrology in the US Solar Energy Landscape

Jake Stid

Along-Strike Variations in Sub-Arc Melting Beneath the Alaska Peninsula Revealed by Body Wave Attenuation

Zhuoran Zhang

Using Community Science to Address a Proposed Mine in Andros, Bahamas

Sophie Huss

Superpiles: A Low Density Explanation for LLSVPs

Heidi Krauss

Field Boundary Segmentation Using Artificial Intelligence (AI) in Harnessing Accurate Yield Stability Map

John Salako

Outreach Demos 3:00 – 3:45 pm

Rocky and The Magic of
Mineral Based Paints

*Journey Beneath the Waves:
Demonstrating Ocean-Bottom
Seismometer (OBS) Deployment and
Dredging during a Cruise*

Go with the Flow: Exploring the
Movement of Water!

DIYnamics: Rotating Convection

Testing the Electrical Conductivity
of Minerals



**Marquette, Michigan
Earth Structure & Tectonics Field Trip**

The Symposium Committee would like to thank the following organizations for their generous sponsorship of this event:

