



MSGC 2023 Fall Conference Agenda
Fetzer Center, Western Michigan University
2251 Business Ct. | Kalamazoo, MI 49008
Saturday, October 21, 2023

8:00am – 9:00am	Registration, Breakfast & Poster Set Up (<i>Atrium Lobby</i>)
9:00am – 9:05am	Welcome & Introductions (<i>Kirsch Auditorium</i>) <i>Mark Moldwin, PhD - Arthur F. Thurnau Professor, Department of Climate & Space Sciences & Engineering, Director of NASA's Michigan Space Grant Consortium</i>
9:05am – 9:10am	Opening Remarks & Kickoff (<i>Kirsch Auditorium</i>) <i>Dr. Remzi Seker, Vice President for Research and Innovation, Western Michigan University</i>
9:10am – 9:15am	Introducing CMU (<i>Kirsch Auditorium</i>) <i>Professor Tao Zheng, Department of Geography and Environmental Studies, Central Michigan University</i>
9:15am – 10:00am	The Extraordinary Power of Experience in Inspiring the Next Generation of Explorers (<i>Kirsch Auditorium</i>) <i>Keynote Speaker Troy Thrash, President & CEO, Air Zoo Aerospace and Science Center</i>
10:00am – 10:15am	Q&A with Keynote Troy Thrash
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10:15am – 11:15am	Poster Presentations
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11:15am – 12:05pm	Oral Presentations Session 1 (<i>Kirsch Auditorium</i>) <i>Moderated by Professor Ed Cackett, Wayne State University</i>
11:15am – 11:21am	Liftoff for Michigan

11:21am – 11:24am	<i>Christine Brillhart, Educator, Science Department, Jefferson Middle School, Midland Public Schools, Midland, MI</i> Q&A
11:25am – 11:31am	Computing camps for girls at EMU <i>Krish Narayanan, PhD, Professor, Department of Computer Science, Eastern Michigan University</i>
11:31am – 11:34am	Q&A
11:35am – 11:41am	The Effects of Contact Physics on the Formation of Planetesimals through Gravitational Collapse <i>Jackson Barnes, Department of Earth and Environmental Sciences, Michigan State University, East Lansing, MI</i> <i>Stephen R. Schwartz, Planetary Science Institute, Tucson, AZ;</i> <i>Instituto de Fisica Aplicada a las Ciencias y la Tecnologias, Universidad de Alicante, San Vicent del Raspeig, Alicante, Spain;</i> <i>Seth A. Jacobson, Department of Earth and Environmental Sciences, Michigan State University, East Lansing, MI</i>
11:41am – 11:44am	Q&A
11:45am – 11:51am	Lunabotics Astro-Huskies Automated Regolith Excavation System (ARES) <i>Christi LeCaptain, Project Manager, Mechanical Engineering, Michigan Technological University</i> <i>Karson Linders, Assistant Project Manager, Mechanical Engineering & Robotics, Michigan Technological University</i> <i>Seth Thurman, Lead Systems Engineer, Robotics Engineering, Michigan Technological University</i> <i>Paul van Susante, Ph.D., M. ASCE, M. AIAA, M. ISTVS, Faculty Advisor for the Multiplanetary INnovation Enterprise (MINE), Mechanical Engineering, Æi Engineering Mechanics, Michigan Technological University</i>
11:51am – 11:54am	Q&A
11:55am – 12:01pm	Resilience to Spaceflight Stressors: Validating Space Farming and Sweat Cortisol Biosensor Wearable as Means to Ensure Mission Health <i>Lisa S. Tsay, NASA Growing Beyond Earth Teacher Ambassador, Saginaw Valley State University</i> <i>Margaret E. Hitt, President & Founder of Dow High Space Farmers, GeneLab for High Schools NASA Intern, H. H. Dow High School</i> <i>Meha Shivakumar, H. H. Dow High School</i>
12:01pm – 12:04pm	Q&A
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12:05pm – 1:00pm	Lunch (Atrium)
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1:00pm – 2:00pm **Oral Presentations Session 2 (Kirsch Auditorium)**
Moderated by Professor Bopaiah Biddanda, Grand Valley State University

1:00pm – 1:06pm **Exploring the structural architecture, reactivation likelihood and seal-ability of faulted subsurface reservoirs in the northern Gulf of Mexico continental shelf: Implications for CO2 sequestration**

*Uzonna Anyiam, PhD in Geophysics, Dr., Geological and Environmental Sciences Department, Hope College.
Madeleine O'Donnell, Undergraduate Student, Miss, Geological and Environmental Sciences Department, Hope College.
Emmanuel Uzuegbu, MSc in Geology, Mr., SLB, Stavanger, Norway.*

1:06pm – 1:09pm Q&A

1:10pm – 1:16pm **Using Airborne eDNA Detection Methods to Investigate Hemlock Woolly Adelgid Impacts on Communities in Michigan Mixedwood Forests**

*Keely Dunham, B.A., Graduate Research Assistant, Annis Water Resources Institute, Grand Valley University
Charlyn Partridge, Ph.D., Associate Professor, Annis Water Resources Institute, Grand Valley University, Jefferson Middle School, and Saginaw Valley State University*

1:16pm – 1:19pm Q&A

1:20pm – 1:26pm **Seismic Amplitude-based Lahar Tracking**

*Brendan Harville, BS Applied Geophysics, Undergraduate Student, GMES, Michigan Technological University
Gregory Waite, BS Mathematics, MS Geophysics, PhD Geophysics, GMES, Michigan Technological University*

1:26pm – 1:29pm Q&A

1:30pm – 1:36pm **Sea Ice Leads as a Source of Arctic Sea Spray Aerosol: A Combined In-situ Measurement and Remote Sensing Study**

*Judy Wu, M.S., Graduate Student, Dept. of Chemistry, University of Michigan
Jun Liu, Ph.D., Postdoctoral Researcher, Dept. of Chemistry, University of Michigan
Jamy Y. Lee, Ph.D., Graduate Student, Dept. of Chemistry, University of Michigan
Son V. Nghiem, Ph.D., Senior Research Scientist, NASA Jet Propulsion Laboratory, California Institute of Technology
Kerri A. Pratt, Ph.D., Professor of Chemistry, Dept. of Chemistry, University of Michigan*

1:36pm – 1:39pm Q&A

1:40pm – 1:46pm **EXPLAINABILITY IN MULTIVARIATE TIME SERIES CLASSIFICATION MACHINE LEARNING MODELS**

Emanuel Sanchez (Undergraduate student, Computer Science department, Hope College)

	<p><i>Giovanni Battaglia (Undergraduate student, Computer Science department, Hope College)</i> <i>Brooke Odle (Ph.D., Assistant Professor, Engineering, Hope College)</i> <i>Omofolakunmi Olagbemi (Ph.D., Assistant Professor, Computer Science, Hope College)</i> Q&A</p>
1:46pm – 1:49pm	
1:50pm – 1:56pm	<p>Digital Phantoms for Quantitative Ultrasound and Photoacoustic Imaging of Thrombosis <i>Sullivan Lauderdale, BS, Graduate Research Assistant, Department of Electrical and Computer Engineering, Oakland University</i> <i>Alycen Wiacek, PhD, Assistant Professor, Department of Electrical and Computer Engineering and Department of Bioengineering, Oakland University</i> Q&A</p>
1:56pm – 1:59pm	
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2:00pm – 3:00pm	Poster Presentations
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3:00pm – 4:00pm	<p>Oral Presentations Session 3 (Kirsch Auditorium) <i>Moderated by Professor Massood Z. Atashbar, Western Michigan University</i></p>
3:00pm – 3:06pm	<p>Development of Highly Sensitive Pressure Sensors with Hybrid Structure for E-Skin and Soft-Robotic Applications <i>Sergei Akhmatdinov, Undergraduate Computer Engineering Student, Department of Electrical and Computer Engineering, Western Michigan University</i> Q&A</p>
3:06pm – 3:09pm	
3:10pm – 3:16pm	<p>Printed and Micro-structured Graphite Electrodes for High Capacity and Fast Charging Lithium-Ion Batteries <i>Himanaga Emani, Ph.D. Student, Dept. of Electrical and Computer Engineering, Western Michigan University</i> Q&A</p>
3:16pm – 3:19pm	
3:20pm – 3:26pm	<p>Simulation and Modeling of the Settling Behavior of Polydisperse Gas-Solid Flows With Application to Pyroclastic Density Currents <i>Emily Foster, bachelor's and master's degrees in mechanical engineering & E.I.T certification & Ph.D. candidate, Oakland University department of mechanical engineering</i> Q&A</p>
3:26pm – 3:29pm	
3:30pm – 3:36pm	<p>Synergistic Approach for Computational Analysis of Geomagnetically Induced Currents in Power Grids <i>Adebola Oke, Electrical Engineer, WMU alumnus, Electrical and Computer Engineering, Western Michigan University</i></p>

3:36pm – 3:39pm	<p><i>Pablo Gomez, PhD in Electrical Engineering, Associate Professor, Electrical and Computer Engineering, Western Michigan University</i> Q&A</p>
3:40pm – 3:46pm	<p>Charging the Future: Solid-State Lithium Ion Batteries in Electric Aviation <i>Valliammai Palaniappan, PhD Student, Electrical and Computer Engineering Department, Western Michigan University</i> <i>Massood Atashbar, Professor, electrical and Computer Engineering Department, Western Michigan University</i></p>
3:46pm – 3:49pm	Q&A
3:50pm – 3:56pm	<p>Thermal Equation of State of Transition-Metal-Bearing Davemaoite and Implications for Large Low Shear Velocity Provinces (LLSVPs) <i>Allison Pease (MS, PhD candidate), Michigan State University, Department of Earth and Environmental Science</i> <i>Mario Cueva Calderon (PhD), Michigan State University, Department of Chemical Engineering and Materials Science</i> <i>Stella Chariton (PhD), Center for Advanced Radiation Sources, The University of Chicago</i> <i>Vitali Prakapenka (PhD), Center for Advanced Radiation Sources, The University of Chicago</i> <i>Susannah Dorfman (PhD), Michigan State University, Department of Earth and Environmental Science</i></p>
3:56pm – 3:59pm	Q&A
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4:00pm	Closing Comments & Adjourn (<i>Kirsch Auditorium</i>)