



Michigan Space Grant Consortium's 2024 FALL CONFERENCE

OCTOBER 19, 2024

ANN ARBOR

MSGC 2024 Fall Conference Agenda

BSRB (Biomedical Science Research Building), University of Michigan
109 Zina Pitcher PL. | Ann Arbor, MI 48109
Saturday, October 19, 2024

8:00am – 9:00am	Registration, Breakfast & Poster Set Up (<i>Atrium</i>)
9:00am – 9:05am	Welcome & Introductions (<i>Kahn 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 – 10:00am	Keynote Talk: A Brief History of my Space Propulsion Odyssey (<i>Kahn Auditorium</i>) <i>Alec D. Gallimore, Ph.D. - Provost and Chief Academic Officer, Alfred J. Hooks E'68 Distinguished Professor, Duke University</i>
10:00am – 10:15am	Q&A with Keynote
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10:15am – 11:15am	Poster Presentations Session A (<i>Atrium</i>) <i>Even Numbered Posters</i>
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11:15am – 12:15pm	Oral Presentations Session 1 (<i>Kahn Auditorium</i>) <i>Moderated by Professor Ed Cackett, Wayne State University</i>
11:15am – 11:21am	Exploring Habitability and Life Detection: Insights from Microbial Biofilms in Serpentinizing Mars Analog Environments <i>Sarah Gonzalez-Henao, B.Sc Biology(ICESI University)/MsC Biotechnology (ICESI University),/current PhD Student (Michigan State University), Department of Earth and Environmental Sciences, Department of Microbiology and Molecular Immunology Michigan State University.</i>

Matthew O. Schrenk, B.Sc. Geology & Geophysics (University of Wisconsin)/Ph.D in Oceanography (University of Washington)/Associate Professor at Michigan State University, Department of Earth and Environmental Sciences, Department of Microbiology and Molecular Immunology Michigan State University.

11:21am – 11:24am

Q&A

11:25am – 11:31am

Temporal Analysis of Neutron Star Low Mass X-ray Binary GX 13+1 *Mohamad Ali Kaddouh, studying for Bachelors in Physics and Astronomy at Wayne State University*

11:31am – 11:34am

Q&A

11:35am – 11:41am

Formalizing Motion Plan Legibility Using Empirical Manual Takeover Data in Autonomous Spacecraft Docking *Hannah Larson, M.S. (University of Michigan Department of Mechanical Engineering), Leia Stirling Ph.D. (University of Michigan Department of Industrial & Operations Engineering, Department of Robotics)*

11:41am – 11:44am

Q&A

11:45am – 11:51am

Batch manufacturing of polyelectrolyte biomaterial capsules with tailored internal micro-environments through use of electrospray technologies. *Rafael Ramos, MS MD-PhD Candidate, Wayne State University Department of Biomedical Engineering, Wayne State University / Wayne State University School of Medicine*
Howard Matthew, PhD Professor, Department of Chemical Engineering and Materials Science, Wayne State University

11:51am – 11:54am

Q&A

11:55am – 12:01pm

Strengthening under-resourced Michigan student engagement in science through astrophysics research *Rhianna Taub, Undergraduate physics and astronomy student, Student Research Assistant, WSU physics & astronomy department; Kristen Dage, PhD in astrophysics, Student research Mentor, lecturer at Curtin Institute for Radio Astronomy and co-chair of Rubin Observatory's Stars, Milky Way and Local Volume Collaboration; Edward Cackett, WSU representative, Associate Dean of the College of Liberal Arts & Sciences and Distinguished Service Professor, Dept. of Physics & Astronomy at WSU.*

12:01pm – 12:04pm

Q&A

12:05pm – 12:11pm

Empowering the Next Generation of Space Scientists: Utilizing NASA STEM Initiatives to Establish the Astrobiology STEM Activation Program (ASAP) *Margaret E. Hitt, Undergraduate Engineering Freshmen & Egleston Scholar, Columbia University, Founder of Dow High Space Farmers, NASA Intern; Sophie Cai, Vice President of Dow High Space Farmers, NASA Intern, Herbert Henry Dow High School; Sanvi Patel, Chief*

12:11pm – 12:14pm	Science Officer, Herbert Henry Dow High School; Lisa S. Tsay, NASA GBE and HUNCH Mentor, Saginaw Valley State University Q&A
12:15pm – 1:15pm	Lunch (Atrium)
1:15pm – 2:15pm	Oral Presentations Session 2 (Kahn Auditorium) Moderated by Professor Tao Zheng, Central Michigan University
1:15pm – 1:21pm	Collagen organization of mouse tendons and mechanotransduction gene expression of mouse tendon fibroblasts are dependent on HIF1-alpha and oxygen tension Stephanie S. Steltzer, BS, PhD Candidate, Molecular and Integrative Physiology, Orthopaedic Surgery, University of Michigan, Ann Arbor, MI, USA Seung-Ho (Ben) Bae, BS, MD Student, Michigan Medicine, University of Michigan, Ann Arbor, MI, USA Tessa Phillips, BS, MD Student, College of Medicine, University of Toledo, Toledo, OH, USA, University of Michigan, Ann Arbor, MI, USA Yatrik Shah, PhD, Professor, Molecular and Integrative Physiology, Internal Medicine, University of Michigan, Ann Arbor, MI, USA Adam C. Abraham, PhD, Assistant Professor, Orthopaedic Surgery, University of Michigan, Ann Arbor, MI, USA Megan L. Killian, PhD, Associate Professor, Orthopaedic Surgery, University of Michigan, Ann Arbor, MI, USA
1:21pm – 1:24pm	Q&A
1:25pm – 1:31pm	Settling and Clustering Behavior of Polydisperse Gas-Solid Flows: Applications to Pyroclastic Density Currents Emily Foster, M.S mechanical engineering, School of Engineering and Computer Science Oakland University
1:31pm – 1:34pm	Q&A
1:35pm – 1:41pm	Nuclear Level Densities: How Important Are They in the Quest to Understand the Elemental Abundancies? Sofia Karampagia, PhD, Associate Professor, Physics, GVSU
1:41pm – 1:44pm	Q&A
1:45pm – 1:51pm	Machine learning to advance Compton scatter tomography Jeffery Martin, PhD, Assistant Professor of Mathematics Instruction, Department of Mathematics and Statistics, Hope College Dominic Cugliari, Student, Research Assistant, Department of Mathematics, Hope College Sydney Olander, Student, Research Assistant, Department of Engineering, Hope College

1:51pm – 1:54pm	<i>Karsten Wiegerink, Student, Research Assistant, Department of Engineering, Hope College</i> Q&A
1:55pm – 2:01pm	Net-GPT: A LLM-Empowered Man-in-the-Middle Chatbot for Unmanned Aerial Vehicle <i>Brett Piggott, Computer Science and Engineering, Oakland University</i> <i>Rajdeep Mukherjee, Computer Science and Engineering, University of Michigan</i> <i>Guohuan Feng, Computer Science and Engineering, Oakland University</i> <i>Ibrahim Odat, MS, Computer Science and Engineering, Oakland University</i> <i>Balakrishnan Dharmalingam, MS, Computer Science and Engineering, Oakland University</i> <i>Anyi Liu, Ph.D. Associate Professor, Computer Science and Engineering, Oakland University</i>
2:01pm – 2:04pm	Q&A
2:05pm – 2:11pm	On the parameter tuning challenge of plain and scalable spectral clustering methods <i>Guangliang Chen, Associate Professor, Department of Mathematics and Statistics, Hope College</i> <i>Valen Feldmann, Irene Seo, and Eli Edwards-Parker, Undergraduate students in the Department of Mathematics and Statistics, Hope College</i>
2:11pm – 2:14pm	Q&A
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2:15pm – 3:15pm	Poster Presentations Session B (Atrium) <i>Odd Numbered Posters</i>
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3:15pm – 4:15pm	Oral Presentations Session 3 (Kahn Auditorium) <i>Moderated by Professor James Sheerin, Eastern Michigan University</i>
3:15pm – 3:21pm	Urbanization Effects on Stress and Auditory-Visual Processing in House Sparrows (<i>Passer domesticus</i>) <i>Natalie Leake, Undergraduate Researcher, Biology, Hope College</i> <i>Emma Yonker, Undergraduate Researcher, Biology, Hope College</i> <i>Kelly Ronald, PhD, Primary Investigator, Biology, Hope College</i>
3:21pm – 3:24pm	Q&A
3:25pm – 3:31pm	Isolating Tiny Earth Strains and Testing for Antimicrobial Production <i>Shruti Attili, High school Student at Washtenaw International High School and Summer Research student at EMU (presenter)</i>

Paul A. Price PhD, Biology Department at EMU and Corteva Agrisciences INC., Indianapolis, IN
Emily Tran, EMU
Q&A

3:31pm – 3:34pm

3:35pm – 3:41pm

Evaluating the Success of a Native Tree Planting along a Tributary to Plaster Creek *Marjorie Styf: Undergraduate Bachelor of Science in Environmental Science, Student, Biology, Calvin University*

3:41pm – 3:44pm

Q&A

3:45pm – 3:51pm

Public outreach and interdisciplinary collaboration through art workshops *Orion Wakeman, BfA, Preserve Fellow, Calvin Ecosystem Preserve and Native Gardens, Calvin University*

3:51pm – 3:54pm

Q&A

3:55pm – 4:01pm

Understanding biological adaptations to Ocean World analog conditions by studying the proteomic response of *Maridesulfovibro hydrothermalis* to high pressure *Ella Cardoza, B.Sc. Integrative Biology, minor in Environment and Sustainability Studies, 1st Year Environmental Geosciences Masters Student and Graduate Research Assistant, Earth and Environmental Sciences, Michigan State University.*
Matthew Schrenk, B.Sc. Geology & Geophysics, M.Sc. Oceanography, Ph.D. Oceanography (Certificate in Astrobiology), Assistant Professor & Principal Investigator, Department of Earth and Environmental Science and Department of Microbiology, Genetics, and Immunology, Michigan State University.
Aude Picard, B.Sc. Life and Earth Sciences, M.Sc. Microbial Ecology, Ph.D. Geomicrobiology. Assistant Research Professor and Principal Investigator. Department of Life Sciences, University of Las Vegas Nevada.

4:01pm – 4:04pm

Q&A

4:05pm

Closing Comments & Adjourn (Kahn Auditorium)