Spring 2026 Meeting

Wayne State University (Detroit, MI)

May 1 & 2, 2026

Meeting Schedule

Friday, May 1

All events in Student Center Ballroom C

10:30 am – 12:00 pm	APS EGLS Executive Committee meeting
1:00 pm – 2:00 pm	Registration
2:00 pm – 2:15 pm	Opening remarks
2:15 pm – 3:00 pm	Invited speaker: Dr. Megan McCullen
3:00 pm – 3:45 pm	Invited speaker: Dr. Lía Corrales
3:45 pm – 4:00 pm	Coffee break
4:00 pm – 6:00 pm	Poster session
6:00 pm – 8:00 pm	Banquet dinner & invited speaker: Dr. Emily Strickland

Saturday, May 2

Contributed talks in Student Center Hilberry rooms A through E
See area map for Michigan Science Center location
All other events in Student Center Ballroom C

8:00 am – 8:30 am	Registration & breakfast
8:30 am – 9:15 am	Invited speaker: Dr. Mehr Un Nisa
9:15 am – 10:45 am	Contributed talks
10:45 am – 11:00 am	Coffee break
11:00 am – 11:45 am	MIAAPT invited speaker: Theo Bott
11:45 am – 12:15 pm	Awards & concluding remarks
12:15 pm – 2:00 pm	MIAAPT business meeting & lunch
2:00 pm – later	Michigan Science Center visit

Invited Speakers

(in scheduled order)

Dr. Megan McCullen (Planetarium Director, Wayne State University)

We Need More Space: The importance of planetariums for science education and outreach

Each year the Wayne State University Planetarium engages thousands of members of the public and the university both on and off campus. As university budgets tighten and there are more voices challenging the value of higher education and scientific expertise, planetariums and science centers are ever more important, but also at greater risk. This presentation will discuss the kinds of programming and collaboration we have done through the WSU Planetarium to support science education in Detroit. It will also consider the impact that recent planetarium closures elsewhere in the country will have on their local communities. I will then suggest ways you can support and collaborate with planetariums in your own towns, and advocate for science centers as a professional and as a private citizen.

Megan McCullen, PhD has been Director of the Planetarium at Wayne State since 2017, where she is also Associate Director of the Anthropology Museum. With an early interest in physics and astronomy, she eventually pivoted and got her degrees in Anthropology. She has worked to engage the public with museums since she was an undergraduate student working in the Discovery Room of a Natural History Museum. Megan enjoys collaborating with community partners to develop programs that engage the wider Detroit community with science and with the university, both on and off campus.

Dr. Mehr Un Nisa (Assistant Professor, Michigan State University)

Cosmic Neutrinos: Ghostly Messengers from the Extreme Universe

Neutrinos are weakly interacting fundamental particles capable of traveling astronomical distances unhindered. This makes them excellent messengers for studying extremely energetic environments in distant galaxies. The IceCube Neutrino Observatory is a cubic kilometer experiment located in the Antarctic ice at the geographic South Pole. IceCube has been observing a bright, diffuse flux of neutrinos at trillions of electron-volt energies for over a decade, but the origin of the majority of this flux remains unknown. This talk will describe highlights from the IceCube observatory and discuss the role neutrinos play in our quest for long-standing problems in physics, such as the origin of cosmic rays, and the nature of dark matter.

Mehr Un Nisa is an assistant professor at the Michigan State University. Her research focuses on designing, building and analyzing data from large-scale experiments to study astrophysical neutrinos and gamma rays. She completed her PhD from the University of Rochester in 2018. She joined the particle astrophysics group at the Michigan State University (MSU) as a postdoc in 2019. In 2023, she joined the faculty at MSU as an assistant professor.

Dr. Emily Strickland (Assistant Professor of Teaching, Wayne State University)

Support Through Structure

As a student, researcher, and instructor with multiple invisible disabilities, I learned far more than physics and astronomy throughout my career. I have been forced to learn how to accommodate my own needs, and the downfalls of trying to go without. In academia, accessibility typically depends on students with non-traditional needs to put in great effort to gain access to accommodations, and/or relies on their instructors to put in great effort to be "accommodating," often with few guidelines if any. Furthermore, with healthcare less accessible than ever, instructors cannot simply rely on official accommodations to support students with non-traditional needs. Implementing structural support in your courses can improve accessibility and equity for students, in a way that is approachable and efficient for instructors. In this talk, I will share a few insightful experiences from my career as a student and faculty member with invisible disabilities, and how I have implemented structures into my courses to accommodate both myself and my students. I will discuss what has worked, what has not, and offer tangible advice for implementing effective structural support into your own courses.

Dr. Emily Strickland is an Assistant Professor of Teaching in the department of Physics and Astronomy at Wayne State University. Dr. Strickland earned her Bachelor degrees in Physics and Astronomy in 2019 from the University of Texas at Austin, her Masters in Physics in 2023 from the University of Utah, and her Ph.D. in Physics in 2025 also from the University of Utah. Her research interests are rooted in exploring the relationship between galaxies and the dark matter halos they form in, as well as understanding effective methods of teaching physics and astronomy courses.

Dr. Lía Corrales (Assistant Professor of Astronomy, University of Michigan)

X-ray Astromineralogy

To understand how the elements cycle from stars to planets, we must understand the chemical composition, sizes and shapes of interstellar dust, which affects the physics of galaxies, star and planet formation. X-ray observations provide the most direct means for astromineralogy through X-ray absorption fine structure imprinted by dust onto the spectra of bright Galactic X-ray sources. I'll review the latest results in astromineralogy and our work on connecting interstellar dust with suspected extra-solar grains collected in our own Solar System. Finally, I'll show how the recently launched XRISM space mission is contributing to questions in astromineralogy.

Lía Corrales is an Assistant Professor of Astronomy at the University of Michigan. She applies advanced observational techniques to study everything from stardust in the interstellar medium to aerosols in exoplanet atmospheres. As a leader in the X-ray Imaging Spectroscopy Mission (XRISM) science team, she has revealed insights into the chemical evolution of the Universe through the mineralogy of interstellar dust. Her diverse research portfolio includes high-resolution X-ray spectra of Sgr A* (our Galaxy's central supermassive black hole), transforming laboratory data into physical models of exoplanet aerosols, and characterizing the high-energy environment of exoplanets.

Theo Bott (Graduate Student, Michigan State University)

Creating anti-ableist counterspaces in the physics classroom: getting started with inclusive curricular design

Academia has a history of ableism, effects of which are evident in retention and graduation rates for disabled students as well as their lived disability experiences in physics courses. Relatively recent in history, there has been a push for access in higher education spaces from the Americans with Disabilities Act in 1990 to the Digital Accessibility Ruling in 2024. Since then, many resources have been developed, aimed at supporting inclusive design efforts for a variety of different classroom curricula and contexts, ranging from course policies, assessments, and in-class interactions to accessible digital and non-digital curricular materials. However, combined with the plethora of different disability types and impacts, the task of "making my classroom and curriculum accessible" can feel daunting and overwhelming, especially for the many instructors that are new to accessible design strategies. In this presentation, I will share from student focus group interviews how disabled physics students are often disadvantaged by traditional classroom spaces, and strategies used by the Courses to Careers research team to create an inclusive, student-

focused meeting space. I will then discuss some starting points for how to reflect on, utilize, and implement inclusive design strategies for a typical physics classroom in a way that offers concrete, actionable solutions for any physics instructor thinking about inclusiveness in their classroom.

Theo Bott is a 5th-year PhD student at Michigan State University's Physics Education Research Lab. His research focuses on developing strategies for inclusive curriculum design and formulating anti-ableist counterspaces in academic settings. He has spent several years teaching introductory physics at Michigan State University with Project-Based Learning in the P-Cubed Sequence. Theo is currently supported by the Courses to Careers collaboration between Michigan State and the University of Connecticut, which is focused on developing and hosting professional development workshops to support physics instructors with inclusive design strategies and disabled physics students with career advancement (NSF Grants #2336367 & #2336368). He received his undergraduate degree from Michigan State University, and expects to defend in summer 2027.

Contributed Talks

Talks are 12 minutes followed by 3 minutes for Q&A.

Hilberry Room A: Condensed Matter Physics

9:15 am – 9:30 am

Julie Barringer (Rensselaer Polytechnic Institute)
Rapid annealing of strain-mediated elastic domains in MoS_2 revealed using coherent x-rays

9:30 am – 9:45 am

Mitra Subedi (South Dakota State University)
Bulk synthesis and magnetic characterization of TiFe6Ge6.1

9:45 am – 10:00 am

Soumya Bhat (Kettering University)
Enhancing thermoelectric performance of TiXPt (X = Ge, Sn) via nanostructuring

10:00 am – 10:15 am

Jonathon Dvorscak
Effects of High Frequency Irradiation and Commensurability on Finite Graphene Ribbons

10:15 am – 10:30 am

Kazi Tahsin Mahmood (Ohio University)
State-Space Geometry and Geometric Phase in Static and Modulated Elastic Lattices

10:30 am – 10:45 am

A. Nafis Arafat (The Graduate Center, City University of New York)
Theory of two-component superfluidity of microcavity polaritons

Hilberry Room B: General Physics

9:15 am – 9:30 am

Abrar Nur E Faiaz (Wayne State University)
Toward Classical Quibit Analogues: Phi-Bit Control in Coupled Acoustic Waveguides

9:30 am – 9:45 am

Ryan Opperman (Central Michigan University)
Use of Image Charge Detection in a Penning trap for a Neutron Lifetime Beam Measurement

9:45 am – 10:00 am

Alexandra Gospodinov (Miami University)

From Quantum Fluctuations to Self-Quenching: The Role of Photon Number in Single-Atom Lasers

10:00 am – 10:15 am

Mahmud Un Nobe (Wayne State University)
A 10-Billion-Year View of Supermassive Black Hole Growth and Accretion

10:15 am – 10:30 am

Gh. Saleh (Saleh Research Centre)
Generating Electrons, Protons, and Primary Elements via Magnetic and Gravitational Wave Interactions

Hilberry Room C: Medical Physics

9:15 am – 9:30 am

Chris Bastajian (Oakland University)
Development of a Human Platform with a Single-Sided Magnetic Particle Imaging Scanner

9:30 am – 9:45 am

Tanjim Siddiqua (Center for Biomedical Research, Oakland University)
In-vivo imaging of tumor mouse model with a single-sided magnetic particle imaging scanner

9:45 am – 10:00 am

Vishal Nandigana (Indian Institute of Technology Madras)
Therapeutic steam: Basics of noodle based soup with groundnut peel having clothing net filter to reduce mucus on the nose

Hilberry Room D: Nuclear & Particle Physics

9:15 am – 9:30 am

Nityaansh Parekh (Michigan State University)
Improved separation of the Higgs boson signal from background in the high transverse momentum in the diphoton channel

9:30 am – 9:45 am

Galen Raymond (Central Michigan University)
Measurement of Nuclear Energy Levels for Evaluation of Ultra-Low Q Value β-Decays

9:45 am – 10:00 am
Rick (P.W.) Mengyan (Northern Michigan University)
Latest model of the muonium (isolated H) state in BeO

10:00 am – 10:15 am
Uwe Trittmann (Otterbein University)
More on the N_c-insensitivity of two-dimensional adjoint QCD

10:15 am – 10:30 am
Ritoban Datta (Wayne State University)
Consistent Jet Quenching from QGP to Hadronic Matter

10:30 – 10:45 am
Syed Afrid Jahan (Wayne State University)
Bayesian model mixing for longitudinal dynamics of relativistic heavy-ion collisions

Hilberry Room E: Physics Education Research (MIAAPT)

9:15 am – 9:30 am
Aiswarya Amalucottage (Ohio State University)
Mapping Introductory Physics Courses Across U.S. Universities: Identifying Patterns to Support Diverse Learners

9:30 am – 9:45 am
Marshall Thomsen (Eastern Michigan University)
Measuring the Impact of Ethics Education in a Physics Course

9:45 am – 10:00 am
Kazi Aatish Imroz (The Ohio State University)
Developing a Student Grouping Framework for Assessing Quantitative Literacy Development

10:00 am – 10:15 am
Wathiq Abdul-Razzaq (West Virginia University)
Fostering relatively deep critical thinking in physics in introductory labs for life sciences students

10:15 am – 10:30 am
Mary Champagne (Saginaw Valley State University)
Low-Cost Pulsed Diode Lasers for Undergraduate Labs

Posters

(alphabetical by presenter name)

Modeling Hemodynamic Tolerability of Short-Radius Artificial Gravity
Aslan Matish (Drake University)

Investigating Control with Electromagnetic Fields Toward Non-Conventional Crude Oil Extraction
Brooke Addams (Wayne State University)

Gedanken Experiments of Entanglement in Particle Physics: Interactions, Operators and Bell Inequalities in Flavor Space
Corbin Pacheco (Wayne State University)

Analysis of the Persistent Photoconductivity of Zinc Tin Nitride
Daniel Austen (John Carroll University)

Reactive Boundaries and Cover Times for Diffusing Particles under Confinement
Daniel Johnson (Indiana University Indianapolis)

Measurement of Nuclear Energy Levels for Evaluation of Ultra-Low Q Value β-Decays
Galen Raymond (Central Michigan University)

The Existence of Electron Stars, Electron Planets, or Electron Dwarfs in the Universe
Gh. Saleh (Saleh Research Centre)

Improving the accessibility and rigor of powerful coherent x-ray imaging via explicit analysis frameworks
Julie Barringer (Rensselaer Polytechnic Institute)

Designing Tasks for Interdisciplinary Physics Reasoning
Khulud Gretlein (University of Detroit Mercy)

A 10-Billion-Year View of Supermassive Black Hole Growth and Accretion
Mahmud Un Nobe (Wayne State University)

What is a pattern in statistical mechanics? Formalizing structure and patterns in one-dimensional spin lattice models with computational mechanics
Omar Aguilar (University of California, Santa Cruz)

Physics Instructor Perspectives of History in the Lab
Patrick Clouse (Western Michigan University)

Comparative Study of Sulphur Derivatives to Reduce Oxidative Stress and Oral Inflammation Through Stereochemical Analysis and DFT Calculations
Richard Kyung (CRG-NJ)

Computational Design of Engineered Nanoparticles for ROS-Mediated Photoregenerative Nanotherapy in Chronic Inflammation
Richard Kyung (CRG-NJ)

Pharmacogenomics Using Quantum Chemical Analysis: Predicting CYP2D6-Mediated Analgesic Metabolism in Oral Cancer Patients
Sunhee Lee (Old Tappan Family Dentistry)

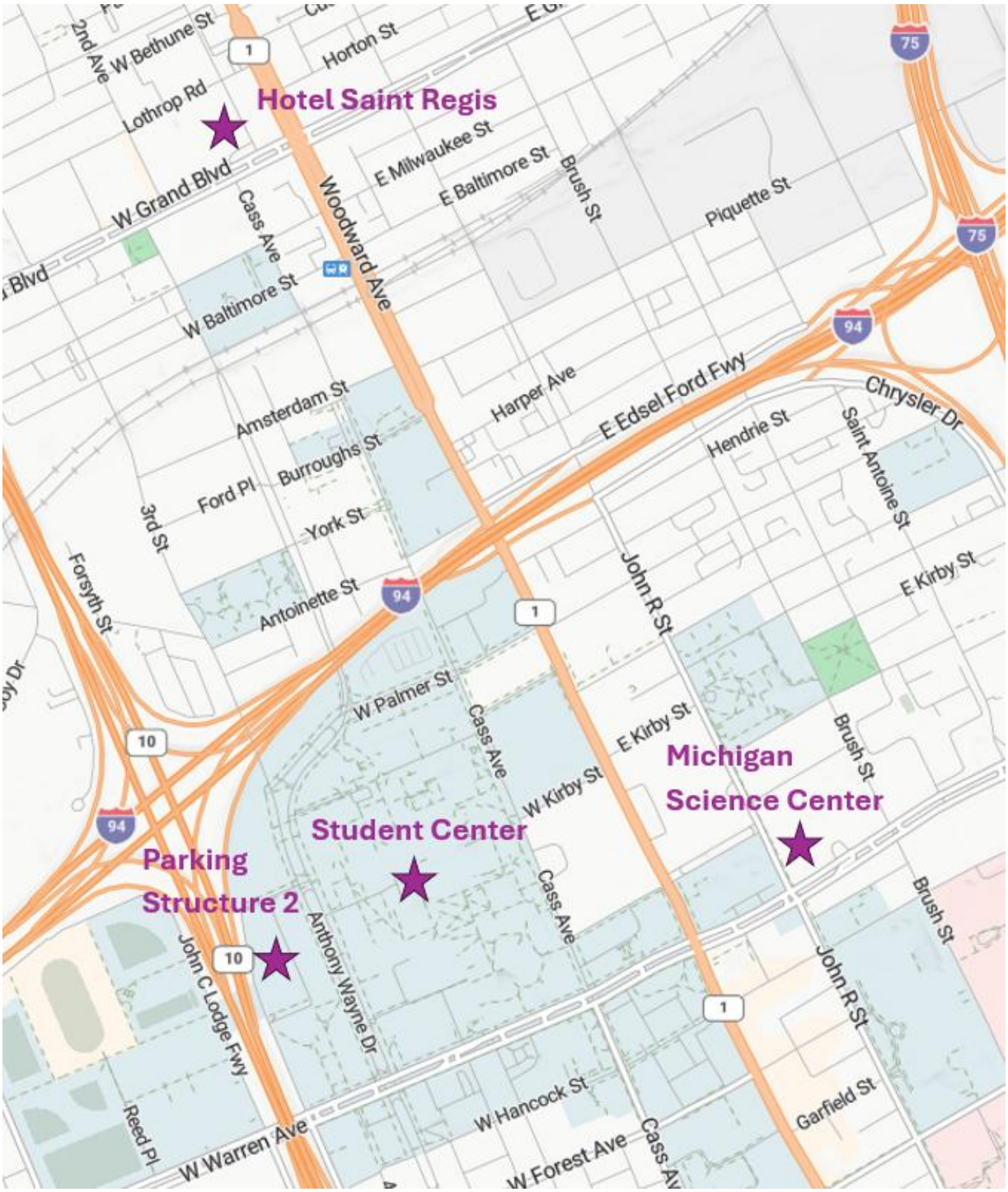
Assessing the Structural Stability of Spider Webs Following Leg Autotomy via Machine Learning and Finite Element Analysis
Todd Beechler (IUPUI)

Experiments on Agitators in Dusty Plasma Multi-rings
William Theisen (Ohio Northern University)

Locations & Parking

Campus map

Area map


Hotel Saint Regis
Student Center
Parking Structure 2
Michigan Science Center
W Bethune St
Horton St
Lothrop Rd
W Grand Blvd
Cass Ave
Woodward Ave
E Milwaukee St
E Baltimore St
Brush St
Piquette St
W Baltimore St
Amsterdam St
Ford Pl
Burroughs St
York St
3rd St
Harper Ave
E Edsel Ford Fwy
Hendrie St
Saint Antoine St
Chrysler Dr
Forsyth St
Antoinette St
John R St
E Kirby St
W Palmer St
W Kirby St
Anthony Wayne Dr
John C Lodge Fwy
Reed Pl
W Warren Ave
W Hancock St
W Forest Ave
Garfield St
75
94
1
10

Addresses

Student Center

5221 Gullen Mall
Detroit, MI 48202

Ballroom C and Hilberry Rooms A through F are on the 2nd level.

Parking Structure 2

5150 John C Lodge Service Drive
Detroit, MI 48202

Hotel Saint Regis

3071 W Grand Blvd
Detroit, MI 48202

Michigan Science Center

5020 John R St
Detroit, MI 48202

Parking

Parking in structure 2 is free for meeting attendees. Enter through gate 3 from the Lodge Service Drive. Use the intercom if you need assistance and inform the parking attendant that you are on campus for the EGLS & MIAAPT meeting.

Hotel Accommodations

A limited number of rooms for Friday and Saturday nights at the Hotel Saint Regis are available at a discounted rate. Reserve online at www.hotelstregisdetroit.com.

- Click on BOOK at the top of the page.
- Scroll down to the bottom of the page and click on the box for “Add Code”.
- Select the “Group Attendee” option and type in the code EGLS26, then click “ADD”.
- Select check in and check out dates and proceed with the reservation process.

Or call the hotel directly at 313-873-3000.

Saturday Lunch Recommendations

Meeting attendees are on their own for lunch on Saturday. The following options are within a 10-minute walk of the Student Center.

Shield’s Restaurant Bar Pizzeria

Charminar Biryani House

Ima Noodles

Byblos Café & Grill

My Big Fat Shawarma

Olympic Grill