Michigan Institute for Plasma Science and Engineering (MIPSE)

17th ANNUAL GRADUATE STUDENT SYMPOSIUM

December 2, 2026
University of Michigan North Campus, Ann Arbor, MI 48109

Schedule

I. Special MIPSE Seminar

Johnson Rooms, 3213 Lurie Engineering Center, 1221 Beal Avenue

1:00 – 1:30 pm	**Registration, light lunch**
1:30 – 1:35 pm	**Prof. Mark J. Kushner**, University of Michigan Director, MIPSE ***Opening remarks***
1:35 – 2:45 pm	**Dr. Dave Ampleford,** Sandia National Laboratories ***The ZX Initiative - Expanding the Physics Capabilities of the Z Pulsed Power Facility***

II. Poster Presentations

Atrium
EECS Building, 1301 Beal Avenue

2:45 – 3:15 pm	Poster setup
3:15 – 4:00 pm	**Poster Session I**
4:00 – 4:45 pm	**Poster Session II**
4:45 – 5:30 pm	**Poster Session III**
5:30 – 5:45 pm	Poster removal
5:45 – 6:00 pm	***Best Presentation Award* ceremony**

Participating institutions: University of Michigan, Michigan State University.

Poster Session I

1-01	**Lucas Babati**	U-M	***Conductivity from the Spitzer Limit through Warm Dense Matter***
1-02	**Declan Brick**	U-M	***Regression Analysis of a Self-Consistent Anomalous Transport Closure in a Multi-Fluid Hall Thruster Model***
1-03	**Gonçalo Cardoso**	U-M	***Characterizing Directionality, Energy and Spatial Uniformity of Neutral Beams for Material Processing***
1-04	**Jesus Diaz Alcala**	U-M	***A Comparison of Hydrodynamic Enhancement and Surfactant Addition for PFAS Treatment***
1-05	**Ian Freeman**	MSU	***Modeling Radiatively Cooled Pulsed Power Reconnection Experiments Using the Open Source AthenaPK***
1-06	**Myles Gong**	U-M	***Impact of Discharge Current on the Response of Hall Effect Thrusters to Background Neutral Pressure***
1-07	**Jiashu Han**	U-M	***A Semi-Lagrangian Particle Method for the 1D1V Two-Species Vlasov–Poisson System and 2D Incompressible MHD in Vorticity–Current Form***
1-08	**Ishan Kanade**	U-M	***Geometry-Aware AMR for 2D FLASH Simulations of Capsule Implosions***
1-09	**Kyle Kemmerer**	U-M	***Molecular Dynamics Simulations of Magnetic-Field-Dependent Parallel Electrical Conductivity in Strongly Magnetized Plasmas***
1-10	**Adam Rouzky**	U-M	***Magnetic Flux Compression and Instability Growth in Argon Gas Puff Z Pinches onto a Solid Rod***
1-11	**Alex Timoney**	U-M	***Shock Density Analysis for Magnetized Collisionless Shocks on the Z Machine***
1-12	**Bingqing Wang**	U-M	***Kinetic Investigation of the Effects of Emission Mechanisms on Inverse Sheath Formation***
1-13	**Yeon Geun Yook**	U-M	***Circuit-Induced Transients and Ion Energy Control in Pulsed-Bias Capacitively Coupled Plasmas***
1-14	**Grace Zoppi**	U-M	***Experimental Characterization of a Co-Axial Electrodeless Magnetoplasmadynamic Thruster***
1-15	**Jisu Jeon**	U-M	***PFOA Degradation in Water: Long-Time-Scale Modeling Investigation***
1-16	**Katie Ballard**	U-M	***An Investigation of Extreme Low-Density and Low-Speed Solar Wind***
1-17	**Shane Keiser**	U-M	***Micropinch Characterization on Hybrid X-pinches using the PERSEUS xMHD Code***
1-18	**Corey Gui**	U-M	***On the Evolution of the Magneto-Rayleigh Taylor Instability in Cylindrical Geometry***

Poster Session II

2-01	**Victoria Collemi**	U-M	***Effect of Orbital Angular Momentum on Wake Instabilities in a Laser Wakefield Accelerated Beam***
2-02	**Carter Krumins**	U-M	***Investigation of Oxygen Resilience of Thermionic Emitters for Electric Propulsion***
2-03	**Chenyao Huang**	U-M	***Dynamics of Charge Conduction in Water Layers Formed During Cryogenic Etching of HAR SiO_2 Features***
2-04	**Alexander Loomis**	MSU	***Chemical Vapor Deposition of Delta-Doped Diamond with a NIRIM Type Reactor***
2-05	**Md Arifuzzaman Faisal**	U-M	***Current Crowding and Contact Resistance in Anisotropic 2D Devices***
2-06	**Adam Brusstar**	U-M	***Simulation and Experimental Demonstration of an Overmoded X-band Magnetically Insulated Line Oscillator***
2-07	**Sarah Feldman**	U-M	***HEROICS: A SWaP-Efficient Triple Coincidence Time of Flight Plasma Spectrometer***
2-08	**Josh Fung**	U-M	***Modeling the Longitudinal Dependence of Radiation Belt Electron Dynamics at Earth and Jupiter***
2-09	**Julian Kinney**	U-M	***Nuclear Fusion Enhancement in Dense Plasmas***
2-10	**Wanglim Song**	U-M	***Two-dimensional Quantum-Mechanical Analysis of Ion-Enhanced Thermionic and Thermo-Field Emission and the Peak-Current Phenomenon***
2-11	**James Welch**	U-M	***Simulations and Experiments Measuring Temperature Relaxation Rates in a Strongly Magnetized Antiproton-Electron Plasma***
2-12	**Ari Eckhaus**	U-M	***Effects of Back Wall Material in an ECR Magnetic Nozzle Thruster***
2-13	**Marissa Knofczynski**	U-M	***Diagnostic Development of X-pinch Backlighters on the MAIZE Pulsed Power Facility***
2-14	**Kwyntero Kelso**	U-M	***X-ray Absorption Spectroscopy Experiments of Radiatively Ionized Argon Gas***
2-15	**Emily Hong**	U-M	***Effects of Elevated Concentrations of Ammonia and Hydrogen Sulfide on Non-Thermal Plasma Inactivation of Airborne Viruses***
2-16	**Braden Oh**	U-M	***Electrostatic-Magnetic Retardation of a Low-Temperature Ion Beam for Backsputter Mitigation***
2-17	**Codie Fiedler Kawaguchi**	U-M	***Identifying Informative Designs for Constraining Rheological Properties under Shocked Conditions***
2-18	**Nicholas Donatelli**	U-M	***Phase-Resolved Optical Emission Spectroscopy of Kr/Water Mixtures in a Pulsed 13.6 MHz RF ICP***

Poster Session III

3-01	**John Riley O'Toole**	U-M	***Comparison of Laser Thomson Scattering and Langmuir Probe Near-Field Electron Measurements on a 9 kW Hall Effect Thruster***
3-02	**Yves Heri**	U-M	***Relativistic Electron Beam Transport and Pulse Broadening in a Diode–Drift System***
3-03	**Jarett LeVan**	U-M	***Extending Plasma Kinetic Theory: Memory, Magnetic Fields, and Strong Coupling***
3-04	**William Maxon**	U-M	***Novel Quasi-Analytic Solutions of Radiation Diffusion in Heterogeneous Media***
3-05	**Alejandro Padilla Gomez**	MSU	***Quantum-Correct Bhatnagar-Gross-Krook Operator for Coupling Collisions to the Wigner-Poisson Model***
3-06	**Nolan Tribu**	U-M	***Determining Energy Flux Across the Dayside Magnetopause Induced by Boundary Motion***
3-07	**Nathaniel Bowers**	U-M	***Development and Characterization of an Al Vapor Target for Ionization Front Experiments***
3-08	**Michelle Bui**	U-M	***DMSP SSUSI & SSJ Auroral Oval Model Validation***
3-09	**Briggs Damman**	U-M	***Calculating the Thermal Conductivity of a Two-Component Plasma Using Non-equilibrium Molecular Dynamics Simulations***
3-10	**Filomela V. Gerou**	U-M	***Platform for X-Pinch Radiography Capability of Shock Propagation Through a Foam***
3-11	**Yifan Gui**	U-M	***Tailored Voltage Waveforms in Inductively Coupled Plasmas for Cryogenic Etching using Ar/HF Gas Mixtures***
3-12	**Lan Jin**	U-M	***Effect of Temporal Optical Pulse Asymmetry on Ultrafast Photoemission***
3-13	**Miron Liu**	U-M	***Spatial Anti-aliasing Optical Plasma Wave Diagnostics for Low Temperature Plasma Sources***
3-14	**Jeremy Rebenstock**	U-M	***High-energy Narrow-divergence Electron Beam Generation from High Intensity Solid Target Interactions using the ZEUS Laser System***
3-15	**Tianqi Sun**	U-M	***Intrinsic Mean Transverse Energy in Electron Emission Across Multiple Emission Regimes***
3-16	**Tetiana Tymoshevska**	U-M	***Conceptual Design of an Electrospray-Enabled Liquid Droplet Radiator***
3-17	**Xinyan Xiang**	U-M	***Coherent Spectroscopy of Rydberg Levels in Discharge Plasma for Electric Field Sensing***
3-18	**Moises Enriquez**	U-M	***Kinetic-informed Fluid Model for Cross-field Sheaths in Multi-ion Species Plasmas***