

# MIPSE Faculty and Staff

University of Michigan



**ARVIND ATREYA**  
Professor  
Mechanical Engineering  
*Combustion, fire, heat and mass transfer, fire suppression, soot and NOx formation*



**NATALIA BABAEVA**  
Assistant Research Scientist  
Electrical Engineering and Computer Science  
*Low temperature plasmas, microplasmas*



**FREDERICK BECCHETTI JR.**  
Professor  
Physics Department  
*Accelerators and beams*



**IAIN BOYD**  
James E. Knott Professor  
Aerospace Engineering  
*Electric plasma propulsion, hypersonic plasmas and material interactions*



**DAVID CHALENSKI**  
Assistant Research Scientist  
Nuclear Engineering and Radiological Sciences  
*Plasma physics, Z-pinch physics, applications of pulsed power, high power magnetrons*



**R. PAUL DRAKE**  
Henry S. Carhart Collegiate Professor of Space Sciences  
Atmospheric, Oceanic and Space Science  
*High energy density plasmas*



**JOHN FOSTER**  
Associate Professor  
Nuclear Engineering and Radiological Sciences  
*Environmental hazard mitigation, energy conversion*



**ALEC GALLIMORE**  
Arthur F. Thurnau Professor  
Aerospace Engineering  
*Electric propulsion, space propulsion, plasma physics*



**YOGESH GIANCHANDANI**  
Professor  
Electrical Engineering and Computer Science/  
Mechanical Engineering  
Director, Wireless Integrated MicroSensing & Systems (WIMS<sup>2</sup>)  
*Microplasmas and MEMs applications*



**BRIAN GILCHRIST**  
Professor  
Electrical Engineering and Computer Science/  
Atmospheric, Oceanic and Space Science  
*Space plasmas, plasma diagnostics*



**RON GILGENBACH**  
Chair and Chihiro Kikuchi Collegiate Professor  
Nuclear Engineering and Radiological Sciences  
*Accelerators and beams, high power microwaves, magnetic liner fusion*



**TAMÁS GOMBOSI**  
Rollin M. Gerstacker Professor of Engineering  
Atmospheric, Oceanic and Space Science  
*Space plasmas*



**DENNIS GRIMARD**  
Managing Director, Lurie Nanofabrication Facility  
Solid-State Electronics Laboratory  
*Plasma materials processing*



**JOHN HART**  
Assistant Professor  
Mechanical Engineering  
*Synthesis, properties, and applications of nanostructures and nanomaterials*



**JAMES HOLLOWAY**  
Arthur F. Thurnau Professor  
Nuclear Engineering and Radiological Sciences  
*Computational plasma physics and uncertainty quantification*



**ERIC JOHNSEN**  
Assistant Professor  
Mechanical Engineering  
*Computational fluid dynamics*



**ROBERT KRASNY**  
Arthur F. Thurnau Professor  
Mathematics  
*Algorithms for plasma simulation*



**KARL KRUSHELNICK**  
Professor  
Director of the Center for Ultrafast Optical Science  
Nuclear Engineering and Radiological Sciences  
*Ultra-high intensity laser plasma interactions*



**CAROLYN C. KURANZ**  
Assistant Research Scientist  
Center for Radiative Shock Hydrodynamics  
*High energy density plasma*



**MARK J. KUSHNER**  
George I. Haddad Professor of Engineering  
Electrical Engineering and Computer Science  
Director, Michigan Institute for Plasma Science and Engineering (MIPSE)  
*Low temperature plasmas*



**YUE YING LAU**  
Professor  
Nuclear Engineering and Radiological Sciences  
*Beams and plasmas, high power microwaves*



**MICHAEL LIEMOHN**  
Associate Professor  
Atmospheric, Oceanic and Space Science  
*Magnetospheric and interplanetary plasmas*



**JYOTI MAZUMDER**  
Professor  
Materials Science and Engineering  
*Laser-plasma material processing*



**ERIC MICHIELSSEN**  
Electrical Engineering and Computer Science  
*Computational electromagnetics*



**MARK MOLDWIN**  
Professor  
Atmospheric, Oceanic and Space Science  
*Space plasma physics*



**JOHN NEES**  
Associate Research Scientist  
Electrical Engineering and Computer Science  
*Laser-plasma interaction at relativistic intensities*



**JIM M. RAINES**  
Lead Mission Operations Engineer  
Atmospheric, Oceanic and Space Science  
*Space plasma physics*



**NILTON RENNO**  
Professor  
Atmospheric, Oceanic and Space Science  
*Atmospheric plasmas*



**MATEUSZ RUSZKOWSKI**  
Assistant Professor  
Astronomy  
*Astrophysical magnetohydrodynamics, numerical simulations, galaxy clusters, accretion phenomena*



**MAX SHTEIN**  
Associate Professor  
Materials Science and Engineering  
*Plasma materials processing*



**VOLKER SICK**  
Professor  
Mechanical Engineering  
*Combustion*



**JAMES SLAVIN**  
Professor and Chair  
Atmospheric, Oceanic and Space Sciences  
*Solar system plasma physics*



**SHUICHI TAKAYAMA**  
Professor  
Biomedical Engineering  
*Biotechnology and biocompatibility*



**FRED TERRY**  
Professor  
Electrical Engineering and Computer Science  
*Electronic materials – properties and processing*



**ALEXANDER THOMAS**  
Assistant Professor  
Nuclear Engineering and Radiological Sciences  
Applied Physics  
*High power laser-plasma interactions*



**KENSALL WISE**  
William Gould Dow Distinguished University Professor  
Electrical Engineering and Computer Science  
*Micro electro-mechanical systems (MEMS)*



**MARGARET S. WOOLDRIDGE**  
Professor  
Mechanical Engineering and Aerospace Engineering  
*Combustion and plasma systems*



**ZHONGMIN (ANDY) XIONG**  
Assistant Research Scientist  
Electrical Engineering and Computer Science  
*Low temperature plasma, computational physics*



**VICTOR YANOVSKY**  
Research Scientist  
Electrical Engineering and Computer Science  
*High field plasma physics*



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**JES ASMUSSEN**  
Richard M. Hong Professor and  
University Distinguished Professor  
Electrical and Computer Engineering  
Director, Fraunhofer Center for Coatings  
and Laser Applications  
*Low temperature plasmas*



**SHANKER BALASUBRAMANIAM**  
Professor  
Electrical and Computer Engineering  
*Computational electromagnetics*



**MARTIN BERZ**  
Professor  
Physics and Astronomy  
*Computational beam physics and nonlinear dynamics*



**YINGDA CHENG**  
Assistant Professor  
Mathematics  
*Numerical methods and kinetic transport*



**ANDREW J. CHRISTLIEB**  
Associate Professor  
Mathematics  
*Algorithms, high performance computing*



**TIMOTHY GROTHJOHN**  
Professor and Chair  
Electrical and Computer Engineering  
*Low temperature plasmas*



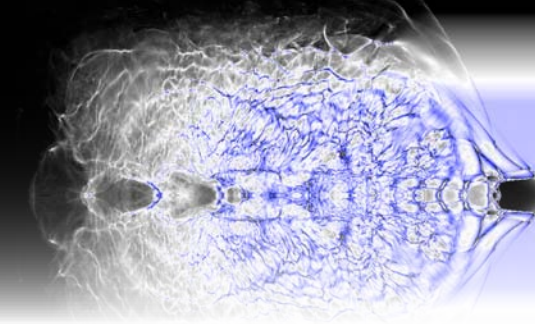
**TONGHUN LEE**  
Associate Professor  
Mechanical Engineering  
*Plasma assisted combustion*



**EDWARD J. ROTHWELL**  
Professor  
Electrical and Computer Engineering  
*Electromagnetics*



**JOHN P. VERBONCOEUR**  
Professor  
Electrical and Computer Engineering  
*Plasma modeling*



MSU graduate students to present the results of their research projects and network with fellow students and faculty. The symposium features a special speaker and posters by students from across the campus. There are awards for best poster presentations.

### Industrial Affiliates

Companies with technology interests in plasma science and engineering are invited to join the MIPSE-Industrial Affiliates Program. The members of the IAP will enjoy benefits including access to and opportunities to collaborate with U-M and MSU faculty and graduate students performing research in their business areas, summaries of current research, invitations to attend MIPSE functions for student recruitment, and the opportunity to influence the directions of plasma research at U-M and MSU. MIPSE faculty and staff are available as consultants to industry, law firms, government agencies, and foundations.

### Public Outreach

Plasma Science and Engineering is an interdisciplinary field that encompasses an impressive diversity of topics that are important to the general public. The MIPSE mission therefore has an important outreach component. One part of that mission is outreach within the discipline wherein scientists in the various fields of plasma science learn from each other. Another part of the mission is outreach to the general public, high school students, and even Federal agencies, to help inform them about the importance of plasmas in our society. Organizations interested in having MIPSE faculty speak at their functions should contact the director.

### Visitors

MIPSE welcomes visitors to U-M and MSU for extended stays for collaborations.

### MIPSE Director

**Mark J. Kushner**  
George I. Haddad Professor of Engineering  
University of Michigan



### Seminar Series

MIPSE sponsors a seminar series inviting leading international researchers in the field of plasma science and engineering to our campuses. Notice of the seminars can be found on the MIPSE website. <http://mipse.umich.edu/about/seminars.htm>

### Graduate Certificate in Plasma Science and Engineering

MIPSE's mission includes the education and mentoring of the next generation of leadership in the investigation and application of plasmas. MIPSE's faculty members enthusiastically engage undergraduate and graduate students and post-doctoral fellows in their research programs. In this regard, MIPSE is administering a graduate certificate in Plasma Science and Engineering (PSE) on the U-M campus. The graduate certificate provides an opportunity for students conducting research in the fundamentals or applications of PSE to both broaden and deepen that experience. The components of the graduate program include:

- Coursework in the fundamentals and applications of PSE
- Co-advising to broaden the student's research
- Participation in an annual research symposium
- Research on a topic related to PSE

Information on the Graduate Certificate is available at <http://mipse.umich.edu/students/certificate.htm>. We hope to extend the graduate certificate to students at MSU in the near future.

### Graduate Fellowships

MIPSE provides a number of competitive fellowships to students participating in the Graduate Certificate in Plasma Science and Engineering (PSE). The fellowships may be awarded to incoming or current students.

### Graduate Research Symposium

MIPSE sponsors an annual Graduate Student Research Symposium which provides an opportunity for U-M and



The Michigan Institute for Plasma Science and Engineering (MIPSE) is building upon this interdisciplinary strength to help facilitate our faculty, students, and staff to continue to make internationally leading contributions to plasma science and engineering. MIPSE's goals are:

- Be a focal point for intra- and inter-university wide activities in plasmas
- Provide opportunities for faculty to collaborate across disciplinary boundaries
- Seed research activities
- Provide educational opportunities through a graduate certificate program
- Host international visitors to collaborate with U-M and MSU researchers
- Connect industry and national laboratories to U-M and MSU plasma activities

Membership in MIPSE is open to all interested faculty, staff, and students, and to external collaborators.

*Banner images courtesy of P. Drake, A. Gallimore, R. Gilgenbach, S. Takayama, and A. Thomas*

Sponsored by the  
University of Michigan College of Engineering

### Contact Information

The Michigan Institute for  
Plasma Science and Engineering  
2236 EECS Bldg., 1301 Beal Ave  
Ann Arbor, Michigan 48109-2122 USA  
Telephone: 734-647-0197  
Email: [mipse-central@umich.edu](mailto:mipse-central@umich.edu)

<http://mipse.umich.edu/>

## About the Michigan Institute for Plasma Science and Engineering (MIPSE)

Plasmas – the 4th state of matter – are gases composed of neutral atoms and molecules, charged ions and electrons. Plasmas compose the vast majority of the matter in the universe, from stars to nebulae, permeate the interplanetary space, and surround the earth thereby controlling our space weather. Plasmas are also the basis of a broad and impressive array of technologies: lighting sources and lasers, electric propulsion of spacecraft, fabrication of microelectronics devices, solar cells, diamond films and labs-on-a chip, plasma medicine, accelerators, plasma aided combustion, and microwave generation. Plasmas are also the means of creating controllable fusion reactions that will one day provide nearly unlimited electrical power.

Plasma science and engineering plays a critical role in our national economy, energy supply, international intellectual competitiveness, and national security while harboring a broad array of science challenges. The University of Michigan (U-M) and Michigan State University (MSU) have an exceptional and broad capability in plasma science and engineering, making advances in better utilizing plasmas for technology and investigating the fundamental science of the 4th state of matter. U-M and MSU host numerous centers and laboratories dedicated to plasma science and engineering.



*Jun-Chieh "Jerry" Wang explains his simulations of microplasma devices to Prof. John Foster at the 1st MIPSE Graduate Symposium.*