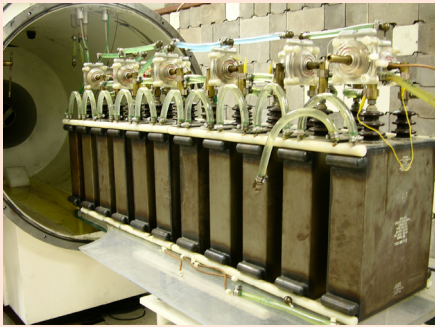
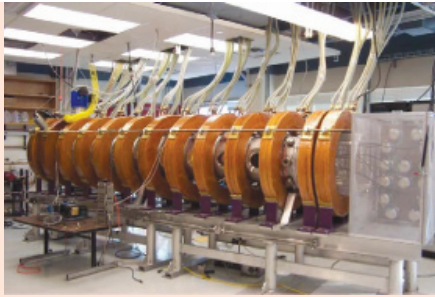
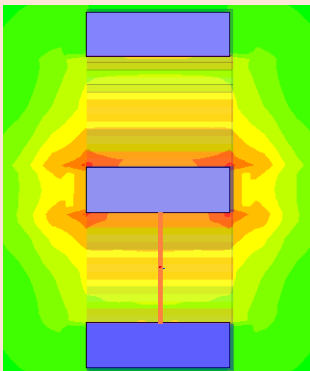


## Related Courses

ECE 485, Fusion Technology  
ECE 534, Plasma Physics I  
ECE 535, Plasma Physics II  
ECE 553L, Experimental Techniques in Plasma Science  
ECE 555, Gaseous Electronics  
ECE 557, Pulsed Power and Charged Particle Accelerators  
ECE 558, Charged Particle Beams and High Power Microwave Devices  
ECE 560, Microwave Engineering  
ECE 561, Electrodynamics  
ECE 562, RF Electronics  
ECE 563, Computational Methods in Electromagnetics  
ECE 569, Antennas  
ECE 580, Advanced Plasma Physics  
ECE 661, Advanced Topics in Electromagnetics



**Above image, top:** HELCAT (HELicon-CATHode) 4-meter-long basic plasma physics research device at the UNM Plasma & Fusion Science Lab. **Above center:** 500 kV Marx generator at the UNM Pulsed Power, Beams & Microwave Lab. **Below:** Computed electric field intensity in a folded Blumlein transmission line at the UNM Antennas & Computational Electromagnetics Lab.



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## Research at UNM

The University of New Mexico is actively involved with research in pulsed power and plasma science within its Electrical and Computer Engineering Department.

UNM has ongoing collaborations with New Mexico's national labs and with local high-tech industry.

Research is conducted by faculty and graduate students in four laboratories in the department as well as on site at Sandia National Laboratories, the Air Force Research Lab, and Los Alamos National Laboratory.

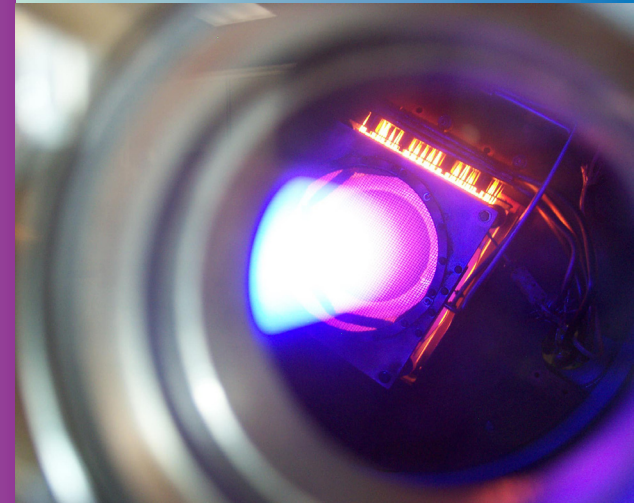
Many of our students find jobs at New Mexico's federal labs after graduation.

**Graduate research assistantships are available.**

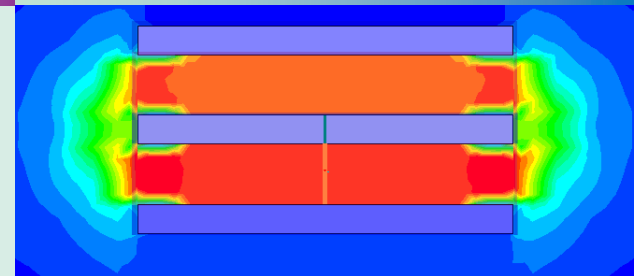
UNM Applied Electromagnetics Group

# Graduate Studies in Pulsed Power & Plasma Science

at the University of New Mexico

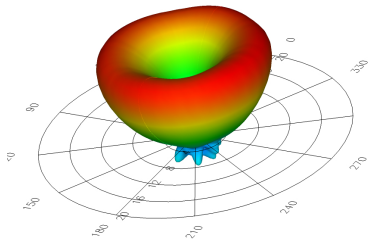


**Above:** Hot cathode generated argon plasma in the UNM Plasma & Fusion Science Lab. **Below:** Computed electric field intensity in a folded Blumlein transmission line at the UNM Antennas & Computational Electromagnetics Lab.



The University of New Mexico

# Pulsed Power & Plasma Science at UNM



## Current Areas of Research

- Pulsed Power Technology
- Pulsed Power Applications
- Intense Electron Beams
- High Power Microwave Sources
- Modeling Electromagnetic Threats to Infrastructure
- Wideband Radiating Systems
- Computational Electromagnetics
- Basic Plasma Physics
- Magnetic and Inertial Confinement Fusion

## The American Southwest

Albuquerque is located on the Rio Grande at the foot of New Mexico's Sandia Mountains, and outdoor activities such as hiking, skiing, kayaking and mountain biking are as close as 15 minutes from campus. It is a culturally diverse city with a population of about 700,000.

Albuquerque is ranked #5 in Forbes Magazine's list of the Top 10 Best Places To Jump-Start a Business or Career (Forbes, May 23, 2005).



**Above:** The City of Albuquerque. **Below:** The Sandia Mountains seen from the Rio Grande.



## Pulsed Power & Plasma Science Faculty

Carl Baum, Research Professor	Electromagnetics
C. Jerald Buchenauer, Research Professor	Time-domain electromagnetics, electromagnetic modeling, pulsed power technologies, rf remote sensing, and plasma diagnostics
Christos Christodoulou, Professor	Modeling of electromagnetic systems, phased array antennas, antennas for wireless communications, microwave systems and applications of neural networks in electromagnetics
David Dietz, Research Professor	HPM effects on networks
Mikhail Fuks, Research Professor	High power microwave source physics
John Gaudet, Research Professor	High power microwave devices, chaos in electronic devices, circuits and systems, electromagnetic coupling to cavities, pulsed power
Mark Gilmore, Assistant Professor	Basic plasma physics, magnetic confinement fusion, plasma diagnostics, plasma physics of pulsed power, microwave systems, complex systems
Edl Schamiloglu, Professor	Physics and technology of charged particle beam generation and propagation, high power microwave sources and effects, pulsed power science and technologies, plasma physics and diagnostics, electromagnetics and wave propagation, infrastructure surety and complex systems
Scott Tyo, Associate Professor	Time-domain electromagnetics, electromagnetic modeling, wideband radar, polarimetric and spectral remote sensing
Christopher Watts, Research Associate Professor	Laboratory studies of astrophysical plasmas, basic plasma physics, magnetic confinement fusion, plasma diagnostics (microwave, spectroscopy), chaos and nonlinear dynamics

## Present Research Sponsors:

- Air Force Office of Scientific Research
- Department of Energy
- Air Force Research Laboratory
- Los Alamos National Laboratory
- Defense Threats Reduction Agency
- National Science Foundation
- Sandia National Laboratories