FLORIDA STATE UNIVERSITY

Aeropropulsion, Mechatronics and Energy (AME) Center

Web Site Link: http://ame.fsu.edu

Contact Information

Dr. Chiang Shih, Director
Email: shih@eng.fsu.edu Phone: (850)645-0102 Fax: (850)645-0112

Description

This 60,000-square-foot state-of-the-art facility supports advanced research in aerospace and aviation, mechatronics (robotics) and sustainable energy engineering. The Aero-Propulsion, Mechatronics and Energy Center houses laboratories, equipment, offices and other infrastructure necessary to carry out the university's research mission in several key areas seen as crucial to the economic development of the state and nation.
As its name indicates, the research that takes place within the Aero-Propulsion, Mechatronics and Energy Center focuses on three key areas:

- Aero-propulsion: The discipline of aero-propulsion deals with transportation systems and other objects that move through air, influencing the design and fabrication of aircraft, spacecraft, automotive transport, and all manner of vehicles in motion. The relevant research areas cover fundamental science topics such as aerodynamics, fluid mechanics, acoustics, thermal physics and turbulence, as well as practical applications such as combustion improvement, active control of flow separation, supersonic jet noise suppression, lift/thrust enhancement and drag reduction.
- Mechatronics: Combining of mechanical systems and electronics, it is the synergistic integration of mechanical, electrical, control and computer systems to create functional products. Mechatronics has become the enabling technology responsible for industrial innovations in numerous economic sectors, including automobiles, alternative energy, aerospace, electronics and defense. The field of mechatronics generally covers topics such as robotics, micro-electro-mechanical-systems (MEMS), intelligent systems, automated guided vehicles and smart materials.
- Energy: Seeking new energy resource that are more efficient and cost-effective and that minimize effects on the environment is among the most critical issues that the world will have to grapple with in the 21st century. The Center houses research labs for organizations that are focused on exploring reliable, affordable, safe and clean energy technologies, including projects such as a photo-bioreactor for algae growth, fuel-cells, ultra-capacitors, and advanced batteries.

Scientifically, the unique combination of the three distinctive yet interconnected disciplines of aero-propulsion, mechatronics and energy is crucial for creating the context for the development of transformational innovations. Synergy is fostered by integrating facilities and training, bringing together the diverse perspectives born of specialized knowledge to develop shared vision through effective communication and long-term collaborations.

Center for Advanced Power Systems (CAPS)

Website: http://www.caps.fsu.edu

Director: Dr. Steinar Dale

Contact Information
Steve McClellan
Email: mcclellan@caps.fsu.edu Phone: (850) 645-2157 Fax: (850) 644-7456

Description
The 34,000 sq. ft. CAPS research, development, test and demonstration facility is located in Innovation Park in Tallahassee, Florida. CAPS is a multidisciplinary research center organized to perform basic and applied research to advance the field of power systems technology and provides a secure infrastructure and environment for all types of sensitive research. CAPS emphasis is on application to electric utility, defense, and transportation, as well as, developing an education program to train the next generation of power systems engineers. The research focuses on electric power systems modeling and simulation, power electronics and machines, control systems, thermal management, high temperature superconductor characterization and electrical insulation research.

Institute for Energy Systems, Economics and Sustainability

Web Site Link: http://www.ieses.fsu.edu/

Director: Dr. David Cartes

Contact Information
Email: sims@ieses.fsu.edu Phone: 850-645-9232

Description
The *Institute* is a public resource to carry out scholarly basic research and analysis in engineering, science, infrastructure, governance and the related social dimensions all designed to further a sustainable energy economy. The *Institute* unites researchers from the disciplines of engineering, natural sciences, law, urban and regional planning, geography, and economics to address sustainability and alternative power issues in the context of global climate change. IESES offers administrative and program support to researchers, partners and collaborators.

Grant Proposal and Administration Support: Proposal development, preparation and submission; grants management; requisition and authorization of payments of purchased items; reconciling ledgers, monthly financial reports, re-budgeting and budget amendments; office space, hiring staff and managing travel.
Program Services: Public and private sector resource identification and partnership development; interdepartmental and state-university wide resource development; promotion of our research partners and collaborators in print, electronic media and through participation in statewide, national and international conferences.

Fee Schedule:
Negotiated on a per-proposal basis.

Future Fuels Institute (COMING SOON)

Web Site Link: *www.Research.fsu.edu/ffi*

Director: Dr. Chang Samuel Hsu

Contact Information
Dr. Chang Samuel Hsu
Email: hsu@magnet.fsu.edu *Phone:* (850) 644-9861

Address: 1800 E. Paul Dirac Dr. Tallahassee, FL 32310

Description
Future Fuels Institute, established at Florida State University is a global center of excellence working with renewable and difficult-to-refine oils for the production of fuels and chemicals. It is supported by sponsoring companies and collaborative entities (instrument companies, universities and research institutes) to develop advance and novel techniques for research applications and problem solving.

Fee Schedule:
TBD

National High Magnetic Field Laboratory (NHMFL)

Web Site Link: *http://www.magnet.fsu.edu/about/* *and* *https://users.magnet.fsu.edu/*

Director: Dr. Greg Boebinger

Contact Information
NHMFL has 7 user programs. The contact information for each user program is listed below.

Magnet Lab User Facilities			
Facility	**Location**	**Director**	**Help With Requests**
Advanced MRI and Spectroscopy	Gainesville	Joanna Long	Joanna Long
DC Field	Tallahassee	Eric Palm	Eric Palm
Electron Magnetic Resonance	Tallahassee	Stephen Hill	Jurek Krzystek Andrew Ozarowski
High B/T	Gainesville	Neil Sullivan	Neil Sullivan
Ion Cyclotron Resonance	Tallahassee	Alan Marshall	Amy McKenna Colleen Davis
Nuclear Magnetic Resonance	Tallahassee	Bill Brey Tim Cross	Riqiang Fu Zhehong Gan Ashley Blue
Pulsed Field	Los Alamos	Chuck Mielke, Facility Director Jonathan Betts, Head of the Pulsed Field User Program, Contact person to help with requests	Chuck Mielke Jonathan Betts

Description

The **National High Magnetic Field Laboratory** offers the highest magnetic fields for use by the international community of scientific visitors. Many of the magnets and experimental techniques are highly specialized, yet broadly applicable to research in physics, materials science, chemistry, biochemistry, biology and even biomedicine. Every year over 1100 scientists and engineers use the National High Magnetic Field Lab facilities. Graduate students and Nobel laureates, researchers from academia and the corporate world, they travel from across the globe for a chance to work with the unique instruments and experienced staff at our three locations. First and foremost, the Mag Lab exists for these users and the cutting-edge research they conduct here as they seek to expand the boundaries of scientific knowledge. The Users Hub is dedicated to them and their needs. It is divided into two sections: User Programs and User Services.

User Programs: The Mag Lab has seven user programs located across three campuses. The lab also has a number of important in-house research programs that complement the user programs through development of new techniques and equipment.

Fee Schedule

Access to NHMFL magnets is open to all qualified scientists and engineers via a competitive proposal process. If a proposal is approved, facility usage is free of charge provided the researcher intends to publish the results in open literature. Proprietary research done at the Magnet Lab must enter into a cost sharing arrangement. All user facilities accept proposals throughout the year. The online system for submitting a proposal and requesting magnet time is located at https://users.magnet.fsu.edu/.