

## **Institute for Simulation and Training (IST)**

*Director:* Randall Shumaker

Partnership II & III, 3100 Technology Pkwy, Orlando, FL 32826-0544

407-882-1300

Email: [info@ist.ucf.edu](mailto:info@ist.ucf.edu)

<http://www.ist.ucf.edu>

The Institute for Simulation and Training (IST) was established to conduct research and develop technology that advances the state of the art in affordable and effective human-centered simulation capabilities and training systems. In April 1985 a State of Florida resolution recognized the institute as part of a Center of Excellence for Simulation and Training. Driven by a proven record of research achievement, IST has developed unique qualifications and is positioned to provide the enabling technologies and technical talent necessary to research new ways to model human activity, improve human-agent interaction, and educate the next generation of scientists and professionals.

IST laboratories, work space, and administrative offices occupy major portions of the Partnership II and III buildings located in the Central Florida Research Park, adjacent the UCF campus. The park also is home to the Army Program Executive Office for Simulation, Training and Instrumentation (PEOSTRI); Army Simulation Training Technology Center; Naval Air Training Systems Division (NAVAIR Orlando); Marine Corps Program Manager for Training Systems; and Air Force Agency for Modeling and Simulation (AFAMS). The institute is one of more than 150 public and private entities specializing in simulation and training and located along a coast-to-coast high tech corridor from Tampa to Daytona Beach—the largest concentration of this expertise in the world.

IST's research staff of more than 260 scientists, engineers, and students conducts basic and applied research for a broad range of training devices and programs. Research teams focus on applied research and technology, human/systems integration, and information systems technologies. Research areas include:

- Multi-resolution simulation
- Virtual, mixed, and augmented reality
- High performance computing
- Human-machine interface, robotics
- Computer-generated forces
- Mathematical foundations
- Application development
- Information management technology
- Human factors psychology and team training
- Cognitive science/augmented cognition
- Medical-related simulation
- Embedded simulation
- Advanced performance technology

IST actively assists UCF in the development of simulation-related curricula. First in the nation with a master's degree in simulation systems, the university in collaboration with IST also offers a truly multidisciplinary PhD in Modeling and Simulation. Both master's and doctoral programs accept applications from graduate students in computer science, digital media, psychology, engineering, mathematics, business, and other related disciplines. Also available at the graduate level are the Modeling & Simulation Professional Science Master's degree, a two-year course of study providing a combination of technical and business courses, and the Graduate Certificate in Modeling and Simulation of Technical Systems, which requires fifteen or more credit hours beyond the bachelor's degree and is beneficial to technical professionals involved with constructing and using simulation models of dynamic systems.

The institute annually employs more than 100 graduate and undergraduate students in a variety of research and support positions. For many outstanding graduates, work experience at IST becomes a launching pad to a career in the simulation industry. A significant number of existing professionals, both in government and industry, enroll in modeling and simulation graduate and certificate programs to continue their advanced education and hone their research skills.

The institute includes in its efforts development of research projects with potential commercial applications and adaptation of military technology to civilian markets. IST communicates the results of its research through seminars, conferences, publications, and workshops. In cooperation with UCF, the University of South Florida, and University of Florida, and with considerable participation from area industry and economic development organizations, IST promotes economic growth in the modeling and simulation industry throughout the Central Florida High Tech Corridor.

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