The Parson Dance Company

"More than 25 of the world’s finest performers and performance ensembles will visit Georgia Tech’s campus during our next season," said Jay Constantz, director of the Ferst Center. "There’s something for everyone: from new and returning favorites to international stars visiting for the first time."

Tech to participate in new research center for fluid power

Megan McRaney
Institute Communications and Public Affairs

Discovering ways to reduce fuel consumption, developing devices for people with mobility impairments and designing state-of-the-art rescue robots are just three of the goals of a new $21 million engineering research center that will include Georgia Tech. The National Science Foundation (NSF) recently announced a $15 million, five-year grant to support the new Engineering Research Center (ERC) for Compact and Efficient Fluid Power. Industry partners will augment NSF funding with $3 million, and seven universities involved in the center, including Georgia Tech, will contribute an additional $3 million. The center will be based at the University of Minnesota’s Twin Cities campus.

Fluid-power technology encompasses most applications that use liquids or gases to transmit power in the form of pressurized fluid. The complexity of these systems ranges from simple hydraulic jacks to lift your car when replacing a tire to the internal combustion engine in your car when accelerating to your destination.

"This new center allows Georgia Tech to focus on robotics computing, control and mechanical engineering," said Henrik Christensen, KUKA Chair of Robotics, professor in the College of Computing and director of the center. "RIM@Georgia Tech will serve as the flagship for Georgia Tech’s robotics efforts, coordinating the university’s capabilities in this field under one roof and facilitating the transfer of research results to the industry.”

"RIM@Georgia Tech will serve as the flagship for Georgia Tech’s robotics efforts, coordinating the university’s capabilities in this field under one roof and facilitating the transfer of research results to the industry,” said Henrik Christensen, RIM@Georgia Tech Chair of Robotics, professor in the College of Computing and director of the center. “This new center allows Georgia Tech to maximize its established relationships with industry leaders and its strengths in interactive and intelligent computing, control and mechanical engineering.”

With a focus on personal and everyday robotics, as well as the future of automation, faculty involved with RIM@Georgia Tech will develop both undergraduate and doctoral degree programs tailored to best enable students to understand and drive the future role of robotics in society and industry.

"The College of Computing identified robotics as one of our critical areas for educational growth and further research development,” says Richard DeMillo, dean of the College of Computing. "With Henrik’s leadership and the establishment of RIM@Georgia Tech, we’re well on our way to achieving eminence as a true leader in this growing field.”

Currently, Georgia Tech boasts 31 faculty members involved in robotics research, 15 robotics-related laboratories and approximately 44 courses in robotics.

"Georgia Tech has a strong capacity and a rich history in the field of robotics, and we’ve just scratched the surface," Christensen said.
Multidisciplinary team presents its model of energy efficiency

Matt Nagel
Institute Communications
and Public Affairs

Georgia Tech unveiled its concept for a house that is sure to capture the imagination of those who appreciate technology, as well as those who are environmentally conscious. The Tech team is finishing the initial phase of a solar powered house that will compete in the U.S. Department of Energy's Solar Decathlon, an international event to be held next year in Washington, DC.

Teams are judged in 10 categories, seven of which focus on energy efficiency; others include design and comfort of the house. The team with the most points — the most energy-efficient and innovatively designed house — wins.

To begin the concept phase, an interdisciplinary design workshop was established at the start of Tech's summer term. The team, with students from architecture, engineering and biology, was divided into seven groups. Each group then created their own concept for the house. Through a democratic process, four houses were chosen to continue. The team was then divided to further those house concepts. The final design is a hybrid, emphasizing the strengths of each house design.

"Combining the best elements of each of the four projects seemed to make a lot of sense," said Chris Jarrett, an associate professor of architecture and one of the team's project managers. "All of the students spent enormous time investigating the various energy systems of the project and how they could be conceptualized into architecture. The strategy allows everyone to take some ownership."

In all, Tech's team includes three project managers, seven faculty advisors and more than 50 students from all academic levels.

And with the project having such strong interdisciplinary ties, it has given students a unique opportunity and experience.

"I've always been in an engineering environment with a bunch of engineers and so it has been a different experience working with people who are coming to the project from a different perspective," said Adam Boyd, a graduate student in mechanical engineering.

"We've been combining our thought processes and ideas and have really come up with something impressive out of it."

Architecture students say it has been an excellent learning experience.

"The engineers help us with things that we don't know so much about," said Travis Hampton, an undergraduate in the College of Architecture.

"How much energy is needed to power the house? They do the calculations to figure out how many panels we're going to need to make this house work. The plumbing, how should that be designed? They really helped us make some good decisions on which choices would be most efficient."

For more information on Georgia Tech Solar Decathlon visit solar.gatech.edu
sophisticated airplane flight control actuators that rely on high-pressure hydraulic systems. Fluid power is a $33 billion industry worldwide. With help from the National Fluid Power Association, more than 50 companies have agreed to provide support for the research center.

“The challenges and opportunities in fluid power have been amplified by the inactivity of universities in recent decades. Forward looking industry leaders have seeded efforts at Georgia Tech and elsewhere, but the NSF recognition of the transformational opportunities for efficient fluid power drives of advanced devices was needed to spur on a new generation of researchers with interdisciplinary talents,” said Wayne Book, a professor in the School of Mechanical Engineering, director of the Fluid Power and Motion Control Center and the leader of the Georgia Tech team for the ERC.

Researchers at the center will study ways to use fluid power more efficiently in manufacturing, agriculture, construction and mining. Each

10 percent improvement in efficiency of current uses of fluid power in these industries will save about $7 billion a year in U.S. energy costs. Researchers will also work to develop hybrid passenger cars that are less expensive and more efficient than current electric hybrids. A 10 percent improvement in efficiency in national passenger-car energy use will save about $10 billion a year.

In addition to research, the center will be involved in developing youth education programs, improving efforts to increase student diversity in engineering, designing internship and exchange programs for undergraduate and graduate students, and offering short courses and labs for industry workers.

Other universities involved in the center are the University of Illinois at Urbana-Champaign, Purdue University and Vanderbilt University.

Grand Challenge is part of the annual robotics Grand Challenge series that began in 2004 and is sponsored by the Defense Advanced Research Projects Agency (DARPA). "Academic and research excellence is the focus of this new center, but developing technologies that can be adopted by industry and applied to the real-world will be a top priority," said Don Giddens, dean of the College of Engineering.

For more information...

Robotics at Georgia Tech
www.robotics.gatech.edu

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Awards & Honors

Georgia Tech Research Institute senior research engineer Bill Melvin received the AESS Young Radar Engineer of the Year Award. This award is presented annually by the Radar Systems Panel of the Aerospace and Electronic Systems Society of the Institute of Electrical and Electronic Engineers.

Research Engineer Jud Ready (GTRI) was recently selected as a “2006 Young Leader International Scholar” by The Minerals, Metals & Materials Society and the Japan Institute of Metals.

Dean Gary Schuster (College of Sciences) has been awarded the Georgia Section of the American Chemical Society’s 2006 Charles Holmes Herty Medal, recognizing his work and service contributions to the Southeast since his arrival at Tech in 1994.

Professor Bruce Ellingwood (School of Civil and Environmental Engineering) was presented with the Nathan M. Newmark Medal by the American Society of Civil Engineers for outstanding contributions to enhancing and incorporating probabilistic mechanics and decision making tools in code development and engineering practice.

Professors Steve French and Larry Keating (College of Architecture) have joined the ranks of other distinguished planners as Fellows of the American Institute of Certified Planners (AICP). French’s work primarily focuses on the area of land use and the impacts of urban development. Keating’s work focuses on housing economics and policy, open housing, real estate and urban land economics, neighborhood and community planning in developing countries.

Principal Research Engineer Douglas Stanley (Aerospace Engineering) has been awarded the NASA Distinguished Public Service Medal “in recognition of outstanding leadership of the Exploration Systems Architecture Study, a team which charted NASA’s first steps back to the moon and on to Mars.”

Assistant Professor Frank Roothamel has received the National Science Foundation’s CAREER Award, becoming the first member of the College of Management faculty to receive this prestigious prize. His award will support his research in the study of firm-level factors influencing why some companies survive and thrive when faced with radical technological innovation while others fail.

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IN BRIEF:

Baseball team plays for national championship

The men’s baseball team earned their third trip to the College World Series by sweeping the College of Charleston in the Atlantic Super Regional, held June 9-11. In helping to lead the Yellow Jackets (50-16) to the College World Series, Georgia Tech sophomore pitcher Matt Wieters was selected as a first-team All-American by Baseball America magazine. The eight-team playoff is scheduled for June 16-26 in Omaha, Neb.

Conference to focus on profitable sustainability

Innovative and profitable strategies for the recovery, recycling and reuse of used products will be the focus of the first annual Georgia Tech Sustainable Enterprise Product Re-X Conference on June 21 at the College of Management.

The conference will bring together scholars and representatives from industry, public agencies and non-governmental organizations to discuss business models, product design solutions, globalization and economic development opportunities in Re-X — short for recovery, recycling, remanufacturing and reuse.

Innovation is the overall theme of the conference, which is being organized by Expanding Closed Loops in Procurement Systems (ECLiPS), an interdisciplinary focused-research program at Georgia Tech. “By closing the loop, we mean taking products that have been used by businesses and consumers and turning them into products, parts, or materials to be reused,” says Associate Professor Beril Toktay, the coordinator of ECLiPS. “There are some companies that have figured out how to do this profitably.”

For more information about the conference, visit eclipse.gatech.edu.

Tech to field team in annual corporate run/walk

Georgia Tech will once again represent the Institute in the Kaiser Permanente Corporate Run/Walk & Fitness Program. On September 21, more than 20,000 runners, walkers and joggers from more than 600 Atlanta companies will participate in what has become the largest corporate fitness event in the world. Registration is now open to all full-time faculty and staff members of Georgia Tech. All levels of GT walkers and runners are welcome. Participants will receive a free t-shirt and those who are not already members of the CRC will receive complimentary two-month membership during training. Georgia Tech team members will also receive emails with updates and tips while preparing for the race.

To register to join the Georgia Tech team, call 404-894-5727 or visit www.kpcorporaterunwalk.com/corporate. Select “Join a Team” and choose “Georgia Institute of Technology.”

For more information, visit www.crc.gatech.edu.