

## FSEC CITED AS “PRE-EMINENT” ORGANIZATION National Utility Group Recommends Support for Energy Future

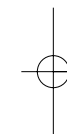
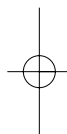
The Florida Solar Energy Center (FSEC) was recently singled out as one of the country’s “pre-eminent organizations” conducting research today on ways to ensure adequate domestic energy sources in the future.

The resolution, adopted by the board of directors of the National Association of Regulatory Utility Commissioners (NARUC) in February, included FSEC in a group of leading national research organizations that deserve continued public and private support to continue their important missions. NARUC directors agreed to pursue their efforts to obtain further support for FSEC and the other organizations “to improve our nation’s energy supply and delivery infrastructure to help secure the United States’ domestic energy future.” The NARUC board additionally directed its executive director “to pursue a formal lobbying strategy that will achieve these research and development objectives.”

The board resolution also noted that research and development from these research organizations is essential to maintaining the country’s secure and long-term energy infrastructure.

FSEC energy research and development efforts include both basic and applied research and encompass a broad range of technologies, including high-performance buildings, photovoltaic and solar thermal systems, distributed power systems, hydrogen and alternative fuels, fuel cells, pollutant detoxification, energy systems testing and certification, energy codes and standards research, and education, training and certification for energy professionals.

Jim Fenton, director of the center, noted that “Over the past 25 years, these FSEC research and development activities have created more than \$2 billion in estimated consumer energy savings, enhanced industry development and job creation and contributed significantly to energy and environmental security.”



## U.S. GEOLOGICAL SURVEY PARTNERS WITH UCF

The U.S. Geological Survey and the University of Central Florida have agreed to break ground on a new facility dedicated to studying Central Florida’s water and how it is affected by stresses including urban growth and hurricanes.

The five-year \$1.7 million project is a two-tiered agreement intended to enable collaborative research and further the scientific mission of both organizations in the public interest.

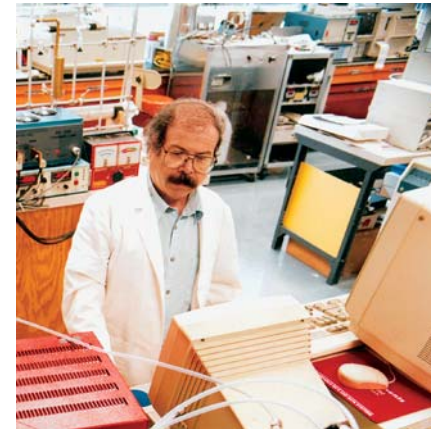
The agreement includes construction of a shared 18,000 square foot research facility in the Central Florida Research Park adjacent to the UCF campus. Research Point LLC has been selected as the developer for the building. About 50 USGS employees and 11 other staff will

relocate from the current USGS facility in Altamonte Springs. Construction should begin in October and be completed by March 2006.

In addition to the new research facility, the agreement calls for UCF faculty and graduate students to conduct joint research projects with USGS scientists.

“The Orlando area has the most varied and complex hydrology of any other district in Florida,” said David Brown, chief of the Orlando office of the USGS Florida Integrated Science Center. “From wetlands, sand hills, sinkhole lakes, submarine springs, flowing wells and other unique configurations – we have it all,”

~ continued on page seven



NAZIM MURADOV, A PRINCIPAL HYDROGEN RESEARCH SCIENTIST FOR MORE THAN 25 YEARS, LEADS FSEC’S EFFORTS ON THE DEVELOPMENT AND PATENTING OF A NOVEL PROCESS FOR CO<sub>2</sub>-FREE PRODUCTION OF NATURAL GAS.

Other organizations cited by NARUC include the Electric Power Research Institute, Gas Technology Institute, Carnegie Mellon Electricity Industry Center, Iowa Energy Center, Rutgers Center for Energy, Economic & Environmental Policy, North Carolina Alternative Energy Corporation, University of Vermont Center for Rural Studies, and the national energy laboratories. ~ continued on page seven

## UCF RESEARCH TO BE FEATURED AT FTT EVENT

Research that has shown promise in the fight against Alzheimer’s disease and cancer will share the stage with multiple technologies available for use by high-tech industries at the Florida Research Consortium’s two-day Florida Tech Transfer Conference hosted by the University of Central Florida this month.

Presenters from universities across the state will focus on research being done in a variety of technology areas, from hardware and software to power systems and biosensors and detectors.

Industry executives, entrepreneurs, university researchers, and investors are among those expected to attend the event produced by the Central Florida

~ continued on page eight

## Q & A WITH JIM FENTON

### Director, Florida Solar Energy Center

The Florida Solar Energy Center has just been lauded by the National Association of Regulatory Utility Commissioners as one of the country's preeminent organizations conducting research on domestic energy.

#### What is FSEC doing right to earn this distinction?

The Florida Solar Energy Center (FSEC) serves a crucial need by saving real energy and real money. It has a 30-year history of energy research, education and development excellence not only in solar energy (photovoltaic: sunlight to electricity and solar thermal: sunlight to hot water), but also in hydrogen technologies (generation, storage and use in fuel cells) and building efficiency that is estimated to be currently saving Floridians more than \$100 million annually in energy costs.



JIM FENTON

#### What can FSEC offer a concerned citizen who wants to be more energy efficient, but doesn't know where to begin?

The quickest way a concerned citizen can learn more about efficiency and renewable energy alternatives is our web site. More than 100,000 users visit FSEC's web site every month, where they have access to hundreds of free online energy notes, technical papers, copies of presentations and other information. Among the information on the web site is specific consumer information on ways to use renewable energy and energy efficiency in their homes. [www.fsec.ucf.edu](http://www.fsec.ucf.edu)

**Are there any areas in which Florida and UCF's FSEC can serve as an example to the rest of the nation in energy efficiency?** Energy dominates today's news headlines: the price of crude oil has just passed \$57 per barrel, the price of gasoline is over \$2 per gallon nationwide, the U. S. Senate has just passed legislation allowing for oil drilling in the Alaskan National Wildlife Reserve and the war in Iraq continues. In addition, it is now clear that the rapid development of China's economy coupled with the depletion of the world's

oil resources is rapidly bidding up the price of petroleum products on the world market in a way that is not reversible. These critical issues all point to the importance of oil and to the need for a national goal of energy independence through the replacement of fossil fuels with sustainable energy resources and fuels.

FSEC's vision – Energy Independence for Florida – constitutes a critical long-term goal if Florida is to successfully move forward into the future. FSEC possesses the broad energy expertise, experience and infrastructure to lead the research and development efforts required to bring this vision to fruition. I believe that our 30 years of success in moving toward this vision serves as an excellent example for the rest of the nation.

#### Your research specialty is fuel cells. Are there any new developments in that area that can offer hope for those suffering from sticker shock at the gas pump?

As you may be aware, fuel cells are more efficient than internal combustion engines that are used in automobiles today. This means that the potential for higher miles per gallon and less pollution will occur if we adopt fuel cell powered vehicles. We still have major technical and cost hurdles to overcome before every American is driving a fuel cell powered car. We must remember that while the fuel cell may be more efficient than the internal combustion engine, the fuel cell prefers hydrogen, a fuel of the future not today. So until we have a hydrogen fueling infrastructure (hydrogen generation and storage along with fuel cells are the major research emphasis of FSEC's hydrogen division) that rivals that of gasoline we will continue to suffer from sticker shock. The price of a gallon of gasoline over the long term will continue to go up. The good news is that there are cars today that are more fuel efficient than the cars of yesterday. So until we have a "Hydrogen Economy" and a moderately priced fuel cell car we must be more energy efficient (energy efficiency for buildings is the major research area of FSEC's building division).

**Is your center open to the public?**  
YES! The public is encouraged to visit.

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## COMMERCIALIZATION AND PURE RESEARCH MAKE FOR A FEAST!

Think for a moment about the pressing issues of our time. These include sustainable energy, cures for cancer and neurodegenerative diseases, and economic diversity to insure access to good jobs for Florida citizens. Others will come up with other critical items, but progress on just these three is a big deal. And progress is being made by UCF faculty, staff, and students. (See the articles in this edition of IMPACT!)

Since the addition of the term "commercialization" to the name of this office I have heard some rumblings about the "selling out" of research to big business and/or big money. Are we deviating from the university's mission of teaching, research and service? I say not. We are free to pursue scholarship without regard to commercial benefit. However we are obligated to share the knowledge and creative works we develop through appropriate venues including peer-reviewed literature and our classrooms. But this should not always be the end of the story.

## COOKIN' WITH M.J.



"Research IMPACT starts with quality ingredients"



For those Star Trek fans among you I am reminded of a species aboard "Deep Space Nine" called the Ferengi. The "Ferengi Rules of Acquisition" spells out, via a series of 285 axioms, how to succeed in business by stifling anybody who stands in the way. I would hope that those of us who are intent on advocating commercialization as a way of bettering our institution and our community are philosophical "anti-Ferengis." Commercialization is, in a sense, our contribution as researchers to society.

Sometimes a simple example is better than a deep philosophical argument. Consider the Gossamer Wind ceiling fan, an invention of the Florida Solar Energy

Center (FSEC), licensed by UCF for commercial production and sale. The university gets some income from this invention but consider this: This product has saved consumers more than \$12 million in energy costs since it became available. This is about a quarter of a million barrels of oil (in today's prices) not burned! I am exceptionally proud of our efforts to make that technology commercially available.

UCF is hosting the technology transfer conference involving all of Florida's universities. This is an effort to have new knowledge developed by our scholars put to work in building successful companies in Florida. If we do a good job of this then the citizens will probably be more willing to pay the taxes that support higher education in our state. And our sons and daughters will not have to leave the state to get a good job. If we do a good job of commercialization of our research then we will have a great positive IMPACT on our society.

To do anything less is akin to preparing a great feast but failing to serve it. Cheers!

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## LASER SCIENTIST NAMED DISTINGUISHED RESEARCHER

An international leader in laser source development has been named the University of Central Florida's distinguished researcher of the year for 2005.

Martin Richardson, a professor of optics in the College of Optics & Photonics, was presented with the award at the university's Founder's Day ceremony April 13.

Richardson joined UCF in 1990, three years after the Center for Research and Education in Optics and Lasers was established, and he is credited with playing an essential role in building a leading academic research group in laser-matter interactions. Ultimately his work enables the creation of ever-smaller microchips, leading to smaller, faster and more powerful computers.

"At UCF, Professor Richardson has truly excelled in his ability to build an internationally recognized research and student-training program, with significant achievements in EUV source development for lithography . . .," wrote David Attwood, professor in residence in the Department of Electrical Engineering and Computer Sciences at the University of California, Berkeley, in a letter of reference for the award.



RICHARDSON

In the last eight years at UCF Richardson has generated \$2.7 million in research funding in addition to a recent \$22 million donation from Northrup Grumman, giving UCF the largest patent portfolio in the technology.

He also holds the unique distinction of having received UCF's 100th patent in 2002 for technology in EUV light sources. Richardson's work in EUV source development is credited with having a major impact on the entire field of advanced lithography.

Richardson's contributions to science and to the lives of his students is profound and lasting, said MJ Soileau, vice president of research, in presenting the award.

"Through his research, and the careers of his graduate students, Martin has consistently focused on generating scientific knowledge and technology for the economic betterment of society," Soileau said.

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IMPACT is produced by the Office of Research & Commercialization at the University of Central Florida. For more information about UCF's sponsored research activities, contact Tom O'Neal, Associate Vice President for Research, 12443 Research Parkway, Suite 301, Orlando, FL 32826 (407-882-1120). For information about stories contained in the newsletter, contact the editor or the appropriate website.

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## BEYOND THE LAB

## RESEARCH MAY HOLD PROMISE FOR TREATING ALZHEIMER'S DISEASE

A compound similar to the components of DNA may improve the chances that stem cells transplanted from a patient's bone marrow to the brain will take over the functions of damaged cells and help treat Alzheimer's disease and other neurological illnesses.

A research team led by University of Central Florida professor Kiminobu Sugaya found that treating bone marrow cells in laboratory cultures with bromodeoxyuridine, a compound that becomes part of DNA, made adult human stem cells more likely to develop as brain cells after they were implanted in adult rat brains. The findings were published in the most recent issue of the *Restorative Neurology and Neuroscience* journal.

Sugaya and his colleagues at UCF's Burnett College of Biomedical Sciences hope to eventually show that stem cells transplanted from a patient's blood or bone marrow will be an effective treatment for Alzheimer's and other neurological diseases because they can replace cells that die from those ailments. The researchers are working with a \$1.4 million grant from the National Institutes of Health.



SUGAYA

"By using a patient's own stem cells instead of embryonic stem cells, we're able to avoid the ethical concerns many people have about stem cell research," Sugaya said. "We also don't have to worry about the immune system rejecting the new cells."

Stem cells hold promise for the treatment of many diseases because they are capable of dividing endlessly and developing into many different types of cells

## UCF RESEARCHER UNCOVERS CANCER LINK

A University of Central Florida researcher has uncovered an ancient protein that could be a critical link to stopping the uncontrolled division of tumor cells that are the basis of cancer.

The work by Mark T. Muller, a professor in UCF's Department of Molecular Biology and Microbiology, and In Kwong Chung and colleagues at Yonsei University in Seoul, Korea, was published in the April 15 issue of *Genes & Development*.

The researchers have found that the protein, called MKRN1, promotes the destruction of an enzyme called telomerase that enables the rapid duplication of cells. While researchers have known for years that healthy cells repress telomerase, they haven't understood why.

The discovery is sure to generate excitement in the research community, said Lee F. Johnson, chair of the Department of

Molecular Genetics at The Ohio State University and an authority in gene expression in mammalian cells.



MULLER

"To the best of my knowledge, this is the first example of how the enzyme (telomerase) itself can be turned off," Johnson said.

The work focuses on the role that a long stretch of repeated DNA known as a telomere has in influencing cell length and, in turn, its lifespan. Each of the human's 46 chromosomes is capped on either end by telomeres, which help protect the cells. Each time a cell divides, the telomeres are shortened until eventually they become so small that the cell stops multiplying and is eventually eliminated from the body.

in the human body. The researchers at UCF and the University of Illinois at Chicago, where Sugaya taught before moving to UCF last summer, are the first to demonstrate improved memory in adult animals after transplanting neural stem cells into their brains.

A recent *Wall Street Journal* column described the work as offering "tantalizing" possibilities in treating Alzheimer's.

Sugaya's colleagues include Jose Pulido, formerly a professor at the University of Illinois at Chicago's School of Ophthalmology and Visual Sciences, and Sugaya's wife, Ikuko, a research associate in his UCF lab.

Technologies from the research project are licensed to NewNeural LLC, a company started by Sugaya and two other founders. NewNeural works to develop and commercialize products that improve the brain's ability to repair and replace damaged brain cells.

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When telomere ends do not shorten, division continues unabated. The body contains other mechanisms that kick in to stop the errant reproduction unless the telomerase enzyme is present. In laboratory tests, the MKRN1 protein has eliminated the presence of telomerase in tumor cells, said Muller, who conducted genetic research at The Ohio State University for 25 years before joining UCF last summer.

Muller said that the MKRN1 gene is incredibly ancient and has likely been part of the human genetic makeup since the beginning of time. "Many different species have these genes which emphasizes important collective roles in life" Muller stated. "Moreover, mutating or altering the MKRN1 gene is lethal, thus, cells cannot live without these genes, further supporting a key role in growth control and cancer."

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## SPOTLIGHT: FACULTY

## UCF SIGNALS NEW RESEARCH THRUST IN COMPUTER VISION

Anyone who has passed the corner of Orange Avenue and Pine Street in downtown Orlando recently has witnessed a UCF research project.

The unobtrusive nature of the KNIGHT surveillance system is indicative of the quiet way in which computer vision is increasingly becoming a part of all our lives.

Mubarak Shah, the founder of UCF's Computer Vision Lab, is principal investigator of the KNIGHT project, which was developed in 2001 as a field test program to help the Orlando Police Department with electronic patrol.

Cameras were installed at four intersections along Orange Avenue in downtown Orlando and the accompanying computer surveillance system was designed to detect important changes, events, and activities. Significant events are flagged and presented in a summary fashion to a monitoring officer for final analysis and response decision.

Shah and his graduate students are studying the results and fine-tuning the program to make it even more effective at screening out unnecessary information while leaving important data intact.

For example, while KNIGHT initially did very well in identifying objects that were some distance away from each other, it had some trouble detecting items in a crowd — such as a bag that people were continually walking in front of.

Subsequent enhancements have made the program highly efficient in detecting and classifying objects and tracking them across multiple cameras, traits that are essential in the types of defense and homeland security applications the program is now being utilized for.

Shah defines computer vision as the processing and interpretation of video images by computer. He said the field has been



THE KNIGHT TRACKING CAMERAS ARE IN FOUR LOCATIONS ALONG ORANGE AVENUE IN DOWNTOWN ORLANDO

studied for about forty years and has received increased emphasis since the terrorist attacks of Sept. 11, 2001.

UCF has one of the oldest and most comprehensive Computer Vision programs in the nation, Shah said, and has consistently ranked among the top in national and international competitions. Six papers from the Vision Lab have been accepted for presentation at the IEEE Computer Vision and Pattern Recognition conference this summer, an event that accepts only six percent of papers proposed.

Many people make the mistake of confusing computer vision work with manual video surveillance, he said. In fact, there is one key difference — with computer vision the data analysis is done by machine, saving human expertise for the times it is required.

"The goal is you want to be able to have a screener so that humans will only look when there is something interesting," Shah said.

KNIGHT is built around three key components of computer vision: detection, tracking and classification, Shah said.

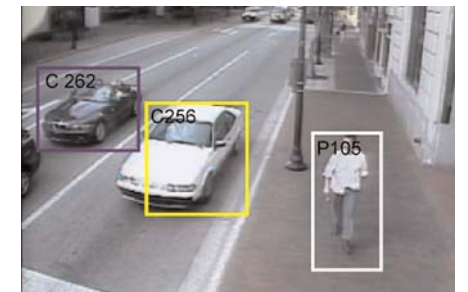
Detection is comprised simply of determining whether an object under surveillance is moving. This can be accomplished by viewing an object through multiple cameras positioned in different locations. Often detection is obscured by color similarities between the object and the background or multiple moving objects in close proximity to each other. Once an object is detected, the movement is categorized, i.e. is it a person, vehicle, bicycle, animal, male or female, etc.

The object is then tracked from frame to frame to determine speed and direction of

movement. And finally, the movement is classified based on a database of thousands of routine gestures categorized by environment and function, such as a video clip of the act of typing on a computer keyboard in an office or walking across the street at an intersection.

"We are just at the beginning of categorizing behaviors," Shah said. "These programs are still at the university research level."

In addition to the Orlando Police Department, variations of KNIGHT have been funded by the Defense Advanced Research Projects Agency Small Business Technology Transfer program, the Lockheed Martin Corporation and the Florida Department of Transportation. The aim of the FDOT project is to use KNIGHT to monitor railroad grade cross-



THIS IMAGE SHOWS THE FIELD OF VIEW OF ONE OF THE ORANGE AVENUE CAMERAS. THE THREE MOVING OBJECTS BEING TRACKED ARE MARKED.

ings and to automatically inform authorities in case of potential hazards such as the presence of a person or a vehicle on the tracks when a train is approaching.

In the coming months Shah will be working in his new role as assistant vice president for research in computer vision in order to develop ways to integrate the science into disciplines across campus.

Specifically he will work closely with UCF's areas of research strength including life science, nanoscience, and photonics.

"Dr. Shah is extremely well respected both in his field and across campus for the breadth and depth of his research work as well as his commitment to students and to UCF. We are fortunate to have him in this exciting new capacity," said M.J. Soileau, UCF's vice president for research.

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**GK-12 PROGRAM RECEIVES NSF FUNDING**

Dave Hagan from the College of Optics & Photonics has received \$450,000 from the National Science Foundation for a project to pair graduate students with ninth grade science teachers in Orange County. The beauty of the project is that the graduate students are not education majors – they are science students who will help the teachers learn more about the specifics of several science related disciplines. NSF is counting on the project to improve education in the sciences in the public schools and also to increase the number and quality of science majors at UCF. The program offers the graduate students \$30,000 a year for participating.



HAGAN

**EDUCATION RESEARCHER RECEIVES CAREER AWARD**

Bobby Jeanpierre, an assistant professor in the College of Education, has received the NSF Career award for her project which aims to significantly impact science teaching in diverse (50% or more students on free and reduced lunch) settings. Her project, "Inquiry Teaching and Learning: Connecting Research and Practice" will look at how inquiry and reform science practices are implemented in diverse environments in order to contribute to building a stronger and more diverse group of scientists entering universities. The award is approved for five years for a total of \$691,855.



JEANPIERRE

**CHIP PROCESSING FUNDING CONTINUES**

Eric Johnson of the College of Optics & Photonics has received \$2.85 million from the Defense Advanced Research Projects Agency (DARPA) for his continued work on a five-year project to develop specific platform technologies that benefit from wafer-based processing and integration. The project, begun in 2003, has generated a total of \$5,699,086 in funding to date.

**IST TESTBED PROJECT RECEIVES \$992,000**

A Research and Testbed Product Integration project that creates simulated battle conditions to help train troops has received \$992,000 from the US Army. Gary Green and Mike Dolezal from the Institute for Simulation and Training, and Florian Jentsch and Peter Hancock from Department of Psychology are working on the project.

**FDOE FUNDS UCF PRE-K PROJECT**

College of Education researcher Lee Cross has been awarded \$652,000 from the Florida Department of Education to continue efforts to meet the special needs of pre-kindergartners with disabilities.

The Technical Assistance and Training System is using multiple methods including needs assessment surveys and integration of existing resources, to develop a highly qualified workforce to work with these children and their families.

**SBDC FUNDED**

UCF's Small Business Development Center has received \$580,000 from the US Small Business Administration through the University of West Florida to continue providing seminars and individual counseling to small businesses in Central Florida.

The center has regional offices at Brevard, Seminole and Daytona Beach Community Colleges and the St. Cloud Chamber of Commerce. In the last 25 years, the SBDC has helped 25,000 small businesses and entrepreneurs.

**CREOL STUDENTS WIN NEWPORT AWARD**

Chien-Hui Wen and Yi-Hsin Lin from CREOL won Newport Spectra-Physics Research Excellence awards at the Photonics West laser and optics conference this winter. The awards program provided Photonics West travel support to university students presenting original research at the meeting held in San Jose.

**BIOMEDICAL SCIENCE STUDENTS AWARDED DARDEN FELLOWSHIPS**

Two students in the Burnett College of Biomedical Sciences have been awarded Darden Fellowships in the amount of \$3,000 each. The fellowship originally was for one student for \$3,000 but the quality of the applicants convinced Darden to present two awards this year. The students, Gopi Maharaja and Maureen Sawh will receive laboratory training at Darden's Total Quality Microbiology and Analytical Laboratory in south Orlando just north of the Florida Mall.

**CREOL CELEBRATES AFFILIATES' DAY**

Representatives from dozens of companies across the country were on campus recently to celebrate Affiliates' Day at the College of Optics & Photonics. University leaders welcomed the guests to UCF and detailed some of the history of the college, the first of its kind in the nation. The program included a full day's worth of lectures, lab tours and interaction between representatives of the university and industry leaders.

**EDUCATOR RECEIVES KENNEDY AWARD**

Laura Blasi, assistant professor, in the Education Research Department of the College of Education has been honored with a Kennedy Summer Faculty Research Opportunity Award for summer 2005. She will join colleagues at the Kennedy Space Center accompanied by Terry Tao, a graduate student from the College of Education, to further develop simulation software for use in K-12 classrooms. This summer fellowship builds on their prior work with NASA's Virtual Lab scanning electron microscope simulation, funded by the BellSouth Foundation.

**INCUBATOR COO NOMINATED FOR BUSINESS AWARD**

Carol Ann Dykes, chief operating officer for UCF's Technology Incubator, was one of 15 finalists for the 2005 "Central Florida Women Who Mean Business" awards, sponsored by the Central Florida Business Journal and Orlando Regional Healthcare. UCF was a presenting sponsor for the awards banquet March 10.

**UCF SPIN-OFF RECEIVES PRESTIGIOUS ENTREPRENEURSHIP AWARD**

Chlorogen, Inc., has been selected to receive the Frost and Sullivan 2005 Entrepreneurial Company of the year award. The company, co-founded by Henry Daniell and based on his patented chloroplast technology, was recognized for its success in entering the marketplace at a time when venture capital funding was limited. Chlorogen attracted \$5 million in funding simultaneously from four leading US venture capital groups in August 2003. The Frost & Sullivan analytical group noted that Chlorogen is entering one of the most commercially promising emerging marketplaces in the life sciences industry and lauded the company for innovations it has shown.

**FSEC**

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FSEC is a research institute of the University of Central Florida and is the statewide energy research institute for Florida. More information on the center is available at [www.fsec.ucf.edu/](http://www.fsec.ucf.edu/)

**FSEC RESEARCH AREAS:**

- Photovoltaic systems
- Solar thermal systems
- Energy-efficient buildings
- Building design assistance
- Simulation model development
- International education
- Air quality
- Windows and daylighting
- Hydrogen from renewable resources
- Pollutant detoxification
- Photoelectrochemical processes
- Alternative-fueled vehicles

**GEOLOGICAL SURVEY**

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said Brown, whose area of responsibility includes central and northeast Florida. Major waterways in the area include the St. Johns River, the Kissimmee River, the Withlacoochee River, and their tributaries.

"UCF is pleased to have the opportunity to work directly with USGS scientists and share expertise to help protect Florida's vital natural resources," said Tom O'Neal, associate vice president for research.

USGS scientists in Florida study the myriad aspects of surface and ground water availability and quality, hydrologic hazards such as hurricanes, sinkholes, flooding, and storm surge. Ecosystem research, marine geology and biology are also key areas of research at USGS facilities throughout the state.

"In partnership with UCF, we hope to enhance our understanding of the water cycle and how it is affected by human and natural stresses, said Brown.

This partnership will help to integrate scientific understanding and help decision makers manage the region's water supply," said Brown.

**EMERGING ENTREPRENEURS**



BUDDING UCF ENTREPRENEURS TOOK PART IN TWO LUCRATIVE COMPETITIONS SPONSORED BY THE OFFICE OF RESEARCH & COMMERCIALIZATION THIS SPRING. IN MARCH, 22 STUDENTS COMPETED FOR MORE THAN \$500 IN PRIZES AT THE FIRST KING OF THE COURT QUICK PITCH BUSINESS COMPETITION. CONTESTANTS WERE GIVEN ONE MINUTE TO PITCH THEIR BUSINESS IDEAS TO A PANEL OF SEASONED ENTREPRENEURS AND INVESTORS. FROM LEFT TO RIGHT ARE WINNERS BRETT DEAN (2ND PLACE), GREGORY KNOP (1ST PLACE), GREGORY VALOR (3RD PLACE) AND JONATHAN LAWHORN (4TH PLACE). AND IN APRIL, 20 TEAMS WITH 67 PARTICIPANTS COMPETED IN THE JOUST, UCF'S ANNUAL BUSINESS PLAN COMPETITION. THE WINNING TEAM, ADASTRA LABS, WHICH HAS PLANNED LIGHTWEIGHT, PORTABLE HEADSETS COMBINING REAL-WORLD SCENES WITH 3D VIRTUAL REALITY OBJECTS, RECEIVED \$4,000 AND ONE YEAR OF ACCESS TO THE BUSINESS SERVICES AND ADVISORY NETWORK OF THE UCF TECHNOLOGY INCUBATOR ALONG WITH CONTINUED USE OF THE UCF VENTURE LAB. PICTURED FROM LEFT ARE CAMERON FORD, FOUNDING DIRECTOR OF THE UCF TECHNOLOGICAL ENTREPRENEURSHIP INSTITUTE AND TOURNAMENT CO-CHAIR, RICARDO MARTINS, CEO OF ADASTRA LABS, AND ADASTRA LABS CO-FOUNDER, VESSELIN SHAULOV. ANY COMPANIES INTERESTED IN SPONSORING FUTURE COMPETITIONS CAN CONTACT STACEY SCHMIDT, TOURNAMENT CO-CHAIR, AT [SSCHMIDT@MAIL.UCF.EDU](mailto:sschmidt@mail.ucf.edu)

# IMPACT

A QUARTERLY PUBLICATION HIGHLIGHTING RESEARCH ACTIVITIES AT UCF



## UCF Office of Research & Commercialization

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### FTT EVENT

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Technology Partnership, the Florida Research Consortium and the Tampa Bay Technology Forum and held at the Hilton Walt Disney World on May 18th & 19th.

Mubarak Shah, a professor of computer science and the leader of UCF's research initiatives in the rapidly developing area of computer vision; Jay Hickman, director of UCF's Nanscience Technology Center; Ron Eaglin, an engineering and computer science professor who helped develop a data sharing technique being used by law enforcement agencies statewide; and Martin Richardson, a photonics professor who specializes in laser spectroscopy are among the UCF presenters who will be participating in technology discussion groups.

Ben Noel, executive director of UCF's new Florida Interactive Entertainment Academy, will be the featured speaker at the luncheon on the event's second day.

As the host university, UCF is looking forward to emphasizing the major role university-business partnerships have in strengthening the state's economy, said Tom O'Neal, associate vice president for research and chief executive officer of the UCF Technology Incubator.

"We're really pleased about the addition of the Innovation Florida showcase to the event this year." O'Neal said. "Florida's universities play such an important role in the economic development of the state. We'll introduce attendees to several promising new companies formed around groundbreaking technologies developed in our universities, and encourage them to invest in or partner with them."

In addition to the company presentations, UCF researchers are expected to join their counterparts from across the state in presenting specific technologies available for commercialization and licensing.

Kiminobu Sugaya, a professor in UCF's Biomedical Sciences Center, will present his pioneering process for increasing the

potency of adult stem cells which can then be used in cell replacement therapies. A recent Wall Street Journal column described the work as offering "tantalizing" possibilities in treating Alzheimer's disease.

And Otto Phansteil, an associate professor of chemistry, will talk about his research which is paving the way for targeted delivery of selected drugs directly into cancerous cells, potentially eliminating some of the negative side-effects typically associated with cancer-fighting agents.

In addition to UCF, participating universities include Florida A & M University, Florida Atlantic University, Florida International University, Florida State University, Nova Southeastern University, University of Florida, University of Miami, University of North Florida, University of South Florida and the University of West Florida.

Registration and fee information is available on the conference website.

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