

From the Director



Photo by Velma Spencer

On behalf of Indian River Research and Education Center and the University of Florida College of Agricultural Sciences Microbiology and Cell Science Department, we are excited about our start with a new Bachelor of Science degree program in Microbiology and Cell Science to begin August 2011.

The new program will be delivered primarily with course lectures online, with laboratory courses instructed by professors on site at IRREC. Courses instructed online will be delivered by full-time faculty members situated in Gainesville. Gainesville faculty members each hold Ph.D. degrees, publish frequently in scholarly journals and conduct cutting-edge research in their fields. Faculty research topics include host-parasite interactions, biofilms, astrobiology, genomics and biofuels.

Administrative student support services will be provided to IRREC students by Jackie White, our full-time student undergraduate student advisor. Jackie will assist local students with registration, online course work, exams and university requirements as needed for course and degree completion.

Prospective students seeking admission to the distance education Microbiology and Cell Science Bachelor of Science degree must have completed either an Associate Arts degree or 60 hours of transferrable credits completed at an institution of higher learning.



New B.S. degree in Microbiology, page 3

What an incredible opportunity this is for residents along the Treasure Coast and from other locations within commuting distance to IRREC. With a Bachelor of Science degree from the state's flagship university, graduates will hold credentials necessary to enter medical school or graduate programs for pursuit of careers in pharmacy, veterinary medicine, optometry or research.

At this time we anticipate about 20 students will enroll for the Fall 2011 semester. It is expected they will complete the degree requirements within two years. We are excited in anticipation of our future graduates' accomplishments.

Pete Stoffella

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Catherine Riiska graduated IRREC with a M.S. in Environmental Sciences and is now employed in microbiology

NEW Bachelor of Science degree in Microbiology and Cell Science

Because the new era along the Research Coast will usher in science careers certain to provide high quality jobs for many residents, the University of Florida is now offering a statewide Bachelor of Science degree in Microbiology & Cell Science. The new degree program, to begin Fall 2011, will feature online lectures and coursework, with live laboratory classed conducted by UF professors at the UF/IFAS Indian River Research and Education Center (IRREC) west of Fort Pierce, 2199 South Rock Road, in the Treasure Coast Research Park.

The Research Coast recently attracted world-class research institutions such as the U.S. Department of Agriculture Horticultural Research Laboratory, Torrey Pines Institute for Molecular Studies, St. Lucie County Forensics Laboratory. Located in north Fort Pierce, Harbor Branch Oceanographic Institute is a world renowned marine science research site. The UF/IFAS Indian River Research and Education Center and the UF/IFAS Florida Medical Entomology Laboratory have been situated locally for centuries.

The UF Off-Campus Bachelor of Science degree in Microbiology & Cell Science will provide the last two years of a 4-year degree and is designed to accept all prerequisites students have earned as part of an Associate in Arts degree from statewide colleges, universities or community colleges. Lectures will be available at times convenient to students by streaming audio, video and PowerPoint presentations. The program may be completed within two years; however, those who have many additional obligations will be encouraged to complete the program over a longer duration. Student support will be provided by

Enrollment Deadline for Fall 2011 is March 1, 2011.

Contact Coordinator of Student Support Services Jackie White at (772) 468-3922, Ext 148; jkwhite@ufl.edu

professors by teaching assistants, academic advisors by e-mail, and in chat rooms and by telephone. Research Coast participants will visit the UF Fort Pierce location, IRREC, to receive personalized services from the Coordinator of Student Services dedicated to that site full-time, Jackie White.

"Our students typically are employed full-time, have families and other obligations," said IRREC Professor and Director Dr. Peter Stoffella. "This program is paced for part-time serious students who will seek employment in research science fields, which we are finding in increasing numbers along the Research Coast as more research firms move to our area."

Some of the courses offered in the program are: Microbiology, Immunology, Virology, Pathogens, Parasitology, Astrobiology, Molecular Genetics and other closely related courses. These courses will provide students with a background required to pursue careers in medicine, pharmacy, dentistry, optometry, veterinary science, biomedical research and basic research fields.

Local residents interested in matriculating in the new program may contact Coordinator of Student Support Services Jackie White (772) 468-3922, Ext. 148, or e-mail: jkwhite@ufl.edu A program website may be viewed at <http://microcell.ufl.edu/students/offcampus/curriculum.shtml>

IRREC GRADUATES



Sambhav Sambhav (last name same as first) works in a citrus grove conducting research



Dr. Mark Ritenour (far left) oversaw Sambhav's graduate research

Sambhav Sambhav Earns Master's in Horticulture With Specialization in Postharvest Technology

Sambhav, who uses his given name as both his first and surname, has earned a Master of Science degree in Horticultural Sciences, carrying out research under the direction of IRREC's Dr. Mark Ritenour. Here, his research developed methods to reduce peel break down of fresh citrus using pre-and-postharvest practices such as the use of pre-harvest foliar nutritional materials or anti-transpirant sprays, and preventing tree water stress. After harvest, he found that exposure to low humidity, 30 or 60 percent environments for three or four days, could greatly increase peel breakdown.

Sambhav had earned a Bachelor Science degree in Horticultural Sciences at the College of Agriculture in Pune, India, prior to his departure to the United States and to Florida.

Upon his recent graduation, Sambhav was hired by Monsanto as a Research Associate and now works in Felda, Florida, near Clewiston, inland from the southwestern shore of Lake Okeechobee. His work at this time is to create x-cell spreadsheets and macros to automate monotonous cells and run procedures for vegetable production gauges for Monsanto.

A native of Ranchi, India, Sambhav Sambhav's earliest memories are of his grandparents' lush mango groves and large vegetable production fields. Members of his extended family studied life sciences, which also inspired him to pursue his career in horticultural sciences.

Ranchi, the capital of Indian state Jharkhand, is situated in north central India, near the widest



Sambhav works with photovoltaic station in a citrus grove

part of the country, inland from the Bay of Bengal's westernmost shore. At home, Sambhav enjoyed temperate weather, similar to Florida's climate at home. Five waterfalls are located near the city which is surrounded by dense forests.

Agriculture is one industry important to his hometown's economy. Mineral production, education at all levels and medical care are equally prominent to Ranchi and its inhabitants.

Sambhav possesses a clear career vision. He plans to continue with his work for one of the nation's largest agricultural corporations and then pursue a Ph.D. His vision aligns with his perceptions about world agriculture. Because land available for food production is shrinking worldwide, increased production yield from smaller land parcels will intensify. And, labor is increasingly more expensive. Because of these two definite trends, particularly in the United States, Sambhav believes corporatization of food production will continue and most of the nation's food will be produced by a number of large companies.



Jinghua at American Horticultural Association meeting



Jinghua taking field sample



Jinghua and Stanford Professor Dr. Sam Webb

Dr. Jinghua Fan, Soils Scientist

Jinghua Fan completed a Ph.D. in Soil and Water Science under the direction of Dr. Zhenli He. Her dissertation was with chemical remediation of copper contaminated soil using water treatment residue obtained from the Fort Pierce Utilities Authority. Her experiments were performed in the Soil and Water Science Laboratory, in the field, in our campus greenhouses. Jinghua's findings were that this waste byproduct, water treatment residuals, is highly effective in reclamation of soils in which copper has been used to treat crops for prevention of citrus canker, in particular.

Jinghua arrived in the United States in 2006. Prior to her arrival at IRREC in Fort Pierce, she completed course work as a doctoral candidate at UF in Gainesville with Dr. Lena Ma, a renowned research scientist with expertise in phytoremediation using ferns to extract arsenic from soils.

Born and raised in Tianjin, China, Jinghua is from one of China's largest metropolitan cities with population of more than 10 million. This year in October, Tianjin hosted the United Nations Climate Change Conference. It sits just south of Beijing, the nation's largest city, and is accessible by train in only a half hour. Situated in northern China, along the coast of the Bohai Gulf, Tianjin borders the Grand Canal of China. Many rivers

pass through Tianjin: The Hai He River forms at the confluence of the Ziya, Daqing and Yongding Rivers, The Grand and South Grand Canals, all of which flow from there into the Pacific Ocean. An important industrial city, it is most well-known for snack foods produced there. What is believed to be the world's fastest supercomputer, Tianhe-1-A, is held in Tianjin's National Supercomputing Center.

Her parents both served as accountants for industrial firms. Jinghua attended Nankai University in Tianjin and earned a Bachelor of Science degree in Environmental Planning and Management. Her plan is to work as a post doctorate anywhere in the United States for the next five years. Later she intends to return to her home.

Jinghua believes agricultural sustainability is vital but it comes with a price: because chemicals are necessary to produce food, contamination of the environment results. Her work as a soils scientist, along with all soils scientists is to improve efficiency of fertilizers and other chemicals, to reclaim contaminated soils and to minimize contamination and eutrophication in water resources affected by agricultural production. With research, and with vigilance by producers to protect the environment, agriculture will indeed become more sustainable, said Dr. Jinghua Fan.



Veronica (left), Cecile and Rodrigo attended commencement in Gainesville



Dr. Cave, Rodrigo, Cecile and Veronica



Cecile in the field

Cecile Montemayor Earns Master's in Entomology and Nematology

Panama national Cecile Montemayor earned a Master of Science degree in Entomology. Under the direction of Dr. Ron Cave, she conducted thesis research at the UF/IFAS Norman C. Hayslip Biological Control Research and Containment Laboratory, situated here at IRREC. Her graduate program research involved the biological control of the yellow-margined leaf beetle, a pest in need of management because it damages important crucifer crops, such as turnips, broccoli, cauliflower, cabbage, collards and mustard greens. Little information was available to growers who seek ways to control the pest, with a minimum amount of chemicals, and to preserve the crops from this insect. Montemayor's research was conducted to evaluate possible "green" solutions for control of the beetle. She looked at natural predators which attack the yellow-margined leaf beetle, as well as the use of a fungus to control the pest.

During her studies, Cecile was a recipient to the St. Lucie County Master Gardeners scholarship award and two place awards for student presentations made at both the 2009 Florida Entomological Society meeting, and during the 122nd Florida State Horticultural Society annual meeting.

The place awards were made to recognize live presentations Cecile made during the event about her IRREC research projects and scholarly journal articles. Dr. Cave said the prestigious

recognitions were garnered following only the second occasion during which she had presented for a student competition.

Cecile earned a Bachelor of Science degree for Agronomy Engineer in Agriculture Science and Production at Zamorano in Honduras prior to her UF graduate studies and research. Her graduate study program was sponsored by the Panama Ministry of Economy and Finance. As part of her graduate study fellowship, she has returned to Panama and is currently employed with the country's Ministry of Agriculture, carrying out three projects: she is implementing a new agricultural extension program for the ministry, using technology; coordinator of a research and technological innovation action plan for Panama's agricultural sector; and, she is coordinating an agreement with her country's agricultural ministry and the Brazilian Agricultural Research Corporation.

Cecile is a native of David City, in Chiriquí, Panama, a very beautiful place in the world. David City is the capital of Chiriquí. Located on the western coast of Panama, between Panama City and Costa Rica to the west, it fronts the cerulean-colored water of the Gulf of Chiriquí, which opens into the Pacific Ocean. Chiriquí is gifted with fertile soil; the region's crops include coffee, oranges, strawberries and vegetables. Cattle is also an important part of the region's agriculture. Chiriquí is emerging as one of Central America's most important tourist destinations, offering stunning beaches, tropical forests, white water rafting and mountain climbing. In Chiriquí, it is possible to climb the country's tallest mountain, Volcan Baru, and view both the Pacific Ocean at the Caribbean Sea at the same time.



Kristin's graduate research experiments



Kristin Campbell earns Master of Science in Environmental Sciences

Kristin Campbell has earned a Master of Science in Environmental Sciences. Her graduate study program was under the direction of Dr. Sandra Wilson, who leads IRREC's environmental horticulture department.

To support statewide UF Environmental Horticulture departmental goals, Kristin assisted with research pertaining to the popular landscaping plant Lantana, valuable to the economy yet which is also highly invasive. The research program goal was to develop germination protocol and to then establish non-invasive cultivars.

Throughout her graduate study program, and at this time, she is employed part-time with Palm City environmental consulting firm, Phillip Jimrusti and Associates Inc., carrying out work for wetlands mitigation and design. The firm is among South Florida's most prominent environmental consulting businesses.

Kristin holds a Bachelor of Science degree in Environmental Science and Policy from the University of South Florida in Tampa. For her undergraduate studies she was a recipient of a Bright Futures Scholarship Award and was a member of the Golden Key Honor Society. There,

she was involved in student organizations such as Project Earth and Students for Ethical Treatment of Animals.

A native of Palm Beach, Florida, her appreciation for natural resources and her love for the environment began at a young age. While attending Palm Beach High School, she participated in beach clean-ups. Kristin said she now intends now to continue with her environmental career and would like to pursue more research opportunities. Research is unique from all of the previous work she had done in taking samples and monitoring ecosystems. Research, she said, is an entirely different and exciting experience.

Kristin said public support to protect, preserve and restore the environment is growing rapidly because more people are realizing what damage has taken place and that it can be reversed. It offers a great opportunity to improve the environment around us for future generations she said.

Kristin enjoys raising a very young child, which she balanced masterfully along with graduate studies and working part-time.



Dr. Pete Stoffella is second from left holding banner to recognize U.S. Marine Corps Reserve Toys For Tots campaign

IRREC Holiday Luncheon 2010

About 75 IRREC Faculty, staff, friends and family members attended the annual Holiday Luncheon held December 19 in IRREC's South Auditorium.

Dr. Stoffella lead the event at which more than several staff members were recognized for devoted years of service and two graduates, Jinghua Fan and Kristin Campbell, were recognized and received special gift bags.

Delicious prepared, pot luck, and homebaked items were available buffet style while attendees mingled. Honoree guests were Professor Emeritus Dr. David Calvert and his wife Mrs. Joyce Calvert, and Professor Emeritus Dr. John Brolmann and his wife Mrs. Brolmann.

Highlighting the event was a solo performed by Salvation Army representative Nate Wells and the annual IRREC Toys For Tots collection presentation. Each year IRREC faculty staff and students donate funds and toys to Toys For Tots. This year's collection included a check for \$725 and an estimated \$275 in-kind donations of toys.



Mrs. and Dr. John Brolmann, IRREC Professor Emeritus



Dr. David Calvert, IRREC Professor Emeritus, and Mrs. Joyce Calvert



Kristin Campbell is recognized by Jane Bachelor, MBA, for earning a Master of Science degree in Environmental Sciences



U.S. Marine Corps Reserve Officer Nate Wells performs solo following IRREC donation to Toys For Tots annual fundraising campaign and toy drive

Undergraduate Course Offerings:

Insect Physiology
Annual and Perennial Gardening
Agribusiness Entrepreneurship
Agriculture and Environmental Quality
Consequences of Biological Invasion
Horticulture Science Seminar
Fundamentals of Pest Management
Introduction to Soils
Citrus Pest Management

For Graduate
Course Offerings check
the UF/IRREC website:

www.irrec.ifas.ufl.edu

Important Dates:

Classes Begin.....January 5
Final ExamsApril 23, 25-29
Martin Luther King Jr. Day.....Jan. 17
Spring Break.....March 5-12
Classes End.....April 20

UF/IRREC Degree and Certificate Program Offerings:

Bachelor Degrees:

Environmental Management

Master Degrees:

Ecological Restoration
Environmental Sciences
Environmental Horticulture
Entomology and Nematology
Agricultural Education
and Communication

Certificates:

Undergraduate

Geomatics
Urban Pest Management
Landscape Pest Management
Pest Control Management

Graduate

Ecological Restoration
Non Profit Management
Sustainable Land Resource and
Nutrient Management
Soil Ecology Services
Wetland and Water Resource
Management