UF Undergrads Make Medical Advancements for HIV and Epilepsy Patients

Horse Enterprise Management Class Hosts Ropin’ in the Swamp Event

CALS Student Travels the World
Making a Difference

The mission and values statement for the College of Agricultural and Life Sciences states in part that the College intends to provide a high quality education that results in knowledge and abilities for productive citizenship. In that effort, the College values scientific inquiry, diversity of ideas, and programs that are responsive to the needs of students, Florida and the world.

With 24 undergraduate majors and 22 graduate programs, CALS is a national and international leader in educational programs in the diverse areas of food, agriculture, natural resources and the life sciences. Students work in classrooms and laboratories on campus and throughout the state to gain first-hand knowledge of the latest research and development issues. They apply new-found skills through internships in business and industry as well as the public sector. They broaden their horizons by participating in short- and long-term international study opportunities. In short, they are developing and enhancing the skills they will need to be productive citizens in the global society.

While many undergraduates enter the workforce upon graduation, more than half will immediately enroll in graduate or professional school. Graduate students continue their education or start their careers in higher education or in the private sector. They are well-prepared, and they do well. The partnerships they develop with faculty and within the “real world” during their studies pay huge dividends. We are proud of all that they accomplish while students in our College and throughout life.

It’s Great to be a Florida Gator!

R. Kirby Barrick
Dean

With 24 undergraduate majors and 22 graduate programs, CALS is a national and international leader in educational programs in the diverse areas of food, agriculture, natural resources and the life sciences.
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*Cover photo:* Machu Picchu in Peru was just one of the stops in student Mike Jones’ travels. (pg: 7)  
Photo by stock.xchng user antoniocrp
A group of University of Florida undergraduates is working to improve the lives of children affected with epilepsy or HIV.

The InvestiGators Research Honors Society members are divided into three teams that specialize in different areas. Each team helps patients improve the symptoms of their illness while collecting important data that may prevent sickness.

Professor Peggy Borum oversees the undergraduates in their research.

“A series of interviews are required for each applicant in order to find the most qualified students, with majors ranging from chemistry to psychology,” Borum said.

Each student is assigned to one of three research teams based on his or her application and interests. The teams are the KetoGator Team, the Gator Team and the Carnitine Team.

The KetoGator Team uses Ketogenic therapy to decrease seizures in pediatric epilepsy patients. Ketogenic therapy is a diet that includes adequate protein and low carbohydrates and as much as 90 percent of the calories from fat. The team prepares meals that follow these nutritional guidelines and educates families on the importance of the diet.

The team supports the families with frequent phone calls and follow-up visits. Based on the results, they determine the effects of Ketogenic therapy in a variety of patients.

“Decreasing seizures is the main goal. Some patients are now seizure-free while others are stable,” said KetoGator Team co-captain Joann Wong. “A lot of success has been achieved through decreasing anti-epileptic medication, which sedates children and lowers their alertness. Parents are very happy to see their children more alert by lowering the medication with the help of our diet.”

The Gator Team works with HIV patients to prevent mother-to-child HIV transmissions and abnormalities in already affected children.

In order to prevent mother-to-child HIV transmission, an infected pregnant woman is treated with antiretroviral drugs during the end of pregnancy and during delivery. After delivery, the baby is treated with the antiretroviral drugs for six weeks. The babies are then tested to conclude if the team was successful in the prevention of the disease.

The team also educates HIV patients about special diets that help affected children maintain normal growth. HIV often impairs a child’s growth in height and weight, and certain antiretroviral drugs can add to the negative effect. The Gator Team works to prevent HIV transmissions and alleviate symptoms of HIV-infected patients.

The Carnitine Team collaborates with the KetoGator Team and the Gator Team by applying what is learned in the clinic to experimental studies conducted on piglets. Piglets are used as these experiments are often too invasive to perform on humans.

“Piglets are the best model because their physiology and anatomy are very similar to humans,” Borum said. “Like humans, half of the brain develops before birth and half develops after birth.”

The Carnitine Team uses the piglet models to study the potential use of carnitine in the treatment of seizures for epilepsy patients and as a treatment for metabolic abnormalities in HIV patients. Carnitine is a nutrient that assists in the production of energy from the food we eat.

“The Carnitine Team applies the biochemical side of the research by translating what is done in the clinic and bringing it to the scientific community,” Wong said. “If the Carnitine Team has an answer, we can apply it to the clinic.”

Through strategic collaboration, the InvestiGators have worked to alleviate children’s illnesses through medical advancements. At the same time, these undergraduate students are using this opportunity to gain medical insight in their fields of study to further improve medical research.
A unique entomology laboratory has created an open door for undergraduate researchers to gain hands-on experience and boost their resumes.

The Miller Lab in the entomology and nematology department enables students to become involved in research at an early stage in their college career.

Dr. Christine Miller, who founded the Miller Lab, is a scientist, teacher and mentor. Her work is dedicated to improving the understanding of natural selection.

“My goal is to advance science as a whole, especially in the area of animal behavior. I primarily focus on mate choice and male competition for mating opportunities,” Miller said.

The Miller Lab provides serious undergraduate science majors the opportunity to boost their resumes and potentially publish research. Fae Nageon de Lestang, an entomology and nematology senior, recently presented one of her projects at the Entomological Society of America’s Annual Meeting. In addition, she has had one project published and another is in review.

“The experience was rewarding, and I was glad to have my work recognized by the scientific community,” Naegon de Lestang said.

Ben Anderson, a recent entomology and nematology graduate, said the tools learned from Dr. Miller have been extremely valuable.

“I feel like Dr. Miller understands what it means to be a researcher, but she also understands what it means to be a teacher,” Anderson said. “She blends the two in such a combination that learning is inevitable for her students.”

To gain hands-on experience, research in the laboratory is complemented with outdoor research, Miller said. Most of the research is based on the sexual selection process; however, students can work on other topics.

The process of sexual selection involves examining specific traits that help an insect achieve matings.

“The research explores the costs and benefits of mate choice, mating behaviors, and reproduction in general,” Miller said.

Students interested in assisting in research or conducting their own research should speak with Miller. Basic science classes are required to be eligible for the program, but when choosing students for research, she said that having a passion for science and a strong interview are more important than test scores.

Ben Anderson and Linhchi Nguyen work in the greenhouse on a project examining the use of social information by cactus bugs.

Fae Nageon de Lestang has written two scientific papers since starting in the laboratory two years ago. She is an entomology and nematology senior.
College of Agricultural and Life Sciences alumna is working toward her goal of becoming an advocate for farmers by immersing herself in international agriculture.

Danielle Brewer, BSA 2009, recently gained a broadened international perspective from her internship at a cattle ranch in Argentina and is planning a second internship to Vietnam in 2010.

While at the University of Florida, Brewer focused her education on the animal science industry, especially beef cattle. "I knew my internship would take me somewhere far away from my family, like the Midwest," Brewer said. "So I figured why not learn another language while I’m at it?"

For her internship in Argentina, Brewer worked with Carlos Ojea, owner of a cattle genetics consulting company, and Genetica Global, the second largest genetics company in Argentina, to set up an internship with Garruchos, S.A., owned by Hugo Sigman. Sigman owns 400,000 acres of farmland, separated into several ranches around the country, Brewer said.

In order to learn the language, she arrived in Argentina four months prior to her internship to take intensive Spanish language classes at Universidad de Belgrano in Buenos Aires. After completing language courses, Brewer left Buenos Aires to begin her internship in General Belgrano.

The initial plan was for Brewer to divide her time interning at several of the ranches. However, after starting work at El Encuentro, Sigman’s premiere cattle ranch, she elected to stay with them for the duration of her internship. The best cattle from all five ranches are taken to El Encuentro where they are prepared for show or sale.

"In Argentina, cattle are shown and kept much fatter than cattle in the states," Brewer said. "There is a distinct variation between the U.S. show cattle industry and the commercial cattle industry that provides the beef that we consume in the U.S. Cattle in the U.S. are shown more for their looks, whereas cattle in Argentina are shown for how well they will feed people. The variation between the ‘show cattle’ and ‘real commercial cattle’ is a little more subtle in Argentina.”

While working at the ranch, Brewer showed 21 head of cattle in the Palermo National, the largest cattle show in Argentina. At the Palermo National, about 1,500 head of cattle are shown annually. One of the heifers Brewer exhibited placed third best female in the Hereford breed category.

In preparation for the show, Brewer worked six days a week at the ranch for an average of 10 hours per day. Through her hard work, Brewer built strong personal bonds with Ojea and fellow ranchers.

“Her stay with us was excellent in whatever way that you look at an exchange of culture and language living together,” said Eduardo Borioni, general manager of El Encuentro.

Her overseas internship has not only given her a broadened view of the beef industry and a different culture, but she gained new friendships and a greater ability to speak and understand Spanish.

Brewer is preparing for another international internship to Vietnam in May. She will work for the U.S. Embassy’s Office of Agricultural Affairs. This office is largely responsible for the trade agreements that happen between the U.S. and Vietnam.

“I enjoy traveling and spending time abroad, so the Foreign Service through the U.S. State Department and the Foreign Agricultural Service through the USDA really interest me,” Brewer said.

Brewer currently attends law school at Mercer University’s Walter F. George School of Law in Macon, Ga. She is interested in practicing international relations, agricultural trade policy and immigration law. “My main goal is to facilitate agricultural trade and to be an advocate for the farmer,” Brewer said.
A 2009 food and resource economics graduate has traveled to 19 countries in the past three years to study, research and explore the world.

Mike Jones took his first international trip in the summer of 2006 with the Lombardi Scholars, a select group of six incoming freshman that participate in international and community-based programs designed to enhance their academic experience. After the trip to Mexico, he discovered that he had a passion for international travel and development work.

“When I went to Mexico, I realized that I have the physical capability to live in another country and that I wanted to work abroad,” Jones said.

The following summer, the Lombardi Scholars traveled to Greece. Jones used this opportunity to spend an extra eight weeks backpacking through Europe with four other students. They traveled through Belgium, France, Italy, the Netherlands, Spain, the United Kingdom and Vatican City.

“I would finish one summer and then start to plan the next summer,” Jones said. “Planning my next trip became a hobby.”

James Sterns, an associate professor of food and resource economics, has served as Jones’s mentor for undergraduate study and research abroad. “Mike continuously dines at the banquet of life,” Sterns said. “He sees his time at the University of Florida as a banquet of opportunities.”

In addition to Mexico and Greece, Jones has also traveled to Japan and South Africa as a part of the Lombardi Scholars program. He has developed an interest in development work as a result of these experiences.

Jones completed his first international development project in Peru in summer 2008. He performed an impact assessment to evaluate the effects of credit and extension service for small-scale potato farming cooperatives in the Andes Mountains. Prior to the trip, he learned Spanish so that he would be able to speak with Peruvian farmers to collect data. His research was awarded best paper by the University Scholars Program and is currently being submitted for academic publication.

In summer 2009, Jones worked on a development project in Egypt, Syria and Jordan for the International Center for Agricultural Research in Dry Areas. He completed an overview of the sage and oregano markets to help determine ways that cooperatives can increase shares to farmers. He traveled with an Arabic translator to collect data from farmers, processors and wholesalers in Jordan.

“One of the more challenging things I’ve done was navigate through an Arabic-speaking country,” Jones said.

Jones spent the fall 2009 semester studying abroad in Switzerland at the University of Neuchâtel. Although he had never taken a formal course to learn French, he taught himself the language prior to the semester and took six courses at the university, all of which were taught in French. Jones says he enjoys the challenge of learning a new language.

“Linguistic skills are investments for the rest of your life,” Jones said. He said that the key to learning a language is to surround yourself with as many tools as possible. To help learn Spanish and French, he changed his cell phone settings and computer programs to Spanish and French mode. He also took class notes in Spanish and spoke Spanish with his roommate.

“It’s more fun when it’s not in English,” Jones said.

Jones wants to work as an agricultural economist in international agricultural development for small-scale producers.

“These farmers are good people working in agriculture, but many just don’t know enough about maximizing the profitability of their products,” Jones said. “The key is providing local nongovernmental organizations with the tools they need to develop agriculture.”

Jones plans to continue traveling the world to work on-site development projects.

“Mike has a genuine interest in making the world a better place,” Sterns said.
Prior to June 2009, visitors to the Food Science and Human Nutrition Building often saw hallways flooded with student researchers and subjects.

A clinical human nutrition lab, the first of its kind at the University of Florida, has since taken up residency in Room 227 of the building.

"Prior to having this lab, students were actually working in the halls of the building completing basic clinical tasks such as taking measurements for height and weight, as well as taking blood samples," said Anne Mathews, research assistant in the department of food science and human nutrition. "It did not allow for much privacy."

Since the opening of the lab in June, six different research studies have already been conducted, Mathews said.

"The crucial need for this lab was established many years ago when students and staff in the department of food science and human nutrition used to have to travel down the street to the General Clinical Research Center at Shands to conduct human research studies," Mathews said.

With the new clinical human nutrition lab, students and staff are able to focus and conduct research on topics including weight management, diabetes and obesity prevention in a fully equipped lab setting, Mathews said.

"A group of students is currently working on a whole grain study that will demonstrate the effect of whole grains in middle school kids," said Wendy Dahl, assistant professor in FSHN. "We currently have over 50 undergraduate students working on this specific study."

Other studies are also being conducted on topics such as the effects of dietary fiber on gastrointestinal health and whether glucomannan fiber beneficially affects glycemic response in women at risk for type two diabetes, Mathews said.

The construction of the new lab was funded by State of Florida Public Education Capital Outlay funds, which allow for building construction on university campuses.

"Most of the equipment in the lab itself, however, was funded by faculty who chipped in and each bought different pieces," Mathews said.

Lab equipment and instruments include machines that measure anthropometrics, which include height, weight and waist measurements, as well as a bioelectrical impedance spectroscopy machine that measures one’s body composition.

In addition to these machines, the lab also contains a metabolic cart, which measures a person’s resting energy expenditure and an automated blood pressure monitor.

"We would not be able to do any of this research without this lab," Dahl said. "The lab is vital, and without it, we would not have this [research] funding either."

Since June 2009, more than $1 million has been raised for the lab and around 400 subjects have been used in the lab’s various research studies, Dahl said.

Thanks to this new lab, the UF community can continue to look forward to groundbreaking clinical human nutrition research from the students and staff of the department of food science and human nutrition.

The Food Science and Human Nutrition building now houses a new clinical human nutrition lab in Room 227 that allows for research projects focusing on areas such as diabetes and weight management.

The main room in the clinical human nutrition lab houses lab equipment as well as food items being used for current research studies.
Students in the University of Florida’s spring 2010 Horse Enterprise Management class worked diligently all spring semester in planning the fifth annual Ropin’ in the Swamp event held on Saturday, March 28.

Ropin’ in the Swamp was held at the IFAS Horse Teaching Unit on Saturday, March 28. This year’s event carried a Cowboy Gator Nation and wild west theme. Activities at the event included a team roping competition, activities for children, silent auction and lunchtime demonstrations from Horses Helping People.

“The competitors were all complimentary towards the students and commented on how professional the roping portion of the event was run,” said Dr. Lori Warren, assistant professor in animal science and instructor of the course.

The event is a major class project developed and organized by students in a semester. The course comprises the main points of running a business, including record keeping, networking, time management, marketing, money management, delegation of responsibilities and donations.

Warren enjoys teaching students how to run the event every year.

“It [the class] provides the opportunity for the students to put their knowledge and skills to the test by running a real business,” Warren said. “This event allows them to see how their decisions affect the bottom line, as well as how a business can be affected by the local economy.”

This year’s class overcame the challenge of managing an event in a down economy.

“It was a struggle to get sponsors and donors to commit to helping support the event this year because the economy has caused them to tighten their purse strings,” Warren said.

Despite the struggle, the sponsorship committee raised $1,660 in cash and $5,900 in in-kind donations.

[The down economy] taught the students that they would have to work harder to sell the event to local businesses to garner their support, as well as be creative about getting businesses involved, even if it was at a lower sponsorship level,” Warren said. “They also learned to be patient and to follow through with each client.”

The class is known for being a memorable event. “Students from previous years usually come back and watch because they have an appreciation for the hard work that goes into putting the event together,” Warren said.

The Horse Enterprise Management class includes students from different backgrounds, and even students that are not familiar with the sport of roping. Despite their different backgrounds, the class encourages students to work as a team in order to put the event together.

“Ropin’ in the Swamp helped with learning a proper chain of command to make sure everyone was doing their part and that things were done in a timely manner,” said Amber Van Denzen, a spring 2010 Horse Enterprise Management student.

As the event involves coordinating many different details, past students of the class remark on how the project provided them with valuable lessons that serve them well in their careers.

“As an IFAS Livestock Extension agent, I still utilize the planning skills that I learned in that class when planning my programs,” said Lindsey Wiggins, UF alumna and
CALS Awards

2009 Award of Distinction

DONALD T. BENNINK, a Cornell University alumnus and lifelong dairy enthusiast, is a strong advocate for the land-grant system and IFAS mission. Bennink is a managing partner of North Florida Holsteins, a 7,400-head operation he helped found in 1980. Through North Florida Holsteins, Bennink has cultivated a unique relationship with the UF Department of Animal Sciences and College of Veterinary Medicine. Bennink has served on the CVM Advisory Council and assisted with the process of merging the UF animal and dairy sciences departments. He resides in Bell with his wife Marianne and was nominated by UF Department of Animal Sciences Chair Geoff Dahl.

CARROLL WAYNE HAWKINS earned his bachelor's degree in agricultural economics in 1960 and has dedicated his 40-year career to helping Florida growers unite to survive and thrive in an increasingly competitive environment. In 1984, Hawkins was selected by the National Academy of Sciences to represent the U.S. tomato industry on a 16-day goodwill mission to China. In 1999, his friends established the Wayne Hawkins Agricultural Scholarship Fund in his honor to support UF students majoring in food and resource economics. And, in 2007, he was inducted into the Florida Agricultural Hall of Fame. Hawkins resides in Orlando with his wife Carole and was nominated by his son Drew.

H. E. “ED” Jowers earned a bachelor's degree in agricultural education in 1964. He served in the U.S. Air Force for five years and was named an Outstanding Transportation Officer in 1968 and 1969 for his service in Southeast Asia. After separation from the Air Force, he returned to UF, earning a master's degree in 1972. Jowers’ work includes expanding the Suwanee County 4-H program and forming the North Florida Regional Swine Producers Association. He became known for his expertise in peanuts in Jackson County and, under his leadership, a new agricultural office complex with a state-of-the-art conference facility was constructed. In 2008, he was inducted into the Florida Association of County Agriculture Agents Hall of Fame. Jowers retired in 2008, following a 37-year career with Extension. He resides in Marianna with his wife Sally and was nominated by former IFAS Senior Vice President Jimmy G. Cheek.

2009 Horizon Award

SHARON SPANN earned her bachelor’s and master’s degrees from UF in agricultural education and communication in 2000 and 2002, respectively. She resides in Tallahassee where she is employed with the Florida House of Representatives, specifically representatives Jennings, Mealor and Dorworth as the primary legislative researcher and analyst for each representative. A former CALS Ambassador, Spann was a member of the CALS Alumni and Friends Board of Directors from 2005 to 2008. She is an active volunteer for Florida 4-H and FFA and received the 2005 Walter B. Arnold, Jr. Youth Hall of Fame Award for 4-H alumni. Spann joined the Florida 4-H Foundation Board of Directors in 2004 and serves as treasurer of this group. She is a past president of Florida Agri-Women and has served on the Central Florida Leukemia and Lymphoma Society’s Board of Directors. Spann was nominated by Debbie S. Clements and O. Patrick Miller.
Two CALS Alumni are Appointed to the Presidential Management Fellows Program

BY RYAN DAUTEL

Two College of Agricultural and Life Sciences alumni have completed a highly competitive application process and have been appointed to a program that seeks promising federal employees.

The Presidential Management Fellows Program is a federal succession program begun to ensure leadership continuity with federal service.

CALS alumni Amy Daniels graduated with a doctorate in interdisciplinary ecology and John DeLuca graduated with a master’s in wildlife ecology. Daniels and DeLuca first competed for spots in the two-year PMF program during their final year of graduate school at UF. Once selected as finalists, they were required to pass a nationwide exam in order to be appointed as PMFs.

“The greatest advantage of the Presidential Management Fellows program is that it cuts through the layers of bureaucracy in the federal hiring process and brings you face to face with the hiring supervisor,” said PMF appointee Daniels.

Roughly 7,000 people took the exam, but only 755 passed, out of which only 150 applicants were actually hired.

Daniels and DeLuca join a select number of UF students in the program. Less than 10 UF students have ever been accepted into the PMF program.

As Fellows, Daniels and DeLuca were invited to a job fair in which they were able to interview with different federal agencies.

Currently, Daniels is working as a climate change specialist at the U.S. Forest Service where he looks to restore and maintain fire-dependent ecosystems. DeLuca received his wildland firefighting certification and is currently training in prescribed fire.

During their two-year term as Fellows, Daniels and DeLuca must complete 80 hours per year of job-related training and a four- to six-month rotation on a career-related mission of their choosing.
For more information on CALS, visit our website at cals.ufl.edu