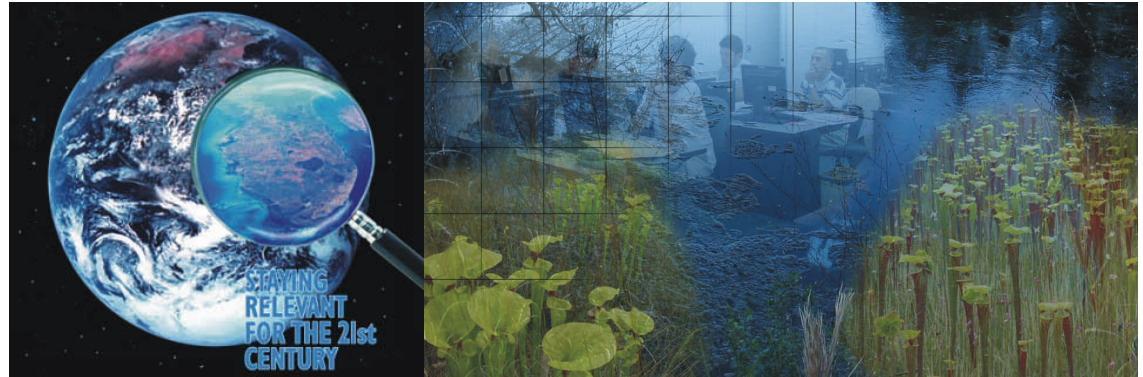




## DISTANCE EDUCATION

### FROM THE CHAIR



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The Soil and Water Science Department (SWSD) launched a Distance Education (DE) graduate program during Fall 2002, with two primary objectives: (1) to meet the needs of Soil and Water Science faculty distributed across nine Research and Education Centers and the Gainesville campus, and (2) to meet the needs of place-bound students interested in the soil, water, and environmental sciences program. At this time, the program is focused on environmental issues related to soil and water quality of agricultural lands, forested lands, rangelands, urban lands, and wetlands and aquatic systems. The program is designed for professionals including: extension agents, state and federal employees, and consultants, who want to pursue an academic career or enhance their knowledge in environmental sciences. A hybrid PhD (mixed on-campus and DE) program complements our suite of graduate degree offerings.

Our DE programs now attract students not only from Florida, but from several other states in the US, as well as other countries around the world (Latin America and Africa). The current enrollment in this program is 51 MS and 4 PhD students. In addition, numerous non-degree seeking students enroll in DE courses offered by the department.

The department uses the learning management system Blackboard/WebCT Vista and an in-house developed toolset (SWS DE portal - <http://swsde.ifas.ufl.edu>) to deliver course material and provide access to various interactive tools (e.g. grade tool, access to digital recordings, hyperlinks, and quizzes). Almost all DE courses are delivered via internet-based technology. The SWSD now broadcasts departmental seminars to DE students using Adobe Connect (Breeze Live). Some of the recorded seminars can be seen at: <http://swsde.ifas.ufl.edu/>.

The SWSD appreciates the contributions of Sabine Grunwald (as Coordinator of DE programs) and Brandon Hoover (providing technical know-how) for their efforts in keeping this program state-of-the-art. This program would not be as successful as it has been without their hard

*(Continued on page 2)*

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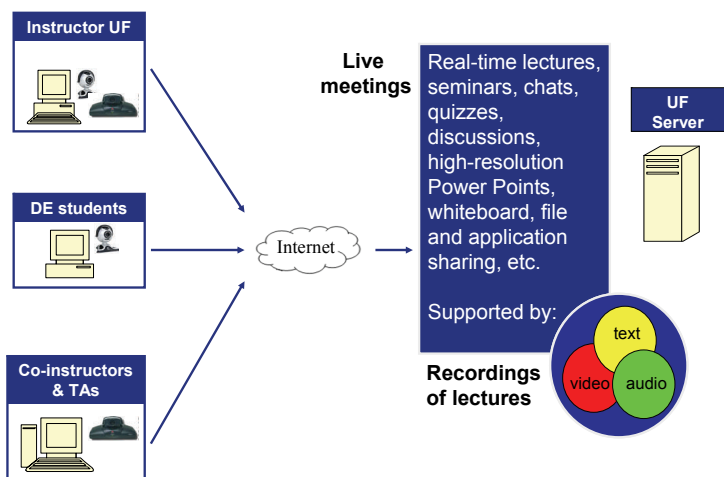
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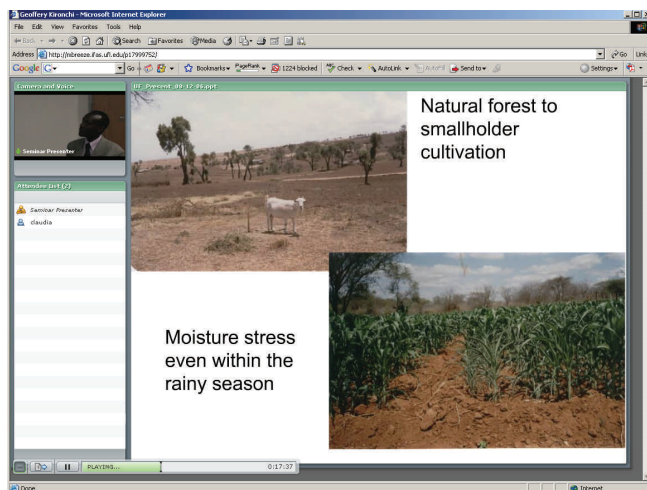


## Delivery Modes

The SWSD uses state-of-the-art electronic learning tools to bring the classroom to your home. An "Online Education Portal" (Learning Management System - LMS) [<http://swsde.ifas.ufl.edu>] has been developed to manage course content. Asynchronous (email and message boards) and the Adobe Connect *Live* chat system are used to emulate classroom settings, allowing students and instructors to interact with each other. The SWSD was one of the first departments at UF to introduce a live chat system into a DE program (Summer 2005). Students and faculty embraced the chat system that has also found use for extension training and connecting researchers online.



Overview Adobe Connect online collaborative software.



Snapshot of recorded seminar.

Learning content is delivered using narrated Power Points, streamed digital videos (e-recordings), online quizzes, reading material, and more. Interactive online tools (e.g. whiteboard and file/desktop sharing) are used to make learning material alive. A virtual computer laboratory is used to provide workspace for students to conduct assignments and projects. We believe that it is a combination of technologies, media, and styles using various forms of interaction (*interaction with people and content*) helps to enhance learning. For more information contact Brandon Hoover at [hoover@ufl.edu](mailto:hoover@ufl.edu) or Sabine Grunwald at [sabgru@ufl.edu](mailto:sabgru@ufl.edu).

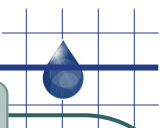
(Continued from page 1)

work and dedication. We see a bright future for our DE program. Here are few examples of what we aim to accomplish in the next few years:

- Improve our DE programs as new technology becomes available.
- Enhance DE graduate degree offerings with several online graduate certificate programs in Sustainable Land, Resource, and Nutrient Management, Soil Ecosystem Services, Wetland and Water Resource Management.
- Offer a new MS track in Agroecology jointly with the Agronomy Department to accommodate the needs of ecology oriented students (tentative launch: Fall 2008).
- Globalize our DE programs by attracting students from around the world. Focus areas include Latin America, Sub-Saharan East Africa, and India. A network of hubs linking Consultative Group on International Agricultural Research (CGIAR) centers to UF has been established to facilitate the blending of research and online teaching activities.
- Feature a digital repository of Reusable Learning Objects (RLOs) called *EcoLearnIT* to be developed by the Department. RLOs provide a digital educational resource that can be reused, scaled and shared from a central online repository in the support of instruction and learning. *EcoLearnIT* can be viewed at: <http://ecolearnit.ifas.ufl.edu/> .
- Strengthen our collaboration with international centers, such as International Crops Research Institute for Semi-arid Tropics (ICRISAT), Hyderabad, India.
- Seek extramural funding to support this program.

The Department is committed to excellence in education and this newsletter showcases numerous exciting success stories on teaching internet-based courses. Additional information on our DE programs can be found at:

<http://soils.ifas.ufl.edu/distance/>.



## Distance Education: How to Track and Improve Student Performance

Quality delivery of DE courses requires reliable hardware and software, and use of advanced technologies such as audio and video aids, and web communications. However, equally important is how to track and improve the performance of each individual student in the class. To engage students in class we use high-quality course materials, well designed homework assignments, interesting and informative chat topics, and useful sample tests. However, homework and chat sessions are probably the best windows for the instructor to know students' understanding of the course materials. Homework assignments are critical for DE students serving to help and stimulate students to study and review the course and reading materials. A more comprehensive homework should be designed that requires a good understanding of the course and reading materials and critical thinking of the basic concepts and principles. For DE courses, a chat session is like an in-class discussion forum and serves three major purposes: 1) to show how each individual student learns and understands the course by asking questions and reviewing each student's response to questions and discussion topics; 2) to answer questions from students related to each course chapter covered; and 3) to discuss the core concepts and principles of studied chapter(s). Therefore, a good design of chat session including navigation of chat and efficient use of time is a great plus to the success of a DE course. For more information contact Zhenli He at [zhe@ifas.ufl.edu](mailto:zhe@ifas.ufl.edu).

## Strengthening Agricultural and Environmental Capacity through Distance Education

<http://international.ifas.ufl.edu/distanceducation/SAECDE.htm>

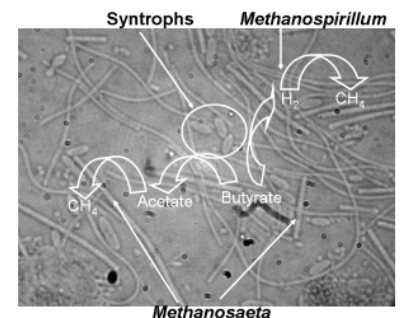
A partnership was formed between UF, the International Center for Tropical Agriculture (CIAT), and the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT). A pilot project has sponsored 4 students from the University of Nairobi, Kenya and Makerere University, Uganda to earn a degree in DE mode from the Soil and Water Science and Entomology departments, UF. The aim is to bring education to Africa and allow students to work on locally relevant research topics jointly with scientists from the Consultative Group for International Agriculture Research (CGIAR) and UF. Barriers to deliver courses in online mode to students in Africa were identified as part of this pilot project (e.g. bandwidth limitations; access to computers; limited access to synchronous class activities; etc.).

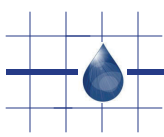


One of the students, Ben Fungo (Makerere University), investigates the causes of soil degradation and infertility on so-called Lunnyu soils that are commonly found in Uganda. Several catenas are studied to gain a better understanding of soil degradation and develop recommendations how to maintain soil fertility and protect soils from degradation. This understanding is critical in Africa to improve livelihood and fight poverty. For more information about SAECDE contact Dr. David Sammons (Director International Programs, IFAS) at [sammons@ufl.edu](mailto:sammons@ufl.edu).

## Soil Microbial Ecology Delivered Online

Soil Microbial Ecology (SOS 5305) is taught as a distance course every fall semester, and the numbers of distance students enrolled have steadily increased. The distance component is taught via the university's e-learning site, with course material presented in a variety of media. Lectures are recorded and uploaded to the site as Windows Media Player files, and slides are uploaded as both Adobe presentations and as PDF files of PowerPoint handouts. Information on labs is supplemented with Adobe Presentations with audio and photographs taken during labs. A text book is recommended, and supplemental readings are uploaded as PDF files to the site. Weekly chat sessions are open to all students and provide an opportunity for distance students to ask questions and review the previous week's material. For more information contact Andy Ogram at [aogram@ufl.edu](mailto:aogram@ufl.edu).





## Blended (Face to Face and Distance Education Teaching) at Research and Education Centers

Two introductory soil science classes are offered through DE in support of the Masters of Environmental Science program and Statewide CALS undergraduate programs. SOS 5050 "Soil Science for Environmental Professionals" is offered through the web currently every Spring semester. The enrollment has increased exponentially in this excellent capstone course. The class is popular not only among matriculated students but also among professionals, e.g. from state agencies taking the class for continued learning and better job opportunities. The class has a comprehensive website on UF E-learning that provides all lecture materials in narrated macromedia flash files, PDF handouts, HW assignments, online exams, and additional resources. Live chats are done every week through ADOBE Connect that simulate a class room environment.

SOS 3022- Introduction to Soil Science in the Environment is offered through polycom videoconferencing every spring semester to various UF Research and Education Centers with website support. The class is offered in support of State Wide CALS programs like Turfgrass Science, Environmental Horticulture, Agricultural Education, Environmental Management, and Natural Resource Conservation. The laboratory part of the class is offered F2F (face-to-face) in all participating centers with SWS faculty teaching the lab.

The two classes including some of the lab instructors come together to participate in a soil classification field trip in the Ft Pierce area. The field trip is an integral part of both classes and offers a much needed hands on for the DE students. For additional information contact Samira Daroub at [sdaroub@ufl.edu](mailto:sdaroub@ufl.edu).



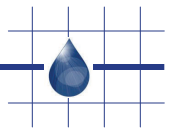
Samira Daroub with several students participating in the soil classification field trip at the Indian River REC.

## Indo-U.S. Collaborative Project on E-Learning in Water Management



<http://akicb.ifas.ufl.edu>

Numerous faculty from the University of Florida (Reddy, Grunwald, Staal, Daroub, Stanley, Alavalapati, Mylavarapu, Haman, Bowen and Judge) are involved in the project "Information and Communication Technologies for Capacity Building in Water Management - India U.S. Collaborative Extension / Outreach and Distance Education" funded by the India U.S. Agricultural Knowledge Initiative (AKI). A partnership was formed with the aim to develop a digital educational learning grid between UF, international (International Crops Research Institute for the Semi-arid Tropics - ICRISAT; Commonwealth of Learning - COL), and Indian partners (Indian Council of Agricultural Research - ICAR; Acharya N. G. Ranga Agricultural University - ANGRAU; Punjab Agricultural University - PAU; and Tamil Nadu Agricultural University - TNAU). Modern information technologies in water management, including geographical information systems (GIS), remote sensing, and internet-based education tools, provide efficient and cost-effective approaches for the assessment of water resources and quality. The partners develop skills and collaborative digital learning resources to strengthen education and technical training for extension and outreach to maximize the use of innovative tools focused on sustainable management of water resources. A workshop on "Innovative E-Technologies for DE, Extension/Outreach in Efficient Water Management" was held in Patancheru/Hyderabad, India (March 5-9, 2007) to prioritize region-specific water management issues in India that need to be addressed. Various e-learning tools and experiences were shared among participants. Indian partners will visit the UF in February 2008 and develop jointly e-learning materials based on the Reusable Learning Object (RLO) concept. The individual and institutional capacity building will occur at U.S. and Indian academic institutions providing a platform for sustainable education, extension and outreach that will foster globalization, knowledge sharing and awareness building. For more information contact K. Ramesh Reddy at [krr@ufl.edu](mailto:krr@ufl.edu).



## Environmental Pedology via Distance Education Challenges and Pleasant Surprises

Soil-landscape of Kibera, Kenya



Kenyan student in the process of describing one of her soils.

Soil profile, Florida



Picture taken by a coastal Florida student who discovered from this soil in her back yard that her lot was on a filled wetland. The brighter (higher chroma) fill color contrast with the reduced gray subjacent original soil. "Topsoil" was deposited over fill.

Pedology is a field science, so when I was first approached about teaching it via distance education I thought the prospect was absurd. I eventually agreed to do it out of concern that it might not otherwise be included in the DE curriculum. The only way I could incorporate a field component was to have students describe, interpret, and compare soils on their own. I also assigned the task of preparing presentations of their work to the class. I was not optimistic about this. However, I did have some pleasant surprises. I remember the first soil picture that I got from a student in South Florida related to her initial soil assessment. I felt exhilaration in that I could actually see her soil features (see figure) and give her suggestions about how to proceed. I subsequently discovered that DE students were tenacious and resourceful in fulfilling their field requirements, and that their reports were enlightening to me as well as other students.

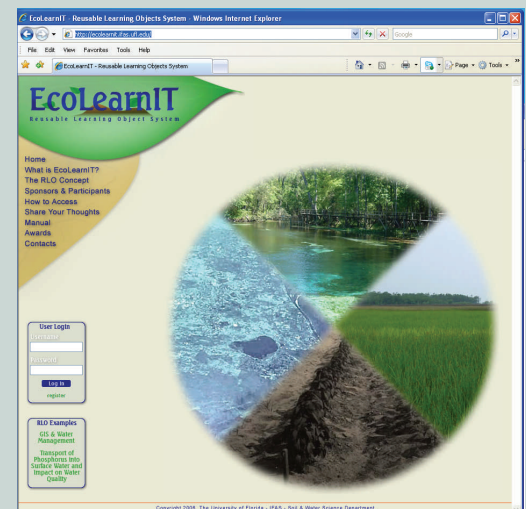
I could list numerous disadvantages of students not being able to attend on-campus field labs. These need to be compensated for in some way. However, there are also advantages to the "operant conditioning" students undergo in actively pursuing their field soil quest; you tend to remember things you ferret out yourself. Another advantage is the rich variety of soils and soil issues that arise from the wide range of student locations, including (so far) Vermont, Colombia, Uganda, Kenya, South Florida, Florida Panhandle, and REALLY foreign places like Georgia. I could NEVER provide this range of soil images from near-campus sites. Distance education requires a lot of commitment from students for it to work. So far, I have been gratified by the commitment I've seen. For more information contact Willie Harris at [apatite@ufl.edu](mailto:apatite@ufl.edu).

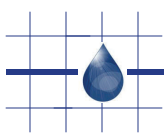
## EcoLearnIT - Digital Repository of Reusable Learning Objects (RLOs)

<http://ecolearnit.ifas.ufl.edu>

Reusable Learning Objects (RLOs) are e-materials that can be reused, scaled and shared from a central online repository in the support of instruction and learning. RLOs may be used in multiple contexts for multiple purposes and at multiple times, and can be grouped into larger collections of content including traditional course structures or learning management systems. A digital framework - *EcoLearnIT* - has been developed that provides authoring tools and access to RLOs focused on the themes soil, water, and climate. *EcoLearnIT* facilitates learning at different levels ranging from simple to complex knowledge encapsulated into different types of RLOs targeting various learning audiences (graduate, undergraduate, shortcourses/certificates, extension/outreach, and continued education).

Recently, communication scientists have observed the phenomenon of communication/learning where students/learners participate in populating and developing learning materials. This concept blends with the ongoing migration of the Internet to the second generation Internet (Web 2.0) where online material is generated by user communities (e.g. Wikipedia). Our RLO-based digital repository *EcoLearnIT* supports this different way of learning that engages students, learners, faculty, scientists and instructors. A peer-review panel ensures that only high quality learning objects are included in the digital repository (online journal). Students can develop RLOs and earn teaching/service credits. Faculty and others contributing RLO to *EcoLearnIT* are acknowledged similar to a peer-reviewed research publication. *EcoLearnIT* is an open-access educational system. For more information about *EcoLearnIT* or RLOs contact Sabine Grunwald at [sabgru@ufl.edu](mailto:sabgru@ufl.edu).





## Forest and Soil Ecosystem Services



Marcela Quintero is a MS student and a full time employee of International Center for Tropical Agriculture (CIAT) in Colombia. While doing her distance degree she has been working in a variety of projects related to the valuation of ecosystem services. Her research is investigating the carbon sequestration as an ecosystem service as well as the role it plays in maintaining soil structure and preventing erosion. She expects to graduate in the spring of 2008.

A new distance course is being developed in the area of Forest and Soil Ecosystem

Services and will be offered for the first time in the fall of 2008. This is the foundation course for a certificate program based on a study abroad experience between the USA and Brazil that is open to both undergraduate and graduate students. The course will be offered in a DE format and taught by an international team of scientists from four universities in the US (UF, University of Georgia-Athens, NC State University, and the State University of New York-Environmental Science and Forestry) and three universities in Brazil (The Federal Universities of Viçosa, Paraná and Tocantins). This foundation course combined with course work in both countries (at least 6 credit hours will be taken by US students in Brazil and vice versa) completes a 12 h certificate in Forest and Soil Ecosystem Services. The program is funded by the US Department of Education and its sister organization in Brazil. For more information contact Nicholas Comerford at [nbc@ufl.edu](mailto:nbc@ufl.edu).



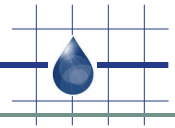
## Online Soil Physics Laboratory

The DE section of SOS 5605C Soil Physics has been taught every fall semester since 2004. At first I was very much concerned about DE students not being able to participate directly in the laboratory component of the course. This concern has now been addressed. All laboratory experiments have been video taped and uploaded on the website for the course. DVDs have also been made for each lab experiment that are sent to students overseas. Such students cannot easily view the lab videos due to bad/poor internet connections or power failures. DE students are sent data collected by on-campus students for a given lab experiment. At the beginning of the course DE students are sent a laboratory manual with instructions as to how to write up the lab assignments. From my experience DE students do a good job of writing up the lab assignments as on-campus students. On-campus students also review the lab videos before the experiments are carried out. In addition, all lectures for the course have been video taped and uploaded on the website. All students can view the lectures before they are given. A Power Point presentation of all lectures is also posted on the website. All students are also provided with a handout of all lectures and past exams. I am more than convinced that offering DE section of the course has been beneficial to me as a teacher and to the students from far away places like Alaska and Uganda who would otherwise not be able to take a similar course at their home institutions or do field experiments of water movement when the soil is completely covered with snow. This semester I have more DE students in the course than on-campus students. During the first mid-term this fall, DE students on the average, have performed better in the course than on-campus students. All DE students have participated in the chat room every Monday at 7:00 PM eastern time. For more information contact Peter Nkedi-Kizza at [kizza@ufl.edu](mailto:kizza@ufl.edu).

## Welcome... Incoming Students - Spring 2008

Mark Nalty, MS, K. Reddy  
Smita Goswami Barkataky, MS, K. Morgan  
Amy Glidewell, MS, R. Ellis  
Jake Sneider, MS, R. Ellis  
Manmeet Waria, PhD, G. O'Connor  
Marie-Jacqueline Depaz, MS, G. Toor

Rupesh Bhomia, PhD, K. Reddy  
Moshe Doron, MS, P. Inglett  
Kevin Alexander, MS, A. Ogram  
Stewart Whitney, MS, A. Shober  
Casey Beavers, MS, R. Ellis  
Ivan Altamirano Vargas, MS, J. Sartain



## Faculty, Student & Staff News

**Sabine Grunwald** will serve a 3-year term as Associate Editor of S-5 Soil Sci. Soc. Am. Journal (1/2008 - 1/2011)

**Mary Collins** was honored as "Distinguished Alumni" by the School of Agriculture and Natural Resources at the State University of New York - Cobleskill. This award was given during Homecoming Weekend at Cobleskill.

**Tom Obreza** was given the Art Hornsby Distinguished Extension Professional and Enhancement Award at the EPAF (Extension Professionals Association of Florida) meeting in September.

**Peter Nkedi-Kizza** represented the University of Florida by accompanying Oscar Ahumuza's remains to Uganda and attend services and burial. Peter Nkedi-Kizza received an award in recognition of his Outstanding Service Above and Beyond the Call of Duty from the Division of Student Affairs, University of Florida.

### Staff

Staff plays a critical role in the successful operation of the department. We thank them for their dedicated service to the department. In this newsletter the following staff were awarded recognition pins for their service to the department.

**Susan Curry** 5 years of service

**Martin Sandquist** 20 years of service

**An Nguyen** 25 years of service

**Pam Reynolds** 30 years of service

2007 SWSD Superior Accomplishment Award: **Rhiannon Pollard**

### Students

Congratulations to the following students for their outstanding accomplishments.

Frederick B. Smith Scholarship: **Rachel Vanlandingham**

Soil and Water Science Department Outstanding Undergraduate Award: **Mathew Vann**

William K. "Bill" Robertson Fellowship 2007-2008: **Julie Padowski**, Advisor, **J. Jawitz**  
and **Gustavo Vasques**, Advisor, **S. Grunwald**

Victor W. Carlisle Fellowship 2007-2008: **Jango Bhadha**, Advisor, **J. Jawitz**

Sam Polston Memorial Fellowship 2007-2008: **Melissa Martin**, Advisor, **K. Reddy** and **Julie Driscoll**, Advisor, **D. Graetz**

Award for Excellence in Graduate Studies- PhD: **Manohardeep Josan**, Advisor, **V. Nair**

Award for Excellence in Graduate Studies- MS: **Caitlin Hicks**, Advisor, **K. Reddy**

## Congratulations... Fall 2007

### Graduates

#### PhD

Yun Cheng, Advisor, A. Ogram

Matt Fisher, Advisor, K. Reddy

H. David Hornsby, Advisor, D. Graetz

Gabriel Kasozi, Advisor, P. Nkedi-Kizza

Angelique Keppler, Advisor, K. Reddy

Thomas Saunders, Advisor, M. Collins

Isabela Torres, Advisor, K. Reddy

#### MS

Amanda Abell, Advisor, K. Moore

Caitlin Hicks, Advisor, K. Reddy

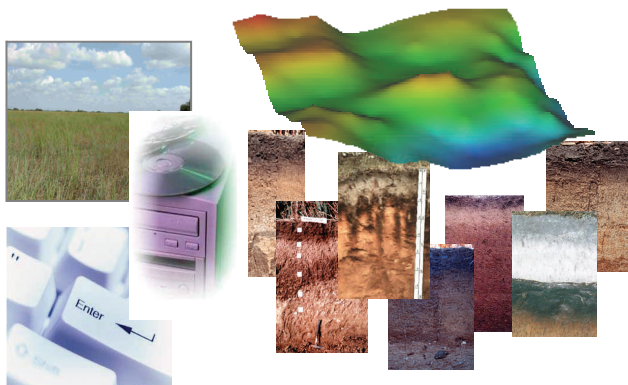
Jason Hood, Advisor, M. Clark

Lalitha Janardhanan, Advisor, S. Daroub

Augustine Muwamba, Advisor, P. Nkedi-Kizza

Catherine Goetz Riiska, Advisor, C. Wilson

## Distance Education Certificates



The SWSD announces three new graduate-level Certificate Programs in Sustainable Land Resource and Nutrient Management, Soil Ecosystem Services, and Wetland and Water Resource Management (starting Spring 2008). The distance learning delivery mode allows students in remote locations to complete course assignments and communicate with faculty and other students anywhere and in their own time. The Certificate Programs are designed for scientists, extension agents, consultants and others for professional development and continued education. Each certificate includes a total of 12 semester hours of credit. There are 2 core courses and 2 elective course requirements. For more information contact Sabine Grunwald (DE Coordinator) at [sabgru@ufl.edu](mailto:sabgru@ufl.edu).

**Don Graetz and Li Ou retired from UF at the end December, 2007.  
We wish them all the best and enjoyable retirement years.**

Don Graetz grew up in northeastern Wisconsin near Green Bay (Pound). His family owned a dairy farm and his early years revolved around activities associated with the farm. During high school he was active in the Future Farmers of America (FFA). During his first few years at the University of Wisconsin, his summers were spent on the family farm giving his Dad, who also worked a full-time job, a little help with farm chores. He received a BS and advanced degrees from the University of Wisconsin in Soil Science. The Soils Department program at that time dealt primarily with agronomic issues but his advisor's program was based on water quality issues, primarily associated with lakes, and Don's research dealt with the fate of pesticides in lake sediments. He was able to complete his MS and PhD degrees without ever working with a soil!



In 1971, Don joined the SWSD at UF. Along with Dr. Roger Nordstedt of the Agriculture and Biological Engineering Department, Don developed and team-taught an undergraduate course entitled "Agriculture and Environmental Quality" since 1971. He has also been involved, at various periods of his career, as undergraduate coordinator and advisor for the Soil and Water Science and Environmental Management in Agriculture majors. His early research has dealt with nutrient processes occurring in lakes and wetlands. In more recent years his research revolved around utilizing and managing nutrients from both inorganic and organic sources in ways that would be both agronomically feasible and environmentally sound. Since the late 1980's his research was conducted largely in the Lake Okeechobee watershed and in the Suwannee River Basin. He also provided leadership to the IFAS Isotope Ratio Mass Spectrometer facility since the early 1980's. Don was elected as a Fellow of the American Society of Agronomy and the Soil Science of America. In recognition of his research contributions, Don was appointed as University of Florida Research Foundation Professor. He served as Chair of S-10 Division -Wetland Soils, Soil Science Society of America. Don is a leader in the field of animal waste and nutrient management as related to sustainable agriculture and sound water quality, and influences agency guidelines and policy in developing strategies for nutrient management. Don retired from UF in December, 2007. He will continue to help with undergraduate advising and a co-advisor of the UF Agronomy soils Club for the Spring 2008 semester. After that, he plans to "go with the flow" of whatever retirement brings.



Li-Tse Ou grew up in Taiwan. He received about four years of Japanese elementary education when Taiwan was occupied by Japan. He attended the National Taiwan University in Taipei, Taiwan majoring in chemical engineering. After graduation, he worked as assistant research scientist with the Institute of Chemistry, Academia Sinica in Taipei. His research involved various aspects of chemistry and biochemistry, occasionally applied microbiology. Li obtained his PhD from the University of Rochester Medical Center in Rochester, NY in 1971. He continued his academic carrier on an NIH postdoctoral fellowship at Cornell University where he studied the biodegradation of several naturally occurring organic chemicals by soil bacteria. As a Research Associate at the Syracuse Research Corporation, Li conducted research on biodegradation of several environmentally important pesticides by bacteria isolated from soil and sewage.

In 1975 Li joined the SWSD where for over 25 years his research focused on biodegradation of pesticides and other environmentally important organic chemicals in soils and water as well as by bacteria isolated from soils and water. He also conducted research on bioremediation of pesticides in contaminated soils. Since 2001 his research mainly focused on the fate of soil fumigants important to Florida agriculture. For over 15 years he taught a graduate level course entitled Biodegradation and Bioremediation. He served as a scientific advisor to USEPA and consultant to environmental consultant companies.

Li retired from UF at the end of December 2007. In retirement, he will initiate research on bioremediation of DDT and its toxic metabolites in contaminated soil under aerobic conditions and by aerobic bacteria isolated from the soil. He plans to travel more to see various parts of the US and other countries and to visit more often his daughter and grandson in Delaware.