



Academic Programs

A Message from the Chair - K. Ramesh Reddy

The SWSD has a long history of providing leadership in teaching, research, and Extension programs to improve the productivity of agriculture with environmentally sound management practices. The year 2016 is a special year for our department. We changed our department name to better reflect both our soil and water sciences programs. We are now the Soil and Water Sciences Department.

We hired several faculty members [three in Gainesville and five at the Research and Education Centers (RECs)] and are in the process of hiring two in Gainesville and one at the Tropical Research and Education Center.

Thanks to Dr. Jack Payne, Senior Vice President, and the IFAS deans for making this happen. These new hires brought excitement to the department and filled gaps created by budget cuts over several years. We are also pleased that Dr. Pedro Sanchez joined the department and the UF/IFAS Institute for Sustainable Food Systems. Pedro is the 2002 World Food Prize laureate, a 2004 MacArthur Fellow, and Member of the National Academy of Sciences. As we move forward, we expect new faculty to play a key role in addressing soil and water issues as related to food security, climate change, sea level rise, public health, and protection of natural resources.



Department Name Change

For the past several years our department has been very active in conducting teaching, research, and extension programs in soil and water sciences. To reflect our current activities and our long-term goals, our name is officially changed to:

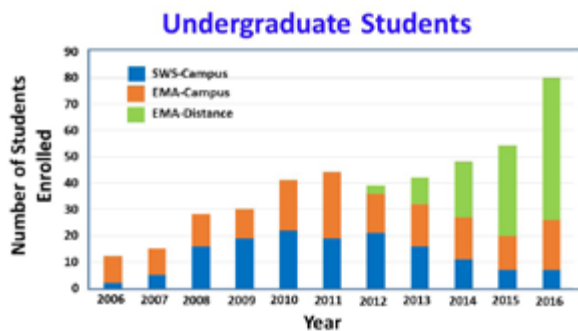
Soil and Water Sciences Department

In this newsletter we highlight our undergraduate and graduate programs offered both on campus and by distance education. On behalf of our faculty, staff, and students, I wish you all Happy Holidays and a productive year ahead.

Undergraduate Program

The SWSD offers two undergraduate programs: (1) Soil and Water Sciences (SWS), and (2) Interdisciplinary Studies: Environmental Management in Agriculture and Natural Resources (EMANR). The EMANR program is also offered via UF Online. The SWS program is offered in two specializations: Soil Science and Water Science.

Students in these programs obtain a broad-based education in soil, water, and environmental sciences. Our goal in the undergraduate program is to prepare educated professionals who can apply scientific principles to problems relating to soil, water, and natural resources. Graduates find employment in both the public and private sectors dealing with environmental, agricultural, and natural resource issues.



SWS Undergraduate Major

The undergraduate major offers two specializations. The Soil Science Specialization is for students interested in managing our land resources in a wide range of ecosystems including agricultural, forested, range, urban and wetland settings. The Water Science Specialization is for students interested in managing water resources



across a diversity of ecosystems, and it prepares students to pursue careers in hydrology, water resource management, water quality analysis, and water resource regulation.

Graduates of this major have gone on to pursue a diverse range of activities including employment as county extension agents and environmental research and development managers with private firms. Others pursue advanced degrees in related fields and environmental law.

Enrollment in the department's undergraduate courses has almost tripled since 2006, largely due to continued growth in existing courses and diversification of course offerings. Over the last four years, ten new courses were created, which integrate the major SWS sub-disciplines within the larger contexts of environmental and agricultural sciences.

Plant Science Major

Soil Science Specialization Joins Plant Science Degree Program

Soil and Water Sciences is expanding its reach. In an effort to attract more undergraduate students, the SWSD joined the Plant Science major that includes students from Agronomy, Entomology, Environmental Horticulture, Plant Pathology, and Soil and Water Sciences. Over the past several months, we have created a curriculum specialization within the Plant Science major titled Soil Management and Plant Productivity.

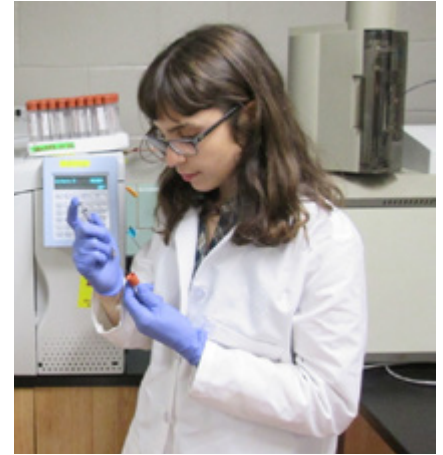


This specialization closely integrates the study of soil science core disciplines with production agriculture and horticulture. Coursework focuses on foundational principles related to soil health, productivity, and fertility in relation to sustainable plant growth and agricultural practices. Among the principal outcomes of the program is to prepare students for certification as both Associate Professional Soil Scientists and Certified Crop Advisors to better position graduates for employment in related fields. For more information, contact James Bonczek at: bonczek@ufl.edu.

Current Undergraduate Experiences

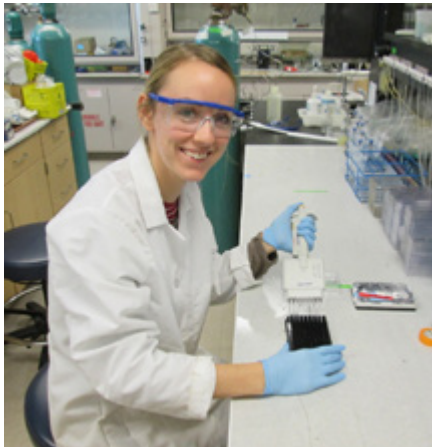
Jennifer Sarchapone:

The SWSD has an amazing ability to foster a tight knit community of students, faculty, and staff within the larger university. What initially appealed to me was the range of topics SWSD offers in its courses. From subjects focusing specifically on soil and water chemistry, to holistic approaches involving water’s relationship with human civilization, the interdisciplinary curriculum has caused me to develop a much deeper appreciation and understanding of this field. Also, as an undergraduate anticipating grad school in the future, I truly value the challenge and insight which the coupled 4000/5000 level courses provide. Outside of the classroom, there are many opportunities for students to get involved. I have been working as an undergraduate research assistant in Dr. Chris Wilson’s Analytical Chemistry and Toxicology Water’s Lab since October 2015. It has been a great learning experience working alongside Dr. Wilson and his team. The advising here at SWSD is certainly worth mentioning. I have not witnessed this degree of involvement on a personal level like that found in SWSD. Dr. James Bonczek and Michael Sisk have been instrumental in making sure I am on the right track towards graduation. As a transfer student with credits from another university, I am so grateful to have the advising that I do. I’m glad I made the decision to complete my bachelor’s degree alongside my SWSD family.



Sara Baker:

The Soil and Water Sciences Department is an exceptional division of the College of Agricultural and Life Sciences. It is a unique department that offers a curriculum specifically tailored to soil and water, which are pertinent natural resources. Courses include basic Introduction to Soils as well as more integrated curriculum such as Soil Chemistry and Environmental Biogeochemistry. The faculty and students are welcoming, encouraging, and supportive. As an undergraduate, I have had the opportunity to work in a Wetland Biogeochemistry lab and pursue my research interests by working directly with faculty on an honors thesis project. Moreover, I have collaborated with a graduate student on a research proposal and presented at the 17th Annual Soil and Water Sciences Research Forum. Overall, I am truly honored to be an undergraduate student in this department, and I would highly recommend Soil and Water Sciences to students pursuing a career in the environmental sciences.



SWS Advisors & Contacts



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Undergraduate Environmental Management

On Campus

The Interdisciplinary Studies: Environmental Management in Agriculture and Natural Resources (EMANR) BS degree was designed to ensure that ecosystem services are protected and maintained for future generations and to maintain ecosystem integrity by considering ethical, economic, and ecological variables. Our students are educated in soil science, water resources and hydrology as well as pest management, agricultural ecology, environmental policy and business management.

In the last ten years, the program has grown from 10 to 73 undergraduate students (17 traditional on campus students, 54 UF Online students, and two Pathway to Campus Enrollment (PaCE) students). We have graduated 70 students in the past 10 years. Our alumni are working as extension agents, environmental lawyers, research scientists, lab managers, and in the medical field. They are employed with agricultural producers, consulting firms, companies such as Syngenta, Tropicana, and Archer Daniels Midland, and government agencies involved in maintaining a sustainable environment.

UF Online

The SWSD has been a leader in distance education course offerings at UF. We started by offering courses at the various RECs. Our researchers and extension personnel provided onsite classes as well as remote classes using polycom technology. As the demand for these flexible courses increased for our place-bound students and high speed internet flourished, our courses shifted to using educational technologies designed specifically for distance learning. SWSD then developed a two-year program available for students who had completed an Associate of Arts. Every course in this program was available completely online. This allowed students to finish a Bachelor's degree without leaving their hometown, family and jobs.

In 2013, UF recognized the demand for online distance learning and started the UF Online program, offering seven degrees that could be attained through online classes. The Bachelor of Science in Interdisciplinary Studies in Environmental Management in Agriculture and Natural Resources was the first Bachelors in Science degree offered through UF Online. In 2010 the program had nine distance learning students at our RECs; in Fall 2016 we have grown to 58 online students.

Our "typical" online student is 29 years of age (median), transferring from a community college or other institution with an AA degree. A little over half (54%)

are female. Most of these students are employed full time and attend UF on a part time basis (<12 hours/semester). They are mostly Florida residents (88%) but many are taking classes from locations such as Hawaii, California, Pennsylvania, Michigan, Texas, Georgia, Maryland, Argentina, and Iraq. Several of our students are associated with the military as an active member, spouse or veteran. Our students take an active part in their communities and are very dedicated to their studies. For more information, contact Susan Curry at: scurry@ufl.edu.

EMANR Testimonials



Haley Glaab:

This program has opened so many doors for me and given me such great experience. I was able to start working in a research lab for soils my sophomore year and because of that experience, I landed an

internship with Syngenta running a soils lab testing for citrus diseases, which turned into a full time job offer! The best part of this program is the advisors. Mike Sisk and Susan Curry are the best advisors and are always so happy to help you be successful and get involved. I am so grateful for my experience as an EMANR major and I am looking forward to using my degree in the workforce.

Heather Kershner:

I am a nontraditional, online student in the EMANR program. I am able to pursue the degree and passion that I have always had thanks to UF's online program. The professors, advisers, and program director have gone above and beyond to ensure that not only am I successful in the program, but get the most from my online experience. I started the program while homeschooling our 4 children, took classes while we moved across the ocean and the country back to the east coast, and now am finishing up my second to last semester. I am so excited to finally graduate from UF with a degree I can be proud of!



EMANR Testimonials Cont'd

Matthew Vann:

I can safely say that EMANR was the most appropriate major for me, given my interest in a range of topics pertaining to agriculture. One benefit of EMANR was that it allowed me to study in a wide range of specialized areas such as agronomy, soil science, water science, ag policy, ag engineering, and even the basic hard sciences like chemistry and physics. Having this broad educational



background has been one of the biggest assets in my career because I now deal with each of these topics on a daily basis. After finishing the EMANR program I enrolled in the Graduate School at North Carolina State

University (NCSSU) where I completed my MS degree in 2011 and PhD in 2015, both in Crop Science with a concentration in tobacco agronomy. I am currently an Assistant Professor and Tobacco Extension Specialist at NCSSU. There is no doubt in my mind that my education and extra curricular activities (Agronomy & Soils Club and CALS Ambassador) at the University of Florida adequately prepared me for where I currently am in my career.

Eric Smith:



To me, the EMANR program was a perfect fit. Growing up an avid fisherman in the Tampa Bay area, agriculture was always nearby - strawberries, tomatoes, citrus, cattle and more. Knowing that, in Florida especially, the interaction of our ecosystems and agricultural practices would always be a critical issue I decided to pursue the EMANR program.

Projects on campus and around the State, coupled with diverse coursework and teamwork in our club (Agronomy & Soils Club) provided an excellent experience as an undergraduate. Throughout the program, I made memories and friendships that will last a lifetime. Since, I have been fortunate to manage sales and agronomic operations on a tree farm; manage agronomic sales for the busiest branch of a national distributor and am now Technical Sales Rep providing sustainable nursery and greenhouse chemistries for multiple states.

Allison Crow:

I have felt very welcomed in the EMANR undergraduate program. The staff and professors I have come across over the last few years have been extremely helpful and care about our students' future. I have learned so much about the environment, agriculture, and wetlands. Because of this program I was able to participate in an internship with Mote Marine Laboratory over the summer



doing research on sea turtle nesting. Although the internship was lots of hard work, I am grateful for the experiences I had, as well as the people and turtles I met!

Jessica Boevers:

As I enter into my last few courses towards the completion of my degree in EMANR, I can reflect back on the interesting and exciting trip it has been, being in this program and as a UF Online student. As a full time employee, wife, and mother, the decision to add 'student' to my list of titles was frightening, to say the least. With that being said, every person that I have encountered, from day one to today, has treated me with respect and patience. During my courses, I have been given several opportunities to explore our amazing environment. I have reared butterflies, stomped through wetlands, and sought out areas in my own town that I could positively impact. The best part about my 'fieldtrips' is that I could include my family. I have shared my views on water usage, found out that the phrase 'American as Apple Pie' is actually accurate, participated in a Water Wars mock debate, and so much more! The

memories that I have made and the people that have touched my life are why I can truly say that it is great to be a Florida Gator!

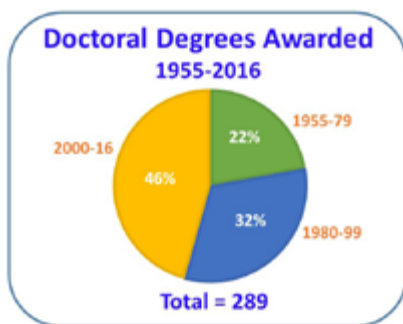


Myakka (pronounced 'my-yak-ah' – Seminole word for "big waters") gives a special identity to our department, as it is also the name of Florida's State Soil, Myakka fine sand. The State of Florida has the largest total acreage of Myakka fine sand (sandy, siliceous, hyperthermic Aeric Alaquod) on flatwood landscapes.

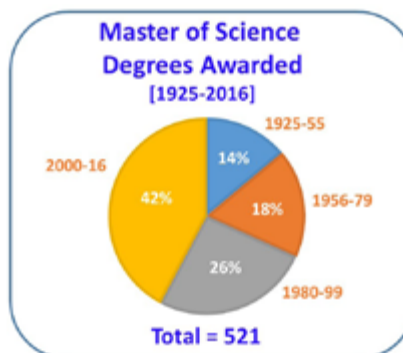
Graduate Program

The SWSD offers excellent research and educational opportunities for students seeking careers in soil, water and environmental sciences related to agriculture and natural resource management. The interdisciplinary nature of SWSD programs provides students an opportunity to conduct basic and applied research at multiple (molecular to landscape) scales to solve environmental problems, manage agricultural and forest crops and protect land and water resources. Graduate research can be conducted in a range of ecosystems including: agricultural lands, forested lands, rangelands, urban lands, wetlands, and shallow lakes and estuaries.

One means of measuring the success of a graduate teaching program is by the number of students attracted to the program. Our department awarded the first MS degree in 1925 and the first PhD degree in 1955. Approximately 42 and 46% of MS and PhD degrees, respectively, were awarded during 2000-2016.

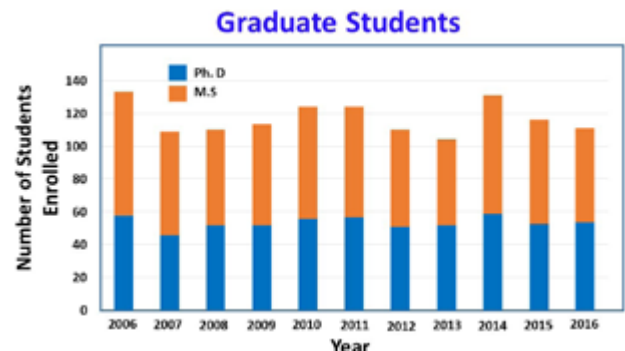


Since 1997, the Soil and Water Sciences department has experienced a large and sustainable increase in graduate student enrollment, increasing by as much as 230% (57 to 133 students) by 2006 and maintaining enrollment in the range of 105 to 130 students for 2007 to 2016.



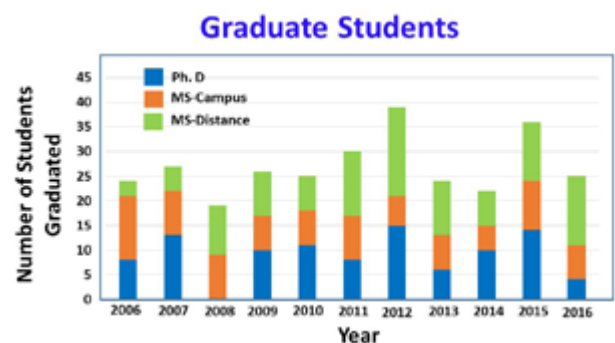
The increase in enrollment for the MS degree program has been largely

attributed to the establishment of the distance education track in environmental science that was initiated in 2001-2002.



The trend in graduate student enrollment is a story of outstanding success due to innovation in distance education, service to an underrepresented clientele (place-bound students), and increased extramural grants, combined with financial support from CALS.

Another means of measuring the success of a graduate educational program is the number of degrees awarded and placement of students in professional careers. During 2006-2016, a total of 297 degrees have been awarded by the department (33% PhD and 67% MS). In our previous newsletters (Summer 2005, 2010, and 2015), we highlighted select graduates currently employed with various organizations (<http://soils.ifas.ufl.edu/about/publications/myakka-newsletter/>). For more information, contact K. Ramesh Reddy at: krr@ufl.edu.



The Soil and Water Sciences Department is working to reach out to current and former students, faculty, staff, departmental affiliates, and those simply interested in soil and water science, through several social media outlets. We hope to encourage conversation about soil and water sciences, environmental and agricultural issues and topics in the news, and disseminate important information about our department, students, and research via these outlets. We are currently connected on Twitter, Facebook, YouTube, Flickr, Wordpress, and LinkedIn. If you are interested in staying up-to-date with the latest SWS news and information, sign up for our email list at <http://soils.ifas.ufl.edu/connect-with-us/>.

Davie Kadyampakeni Joins the SWSD Faculty



Davie Kadyampakeni received a BS and MS from the University of Malawi and a PhD from UF. Davie has worked for the Malawi Ministry of Agriculture and Food Security as an Irrigation Agronomist, International Crops Research Institute as a Scientific Officer, the World Bank - International Fund for Agricultural Development as an Irrigation Specialist, as a Graduate Research Assistant and Postdoctoral Research Associate in UF/IFAS SWSD at the Southwest Florida Research and Education Center, and International Water Management Institute (IWMI) as an Agricultural Water Management Specialist.

At IWMI, Davie's work focused on implementing improved agricultural water management practices in West Africa, building capacity of irrigation practitioners and institutions, and development of new approaches to help small- and large-scale farmers. He led the IWMI projects on Africa Rising (AR), Innovation Lab for Small-Scale Irrigation (ILSSI), Securing Water for Seed and High-value Vegetable Production (SecureWater), Drylands Systems

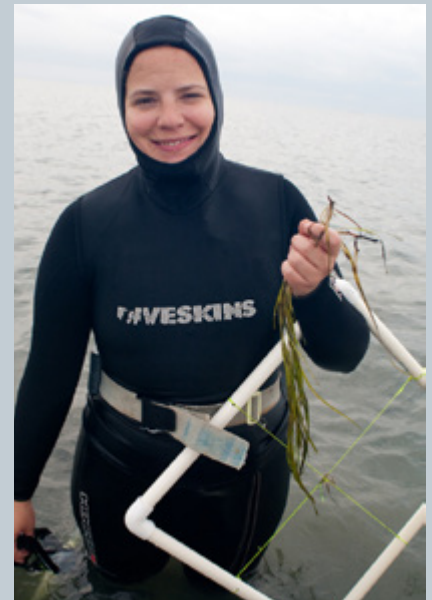
CGIAR Research Program (DSCRCP) and Climate Change in Agriculture and Food Security in West Africa.

Davie joins the Citrus Research and Education Center (CREC) as an Assistant Professor in citrus water and nutrient management. His research and extension interests include soil and water management and conservation; nutrient management through conventional and precision agricultural practices; irrigation and drainage management; micro-irrigation; water and nutrient best management practices; crop production; and soil and crop modeling. For more information, contact Davie Kadyampakeni at: dkadyampakeni@ufl.edu.

Laura K. Reynolds Joins the SWSD Faculty

Laura K. Reynolds received a BA in biology and an MS and PhD in Environmental Sciences from the University of Virginia. For her MS research, she documented a symbiotic relationship in the Florida Keys between clams and seagrass, where seagrasses protect clams from predation, and the bacteria in the gills of the clams alter sediment biogeochemistry in a way that makes the plants more stable. After her masters, she worked as a lab manager at San Francisco State University testing different methods of seagrass restoration, in a project to advise future large-scale restoration of these plants and their ecosystem functions (habitat, carbon storage, shoreline stabilization). Her dissertation work aimed to understand the role of genetic diversity in the quantity and quality of functions that seagrass meadows provide. She also showed that incorporating genetic diversity into seagrass restoration increased success. As a postdoc at UC Davis, she explored mechanisms (e.g., physiological, chemical, and morphological trait variability) by which genetic diversity can alter ecosystem functions.

She is excited to return to Florida and is planning a research program to understand nearshore ecosystem (seagrass, mangrove, oyster reef) functions, how they are changing with both natural and human disturbances, and the role of diversity in disturbance response. In addition to mechanistically understanding the science behind how systems are changing, she prioritizes collaborations that use that science to solve environmental problems. For more information, contact Laura Reynolds at: lkreynolds@ufl.edu.



Congratulations Fall 2016 Graduates!

PhD

Marcos de Moraes (Teplitzki & Hochmuth)
Yu Fang (Jawitz)
Lorae Simpson (Osborne)
William Zaragoza (Teplitzki & Wilson)

MS

Allison Leopard (Osborne)
Mary Maddox (Mackowiak)
Vijay Nazareth (Mackowiak)
Antonio Yaquian-Luna (Jawitz)

BS - IS-EMANR

(Advisor - Curry)
Thomas Cawiezell
Allison Crow
Sara Harper
Jon Lackey
Abigail Murphy
Erika Rodriguez
Michael Ross
Amanda Turner

BS-SLS-SS

(Advisor - Bonczek)
Steven Gregory

SLS Minors
(Advisor - Bonczek)
Quinton Allen
Karla Medina
Sara Nelson

Faculty, Staff and Student Accomplishments

Congratulations to our faculty and students for their outstanding accomplishments:

[2016 SWSD Research Forum Student Winners & Advisors](#)

Best Oral Presentation - Anne Sexton (Daroub & Bhadha)

Best Graduate Student Poster Presentations -

- Evandro B. da Silva (Ma & Wilkie)
- Peng Gao (Ma & Wilson)
- Katie McCurley (Jawitz)
- Katsutoshi Mizuta (Grunwald)

Best Undergraduate Poster Presentation - Chelsea Hazlett (Susan Curry, Kimberly La Pierre, Ellen L. Simms)

[SWS Graduate Awards](#)

Carlisle Award - Yaslin Gonzalez (Bacon)

Polston Award - Ryan Blaustein (Teplitzki) and **Paul Julian** (Wright)

Robertson Award - Claire Friedrichsen (Daroub) and **Katsutoshi Mizuta** (Grunwald)

[SWS Undergraduate Scholarships](#)

Frederick B. Smith Scholarship - Kayci Kowalski

Donald A. Graetz Education Award - Robbie Guggenheim

Outstanding Undergraduate Award - Jennifer Sarchapone

[UF Graduate School Doctoral Dissertation Award](#)

Wade Ross (Grunwald)

[Outstanding Achievement Award \(UF International Center\)](#)

Katsutoshi Mizuta (Grunwald)

[Kingenta Agricultural Science Award from the American Society of Agronomy](#)

Yuncong Li

Congratulations to Dr. Pedro Sanchez on being named by President Obama to serve as a member of the President's Committee on the National Medal of Science.

<https://www.whitehouse.gov/the-press-office/2016/12/01/president-obama-announces-more-key-administration-posts>



[2016 NIFA USDA Partnership Award for Mission Integration](#)

Awarded to the *Coordinated Agricultural Project (CAP) Pine Integrated Network: Education, Mitigation and Adaption Project (PINEMAP)*. Sabine Grunwald is a co-PI and team member.

[Lifetime Service Award by GlobalG.A.P. Organization](#)

PhD student **Richard Yudin** (Li) for 18 years of involvement in the development and administration of the international farm sustainability standard.

[Best Poster at Soil Science Society of America, 2016 Wetland Soils Division, Student Competition Award](#)

Anne Sexton (Daroub & Bhadha)

[SWS Staff Service Pin Awardees](#)

- **Angela Petringelo** (5 yrs)
- **Xiao-Li Yi** (10 yrs)
- **Deborah Butler** (25 yrs)
- **Kathryn Curtis** (10 yrs)
- **Abid Al Agely** (20 yrs)

Welcome New Students Spring 2017

PhD

Victor Guerra (Mackowiak)
Xiaoping Xin (He)

MS

Emma Fain (Strauss)
Traci Goodhart (Deitch)
Jeffrey Kindley (Bhadha)
Robert Mason (Reddy)
Maria Mejia (Reddy)
Emuesiri Oduaran (Reddy)
Natasha Rodriguez (Clark)
Nicole Salvatico (Reddy)
Sarah Stover (Wright)

BS - IS-EMANR

(Advisor - Curry)
Matthew Brooks
Keisha Claudio
Dillon Clemens
Luis Mejia Alarcon
Erik Moretuzzo
Aislynn Mullen
Lily Willingham

