



Extension Programs

A Message from the Interim Chair

As we enter the second half of 2018, the Soil and Water Sciences Department (SWSD) is undergoing some transitions. The most significant one is Dr. Ramesh Reddy's move from Department Chair into the "regular" faculty ranks. Dr. Reddy served the department as chair for 18 years and he will be missed in that leadership role. Dr. Reddy certainly put his stamp of excellence on the department and his legacy will last for many years.

But... the only constant in life is change. I have been a member of the department since 1989, first as research/extension faculty at SWFREC-Immokalee, then changing to a similar capacity on campus starting in 2002, then changing to the Dean for Extension Office in 2009. My latest change is a return to the department in the Interim Chair role as we search for the next permanent chair. I was honored to accept Senior Vice President Jack Payne's invitation to serve.

As this issue of Myakka focuses on Extension, a brief mention about the extension scholarship exhibited by our faculty is warranted. Most people can identify with the scholarship of research and teaching, but few understand there is also the scholarship of extension, the third leg of the land-grant university stool. Extension scholarship is identified by creative intellectual works, reviewed and adopted by peers, recorded, and valued by clientele for whom it was intended.

Extension scholarship is composed of the scholarship of integration and the scholarship of application. Integration makes connections and draws insights from discrete facts and findings produced by original research, which brings

a multi-disciplinary flavor to the pursuit of learning. Application is the application of knowledge within one's professional expertise in a way that is characterized by rigor and accountability.

Scholarship does not imply solely individual work. We value and encourage collaboration. We also note that not all scholarly work needs to be "successful" in the sense that the desired outcomes are always achieved, nor is all the work of an Extension faculty member necessarily scholarly.

Changes resulting from Extension programming that positively impact peoples' lives are highly valued by the UF/IFAS, our stakeholders, and our funders. All academicians including extension faculty must attain and account for the scholarly nature of extension work. Please enjoy the exhibition of extension scholarship portrayed in the pages of this newsletter.

Thomas Obreza, Sr. Associate Dean for Extension and Interim Chair, SWSD



From the Extension Coordinator

Currently there are 17 faculty members statewide with extension appointments in the Department, representing a total of 6.10 FTE.

At the 2018 statewide retreat of the extension faculty, the following eight programmatic themes were identified based on the faculty expertise and interest in providing leadership at the state level: (i) Soil Health, (ii) Technology Advances, (iii) Soil & Nutrient Management, (iv) BMPs and education, (v) Water Quality, (vi) Environmental Resilience, (vii) Organic Amendments,

Resource Recycling and Re-use, and (viii) Water Conservation.

The faculty aims to collaborate within and outside IFAS and UF with state agencies and regional peers, reach out to the county extension faculty and faculty working in niche areas, and pursue national and international opportunities.

For more information, contact Rao Mylavarapu, SWSD Extension Coordinator, at: raom@ufl.edu.

The UF/IFAS Agricultural Best Management Practices (BMP) Program

The UF/IFAS Agricultural Best Management Practices (BMP) program was developed to assist the Florida Department of Agriculture and Consumer Services, Office for Agricultural Water Policy (FDACS/OAWP) in developing BMPs and educate growers on their implementation. Initially, the program was voluntary.

The Florida Department of Environmental Protection (FDEP) has developed 27 Basin Management Action Plans (BMAPs) based on impaired water bodies. Growers within BMAPs must be enrolled in the BMP program or establish a water quality sampling program with FDEP, so the BMP program is no longer voluntary within BMAPs.

FDACS/OAWP has funded the UF/IFAS BMP program for the past several years for educational programs and on-farm demonstrations by extension agents. Additional funding from the Mosaic Foundation and water

management districts have allowed the UF/IFAS BMP program to expand.

In 2017, the Florida legislature provided one-time money to enable IFAS to focus on the next generation of agricultural BMPs on sustainable production, economic profitability and environmental management.

SWSD faculty continue to be involved in BMP-related research and extension activities.



Jehangir Bhadha - Soil, Water, Nutrient Management

My role as an extension specialist is to advance integrated sustainable agricultural practices in and around South Florida by delivering science-based information related to soil sustainability, water quality and nutrient management. My key extension program goals are to (i) assist growers and the public to adopt farming practices that improve soil health and sustainability; (ii) investigate the role of organic amendments for nutrient use efficiency in crop production; and (iii) have a positive impact on farm efficiency and productivity, especially for flooded

rice cultivation that is efficacious and sustainable.

My program area contributes to the following IFAS high priority initiatives: (1) Increasing the sustainability, profitability, and competitiveness of agricultural and horticultural enterprises; and (2) Enhancing and protecting water quality, quantity, and supply focusing on water conservation and quality.

For more information, email jango@ufl.edu or connect on Twitter: [@UFSustainableAg](https://twitter.com/UFSustainableAg).



Mark Clark - Wetlands and Water Quality



My extension program focuses on wetlands and water quality, including the assessment and protection of wetlands and the investigation of innovative practices to improve water quality associated with agricultural and urban landscapes. Some of these practices include enhanced stormwater basins using wetlands, integration of groundwater denitrification bioreactors and construction of living shorelines to

mitigate coastal erosion and improve water quality and habitat.

These activities fall mainly under the UF/IFAS Extension High-Priority Initiative 2, Enhancing and protecting water quality, quantity and supply; and Initiative 3, Enhancing and conserving Florida's natural resources and environmental quality. For more information, email clarkmw@ufl.edu.

Davie Kadyampakeni - Water and Nutrient Management



My role in extension is to use my expertise in water and nutrient management for promoting good environmental stewardship in Florida sandy soils. The key extension goals are to: i) help growers understand and use efficient water management practices and ii) develop simple guidelines for nutrient management based on research findings.

My program area contributes to and fits into the following IFAS high

priority initiatives: 1) Increasing the sustainability, profitability, and competitiveness of agricultural and horticultural enterprises; and 2) Enhancing and protecting water quality, quantity, and supply focusing on water conservation and quality.

For additional information, visit www.crec.ifas.ufl.edu/academics/faculty/kadyampakeni/ or email dkadyampakeni@ufl.edu.

Barbra Larson - Online Extension

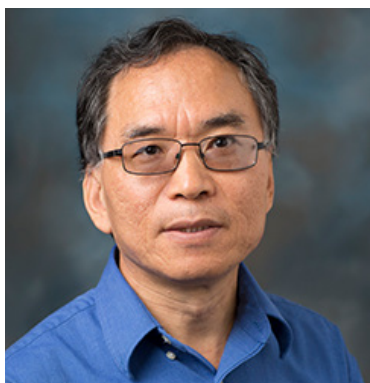


My focus is on distance education opportunities for extension programs. I am working with Soil and Water Sciences faculty to develop online extension short courses and integrate extension and academic teaching materials where possible, including the use of video to demonstrate field and lab experiences to online audiences.

This supports the UF/IFAS Extension High-Priority Initiatives involving water, natural resources and environmental quality, agriculture, and community development.

For more information, email bcl@ufl.edu.

Yuncong Li - Optimizing Nutrient Management of Calcareous Soils and Protecting Water Quality



The objectives of my extension program are to: 1) demonstrate improved fertilizer management strategies through on-farm trials, grower and county extension workshops, and seek grower adoption of these practices; 2) educate target audiences on using soil organic amendments for crop production and introduce new cover crops to growers through field demonstrations; and 3) train target audiences on water quality concepts, sampling and chemical analysis.

The mission of my extension program is to serve our clientele by extending research-based knowledge and problem-solving resources. My extension philosophy is that I believe what Seaman Knapp, the father of Cooperative Extension, said: "What a man hears, he may doubt. What he sees, he may possibly doubt. What he does himself, he cannot doubt." See my EDIS publications at http://edis.ifas.ufl.edu/topic_a03164470. For more information, email yunli@ufl.edu.



Sunny Liao - Soil and Plant Microbiology (Forest and Agriculture) Ecosystem Science and Management

My program seeks to: 1) Identify the impacts of soil health as affected by the agriculture and forestry management strategies, and environmental stresses (e.g, droughts and invasion); and 2) Enhance the beneficial microbial processes as a means to re-balance the soil fertility and diversity of

phytobiomes underlying agriculture and managed forest lands.

My extension programs are structured based upon IFAS extension areas including agriculture and natural resources. For more information, email sunny.liao@ufl.edu.



Mary Lusk - Urban Nutrient Management

Urban stormwater ponds number in the thousands in Florida. They often connect the built to the natural environment, potentially conveying pollutant-laden stormwater to receiving streams. I work at the residential landscape level to educate builders, developers, and homeowners about landscape choices that prevent the transport of stormwater pollutants and improve the treatment efficacy of stormwater ponds.

This work falls under the IFAS Extension Roadmap Initiative 2: Enhancing and protecting water quality, quantity, and supply. Within this initiative I work with the Urban Water Quality Priority Team. My work is closely connected with Florida-Friendly Landscaping (FFL) and Green Industry BMP (GI-BMP) programs, and I often collaborate with county FFL and urban horticulture agents. For more information, email mary.lusk@ufl.edu.



Cheryl Mackowiak - Sustainable Soil Nutrient Management and Forage Health

My program provides balanced fertilization guidance and delivers information on opportunities for using enhanced efficiency fertilizers (EEFs), soluble mineral fertilizer alternatives, and N₂ fixing legumes. I emphasize that good soil and plant management will work together to improve all aspects of soil fertility: 1) physical, 2) chemical, and 3) biological.

My program supports sustainable, profitable, and competitive agricultural enterprises through training and promoting land management practices that result in productive and healthy plants and soils.

For more information, email echo13@ufl.edu.



Rao Mylavarapu - Sustainable Nutrient Systems

My extension programs optimize nutrient applications to agricultural lands and landscapes by improving uptake efficiencies by using scientific tools such as soil testing for maximizing productivity and minimizing negative environmental impacts.

I work to prepare clientele for the digital agricultural revolution and

enhance field management capacities of growers through nutrient models.

My programs support the Extension priority area of increasing the sustainability, profitability, and competitiveness of agricultural and horticultural enterprises.

For more information, email raom@ufl.edu.



Alexander (AJ) Reisinger - Urban Ecosystem Ecology (Soil and Water Quality)

My extension program focuses on informing urban stakeholders about nutrient and contaminant impacts on soil and water quality, evaluating the effectiveness of novel management strategies, and quantifying the impacts of these strategies for improving water quality. I focus on both traditional (fertilizer) and emerging (pharmaceuticals) contaminant impacts in residential landscapes.

We are directly addressing High Priority Initiative (HPI) 2 by focusing on both

understanding and improving water quality while raising public awareness of water issues; on HPI 3 by improving soil and water quality from urban landscapes to minimize contaminant impacts on Florida's natural resources via environmental stewardship; and on HPI 6 by focusing on enhancing urban environmental quality while incorporating community awareness and environmental stewardship to improve urban water quality. For more information, email reisingera@ufl.edu.



Laura Reynolds - Natural Resources

Establishing new salt marshes and seagrass meadows through restoration can improve water quality by sequestering nutrients. My extension program promotes community involvement in coastal restoration and provides resources to managers to increase restoration success. With Florida Oceanographic Society, we have initiated a volunteer-based seagrass restoration project demonstrating how to incorporate genetic diversity, with

enhancement of an existing seagrass nursery as a resource for future restoration projects.

I am working very closely with the SeaGrant Extension program. My work aligns closely with Initiative 2 in the UF/IFAS Extension Roadmap—Enhancing and protecting water quality, quantity, and supply—and Initiative 3—Enhancing and encouraging Florida's natural resources and environmental quality. For more information, email lkreynolds@ufl.edu.



Arnold Schumann - Citrus

My extension programs are based on the goals of improving crop production efficiencies with integrated research and extension for sustainable profitability and environmental protection.

Developing interim sustainable solutions for Huanglongbing (HLB) disease of citrus and developing advanced technologies for reducing agrochemical use (for

example: <http://edis.ifas.ufl.edu/hs1304>) is related to IFAS Extension Initiative 1: Increasing the sustainability, profitability, and competitiveness of agricultural and horticultural enterprises.

For more information, email schumaw@ufl.edu.



Extension Soil Testing Lab (ESTL) and Livestock Waste Testing Lab (LWTL)

The UF/IFAS Extension Soil Testing Laboratory offers a variety of tests for mineral soils, container media and irrigation water. The IFAS Livestock Waste Testing Lab provides nutrient testing of manures, composts, and other wastes. Information about the tests and how to submit samples for testing can be obtained either directly from the Extension Labs website (<http://soilslab.ifas.ufl.edu/ExtensionLabs.asp>) or by contacting your local [County Extension Office](#). The ESTL and The LWTL are the extension components of IFAS Analytical Services Laboratories (IFAS ANSERV Labs), which also provides testing for researchers. Dr. Rao Mylavarapu is the Director of the IFAS ANSERV Labs in Gainesville.



Maria Silveira - Nutrient Management Program for Forages



My extension program at the UF/IFAS Range Cattle Research and Education Center (Ona, FL) addresses the agronomic and environmental challenges associated with soil nutrient management in forage-based livestock production in Florida to satisfy production needs while avoiding environmental degradation.

My extension program is also aligned with clientele needs, as it addresses 3 (out of 11) of the Florida Cattlemen's Association Research Priorities, including priorities # 1 - Fertilization, # 6 - Ranching activities' impacts on the environment, and # 9 - Application

of biosolids on pastures. I deliver science-based information to producers, extension faculty, industry professionals, and state regulatory agencies on topics related to soil fertility and pasture fertilization.

My extension efforts address UF Extension Roadmap Initiative 1: Increasing the sustainability, profitability, and competitiveness of agricultural and horticultural enterprises, with especial emphasis on animal systems.

For more information, email mlas@ufl.edu.

Ashley Smyth - Natural Resources: Water Quality and Coastal Resilience



My extension program focuses on coastal resilience. I work to increase public awareness of the benefits that natural ecosystems provide and help coastal resource managers with restoration projects and climate change adaptation strategies.

My program covers topics such as water resources, coastal process, habitat restoration and sea level rise.

My extension program increases awareness and appreciation of the environment. Specifically, my program addresses IFAS High Priority Initiative 2: Enhancing and protecting water quality, quantity and supply; and Initiative 3: Enhancing and conserving Florida's natural resources and environmental quality.

For more information, email ashley.smyth@ufl.edu.

Sarah Strauss - Management of Soil Microbiology to Improve Sustainability and Increase Production of Florida Citrus and Vegetable Crops



My extension program is focused on improving our understanding of the interaction between the soil microbial community and plant health. Through research and extension, we can increase our knowledge of these interactions, develop effective methods to manipulate the soil microbial community to improve soil health, and inform growers, industry, and the public of these new methods.

My extension program directly addresses the following Extension Roadmap Super Issues: 1) The awareness and

appreciation of our food systems and our environment; and 2) The sustainability and conservation of resources in our Florida communities.

My program also directly addresses the following Extension Roadmap High Priority Initiatives: 1) Increasing the sustainability, profitability, and competitiveness of agricultural and horticultural enterprises; and 3) Enhancing and conserving Florida's natural resources and environmental quality. For more information, email strauss@ufl.edu.



Join us at... The 19th Annual Soil and Water Sciences Research Forum

The 19th Annual Soil and Water Sciences Research Forum will be held on October 15, 2018, in Gainesville, Florida. The forum is designed to bring together representatives from state and federal agencies, private industry, faculty, graduate students, and prospective students. The forum will provide an opportunity for all those interested in soil and water sciences to interact with our students, faculty, and administrators on campus.

Our Keynote Speaker will be **Dr. Johannes Lehmann**, Professor, School of Integrative Plant Science, Cornell University. Dr. Lehmann is interested in advancing our general understanding of biogeochemical cycles of carbon and nutrient elements in soil, providing important insight into regional and global element cycles such as the carbon or sulfur cycle. His field of research has global and local relevance with implications for climate change and environmental pollution.

For additional information, visit his website: <https://scs.cals.cornell.edu/people/johannes-lehmann/>.

We look forward to your participation in the forum. **If you are planning to attend, please register** at: <http://soils.ifas.ufl.edu/research/research-forum/2018-sws-research-forum/>.

For additional information, contact Patrick Inglett at: pinglett@ufl.edu.



Johannes Lehmann, Professor of Soil Biogeochemistry and Soil Fertility Management at Cornell University, will deliver the keynote presentation at the 2018 Research Forum.

Sam Smidt Joins the SWSD Faculty



Sam Smidt has joined the Soil and Water Sciences Department as an Assistant Professor of Watershed Science/Soil Physics. He received his Ph.D. in Environmental Geosciences from Michigan State University with a specialization in Environmental Science and Policy.

For his doctoral research, Sam looked intensely at agricultural water use across the country to develop practical steps for future management plans based on areas where past strategies have missed their conservation objectives. He continued his work while occupying a Visiting Assistant Professor position at Wheaton College (IL), where he developed a curriculum for undergraduate earth science students.

Going forward, Sam will focus on agriculture and freshwater applications where users are empowered to collect fundamental data, analyze trends within those data, and develop tailored management plans specific to the

user. His research will seek to equip end-users with the basic technologies and data processing abilities necessary to make decisions that encourage resource stability while maximizing environmental production.

He further plans to investigate the changing agricultural patterns across the country in response to climate change, market incentives, and new technologies while prioritizing critical zone processes and watershed sustainability. For additional information, contact Sam Smidt at ssmidt@ufl.edu.

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.

Faculty Accomplishments

Masanori Fujimoto was named a 2018 UF International Center Global Fellow.

Congratulations Graduates Summer 2018

PhD

Joshua Papacek (P. Inglett)
Sheng-Yen Wu (Graham & Duncan)

MS

Gurcan Baysal (Mylavarapu)
Kenton Beal (Clark)
Jay Capasso (Bhadha)
Laura Jalpa (Mylavarapu)
Gabrielle Lawson (Wilkie)
Daniel Lippi (Osborne)
Kaitlyn Mroczka (Osborne)
Natasha Rodriguez (Osborne)

BS - IS-EMANR (Advisor - Curry)

Aislynn Mullen
Courtney Murphy

SLS Minors (Advisor - Bonczek)

Daniel Moran

Welcome New Students Summer B and Fall 2018

PhD

Leandra Gonzalez (Bhadha)
Laura Jalpa (Mylavarapu)
Michael James (Maltais-Landry)
Clayton James Nevins (P. Inglett & Strauss)
Kira Sorochkina (P. Inglett & Strauss)
Kaile Zhang (Liao and Maltais-Landry)

MS

Madeline Ciszewski (Maltais-Landry)
Eduardo Esteves Velez (Kadyampakeni & Maltais-Landry)
Jennifer Gienger (Reynolds)
Audrey Goeckner (Lusk)
Kalani Henshaw (Judy)
Steven Hohman (Reisinger)
Erin Josephitis (Lusk)
Susan Lamb (Smidt)
Djanaan Nemours (Wright)
Qian Yao Si (Lusk)
Tiffany Turnbull (Daroub)
Emily Taylor (Reisinger)
Hugh Bruce Webb (Smidt)

BS - Soil and Water Sciences (Advisor - Bonczek)

Wenny Cruz-Lopez - Soil Science	Paislee Peyton - Water Science
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BS - IS-EMANR (Advisor - Curry)

Corinne Bregman	Benjamin Manners
Zoe Crawford	Alexander Mason
Samuel Glinsky	Olivia Miserandino
Michelle Gomez	Rachel Porter
Mercedes Himmelwright	Morgan Romero
Taylor Johnson	Stephen Singleton
Arjuma Khandakar	Karre Stratford
Jenna Knobbe	Heather Surratt
Mary Lemons	John Syndey Jr.
Soleil Lobato	Jason Williams
Kathi Malfa	Kathryn Winstanley

