



## SWSD Strategic Plan: Path Forward to Maintain Preeminence

### *A Message from the Chair - K. Ramesh Reddy*

The University of Florida's Soil and Water Sciences Department (SWSD) ranks among the largest and most prestigious departments in the nation. With a distinguished record of accomplishments in teaching, research, and extension, the department has made a remarkable impact on the soil and water science discipline. The department has been the leader in graduate education with innovative programs that reach a wide range of students.

The department has an outstanding record of meeting the needs of clientele through teaching, research, extension and outreach programs. Overall, accomplishments of faculty, staff, and students in the past decade have continued to elevate the department's stature at national and international levels. We are not satisfied to reflect on the past, however, and strive for higher goals to maintain excellence in the field of soil, water, and environmental sciences.

To accomplish these goals, the department must take advantage of opportunities that enhance

the effectiveness of its academic programs, while maintaining the relevance and impact of research, teaching, and extension/outreach programs. The department must have a vision to address the critical future needs of our clientele.

The SWSD is organized as an academic unit within the University of Florida's Institute of Food and Agricultural Sciences (UF/IFAS). Responsibilities of this unit include academic programs, research, extension education, and scientific, professional, and community service.

Soil and Water Sciences programs are located on the main campus in Gainesville as well as at 11 Research and Education Centers (RECs) located throughout the state. The department has developed a road map to maintain preeminence as presented in the following pages.

The five-year strategic plan is adaptive in nature and will continuously change to ensure that the department's vision, core values, and goals remain relevant to meet the changing needs of our clientele.

## Soil and Water Sciences Department Strategic Plan [2018-2022]

The SWSD at the University of Florida offers one of the strongest and most prestigious programs in soil, water, and environmental sciences in the nation. To build on the reputation of its faculty and programs, the department must pay particular attention to future needs and opportunities, while maintaining current strengths. The road map presented in the Strategic Plan functions as a guide to accomplish the department's goals in the coming years. The plan includes six goals with defined action steps to maintain excellence and function at full

potential. For the plan to be successful, the faculty must be prepared to think innovatively and be open to change, especially for capturing unexpected opportunities and addressing future challenges.

The department is committed to the strategic process. The plan will be reviewed regularly and changed as needed to provide vision and guidance for growing and improving the department and responding to future challenges and opportunities.

### Vision & Mission

The vision of the SWSD is to be a global leader in advancing the understanding and stewardship of soil and water resources.

The mission of the SWSD is to provide knowledge and science-based solutions for addressing food security, public health, and protection of natural resources and the environment in Florida, the nation, and the world.

### Core Values

- *Excellence*
- *Productivity*
- *Creativity*
- *Accountability*
- *Flexibility and Viability*
- *Partnerships*
- *Transparency*

### Strategic Goals

The strategic goals of the SWSD for 2018-2022 include improving the department's national and international visibility and recognition, delivering highly visible teaching, research and extension programs that have deep, lasting impacts, increasing the emphasis on internationalization across all departmental programs, and strengthening the position of the department as a leader in distance education (DE).



## ***Goal 1: Improve the national and international visibility and recognition of the department***

### **Action Steps**

- Based on current faculty strength and future needs, revise departmental program thrust areas to address the state, national, and international agenda to protect soil and water resources.
- Promote high-impact activities and achievements by enhanced solicitation of funding from federal agencies and service on national panels and science advisory boards.
- Strive for high-impact programs and publications.
- Assess the current departmental achievements in relation to peers, and develop strategies to attain pre-eminence.
- Seek opportunities to engage with other universities at the national and international level to develop joint programs or interdisciplinary centers.
- Improve science communication at the state, national, and international levels using various methods including social media.
- Encourage faculty participation and leadership activities in their professional societies.

- Nominate faculty and students for selected awards.
- Encourage faculty to organize thematic research conferences, symposia, and workshops at national and international levels.

### **Measures of Success**

- Increased proposal submission and funding
- Increased collaboration and networking with other universities
- Increased number of publications in high-impact journals
- Increased number of synthesis documents and books
- Increased social media interaction and recognition
- Increased participation in professional societies in leadership roles
- Increased participation in national level panels and review boards
- Development and support of national programs or centers aimed at large grant funding

## ***Goal 2: Deliver highly visible teaching programs that have deep, lasting impacts***

### **Action Steps**

- Review and identify the significant contributions department teaching programs have made in producing highly employable students.
- Develop and implement strategies to improve the quality and diversity of students enrolled in the department.
- Review curriculum regularly and adjust course offerings accordingly to assure content breadth, depth and quality.
- Strengthen the academic programs by focusing on the skills and credentials that students will need when they graduate.
- Improve education strategy for doctoral students to become “independent scientists” when they graduate.
- Present certificates that recognize student credentials in a capstone class.
- Track the awards and career placement of students. Survey graduates as to what courses and activities have proven more valuable to them.

- Reach out to potential employers and seek their input to improve our teaching programs.
- Encourage faculty members to pursue extramural funding aggressively and continuously in support of graduate programs.
- Foster fundraising for scholarships and fellowships, including submission of grant proposals to support teaching programs.
- Encourage faculty to attend workshops and training programs on innovative teaching methods.
- Provide resources to increase students’ hands-on experience and out-of-classroom projects.

### **Measures of Success**

- Increased marketing of our teaching programs
- Increased enrollment in department courses
- Increased enrollment in the major
- Placement of undergraduate students
- Increased funding for teaching programs

## ***Goal 3: Deliver highly visible research programs that have deep, lasting impacts***

### **Action Steps**

- Review current research program areas and faculty strengths and develop a research agenda for the department.
- Align the research agenda with the departmental program thrust areas.
- Based on statewide faculty strength, identify key research initiatives that have potential for large-scale funding. Provide seed funds to these groups to develop preliminary data.
- Focus on high quality, scholarly, high-impact, and relevant research.
- Improve the involvement of undergraduate students in research programs.
- Encourage faculty to take leadership roles in developing interdisciplinary research programs/grant proposals at state, national, and international levels.
- Encourage technology transfer and identification of discoveries and inventions for commercial applications.

- Foster stronger linkages between research and extension faculty to better compete for grants requiring integrated extension/outreach component as a part of the research proposals.

### **Measures of Success**

- Increased external funding of research programs
- Increased number of high-impact refereed journal articles
- Increased recognition of department research at the national or international level
- All faculty with major research appointment should have a robust and fully funded research program
- Increased leadership roles by faculty in developing large-scale interdisciplinary project funding
- Increased collaboration among faculty with research and extension appointments

## ***Goal 4: Deliver highly visible extension programs that have deep, lasting impacts***

### **Action Steps**

- Improve how the department's research and extension value is communicated.
- Provide leadership to Extension Roadmap initiative teams.
- Align extension programs with priority issues to achieve stakeholder impacts, and promote these accomplishments within the department.
- Increase coordination among statewide extension programs. Develop new materials while avoiding redundancy.
- Improve involvement of undergraduate and graduate students in extension programs.
- Create opportunities to “tell the world” about departmental contributions in addressing key issues related to protection and conservation of soil and water resources.
- Link current EDIS publications with two-minute videos that show significance of the SWS faculty work and projects. Share these videos with various media outlets.

- Increase the department's social media footprint. Encourage/require faculty to provide the content.
- Modify existing teaching materials for application in extension programs.
- Each faculty member with extension responsibilities will establish mechanisms for determining and quantifying impacts of his or her programs on targeted audiences and on the state.
- Foster stronger linkage between extension and research faculty. Many state and federal agencies now require extension/outreach component as a part of the proposals.

### **Measures of Success**

- Increased impact of our extension programs
- Increased number of in-service training programs
- Increased number of fee-based training courses (both on-site and online)
- Increased grant and private funding
- Improved educational products to current and future needs of clientele



## Goal 5: Increase the emphasis on internationalization across all departmental programs

### Action Steps

- Review current international programs and strengths where SWS has made or can make a global impact, consistent with departmental research, teaching, and extension priorities.
- Encourage broader linkages between the department and existing opportunities within the department, IFAS Global, and the UF International Center.
- Seek grant funding from federal agencies/private foundations to support international programs.
- Encourage faculty to take leadership in developing high-impact international programs.
- Strengthen connections with international centers (e.g., Zamarano, Earth University, ICRISAT, and others) through intern placements.

- Develop an international programs working group within the department.
- Take advantage of our physical location as a gateway to tropical systems research.
- Establish international hubs in select countries to promote SWS programs.

### Measures of Success

- Expanded geographical presence to increase the impact
- Increased diversity and level of funding
- Increased international courses (both on-site and online) taught

## Goal 6: Strengthen the position of the department as a leader in distance education (DE)

### Action Steps

- Develop specific growth strategies and include resources assessment.
- Conduct a marketing study to identify promising ways to promote our DE programs internationally.
- Utilize UF resources for DE development and support.
- Increase professional development online short courses in select topical areas.
- Increase demand-driven online certificate programs.
- Develop online courses for wide audiences.

### Measures of Success

- All SWS DE courses meet the UF Standards and Markers of Excellence
- Increased student enrollment in DE courses
- Increased faculty engagement in distance education



## Gabriel Maltais-Landry Joins the SWSD Faculty

**Gabriel Maltais-Landry** has joined the Soil and Water Sciences Department as an Assistant Professor of Sustainable Nutrient Management Systems. Gabriel received a B.Sc. and M.Sc. in Biology from Université de Montréal (Canada), and a Ph.D. in Biology from Stanford University. For his doctoral research, he collaborated with scientists from UC-Davis and the USDA to quantify how cover crops, composts, and manures affected soil phosphorus (P) cycling in intensive farming systems. Gabriel continued his work on cover crops, compost and manures at the University of British Columbia as a postdoctoral fellow, focusing on nitrogen (N) cycling and greenhouse gas emissions in intensive vegetable systems.

Gabriel aims to continue investigating similar questions in Florida, focusing on how agroecological practices (crop rotations, intercropping, cover-cropping) and the use of composts and manures can increase crop productivity, benefit soil fertility and quality, and reduce environmental impacts. He also plans to determine how to integrate non-legume N-fixers into cropping systems as additional tools for farmers to increase N inputs without relying on external inputs or including legumes too often in rotation. Finally, he is interested in investigating how diet shifts would impact the production and composition of composts and manures, the effects of their application on soil fertility and quality, and crop yield and quality. For additional information, contact Gabriel Maltais-Landry at [maltaislandryg@ufl.edu](mailto:maltaislandryg@ufl.edu).



## Volunteering in Retirement



The source of pottery found at archeological sites is important in deciphering trade and cultural patterns of ancient peoples. Retired Soils Professor **Jerry Kidder** volunteers in the Florida Museum's Ceramic Technology Lab. His technique for making test briquettes from soil of known origin is described in *Advances in Archeological Practice*. The article was one of three highlighted by the editors for 2017. Thin sections are made from fired briquettes and the mineralogy is compared to that of pottery sherds. Jerry enjoys being in the lab again and contributing to research in another field of science - while still working with good old soil.

## Alexander (A.J.) Reisinger Joins the SWSD Faculty

**Alexander (AJ) Reisinger** has joined the Soil and Water Sciences Department as an Assistant Professor of Urban Soil and Water Quality. AJ received his Ph.D. in Biology at the University of Notre Dame, where he studied large river nutrient cycling. He was most recently a post-doctoral researcher at the Cary Institute of Ecosystem Studies, studying urban stream biogeochemistry, working primarily in Baltimore, MD. There, AJ worked alongside ecologists, economists, sociologists, and hydrologists from academia, federal agencies, and non-profits, as part of a multi-disciplinary team quantifying water quality and socioeconomic effects of urban stream restoration.

His research interests include nutrient dynamics in urban aquatic environments (streams, wetlands, lakes, stormwater ponds) and residential lawns, primarily focused on gaining a better understanding of biogeochemical processes driving the fate of nutrients. Additionally, AJ is interested in ecosystem level effects of emerging contaminants such as pharmaceuticals and personal care products. Gaining a broader understanding of the effects of emerging contaminants on ecosystem functioning is needed, particularly in our increasingly urbanized society. For additional information, contact AJ Reisinger at: [reisingera@ufl.edu](mailto:reisingera@ufl.edu) or follow him on Twitter: [@RiverGypsyAJ](https://twitter.com/RiverGypsyAJ).



## Ashley Smyth Joins the SWSD Faculty

Ashley Smyth has joined the Soil and Water Sciences Department as an Assistant Professor of Biogeochemistry at the Tropical Research and Education Center (TREC). Ashley’s interest in biogeochemistry began during an REU position, where she studied the impact human activities have on elemental cycles, and discovered that she really enjoys being covered in mud. Ashley went on to earn a Ph.D. in Marine Science from the University of North Carolina at Chapel Hill and was a David H. Smith Conservation Research Postdoctoral Fellow at the Virginia Institute of Marine Science.



Ashley’s research is centered on understanding how coastal habitats such as oyster reefs, salt marshes and seagrass beds process and remove nutrients, and how human activities alter ecosystem functions. At TREC, Ashley is researching the effects of climate variability and sea level rise on the structure and function of coastal and marine ecosystems. She has a passion for science communication and plans to establish an extension program focused on increasing public awareness concerning climate predictions in South Florida. For additional information, contact Ashley Smyth at: [ashley.smyth@ufl.edu](mailto:ashley.smyth@ufl.edu).

## Congratulations Fall 2017 Graduates!

### PhD

Ryan Blaustein (Teplitski)

### MS

Stephanie Armstrong (Ma)

Natasha Darre (Toor)

Matt Jablonski (Toor)

Stefan Kalev (Toor)

Paul Kirk (Ma)

Danielle Koushel (P. Inglett)

Timothy Sink (Schumann and Wilkie)

### BS - IS-EMANR (Advisor - Curry)

Gilmer Bautista

Jessica Boevers

Daniel Bromley

Robert Guggenheim

Heather Kershner

### BS-SLS-SS (Advisor - Bonczek)

Kayci Kowalski

### BS-SLS-WS (Advisor - Bonczek)

Katherine Galluscio

### SLS Minors (Advisor - Bonczek)

Brian Francis

Jovana Radovanovic

Rachel Sampson

Tristen Townsend

## SWSD is Kicking the Styrofoam Habit! We Now Have Compostable Cups.

Soil and Water Sciences has switched to a sustainable catering alternative for all events. We are committed to improving the health of our soils by composting all biodegradable materials, including cups, coffee grounds, food waste, and shredded paper. To further that goal, we are replacing the use of styrofoam cups with compostable cups made from sustainable paper fiber that can hold hot or cold beverages without leaking.

If you forget to bring your own reusable coffee mug to departmental seminars, you can use the compostable cup provided. Place your used cup in the new container for compostable waste. Always use the appropriate composting and recycling containers at all SWSD events. Compost-friendly waste is processed by the Student Compost Cooperative, creating an organic soil amendment to feed the future. For more information, visit the Student Compost Cooperative at <http://biogas.ifas.ufl.edu/SCC/> or on Facebook search for UF Student Compost Cooperative.



## Faculty, Staff and Student Accomplishments

### Tenure and Promotion

**Stefan Gerber** - Promoted to Associate Professor

**Alan Wright** - Promoted to Full Professor

### 2018-2020 UF Term Professorships

**Samira Daroub, Stefan Gerber, Zhenli He, Patrick Inglett, Kelly Morgan, Rao Mylavarapu, and Alan Wright**

### ASA-CSSA-SSSA Annual Meeting Awards/Recognition

**Zhenli He** was awarded the *Kingenta Agricultural Science Award* by the American Society of Agronomy.

**Pedro Sanchez** gave the invited Leo Walsh Distinguished Lecture at an SSSA Special Section titled "Views on Soil Fertility from the Tropics".

### Student Competitions:

*Soil and Water Management and Conservation Division, Student Poster Presentation: 3rd Place - Timothy Ayankojo (Morgan)*

*Wetlands Soils Division, Student Oral Competition: 1st Place - Sara Baker (P. Inglett)*

*Environmental Quality Division, Biochar Section, Student Poster Presentation: 1st Place - Andressa Freitas (Nair)*

*Soil Carbon and Greenhouse Gas Emissions Community, Student Oral Competition: 2nd Place - Carla Gavilan (Grunwald)*

### Outstanding Achievement Award (UF International Center)

**Saroop Sandhu** (Gerber and Sharma Inglett)

### CALS Scholarships

*Doris and Earl and Verna Lowe Graduate Scholarships: Ryan Blaustein (Teplitski), Clarie Friedrichsen (Daroub), Carla Gavilan, Mizuta Katsutoshi (Grunwald)*

*Doris and Earl and Verna Lowe Undergraduate Scholarships: Stephanie Fisher, Ryan Goebel, Meylin Muniz and Ethan Weinrich (EMANR-Curry); and Gabriela Sullivan (SWS-Bonccek)*

*Florida Rural Rehabilitation Corporation, Inc. Undergraduate Scholarship: Robert Guggenheim (EMANR-Curry)*

### 2017 SWSD Research Forum Student Competition

*Best Oral Presentation: Carla Gavilan*

*Best Graduate Student Poster Presentations: Yanyan Lu (Silveira), Sara Miller (Osborne), Julio Pachon (Bacon), Saroop Sandhu*

*Best Undergraduate Poster Presentation: Rebecca O'Connell (Wilkie)*

### SWSD Graduate Awards

*2016 SWSD Excellence in Graduate Research - MS Thesis Level: Katsutoshi Mizuta*

*Quantitative Environmental Soil Science Pedometrics Award (2017): Katsutoshi Mizuta*

*Victor W. Carlisle Scholarship Award (2017): Julio Pachon*

*Sam Polston Scholarship Award (2017): Claire Friedrichsen*

*William K. (Bill) Robertson Graduate Fellowship (2017):*

*Rose Collins (Mylavarapu), Sara Miller, Saroop Sandhu*

*Ben Skulnick Fellowship (2017): Jay Capasso (Bhadha)*

*WBL Biogeochemistry Graduate Fellow Award (2018):*

*Amanda Desormeaux (Jawitz), Sara Miller*

### SWSD 2017 Undergraduate Scholarships

*Frederick B. Smith Scholarship - Anna Caroline Buchanan (SWS-Bonccek)*

*Donald A. Graetz Education Award - Adam Yingling (EMANR-Curry)*

*Outstanding Undergraduate Award - Ryan Goebel*

### SWSD Staff 15-Year Service Pin

**Michael Sisk**, Academic Program Specialist

## Welcome New Students Spring 2018

### MS

John Allar (Maltais-Landry)

Chris Cappiello (Reddy)

Yuting Fu (Li)

Kelsey Krueger (Reddy)

Mark Tancig (Wilson)

### BS - IS-EMANR (Advisor - Curry)

Jennifer Anderson

Daniel Lambert

Sara Lewis

Breanne O'Neill

John Upchurch

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