

Everglades Research and Education Center

Winter Newsletter

2022



EREC Winter Newsletter 2022

A Word from our Director: Dr. Samira Daroub

UF IFAS
UNIVERSITY OF FLORIDA



The EREC has been here serving the agricultural industry and community at large in the Everglades Agricultural Area in south Florida for over 100 years. In 1921, the State of Florida enacted legislation to create an Agricultural Experiment Station on the muck lands of Florida. Construction began in 1923 and we have been serving the agricultural community since then. Current research and extension focus on crop breeding and production of sugarcane, corn, leafy vegetables, and rice as well as crop protection, soil health, and water quality. We are very proud of the rich EREC history and our strong relationship with our stakeholders. We value this mutual relationship and the trust they have in us.

We are very excited to announce the CENTENNIAL Celebration of the EREC: February 10, 2023. Registration is open and information is listed on the last page of this newsletter. We hope to see everyone there to celebrate the History and Future of the EREC.

I wish to thank the EREC faculty, staff, and students for all their hard work and dedication in 2022! We highlight some of these accomplishments as well as the educational and fun activities in this newsletter.

The Holiday season is always a good time for reflection and recharge in preparation for a new and exciting new year. Wishing everyone a safe, relaxing, and Happy Holiday Season.

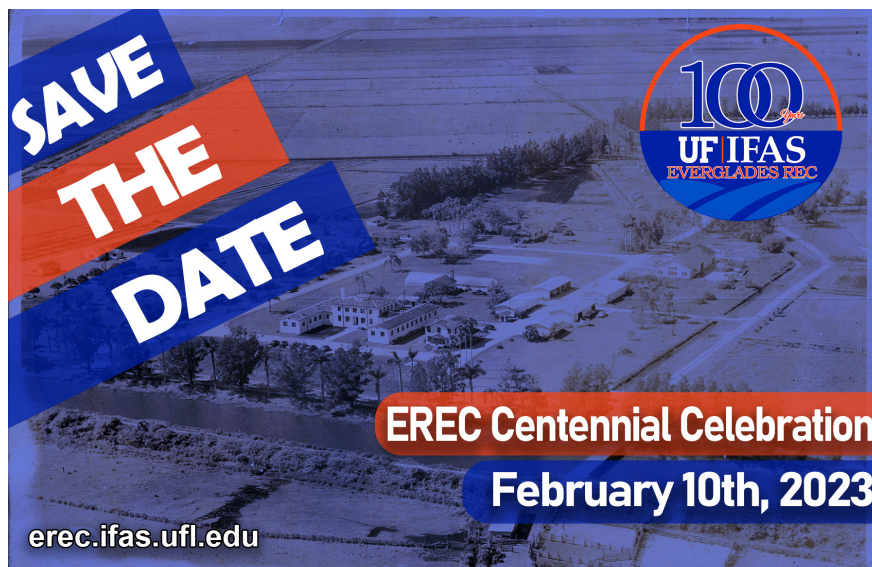


Table of Contents

New Members of the EREC... Page 3

EREC Awards and Articles... Page 4

Student Updates... Pages 5-6

Faculty Updates... Pages 7-9

Sights around the EREC... Pages 10-17

Centennial Celebration Flyer... Page 18

Social Media and Website Links... Page 19

Everglades REC: Student and Post Doc Updates

New Members of the EREC



Dr. Ricardo A. Lesmes-Vesga is a Postdoctoral Associate with a BSc in Agronomy from the National University of Colombia. He earned a MSc in Protected Crop Plant Production at the University of Almería in Spain; and received his PhD in Horticultural Sciences from the University of Florida. As a postdoctoral Associate in the Sugarcane Agronomy Lab, lead by Dr. Hardev Sandhu. His research focuses on integrated landscape management of Energycane production systems. His work involves the evaluation of feedstock production systems, in terms of biomass yield potential and suitable agronomic practices plant nutrition, as well as the quantification of their ecosystem services.

Amandeep Sahil Sharma is a Ph.D. student, originally from India. He received his master's degree from Punjab Agricultural University, India. He is now a part of the Agronomy department and will be working on the evaluation of energycane for bioenergy and sustainable agricultural systems under the supervision of Dr. Hardev Sandhu.



Jairo Arcos is a PhD student in the Plant Breeding program, originally from Colombia. He received his Bachelor of Agriculture Engineering at the Universidad Nacional de Colombia and a master's degree in Biotechnological Sciences from ICESI University in Colombia. As part of his PhD, Jairo will be working on plant breeding of lettuce and improving phosphorus use efficiency (PUE) under the supervision of Dr. German Sandoya.

Everglades REC: Awards and Articles

Congratulations to Dr. Matthew VanWeelden, Dr. Jango Bhadha, and Dr. German Sandoya for their achievements in Extension services. They were awarded for their efforts at the annual Extension Professional Associates of Florida Conference on August 31st, 2022.



Hispanic Heritage Profile: Germán Sandoya Miranda

Our resident lettuce breeder, Dr. German Sandoya was featured in a short biography during Hispanic Heritage Month. Lourdes Mederos writes, “For Germán Sandoya Miranda, a lifelong passion for agriculture began when he was a child playing on his grandparents’ farms in his homeland of coastal Ecuador.. (Now) Stationed at the UF/IFAS Everglades Research and Education Center in Belle Glade, Sandoya Miranda is a statewide extension specialist in leafy vegetables and leads a lettuce breeding program that has gained international attention and national funding.” To read the full article, click the following link: <https://www.morningagclips.com/hispanic-heritage-profile-german-sandoya-miranda/>



Everglades REC: Student Updates

PhD. Student Noel Manirakiza

PhD. Student Suraj Melkani

Noel Manirakiza is a PhD student under the supervision of Dr. Jango Bhadha. His research area focuses on soil health sustainability and carbon sequestration. Draining organic soils of the Everglades Agricultural Area (EAA) resulted in loss of soil and organic matter decomposition (soil subsidence). To mitigate soil subsidence, growers adopted different management practices including rotational crops (sugarcane in rotation with flooded rice) and cover crops. Noel is investigating how sugarcane and flooded rice are mitigating soil subsidence by estimating below and aboveground biomass carbon sequestration potential.



As part of his Ph.D., Suraj is working on soil carbon sequestration, a potential tool for climate change mitigation in the Soil, Water, & Ecosystem Sciences Department under the supervision of Dr. Bhadha.

His research focuses on utilizing biogeochemical models Day Cent and COMET and crop simulation models like DSSAT and APSIM that help us better understand soil C dynamics, allowing us to improve C sequestration capacity through improved monitoring and soil C modeling.



Everglades REC: Post-Doc and Student Updates

Dr. Yuchuan Fan

PhD. Student Anik Mahmud

Dr. Fan, along with Dr. Jango Bhadha and PhD. Student Suraj Melkani have continued collecting soil samples from the diverse vegetation covers at the DeLuca Preserve. Along with his field research, Dr. Fan also had the opportunity to attend and present at the 11th International Drainage Symposium. As well as moderate, organize and present at the ASA-CSSA-SSSA International Annual Meeting in Baltimore. Dr. Fan moderated the agricultural water quality under sustainable intensification management oral session; and presented his research on: “Water quality and yield assessment of rice cultivated on Histosol under different flood depths”.



MD Anik Mahmud is a Ph.D. student in Soil, Water and Ecosystem Sciences at the University of Florida. Under Dr. Jahangir Bhadha's supervision, he works on phosphorous legacy, sensing, fate and capture. Before joining this program, he earned MSc. in the IPSS program from the University of Kentucky where he worked on selenium oxyanions removal using passive anaerobic bioreactors. Anik earned BSc. from the Soil, Water, and Environment department at the University of Dhaka, Bangladesh.



Everglades REC: Faculty Updates

Dr. Katia Xavier:

Dr. Xavier currently has a grant proposal for her project titled: **Characterization and management of tar spot – an emerging threat to sweet corn production in Florida**. She is leading the project and collaborating with Dr. Marcio Resende. This project was awarded from the Food and Agriculture Research (FFAR)/ Rapid Outcomes from Agriculture Research. Dr. Xavier is also currently working on a project titled: **Developing a delivery system of rust effectors in sugarcane using *Colletotrichum falcatum***; which was awarded by the 2023 UF/IFAS Archer Early Career Seed Grants.

Dr. Xavier has recently been visiting vegetable growers to identify diseases and pathogens causing losses in the field. She has collected samples for VegPro to identify pathogens with future graduate student Vitor Moura. As well as collecting celery samples to analyze in the lab at Duda's Farm with Perry Yance. She also had the opportunity in October to travel back to her native country of Brazil to present for the NEFIT. The very first plant pathology student association in Brazil. While there, she gave a presentation about pathogen characterization.

Dr. Xavier welcomed two new employees this fall: Dr. Larissa C. Ferreira and Alba Myers.

Dr. Larissa C. Ferreira is a Molecular & Digital Plant Pathologist, working together with Dr. Katia Xavier, as a postdoctoral research associate. Throughout her Bachelor's and Master's degrees in Agronomy/Plant Pathology at the Federal University of Lavras (Brazil), and PhD in Biological Sciences at Aberystwyth University (UK), she conducted basic and applied research focused on biocontrol of plant pathogens and plant-microbe interactions. She is utilizing various molecular biology and bioinformatics skills to study important and emerging pathogens in the Everglades, such as the Tar Spot disease of sweet corn.

Alba Myers obtained a bachelor's degree from The University of Florida in Environmental Horticulture focused on tissue culture and biotechnology and a master's degree from Florida International University in Landscape Architecture. Alba Myers's professional background and training include Biotechnology, tissue culture, molecular biology, Research, and Development, inoculating bioreactors, mass production in bioreactors, plant propagation in-vitro, plant science, diagnostic, disease indexing, and hydroponics.



From left to right: Vitor Moura, Ann Hartman, Dr. Katia Xavier, Dr. Larissa C. Ferreira, Alba Myers



Dr. Xavier presenting for NEFIT in Brazil.

Everglades REC: Faculty Updates

Dr. Hardev Sandhu

- Dr. Sandhu conducted a sugarcane field day and a variety committee meeting in November to select new genotypes at Stage 2 and Stage 3 of the sugarcane breeding program.
- Dr. Sandhu delivered an invited presentation in the Agriculture Commission Webinar of the International Society of Sugar Cane Technologists (ISSCT) in September. The title of his presentation was “Sensing technology – Useful tools to guide informed decisions on farm”.
- Dr. Sandhu served on the executive committee as a Chair Agriculture in the annual meeting of the American Society of Sugar Cane Technologists (ASSCT) in June. He also served as a Vice-Chair of the Agronomic Production System section in the annual tri-society meeting of ASA-CSSA-SSSA in November.
- Dr. Sandhu and his students presented their research at ASSCT and ASA meetings.
- Amandeep Sahil Sharma joined the sugarcane agronomy lab in the Fall of 2022 as a new Ph.D. student to work on bioenergy project funded by the Department of Energy (DOE).
- In Fall 2022, the sugarcane agronomy lab hosted four undergraduate students as short-term (4-months) interns from Brazil. The interns were trained on the sugarcane breeding and selection programs.



Dr. Sandhu presenting in the field for a group of graduate students.



Pedro Guerini Filho, Augusto Leao Assis da Mata Rezende, Maria Pastre and Livia Amaral showing off their internship completion certificates with Dr. Sandhu.



Dr. Sandhu and graduate student Hima Varsha Madala.

Everglades REC: Faculty Updates

Dr. Samira Daroub/Water Quality Lab

We would like to welcome our new technicians Manuel “Manny” De La Cruz Tapia and Maria De La Luz Medina to our water quality lab. Both Manuel and Maria are local residents of Belle Glade and recently graduated from Glades Central. Manuel first joined our water quality lab in July, and Maria joined us in September. Since joining our lab, Manny and Maria have become an integral part of the Best Management Practices (BMP) research conducted in the Everglades Agriculture Area (EAA). We also welcomed intern Krista Zapata Barrientos from Zamorano University in Honduras. Krista joined the BMP team in September and worked alongside us until late November.



Manuel Tapia



Maria Medina



Krista Zapata Barrientos

The Everglades Best Management Regulatory Program requires farmers to adopt BMPs to reduce phosphorus (P) loads leaving the EAA basin in accordance with the Everglades Forever Act. Research projects and active extension and outreach programs at the UF IFAS EREC in collaboration with EAA growers and South Florida Water Management District have led to consistent improvements in water quality out of the EAA. Current BMP research investigates factors leading to differences in P load reduction at collaborating farms in the EAA and evaluates the impact of soil chemistry, P absorption properties, and historical land use on P concentration and loads. Preliminary results for the project were presented at the ASA, CSSA, SSSA annual Meeting in Baltimore, MD in November. In addition to in-person BMP training conducted in 2022 with over 120 participants, the BMP workshop training is also offered online at the UF Extension Canvas site in English and Spanish at: <https://ifas-bmp-eaa.catalog.instructure.com/>. Our lab is also engaged in a project with the Palm Beach County Department of Environmental Resources. Dr. Mohsen Tootoonchi recently presented the results of this collaboration at the Lake Worth Lagoon Science Symposium. The project investigated the changes in nitrogen and phosphorus over a decade in waters along a major canal and estuary in South Florida. For more information please visit: <https://doi.org/10.1002/jeq2.20386>.



From left to right: Dr. Pamela Aracena, Dr. Samira Daroub, Krista Zapata Barrientos, Maryory Orton



From left to right: Krista Zapata Barrientos, Dr. Pamela Aracena, Dr. Mohsen Tootoonchi, Manny Tapia, Maria Medina

Sights Around the Everglades REC: Lettuce Breeding Lab



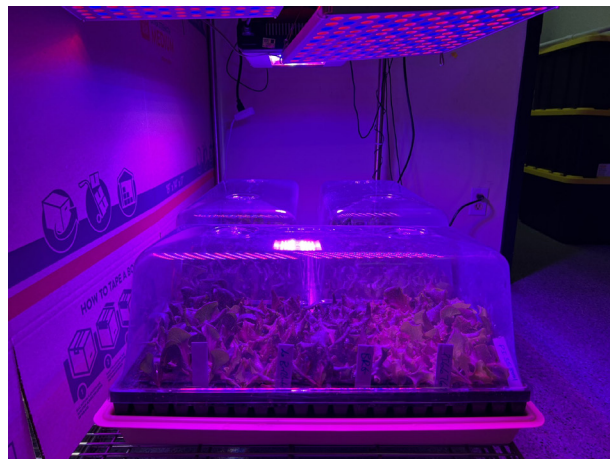
Evaluating heat tolerance in lettuce and selecting breeding lines for Florida production. Thanks to EAA Farmers for hosting experiments. Pictured students: (Jesse Murray, Jairo Arcos, Hannah Mather)



PhD. student Byron Manzanero conducting experiments for the breeding program. Goal is to find resistant genes for bad lettuce diseases to help growers in Florida.

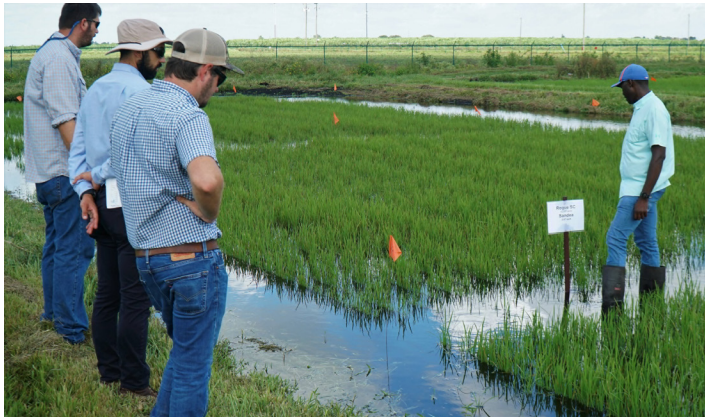


Dr. German Sandoya (fourth from the left) received 2023 Global Fellow Award!



Dr. Sandoya and former EREC PhD. Student Gustavo Kreutz at graduation.

Sights Around the Everglades REC: Weed Science



Dr. Calvin Otero presenting at the Rice Field Day



Dr. Calvin Otero presenting at the Rice Field Day



South Florida farm tour organized by Rachelle Berger for Agronomy grad students. They toured U.S. Sugar, the EREC, the aquaculture at Lake O and C & B farms.



PhD. student Rachelle Berger presenting on the importance of weed management in cane at the Agronomy student's meeting.



Dr. Otero and Rachelle Berger at the annual sugarcane technologist meeting in Bonita Springs, Florida.



Dr. Otero visiting the FL Weed Science Society of America.

Sights Around the Everglades REC: Soil, Water and Nutrient Management Lab



Dr. Bhadha's lab wishing you all a Happy Holidays!



Dr. Bhadha presenting muck soils to Agronomy students in front of the Subsidence Post



Dr. Yuchuan Fan, Dr. Jango Bhadha and Noel Manirakiza at the ASA-CSSA-SSSA annual meeting.



From left to right: Xue Bai, Anik Mahmud, Noel Manirakiza, Suraj Melkani



The two pictures above are taken from a mini-documentary about Dr. Jango Bhadha's lab.
To view the video, please click this link: <https://www.youtube.com/watch?app=desktop&v=jJR9ao-qRTcw&feature=youtu.be>

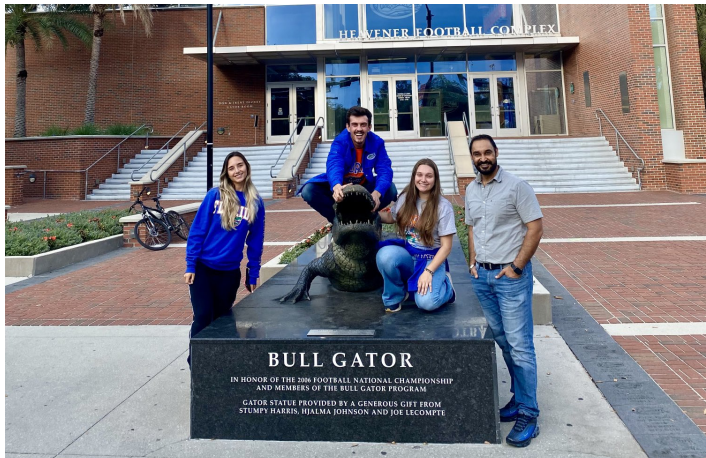
Sights Around the Everglades REC: Agronomy



Annual meeting of the American Society of Sugar Cane Technologists - Florida division at the EREC.



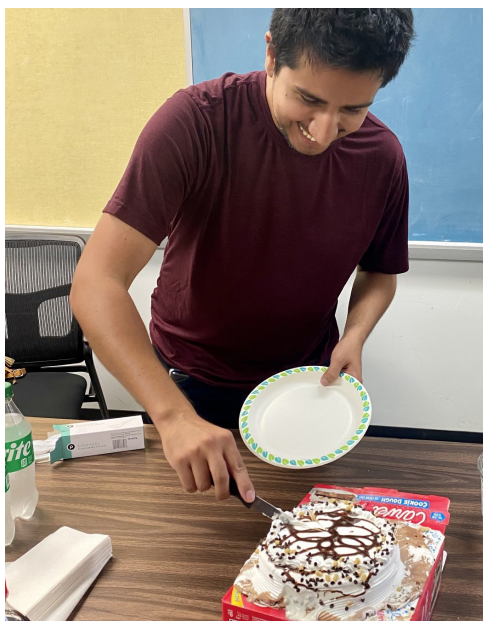
Dr. Sandhu and company planting 2 acres of energycane for bioenergy project at IRREC, Fort Pierce.



Livia Amaral, Pedro Guerini Filho, Maria Pastre and Dr. Hardev Sandhu visiting the Gainesville campus.



Sugarcane field day to make selections from Stage 3 of the sugarcane breeding program.



Jose Garcia, a Fullbright scholar from Argentina celebrating his last day at the EREC.



Making beds for hemp planting in muck soil.

Sights Around the Everglades REC: Entomology



From left to right: Carolina Tieppo, Donna Larsen,
Amir Avila Zapata



Dr. Beuzelin presenting at the Rice Field Day



Dr. Beuzelin demonstrating how to use a sweep net while
scouting for rice stink bugs at the Rice Field Day.



Fall armyworm trial at the EREC.



Graduate student Carolina Tieppo giving a presentation at the
Rice Field Day



The Rice Field Day crowd getting involved in sweeping bugs.

Sights Around the Everglades REC: Water Quality Lab



Maryory Orton and Dr. Pamala Aracena presenting at the ASA-CSSA-SSSA annual meeting in Baltimore.



From left to right: Dr. Pamela Aracena, Aline de Camargo Santos, Shabnam Sadeghibaniani, Dr. Samira Daroub, Dr. Mohsen Tootoonchi, Krista Zapata Barrientos, Maryory Orton in Baltimore.



Dr. Samira Daroub touring U.S. Sugar



Manuel Tapia working in the lab.



Krista Zapata Barrientos and Maria Medina taking soil samples



From left to right: Dr. Pamala Aracena, Manuel Tapia, Irina Ognech, Maria Medina, Dr. Samira Daroub, Viviana Nadal, Dr. Mohsen Tootoonchi, Krista Zapata Barrientos, Maryory Orton

Sights Around the Everglades REC: Extension



Crowd at the Rice Field Day



Dr. Matthew VanWeelden presenting at the Rice Field Day.



Sweet Corn Extension Workshop



Everglades REC and Extension personnel at the You Farm Pumpkin Patch hosted by Basore Family Farms in Loxahatchee.



Dr. Julien Beuzelin and Dr. Matthew VanWeelden presenting at the You Farm Pumpkin Patch.



Sugarcane Crop Protection Workshop

Sights Around the Everglades REC: Happy Holidays at the EREC

We celebrated the upcoming holiday season with a taco and potluck lunch. Followed by rounds of bingo, an ugly sweater contest, a gift exchange, a game of egg toss and sac races. The EREC also participated in a toy/food donation drive for Ella's Closet and Lighthouse Cafe in Belle Glade.



Celebrate

**YOU ARE CORDIALLY INVITED TO
THE CENTENNIAL CELEBRATION OF THE**



UF | IFAS
UNIVERSITY of FLORIDA

**FRIDAY, FEBRUARY 10, 2023 | 7:45 A.M. - 3:00 P.M.
3200 E. CANAL ST. S., BELLE GLADE, FL, 33430**

7:45 a.m. - Registration, Breakfast, Student Posters, Sponsor Displays

8:30 a.m. - Welcome to EREC: Samira Daroub, Center Director

8:45 a.m. - UF/IFAS Administration Welcome: Scott Angle, UF/IFAS Senior Vice President

9:00 a.m. - Keynote Speakers: Jim Shine, EREC Advisory Committee Chair & Rob Gilbert, UF/IFAS Dean of Research

10:15 a.m. - Research Tours of the EREC

12:30-2:00 p.m. - Lunch, Educational Displays, Stakeholder Testimonials

2:00-3:00 p.m. - Tour of EREC Farm & Laboratory Facilities

Register by Tuesday, Jan. 31, 2023 using this link: [Click Here](#)

You may also scan the QR Code



If you want to see these announcements
in real time, follow us on social media:

@EvergladesREC

Visit our website:

erec.ifas.ufl.edu

Check out our YouTube channel:

[UF IFAS EREC](#)

Thank you for reading the 2022 EREC Winter
Newsletter!

Newsletter Contact:

David Stevens

dstevens55@ufl.edu