

News from the Sloughs

News from the researchers,
students, and educators of
FCE LTER



FCE Reflections for 2011

It has been a highly productive year for FCE! Our FCE III proposal is nearly complete after more than a year of planning and a confluence of brilliant minds in person and on paper. As the year draws to a close we can reflect on the enormity of work that has been accomplished by FCE researchers this year. We can also look forward to hearing the 2011 highlights and statistics for papers and datasets contributed, presentations given, newly welcomed collaborators, and newly forged partnerships and collaborations at our FCE ASM in March 2012. As M.S. Douglas said “There are no other Everglades” but there is no other FCE either. Our strength lies in the interconnectivity and communications between diverse scientific practices and approaches geared toward stewardship of a massive and unique wilderness that has the humble attribute of providing all of the water to South Florida. So be proud, swath yourself in FCE swag and carry on. *Note from the editor*

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Do you want to know more? Are our FCE Students Trendsetters for the Network? What do our Lead P.I. and workgroup leaders have to say about the FCE III proposal? What do you do with a 11' long reptile near your data sensors? Does the FCE RESSt program work? Find out in this edition of the newsletter.

Save the date and register for the 10th Annual FCE ASM at Deering Estate March 15th and 16th 2012





FCE Student Group Is Making Things Happen

This fall, the FCE Student Group proudly inaugurated a conference travel grant award competition open to FCE students. Each fall and each spring,

the FCE Student Group will give out travel grants of approximately \$500 to meritorious FCE students in order to help defray their conference travel costs. The FCE Student Group pioneered this program to make it financially feasible for more FCE students to participate in key academic conferences, which facilitate important professional development opportunities but are often very expensive to attend. Grant recipients can use their award money to cover the cost of airfare, conference registration, lodging and/or poster printing associated with conference participation. This fall, the

FCE Student Group awarded three (3) \$500 awards for conference travel. Recipients included PhD student David Lagomasino (Picture left) who will present a talk entitled, "Monitoring hydrogeochemical interactions in coastal mangroves in Everglades National Park using field spectroscopy and remote sensing" at the December 2011 American Geophysical Union Conference in San Francisco, California; PhD candidate Bryan Dewsbury (Pictured right) who gave a talk on the distribution and biogeochemistry of primary producers in Biscayne Bay at the November 2011 Coastal

and Estuarine Research Federation Conference in Daytona Beach, Florida; and Pamela Sullivan (Pictured middle) who recently defended her dissertation research on plant-groundwater-surface water interactions on tree islands of the Everglades. Congratulations to our winners! The FCE Student Group E-board will begin accepting applications for the spring/summer 2012 travel grant funding cycle in January 2012. Please look for the program announcement on the FCE-STUDENTS list-serv. Contributed by Rebecca Garvoille, FCE Student Group President

FCE Student Funding

FCE LTER grant number #DBI-0620409. The FCE LTER budget includes \$1,000 per year for student travel.

The FIU's College of Arts and Sciences and FIU's Division of Research provided a total of \$5,000 per year for student travel support. The \$5,000 per year of student travel support was split 50/50 between the College of Arts and Sciences and the Division of Research in years 4-6 of FCE II. In years 1-3 of FCE II, the Division of Research provided \$5,000 per year of student travel support. THANK YOU!

Proposing, Postulating, and Pushing for FCE III

FCE has now officially spanned eleven years of scientific research, discovery, and growth in education. We now have a pile of publications that would burst the backpack or fill the computer hard drive of most aspiring students. With this

wealth of information comes new questions and projects that must be addressed to further our understanding of the ecosystem and its connectivity with adjacent systems, both human and wild.

In anticipation of the FCE III proposal and review process we asked Principal Investigators, Workgroup Leaders, and Cross Cutting Theme Leaders to share their words on the efforts and current thinking for the FCE III proposal.

Here are the questions we posed:

1. Your thoughts on the transition from FCE II to FCEIII
2. What you feel are the strengths of the FCE III proposal (or what are you most excited about in the proposal?)
3. How you feel the new additions and changes for FCE III will guide the research direction and significant findings for the program

Here are the responses we received:

From Lead Principal Investigator/Principal Investigator Dr. Evelyn Gaiser:

“The renewal process of an LTER program is an exciting journey! Planning future research is something we do continually as we make each new discovery and share their implications with our collaborators. These plans include activities that extend from years to decades, because as LTER, we can envision what our study domain, research topics and collaborator might look like decades into the future. We began the formal planning of our 2012 renewal proposal back at our 3rd year review, where we both introspectively evaluated where we have come from and where we are headed, as well as received helpful critiques and guidance from external evaluators and NSF. Last year, we really kicked the proposal generating machine into gear during several workshops and our ASM, where

new ideas coalesced into a framework for the future. FUTURE – this is a central idea of the FCE III proposal. Our ecosystem is faced with a double whammy of rapid sea-level rise and increased human demand on our freshwater resources, which together accelerate the rates of saltwater transgression into our ecotone and aquifer. Will restoration be sufficient to counteract these pressures? Have the delays increased our vulnerability to sea-level rise and increased storm severity? How does the balance of fresh and salt water supply influence carbon sequestration and transport in one of the most productive mangrove forests on the planet? We can examine these critical questions through our dedicated long-term collections of key ecosystem and human dimensions attributes, and through new and innovative studies that link human decisions to ecosystem properties and services. We will study how past decisions leave their footprint in ecosystems in ways that determine future pathways of change. A big, new, exciting part of FCE III will be an examination of how those “legacies of the past” influence the future under contrasting scenarios of water management and sea-level rise. By employing our research results and quantitative modeling tools developed in past research, we can envision alternative “FCEs of the future” that can not only guide more effective decision-making but provide testable predictions for future FCE research!”

“Some of the most rewarding experiences I have had as a lead PI have been through my interactions with the FCE graduate student organization. Our graduate students rock our planet! This semester about a dozen FCE students attended a weekly workshop at FIU that focused on development and evaluation of the FCE renewal proposal. Some students enrolled for FIU graduate credit while others freely committed

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their own time to participate in the weekly meetings. Each week the students read a different section of the renewal proposal, accompanied by a couple of key related FCE papers, and one student led the group discussion. Through this activity, the students (many of whom were new to the program) not only learned the nuts and bolts of each part of the FCE program, but also contributed in instrumental ways to the development and refinement of the renewal plans, as well as the proposal document itself. FCE is dedicated to program building through the full collaborative energy of our large, multi-disciplinary research team, and takes particular pride in the enthusiasm, creative energy and intellectual dedication of

our graduate students. They have fundamentally influenced the direction, cohesiveness and scientific validity of our research, which not only serves FCE well but also the students as they the ones who get to experience and test our predictions for the future of FCE!"

From Cross Cutting Theme Modeling, co Principal Investigator: Dr. Mark Rains

"In FCE I and II, we assembled many of the pieces; in FCE III, we will increasingly focus on putting these pieces together. This commitment is clear in the establishment of the Synthesis and Integration Cross-Cutting Theme, which will be co-led by Evelyn Gaiser and Dan Childers, the two lead PIs in FCE I, II, and III. This commitment also is clear in the

new focus of the Scenarios and Modeling Cross-Cutting Theme, which will begin using a scenarios study framework to focus modeling efforts on common storylines to better enable models and model results to be linked across disciplines and scales."

From Education and Outreach Coordinator Nick Oehm:

"I am excited about our new partnerships and collaborators. There are many innovative ideas that we are working on for FCE III with our new educational partners at the Deering Estate and Everglades Foundation. As we move forward FCE Education & Outreach and our partners are working with the Everglades Digital Library on building ". . . a multimedia discovery system for Everything Everglades"."



Thank you to everyone and especially to the Principal Investigators, Education and Outreach Coordinator, and Managers for all your efforts and comments in the proposal preparation process!

FCE III Proposed Working Group Principal Investigators: Biogeochemistry – Dr. Joe Boyer, Dr. Steve Davis; Primary Production – Dr. Tiffany Troxler, Dr. Victor Rivera-Monroy; Organic Matter – Dr. Rudolf Jaffe' (co-PI), Dr. Bill Anderson; Trophic Dynamics – Dr. Mike Heithaus (co-PI), Dr. Joel Trexler

FCE Proposed Cross Cutting Themes Principal Investigators: Water – Dr. Rene' Price (co-PI) and Dr. Laura Ogden (co-PI); Legacies – Dr. Rinku Roy Chowdhury, Dr. Henry Briceno; Carbon – Dr. Vic Engle, Dr. Rudolf Jaffe'; Modeling – Dr. Mark Rains, Dr. Carl Fitz; Synthesis CCT – Dr. Evelyn Gaiser, Dr. Dan Childers

Lead Principal Investigator: Dr. Evelyn Gaiser

Education and Outreach Coordinator- Nick Oehm

Information Management- Linda Powell

Project Manager- Mike Ruge

Snake Slough? What's in your Action Packer?

A frightening tale (and head for that matter) from Rafael Travieso

First in a series of FCE Field Adventures



Field work in the Everglades is always an adventure but some days hold more surprises than others. On their monthly sampling trip to SRS6 Rafael Travieso and his fellow researchers Valentin Nechita and Kyle Tuntland encountered a beast that could have ruined their day. Instead, with careful handling and a good bit of bravery, Rafael safely caught the exotic reptile and removed it from the Everglades.

We caught up with Rafael and asked him questions about his unusual encounter.

1. Were you the person who caught the snake? Do you have any prior snake handling experience? Did the snake cooperate with you while you were trying to get it into the action packer?

Valentin Nechita was the person who spotted the python and I was the one who caught it and decided to take it to Skip Snow. Later I find out from Skip the following information: sex (female), her length (11.2 feet) and her weight (18.2 kg). Both Kyle Tuntland and Valentin did help me with the transporting and “packing” inside the action

packer. I don't have too much experience in handling snakes, although when I see them, I feel an adrenaline rush that “compels” me to catch them. The python did not show any aggression at any moment; my guess is because she was digesting a prey.

2. Is this the first time you have seen a python out at this site? Have you seen them at any of the other sites you visit?

In 2006 and 2010 I caught two pythons, both smaller than the one at SRS6, in the S332 area.



3. How did you discover the snake- was she just lying on the autosampler platform when you arrived by boat?

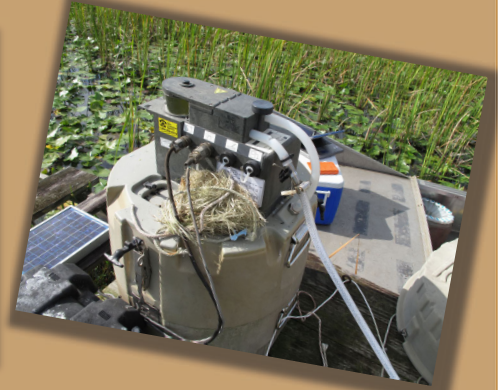
The python was not close to the autosampler. It was a bit deeper in the mangrove forest, and resting on the ground. We were looking for some sensors deployed in the area.

4. Is this the most interesting field encounter you have had with wild animals? If not- please share what was your most exciting field encounter with a wild animal?

I would definitely consider it interesting if I see a panther or a bear during my field days but unfortunately I don't think they are easy to spot. However, the

autosampler cover/lid provides a safe shelter for many animals in the Everglades; the place is out of sight, dry and protected from the weather. Having said that, we frequently find frogs, mud wasps, small snakes, rats and fire ants as residents in the autosampler. There was a time when a beehive colonized the autosampler at SRS3 and it took me two months to get rid of the

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bees; it was very sad for me to destroy the hives because I really like the honeybees and their work as pollinator but at the same time they were taking over the autosampler.

Thank you for sharing your stories and pictures Rafael!

We wanted to know more about pythons in the Everglades and FCE Collaborator Dr. Fred Sklar from the South Florida Water Management District (SFWMD) put us in touch with LeRoy Rodgers, also at SFWMD, who has been the District's point person on python monitoring, management, and research over recent years and we asked the following questions:

1. I was wondering if there might be a link for more information that you have collected over the years that we can send FCE LTER newsletter readers to for more info?

There are a number of literature resources. For a good overview of the south Florida python story, see the following link:

<http://edis.ifas.ufl.edu/uw286>

For a broader discussion on invasive species in south Florida, I recommend the South Florida Environmental Report

http://my.sfwmd.gov/portal/page/portal/pg_grp_sfwmd_sfer/portlet_prevreport/2011_sfer/v1/chapters/v1_ch9.pdf

2. Could you also please include a quote about either python population dynamics or where you are seeing them?

The SFWMD, Everglades National Park, and other agencies continue to observe Burmese pythons in and near the southeastern portion of the Everglades. The number of removed pythons is down from recent years, but we are finding a broad range of age classes, from juveniles to large adults.

3. Would you like for other people including FCE researchers to let you know when they either a.) catch one or b.) see one?

Most definitely! But rather than contact me directly, ask readers

to report any sightings/collections through the Everglades Invasive Species Management Area's (ECISMA) reporting website. ECISMA is an interagency team of scientists and resource managers working on invasive species in the Everglades. Our website allows folks to quickly report invasive species and route the information to the appropriate responders.

<http://www.evergladescisma.org>

4. It would be great if you have any big picture information to offer.

See info on pages 9-24 , 30, and 60 in the South Florida Env. Report (link above)

Story Contributed by Rafael Travieso, LeRoy Rodgers and Susan Dailey



Where Are They Now? An Update from our Second Research Experience for Secondary Students (RESSt) Participant from 2004, Juan Esteban Gallo

In 2004, Juan Gallo was an exceptionally well-spoken and outgoing high school student who was energetically interested in lab work and his high school executive internship at Felix Varela Senior High. Today, he is a budding molecular scientist who continues to work with the same enthusiasm in biological sciences.

His Honors Biology teacher, our very own FCE Education and Outreach Coordinator Nick Oehm who then was an RET (Research Experience for Teachers) with FCE, asked Juan to be an intern in the RESSt (Research Experience for Secondary Students) program. Juan worked with Greg Juzli in Dr. Childers' Wetland Ecosystems Lab from 2004 to 2005 on belowground *Cladium jamaicense* biomass and how nutrient availability affects belowground productivity.

Juan competed in the Miami Dade Regional Science Fair and then the State Science Fair and remains our mostly highly awarded RESSt program participant to date out of over 40 students. For a list of his awards and his presentations see:

http://fcelter.fiu.edu/education_outreach/awards/

http://fcelter.fiu.edu/education_outreach/posters/

After graduating from High school and participating in FCE LTER, Juan went on to the University of Central Florida (UCF), graduating with two Bachelors degrees, Molecular Biology and Microbiology, along with Biotechnology. While at UCF, he participated in undergraduate research in a Molecular Parasitology lab, studying transport vesicle proteins involved in the infection process of *Plasmodium falciparum* causing malaria. Juan was part of the Ronald McNair

Scholars program at UCF with advisor Dr. Debopam Chakrabarti. His research involved the characterization of the structure and function of VAMP 7 SNARE protein in the *Plasmodium falciparum* parasite. This parasite is involved in the infection of human erythrocytes, causing Malaria. Characterization of the SNARE proteins in *Plasmodium falciparum* could lead to potential drug targeting sites to treat Malaria.

Juan then went on to pursue a Ph.D. at the University of Rosario in Bogota, Colombia in the area of Biomedical Sciences. He is currently working on sequencing 5 dimorphic fungal genomes for a comparative genomics project that will aid in the process to differentiate certain virulence factors in the systemic infections Blastomycosis, Histoplasmosis, and Paracoccidioidomycosis.

He is eager to collaborate with FCE scientists and is interested in implementing molecular characterization of *Cladium jamaicense* and in his words "to get back to his roots".

We asked Juan to describe how FCE LTER influenced his path of study and career and he is what he said:

"Participating in FCE LTER allowed me to gain remarkable experience in conducting academic research and planted in me the seed for young minds to begin to think like scientists. The invaluable mentors not only helped me along every step of the way, but instilled in me the passion that they themselves emitted for the importance of outreach for young scientists. I plan to

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continue their efforts and participate in mentoring young minds to reach their full potential through academic involvement, with hopes that they too someday can fulfill their academic aspirations through research.”

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Story Contributed by Juan Gallo, Nick Oehm,
and Susan Dailey



Juan THEN (Above) and NOW (Below)



Keep up the great work Juan and keep in touch!

FCE Student Defenses this Quarter- Congratulations to:

[Pam Sullivan, dissertation.](#)- Groundwater-Surface Water Interactions on Tree Islands in the Everglades, South Florida [Advisor Dr. Rene Price](#)

[Ross Boucek, thesis.](#)- Resource Partitioning Among Three Mesoconsumers at a Marsh Mangrove Ecotone: A Response to A Seasonal Resource Pulse Subsidy [Advisor Dr. Jennifer Rehage](#)

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Please note: FCE ALL

Please send any comments and contributions for the next FCE Newsletter by February 23, 2012 to fceslter@fiu.edu

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Please address questions or comments about this website to: fceslter@fiu.edu