**PUSHPA GAUTAM SOTI**

Agroecology and Sustainable Food Systems

Department of Biology

University of Texas Rio Grande Valley

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**EDUCATION**

Ph. D., 2013, Department of Earth and Environment, Florida International University, Miami, FL

M. Sc., 2008, Department of Biology, Florida Atlantic University, Davie, FL

B. Sc., 2002, Environment Management, Pokhara University, Nepal

**EXPERIENCE**

January 2017-Present: USDA-NIFA Postdoctoral Fellow.

August 2015- December 2016: Research Scientist, Subtropical Organic Agriculture Research Partnership, Agroecology and Sustainable Food Systems University of Texas Rio Grande Valley

January 2014 – July 2015: Postdoctoral Research Associate/Adjunct Lecturer, Department of Earth and Environment, Florida International University

August 2008 – December 2013: Teaching Assistant, Department of Earth and Environment, Florida International University

August 2006 – May 2008: Teaching Assistant, Department of Biology, Florida Atlantic University.

**TEACHING**

Classes taught as an Adjunct Lecturer and Teaching Assistant at Florida International University (FIU):

EVR 5061 - South Florida Ecology (3 semesters)

EVR 3013 - Ecology of South Florida (3 semesters)

EVR 1017 - The Global Environment and Society (5 semesters)

EVR 1001 - Introduction to Environmental Science & Sustainability (2 semesters)

EVR 3011L - Environmental Science: Pollution laboratory (1 semester)

GLY 1010L - History of Life laboratory (10 semesters)

GLY 1001L - Introduction to Earth Sciences laboratory (5 semesters)

**STUDENT RESEARCH MENTORING**

Graduate

 Selecting cover crops for subtropical organic farmers.

 Integrated pest management in subtropical vegetable farms.

Buckwheat as a cover crop in Florida: mycorrhizal status and soil analysis.

Comparing the effect of organic and conventional herbicides on soil microorganisms.

Amending soil using weeds biochar.

Undergraduate

Feedback between soil characteristics and exotic invasive plants.

Using aquaponics in organic farming in urban areas.

Biological control of plant pathogenic nematodes in organic farms.

Nutrient leaching from container grown palm trees fertilized by various slow release fertilizers.

International Scholars

Using mycorrhizal fungi in sugarcane production.

Mycorrhizal association in Avocado trees.

Mycorrhizal fungi diversity in south Florida farms.

High School students (Summer internship)

 Integrated pest management in subtropical organic farms.

Use of mycorrhizal fungi in soil stabilization.

Use of mycorrhizal fungi in medicinal plant farming.

Soil physical and chemical properties in Florida.

Mycorrhizal fungi association in south Florida ferns.

**PROFESSIONAL DEVELOPMENT IN TEACHING**

Using technology in classrooms; working with diversity students; effective syllabus preparation sponsored by Center for Advancement in Teaching, Florida international University (FIU).

FIU's global learning Case Response Assessment (CRA) rater trainings, global learning course instruction workshop (syllabus preparation, class participation, use of audio visual technology); global learning professional development workshops sponsored by the Office of Global Learning Initiatives, FIU.

**PROFESSIONAL ACTIVITIES**

* **Judge:** UTRGV College of Sciences Annual Conference, Poster Presentation, 2017.
* **Panelist:** USDA-AFRI Competitive Grants Program, 2016
* **Reviewer:** International Journal of Plant & Soil Science

Journal of Environment Science and Management

* **Member, Conference Organizing Committee:** Agri-Science Education for the 21st Century Conference, Miami FL, Nov 21-23, 2014.
* **Judge:** Middle school prepared speaking contest, organized by Future Farmers of America, Miami Dade Public School District 2013, 2014.
* Student recruitment activities: local high school visit, setting up tables in local fairs and conferences.
* **Treasurer:** Nepalese Student Union, Florida International University 2008-2010.

**FUNDING**

* Using mycorrhizal fungi to improve soil health and increase yield in organic vegetable farms. 2017-2019, Southern SARE On-Farm Research Grant $15,000.
* Comparing the ecosystems services provided by mixed or single species cover crops in subtropical United States. December 2016-December 2018, USDA AFRI Postdoctoral Fellowship $152,000. (PD)
* FIU tech fee proposal: Integrating technology in classroom to field studies, $ 62,000.
* College of Arts and Sciences/Department of Earth and Environment, Florida International University (Travel Grant: Fall, 2013) ($ 400.00)
* Doctoral Evidence Acquisition Fellowship, University Graduate School, FIU (Summer 2011 and Fall 2011) ($16,666).
* College of Arts and Sciences, Florida International University (Travel Grant: Summer 2010) ($ 200.00)
* Teaching Assistantship: August 2008-December 2013, FIU
* Teaching Assistantship: August 2006 – May 2008, FAU
* Equity and Justice in Natural Resource Utilization Grant, Winrock International, Nepal (2003) (NRs. 40,000; ~ $ 600.00)

**Student Grants**

* Eric Cantu, Variation of soil quality in Local Farms Across the Rio Grande Valley. UTRGV Engaged Scholar Program, 2017 ($ 2,000)
* Diana Cantu, Integrating cover crops in organic vegetable farming systems in south Texas, UTRGV HHMI, Undergraduate Leaders In Scientific Research Training Program, ($ 6,826).

**PEER REVIEWED PUBLICATIONS**

**Soti, P.G.** and J.C. Volin. (2010) Does water hyacinth (*Eichhornia crassipes*) compensate for simulated defoliation? Implications for effective biocontrol. *Biological Control* 54: 35–40.

**Soti, P. G**., K. Jayachandran, M. Purcell, Volin, J. C., & K. Kitajima, (2014) Mycorrhizal symbiosis and Lygodium microphyllum invasion in South Florida—a biogeographic comparison. *Symbiosis*, 1-10.

\*Boglaienko D., **P. G. Soti**, K. G. Shetty & K. Jayachandran (2014) Buckwheat as a Cover Crop in Florida: Mycorrhizal Status and Soil Analysis. *Agroecology and Sustainable Food Systems* 62: 81-90.

**Soti P. G.,** K. Jayachandran, S. Koptur, & J.C. Volin (2015) Effect of soil pH on growth, nutrient uptake, and mycorrhizal colonization in exotic invasive *Lygodium microphyllum*. *Plant Ecology*, 1-10.

**\*Soti, P. G.,** Fleurissaint, A., Reed, S., & Jayachandran, K. (2015) Effects of Control Release Fertilizers on Nutrient Leaching, Palm Growth and Production Cost. *Journal of Agricultural Science*, *5*(4), 1135-1145.

**Soti, P. G.,** Rugg, S., & Racelis, A. (2016) Potential of cover crops in promoting mycorrhizal diversity and soil quality in organic farms. *Journal of Agricultural Science*,8(8), 42-47.

**Soti, P. G.,** Jayachandran, K. (2017)Effect of exotic invasive old world climbing fern (*Lygodium microphyllum*) on soil properties. Journal of Soil Science and Plant Nutrition (Accepted).

**MANUSCRIPTS UNDER PREPARATION**

**Soti, P. G.,** Rugg, S., Cantu, D., & Racelis, A. (2017) Evaluation of multiple winter cover crops for the subtropical organic vegetable systems. *Subtropical agriculture and environments.*

**Soti, P. G.,** Jayachandran, K. (2017) Influence of soil biogeochemical properties on exotic species invasion: a cross continent comparison of soil characteristics to invasion success. *Plant and Soil.*

**Soti, P.G.,** Toprak, B., De La Rosa, N., Jayachandran, K. (2017) Diversity and abundance of mycorrhizal fungi associated with avocado from different farming practices in south Florida. *Journal of sustainable agriculture.*

\*Rugg, S., **Soti, P. G.,** & Racelis, A. (2017) Using cover crops to suppress weeds in subtropical organic vegetable farms. *Sustainable agriculture research.*

\*Toprak, B., **Soti, P. G.,** Jovel, E., Alverado, L., Jayachandran, K. (2017) Survey of Arbuscular Mycorrhizal Fungi in South Florida Organic Farms. *Turkish journal of agriculture and forestry*

\*Freidenreich, A., **Soti P. G.,** Betancourt E., Jayachandran, K. (2017) Effects of prescribed burn on pine rockland soil health and plant communities. *Forest ecology and management.*

*\* Mentored students’ projects*

**POSTERS & PRESENTATIONS**

Oral presentation

**Soti Pushpa G.,** K Jayachandran, S Koptur, and JC Volin (2013) Effect of soil pH on growth, nutrient uptake, and mycorrhizal colonization in exotic invasive *Lygodium microphyllum.* ASA, CSSA and SSSA Annual Meetings in Tampa, FL on November 3-6, 2013.

**Soti Pushpa G.,** K Jayachandran, S Koptur, and JC Volin (2013) Effect of soil pH on growth, nutrient uptake, and mycorrhizal colonization in exotic invasive *Lygodium microphyllum.* Plant Biologists of South Florida, Miami, FL, April 13, 2013.

**Soti Pushpa G.,** K Jayachandran (2013) Effect of soil pH on growth, nutrient uptake and mycorrhizal colonization in exotic invasive *Lygodium microphyllum*. Agroecology Symposium at FIU, March 4, 2013.

**Soti Pushpa G.,** K Jayachandran (2013) Do soil geochemical properties promote exotic species invasion in Florida? A cross continent comparison. Department of Earth and Environment, Graduate Research Symposium, February 15, 2013.

**Soti Pushpa G**, Jayachandran K (2012) Soil Bio‐geochemical Properties Associated with Exotic Species Invasion in Florida: A Cross Continent Comparison. Graduate Student Research Symposium, April 11, 2012.

**Soti Pushpa G.,** K Jayachandran (2010) Influence of Soil Biogeochemical Properties on the Invasiveness of Old World Climbing Fern (*Lygodium microphyllum*). Environmental Studies Graduate Seminar, November 3, 2010.

Poster presentation

**Soti PG**, Jayachandran K, Purcell M, Volin JC, and Kitajima K, (2013) Mycorrhizal Symbiosis and *Lygodium microphyllum* Invasion in South Florida- a Biogeographic Comparison. FLEPPC/SE-EPPC Joint Annual Conference, May 20-23, 2013, Panama City Beach, FL.

Boglaienko D., **P. Soti,** K. G. Shetty and K Jayachandran (2013) Buckwheat as a Cover Crop in Florida: Soil Analysis and the Role of Arbuscular Mycorrhizal Fungi in Phosphorus Uptake. ASA, CSSA and SSSA Annual Meetings in Tampa, FL on November 3-6, 2013.

**Soti PG.,** Jayachandran K (2010) Role of mycorrhizal fungi in supporting invasiveness of Old World Climbing Fern in south Florida natural areas. Greater Everglades Ecosysem Restoration, The Greater Everglades: A Living Laboratory Change – Planning, Policy, and Science Meeting, July 12-16, 2010, Napels, FL.

**SKILLS**

Survey design

Designing and conducting surveys for healthy eating habits. Analyzing the data and report writing for diverse audience.

Plant-Soil Science Laboratory Management

Chemicals, lab supplies and equipment inventory, safe handling and disposal of hazardous wastes, training, advising and mentoring students.

Organize, prepare, and maintain instructional material/equipment for teaching biology, soil science and geoscience laboratories,

Equipment

Gas Chromatography (Shimadzu Corporation)

TruSpec CN Analyzer (LECO Corporation)

AA Spectrophotmeter (Shimadzu Corporation)

UV 1601 Spectrophotometer (Shimadzu Corporation)

TOC Total Organic Carbon Analyzer (Shimadzu Corporation)

Spectronic 20D+ (Thermo Fisher Scientific Inc.)

LI-3100C Leaf Area Meter (LI-COR)

LI-3050C Leaf Area Meter (LI-COR)

LI-6400XT Portable Photosynthesis System (LI-COR)

Partlow MIC 6000 Profile Controller (Partlow)

Software

MS Office, SAS, SPSS

Language

English (fluent), Nepali (native)