

Rounak Patra

Ph.D. Candidate – Environmental and Soil Sciences
Department of Biosystems Engineering and Soil Science
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Education:

- Ph.D. in understanding subsoil C-stabilization mechanisms under highly managed terrestrial ecosystems (2019 Fall - 2023 Fall expected)
- Research and development experience with strong proficiency in modeling soil organic carbon (SOC) storage, microbial ecology, and stable isotope biogeochemistry resulting in finding factors controlling microbial biomass C stabilization as SOC under conservation agricultural management practices such as no-tillage and off-season cover cropping.

Selected Publications & Scientific Presentations

- 2022 Fall Winter wheat cover crop increased subsoil organic carbon in a long-term cotton cropping system (<https://doi.org/10.1016/j.still.2022.105521>)
- Do Profile-Scale Soil Organic Carbon Distribution Under Conservation Cropping Systems Increases from Improved Microbial Functional Traits Associated with C Cycling? (ASA, CSSA, SSSA *International Annual Meeting, 2022*, Baltimore, MD)
- 2022 Summer Increased carbon use and extracellular enzymatic efficiency promote profile-scale soil organic carbon accumulation under a long-term no-till system integrated with winter wheat cover crop (*ESA and CSEE 2022 annual meeting*, Montreal, Canada)

Skills

Soil health & SOC evaluation	Physical, chemical and biological indicators of soil health, SOC budgeting, SOC stock and its functional fractions measurement Soil, Liquid and Gas Elemental analyzers (TOCcube, MaxCube)
Molecular biology laboratory techniques	Nucleic acid extraction, Polymerase chain reaction (PCR), Gel Electrophoresis, DNA sequencing (Illumina MiSeq), Fluorescence Microscopes, Spectrophotometers (microplate)
Stable isotope geochemistry laboratory techniques	Stable isotope probing (SIP), Stable carbon isotope analyzers (Picarro)
Transferrable skills	Presentation skills (Microsoft office), Statistics & Data analysis (R, SAS), Collaboration Skills, Technical Writing, Project & People management

Awards, Affiliations & Volunteer Activities

- Katherine S McCarter Graduate Student Policy Award (2022), Graduate student leadership conference in SSSA 2022; Bayer AG Encompass Scholar program (2022-23 cohort)
- Graduate Advancement, Training, and Education (GATE-ORNL) fellowship, 2022-23 cohort
- Tennessee Plant Research Center Graduate Student and Postdoc Research Grant award
- HERF-III (\$3500, Higher education emergency relief fund) & Herbert College of Agriculture Fellowship for graduate excellence (2019-2023)
- ESA opportunity fund, trailblazing graduate student award, and PRC travel award (for presenting in *ESA Annual Meeting, 2022*, Montreal), GSS & PRC travel award (for presenting in *ASA, CSSA, SSSA International Annual Meeting, 2021*, Salt Lake City)
- Present member of the Soil Science Society of America and Ecological Society of America (2020-Present); Abstract reviewer for ESA-CSEE annual meeting 2022
- Vice President (2020-21) for "Manthan Indian Students' Association at UT Knoxville"; Duties: Organized, executed, and fundraised university-wide events