

Stable Isotope Mass Spectrometry Laboratory (SIMS)

The Stable Isotope Mass Spectrometry Laboratory (SIMS) is located in the Department of Soil and Water Science (SWS) at the University of Florida. The SWS SIMS laboratory maintains and operates a Thermo-Finnigan Delta^{Plus} XL Isotope Ratio Mass Spectrometer (IRMS) interfaced via a ConFlo-III device to a Costech ECS 4010 elemental analyzer for continuous flow measurement of stable carbon (C) and nitrogen (N) isotope ratios of organic and inorganic samples. Additional peripherals interfaced with the mass spec include a ThermoFinnigan GasBench II.

Mission:

The mission of the SWS Stable Isotopic Mass Spec Lab is to provide high quality stable isotopic data to lab users at the University of Florida SWS Department and outside clients.

Contributing Faculty: Kathryn Curtis (Coordinator), Andy Ogram, Patrick Inglett, K. Ramesh Reddy

Scope of Services:

- The SWS Stable Isotope Mass Spec Lab can provide stable isotopic data (¹⁵N and ¹³C), as well as total nitrogen and total carbon data for soil, plant, and other organic and inorganic materials using a Delta plus XL coupled to a Costech ECS 4010 elemental analyzer.
- The SWS Stable Isotope Mass Spec Lab can provide stable isotopic analysis of ¹³C of pure CO₂ or atmospheric CO₂ using a GasBench prep system coupled to the Delta plus XL.
- The SWS Stable Isotope Mass Spec Lab can provide stable isotopic analysis of ¹³C of dissolved inorganic carbon (DIC) of water using a GasBench prep system coupled to the Delta plus XL
- The SWS Stable Isotope Mass Spec Lab can provide stable isotopic analysis of ¹⁵N of N₂O of water using a GasBench prep system coupled to the Delta plus XL
- The SWS Stable Isotope Mass Spec Lab can also weigh samples using a microbalance and load them in preparation for isotopic analysis.

Price list as advertised (based on unit cost with or without labor):

- EA/Mass spec isotopic analysis only: **\$15** per sample
- EA/mass spec with TN/TC: **\$17** per sample
- Weighing and loading samples for EA/mass spec analysis: **\$3** per sample
- Gas Bench: **\$10** per sample