

Job Description

Job Title:	GC-C Isotope Technician
Department:	Earth and Environmental Sciences, Environmental Isotope Laboratory
Reports To:	Lab Manager and Senior Technologist
Jobs Reporting:	None
Salary Grade:	USG 9
Effective Date:	June 2018

Primary Purpose

The Gas Chromatograph Combustion (GC-C) Isotope Technician is responsible for performing Compound Specific Isotope Analyses (CSIA) for carbon, nitrogen and hydrogen on a fee for service basis for both University and external researchers and international consulting companies. The incumbent will be an integral part of the team to provide sample analyses results in a timely manner to clients from around the world. Duties assigned will include the set up and operation of laboratory analytical equipment, conducting data analysis/reporting and interacting with students, co-workers and clients. In addition, time will be used for Research and development of procedures, experimental design and execution and method validation.

Key Accountabilities

Mass Spectrometer systems and peripherals operation, maintenance, update and repair

- Responsible for the use and maintenance of the following lab equipment:
 - IsoPrime MultiFlow/Thermal Desorption-Gas Chromatograph-combustion-isotope ratio mass spectrometer (MF/TD -GC-C-IRMS) (elementar / Langensfeld-Germany) coupled with an Agilent 7890 Gas Chromatograph (Santa Clara-USA)
 - Thermo Delta XP Thermal Desorption/Purge & Trap-Gas Chromatograph-combustion-isotope ratio mass spectrometer (TD/PT-GC-C/P-IRMS) (Thermo Finnigan / Bremen-Germany) coupled with a CDS Thermal Desorption/Purge & Trap Autosampler (CDS Analytical, Oxford, Pennsylvania), Thermo Trace GC and Thermo GC-Combustion III interface (Thermo Finnigan, San Jose, CA).
 - MAT 253-DI/TD/GB/CF/GC - Dual Inlet, Continuous Flow Stable Isotope Ratio Mass Spectrometer (CFSIR-MS) with Gas Bench (Thermo Finnigan / Bremen-Germany) coupled with an Agilent 7890 Gas Chromatograph (Santa Clara-United States), Thermal Desorber (Scientific Instruments / West Palm Beach-USA)

Sample Pretreatment and Extraction

- Prepare and analyze organic and inorganic samples from around the world primarily for ¹³C and ²H and at times ¹⁵N isotope compositions
- Determine most appropriate analytical technique based on sample composition
- Sample preparation and analysis of dissolved organic and inorganic carbon in ground water

Method Development

- Design, validate and implement new analytical techniques for emerging organic pollutants within the current available laboratory capabilities and offer advice and to other technicians and clients and insights into new instrumentation to advance capabilities
- Assess the anticipated cost and impacts long term of the newly developed methods
- Produce new and maintain up to date Standard Operating Procedures (SOP)
- Respond to client(s) inquiries/questions pertaining to various results/analyses/project goals

Safety

Job Description

- Maintain up to date Safety Data Sheets for all chemicals routinely used

Other Duties

- General lab clean up and organization
- As assigned by the uwEILAB Manager

**All employees of the University are expected to follow University and departmental health and safety policy, procedures and work practices at all times. Employees are also responsible for the completion of all health and safety training, as assigned. Employees with staff supervision and/or management responsibilities will ensure that assigned staff abide by the above, and actively identify, assess and correct health and safety hazards, as required.*

Required Qualifications

Education

- Master's degree required in a Science related field, PhD preferred
- An equivalent combination of education and experience will be considered

Experience

- At least 5 years' experience working in an Isotope laboratory environment required
- Experience with stable Isotope mass spectrometry across several equipment manufacturers required
- Experience with associated peripherals preferred

Knowledge/Skills/Abilities

- Familiarity with Good Laboratory Practice (GLP)
- Effectively manage multiple priorities and exercise independent, prudent judgement
- Strong analytical and problem solving skills
- Excellent verbal and written communication skills
- Intermediate MS Word and Excel

Nature and Scope

- **Contacts:** Good oral skills for telephone contacts, communicate effectively with clients, staff, students and faculty by telephone and/or email.
- **Level of Responsibility:** Provides direction and training to undergrad and grad students and visiting fellows. Investigate, design and test new and enhanced methods for isotopic analyses. Suggest new avenues of analysis for novel compounds of environmental impact and interest.
- **Decision-Making Authority:** Organize and prioritize samples for preparation and analysis. Determine the most appropriate extraction and analytical method for analysis.
- **Physical and Sensory Demands:** Works in a busy lab where it can be noisy and hot, must be able to lift and carry medium weight boxes containing samples to storage areas throughout the labs. Must be able to disconnect, move and reconnect and move gas cylinders safely.
- **Working Environment:** Lab based with various chemical compounds, and chemicals; may have to stand for extended periods; constant need to give close attention to detail with written material; deadline pressures.