

Updating Equipment to an Agilent 7890 Gas Chromatograph with a 7010B Triple Quadrupole Mass Detector

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Purpose:

The new instrument is primarily used to measure organic biomarkers to study natural organic matter cycling and contaminants, specifically polycyclic aromatic hydrocarbons (PAH) and polychlorinated biphenyls (PCBs).



Figure 1: Agilent 8890/7010B gas chromatography with triple quadrupole mass detector.

Current research projects:

1) NSF RAPID: Evaluating the role of pollution monitoring on improving coastal community social well-being following a petrochemical fire and spill into Galveston Bay.

The project evaluates PAH/PCB contamination in Galveston Bay after the petrochemical fire and spill at Deer Park in Houston (TX) (from 3/17 to 3/20/19).

2) Decomposition and transformation of terrestrial organic matter at the land/ocean interface.

The research develops a metabolomics pipeline to automatically identify and integrate novel vascular plant biomarkers.

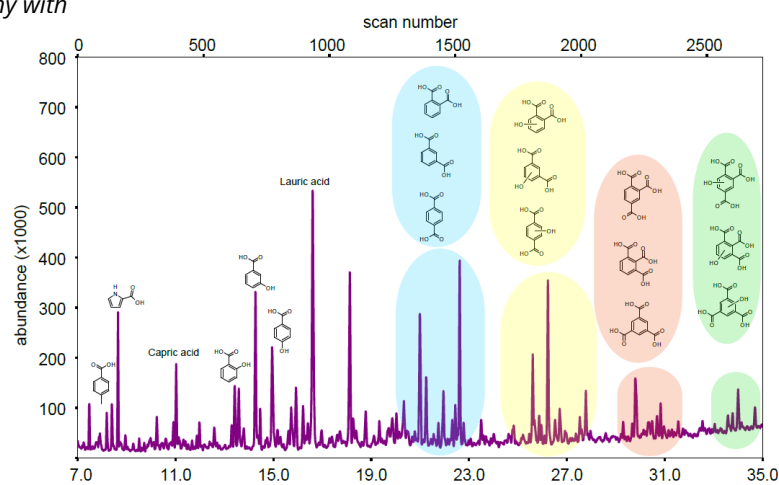


Figure 2: Known and unknown phenols derived from terrestrial dissolved organic matter in 3000 m Arctic water (400-500 year old Atlantic water).

This instrument will be immensely useful to support current projects and future proposals by increasing the University capabilities to analyze compounds such as lignin, tannins, fatty acids, polycyclic aromatic hydrocarbons (PAHs), polycyclic chlorinated biphenyls (PCBs), iodide, iodate, and organo-iodide. The system will also be used for a novel metabolomics platform to contribute to Texas A&M's One Health initiative.