Title: “Stable Isotope Labeling (SIL) at Los Alamos National Laboratory (LANL): A Historical Perspective.

With, Syntheses and Applications of Stable Isotope Labeled Carbohydrates, Lignin Models, and Medicinal Systems”

Abstract: Los Alamos National Laboratory (previously Los Alamos Science Laboratory) was very interested in the isolation of nitrogen and oxygen isotopomers since the early 1960's. This was driven by the fact that 15N and 17,18O could serve as tracers in structural and kinetic reaction studies of inorganic and biochemical processes. 13C enrichment activities began in the late 1960's with the advent of new cryodistillation columns. A major driver for large scale production of 13C was the need for a "heavy" methane (13CD4) which acted as a universal, extremely sensitive, nonradioactive atmospheric tracer. Aspects of the early ICONs (Isotopes of Carbon, Oxygen, and Sulfur) program at LANL will be presented. To provide context to more recent advances in isotope science at LANL the presentation will then center around the syntheses and application of labeled carbohydrates, lignin model systems, and will culminate with a description of the first 13C labeled drug with enhanced efficacy. [Acyl-13C]Isoniazid one step synthesis from 13CO and a series of studies illustrating the enhanced kill rate of tuberculosis (TB) and MDR (Multi Drug Resistant) TB will be presented.

Coffee & Timbits will be served at 10:00 am
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