

Symposium and Training IV: **Carbon Isotopes in Metabolic Research:** **Mass Spectrometry, NMR, PET, and Radioisotope Methods**

Thursday, April 25, 1996

Presented by
The Mary Nell and Ralph B. Rogers
Magnetic Resonance Center
and
The National Center for Research Resources in association with



Program Objective

In this year we chose to focus solely on carbon isotope methods. The objective of the symposium was to bring together physicians, biomedical scientists and students who were interested in the use of different carbon isotope techniques in metabolic research. Experts in the fields of mass spectrometry, NMR, PET and radiotracer methods discussed the advantages, limitations and recent applications of each tool.

The goal was to focus on the assumptions which underlie the standard carbon isotope methods and to illustrate the assumptions and experimental results which can be provided by each method. The Symposium was followed by a reception for visiting faculty and a dinner for all participants which allowed interaction between attendees and faculty. After dinner, Dr. Kamil Ugurbil discussed applications of ultrahigh field systems (3 T and greater) for clinical applications.

Guest Speakers

Heinrich Schelbert, MD, PhD Professor of Molecular and Medical Pharmacology and Radiological Sciences, University of California at Los Angeles, Los Angeles, CA

Christine Des Rosiers, Ph., Associate Professor of Nutrition and Biochemistry, University of Montreal, Quebec, Canada

Bernard Landau, MD, PhD Professor of Medicine and Biochemistry, Case Western Reserve University, Cleveland, OH

Kamil Ugurbil, PhD, Professor of Radiology, Biochemistry and Medicine, University of Minnesota Medical School, Minneapolis, MN

UT Southwestern Speakers

A. Dean Sherry, PhD, Professor of Radiology at the University of Texas Southwestern Medical Center and Professor of Chemistry at the University of Texas at Dallas

F. Mark Jeffrey, D. Phil., Assistant Professor of Radiology, University of Texas Southwestern Medical Center, Dallas, Texas

Craig R. Malloy, MD, Professor of Radiology and Internal Medicine, and Director of the Southwestern Biomedical Magnetic Resonance Facility at the Mary Nell and Ralph B. Rogers Magnetic Resonance Center, University of Texas Southwestern Medical Center, Dallas, Texas

Program Schedule

12:00 a.m.	On Site Registration
1:05 p.m.	^{11}C and Positron Tomography: Measurement of Substrate Oxidation in the Heart Heinrich Schelbert, MD, PhD
2:00 p.m.	Analysis of the TCA Cycle by ^{13}C Mass Isotopomers and GC-Mass Spectrometry Christine Des Rosiers, PhD
3:00 p.m.	Break
3:30 p.m.	^{14}C Tracer Methods: Measurement of Gluconeogenesis Bernard Landau, MD, PhD
4:15 p.m.	Principles of ^{13}C NMR Isotopomer Analysis A. Dean Sherry, PhD
4:45 p.m.	TCA Cycle Kinetics by ^{13}C NMR Isotopomer Analysis F. Mark Jeffrey, D. Phil.
5:15 p.m.	Comparison of Carbon Isotope Methods Craig R. Malloy, MD
5:30 p.m.	Wine and cheese reception
6:30 p.m.	Buffet dinner
7:15 p.m.	Ultra-High Field Clinical NMR: Past, Present and Future Kamil Ugurbil, PhD

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