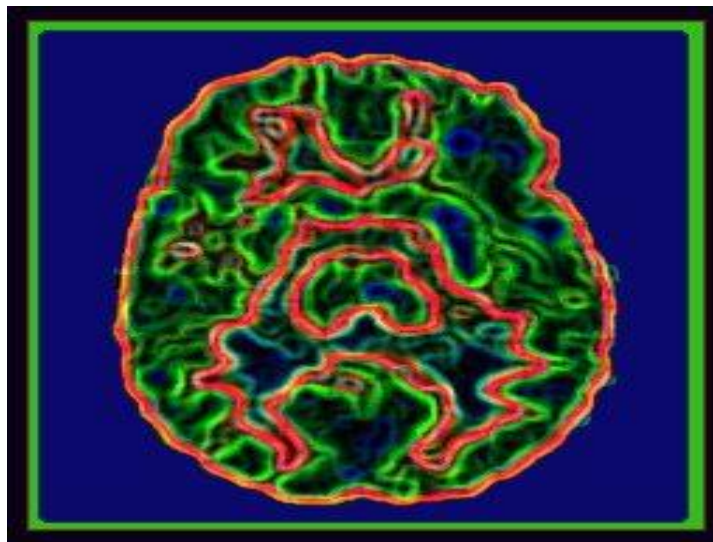


# ***Symposium and Training XIII:*** **Prospects of Biochemical Imaging:** **The Brain & Beyond**



Thursday, April 14, 2005

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

**UT SOUTHWESTERN**  
MEDICAL CENTER

## **Program Objective**

The goal of the NIH-funded Research Resource at UT Southwestern is to develop novel Nuclear Magnetic Resonance (NMR) technologies for measuring and understanding intermediary metabolism *in vivo*. One major emphasis is to use  $^2\text{H}$  and  $^{13}\text{C}$  as metabolic tracers and modern NMR methodologies to unravel the complexities of multi-organ metabolism in animals and humans. A second component of the Research Resource is to develop novel imaging agents that respond to metabolism *in vivo*.

There is widespread interest in brain activation as well as excitement about the potential for both spectroscopy and molecular imaging tools for *in vivo* detection of activation. We decided that a symposium emphasizing the current methods for detecting brain activation by MR would be timely and educational. Therefore, outstanding speakers in brain metabolism and physiology will discuss their work and the core research interests of this group will be discussed in the context of application to brain studies.

---

## **Guest Speakers**

Pierre-Gilles Henry, PhD, Research Associate, Center for Magnetic Resonance Research, University of Minnesota

Ralph E. Hurd, PhD, Chief Scientist and Director, Biochemical Imaging Laboratory, GE Healthcare Technologies

Fahmeed Hyder, PhD, Associate Professor of Diagnostic Radiology and Biomedical Engineering, Yale University

Allen Song, PhD, Associate Professor of Radiology, Center for Brain Imaging & Analysis, Duke University

Keith Thulborn, MD, PhD Professor of Radiology and Director of Center for MR Research, University of Illinois at Chicago

---

## UT Southwestern Speakers

Craig Malloy, MD, Professor of Radiology and Internal Medicine and Staff Physician, VA North Texas Health Care System

Shawn Burgess, PhD, Assistant Professor of Radiology

Dean Sherry PhD, Professor of Radiology & Professor of Chemistry, University of Texas at Dallas

Carol Tamminga, MD, Professor of Psychiatry

---

## Program Schedule

8:00 a.m.	<b>On-Site Registration - North Campus</b> Continental Breakfast
8:30 a.m.	<b>Metabolic Pathways by Stable Isotopes and NMR</b> Shawn Burgess, PhD
9:15 a.m.	<b>Isotopomer Analysis and Biochemical Fluxes</b> Craig R. Malloy, MD
10:00 a.m.	<b>Break</b>
10:15 a.m.	<b>Measuring Brain Energy Metabolism and Glutamatergic Neurotransmission in the Brain using <sup>13</sup>C NMR</b> Pierre-Gilles Henry, PhD
11:00 a.m.	<b>Principles and Prospects of Hyperpolarized <sup>13</sup>C</b> Ralph E. Hurd, PhD
12:00 a.m.	<b>Catered Lunch</b>
1:00 p.m.	<b>Using <i>In Vivo</i> Imaging to understand Diseases of the Brain</b> Carol Tamminga, MD
1:45 p.m.	<b>Magnetic Resonance Imaging of Minute Electrical Activities</b> Allen Song, PhD
2:30 p.m.	<b>Cellular Physiology of Brain Activation</b> Fahmeed Hyder, PhD

3:15 p.m. **Discussion / Break**

3:45 p.m. **Human Brain Metabolic Studies at High Fields**  
Keith Thulborn, MD, PhD

4:30 p.m. **Metabolic Imaging of Tissues using Responsive Magnetic Resonance Imaging Agents**  
A. Dean Sherry, PhD

5:30 p.m. **Wine and Cheese Reception**