Each year the Annual Symposium is devoted to training in which the latest developments at the Center are discussed and training opportunities are made available. This year's topic is Catalyzing Translational Imaging in PET and MR.

Faculty, research staff, and undergraduate, graduate and postdoctoral students are encouraged to attend. Past participants have included those from academia and industry around the country.

Instead of poster presentations, all attendees are encouraged to submit a one page abstract on a primary research interest (instructions are available on the registration page). These abstracts, along with speaker abstracts, will be distributed in a booklet at the meeting registration desk. The intent of the booklet is to outline attendee research interests and expertise to augment Investigator interaction.

Target Audience

This symposium is intended for students, scientists and physicians with an interest in translating new ideas in chemistry and physics to practical imaging methods in patients using PET and MRI.

Purpose and Content

Imaging methods such as MRI and PET are essential for clinicians, and the technology continues to evolve. Fundamentally new ideas such as imaging hyperpolarized ^{13}C in patients by MRI have been demonstrated in the last few years. New techniques to image protons in water to reveal information about macromolecules have appeared, and new positron-emitting probes are continuously developed. There is no question that the effect of disease on many imaging markers can be quite large and potentially imaging these biomarkers can dramatically reduce the need for conventional (and very expensive) large clinical trials. Yet translation of these methods to clinical research and clinical care is difficult.

This workshop and symposium is supported by the NIH Research Resource Program (RR02584). The purpose is twofold: to present basic concepts in NMR technology under development in the Resource, and to present recent examples of successful translation from the bench to bedside.

Educational Objectives

Upon completion of the course, the participant should be able to:

- Define translational imaging.
- Describe the physical and physiological basis for one recent clinical translation in MRI.
- Do the same for one translation in PET.
- Discuss some of the barriers to applying new imaging technologies in a clinical environment.

Agenda

Wednesday, May 23, 2012

8:00 a.m.	*Registration*	
8:25 a.m.	Overview of CPRIT	Dean Sherry, PhD
8:30 a.m.	Animal Models of Cancer: Motivation for *In Vivo* Studies	Robert Bachoo, MD, PhD
9:05 a.m.	Progress in Quantitative Evaluation of Hyperpolarized Carbon Tracers *In Vivo*	Jim Bankson, PhD
9:40 a.m.	Advances in RF Coil Design for High Field Imaging in Patients	Steve Wright, PhD
10:15 a.m.	*Break*	
10:40 a.m.	Reprogramming Metabolism in Cancer	Ralph DeBerardinis, MD, PhD
11:15 a.m.	Cancer Metabolism and Clinical Translation	Elizabeth Maher, MD, PhD
11:50 a.m.	Discussion	
12:00 Noon	*Lunch*	
1:00 p.m.	Intermediary Metabolism by 13C NMR	Shawn Burgess, PhD
1:40 p.m.	Metabolism in the Fatty and Fasted Human Liver	Jeff Browning, MD
2:10 p.m.	Hyperpolarized 13C	Matthew Merritt, PhD
2:50 p.m.	Discussion and Break	
3:15 p.m.	Physiology of Substrate Oxidation in the Heart	Chalermchai Khemtong, PhD
3:45 p.m.	11C for Analysis of Metabolism *In Vivo*	Robert Mach, PhD
4:30 p.m.	Discussion and Reception	

Thursday, May 24, 2012

8:00 a.m.	*Registration*	
8:30 a.m.	Overview of Clinical Translational Imaging	Neil Rofsky, MD
9:15 a.m.	PET Probes on the Horizon	Charles Manning, PhD
10:00 a.m.	*Break*	
10:15 a.m.	Integrated PET/MR	Ciprian Catana, MD, PhD
11:00 a.m.	Imaging the Heart with Hyperpolarized 13C	Charles Cunningham, PhD
12:00	*Lunch*	

Noon		
1:00 p.m.	Bench to Bedside with PET: 11C-hydroxyephedrine Imaging of the Heart	John Canty, Jr., MD
1:45 p.m.	Bench to Bedside with 13C: Imaging Prostate Cancer	John Kurhanewicz, PhD
2:30 p.m.	*Break*	
3:00 p.m.	Opportunities and Realities in Translational Imaging	Peter Choyke, MD
3:45 p.m.	Translational Imaging in Drug Development	Paul Matthews, MD
4:30 p.m.	Discussion and Adjournment	

Discussion of Off-Label Use

Because this course is meant to educate the physicians with what is currently in use and what may be available in the future, there may be "off-label" use discussed in the presentations. Speakers have been requested to inform the audience when off-label use is being discussed.