

The Fourth International Workshop on Hyperpolarized Carbon-13 and Its Applications in Metabolic Imaging

**Philadelphia, PA
February 25th – 27th, 2016**

Organizing Committee:

Rahim R. Rizi
Stephen Kadlecsek
David Mankoff
Masaru Ishii
Mitchell Schnall

International Scientific Committee:

Douglas Rothman
John P. Mugler
Zahi Fayad
Warren S. Warren

Important Dates:

Deadlines for Abstracts	January 15 th , 2016
Deadline for Early Registration	February 1 st , 2016
Request for Financial Support for Students and Postdoctoral	January 15 th , 2016

Office of Organizing Committee:

Lori Ehrich
Manager, Continuing Education
UPHS, Department of Radiology
Lori.Ehrich@uphs.upenn.edu
cme@rad.upenn.edu

University of Pennsylvania
1 Silverstein, 3400 Spruce Street
Philadelphia, PA 19104
Tel: 215-662-6904
Fax: 215-349-5925

*Preliminary
(subject to change)*

Wednesday, February 24, 2016

6:00 – 8:00 pm **Registration**

Thursday, February 25, 2016

7:00 – 7:45 am **Breakfast**

7:45 – 8:00 am **Introduction**
Rahim R. Rizi, Ph.D.
University of Pennsylvania

8:00 – 8:15 am **Welcome Remarks**
Mitchell Schnall, M.D., Ph.D.
University of Pennsylvania

Session I: Special Lecture Moderator: TBA

8:15 – 9:00 am **TBA**
TBA

Session II: General Session Moderator: TBA

9:00 – 9:40 am **Assessing Tumor Progression and Mutational Status
Using Metabolic Imaging with Hyperpolarized ¹³C
Labelled Cell Substrates**
Kevin Brindle, Ph.D.
Cambridge University, United Kingdom

9:40 – 10:00 am **Refreshment Break**

10:00 – 10:35 am **Current Status of Prostate Cancer Hyperpolarized ¹³C MR
Clinical Trials**
John Kurhanewicz, Ph.D.
University of California, San Francisco

10:35 – 11:10 am **Mass Spectrometry-based Approaches to Studies of
Cancer Metabolism**

Ian Blair, Ph.D.
University of Pennsylvania

11:10 – 11:45 am **Structure Function of the Mitochondrion in Muscle Cells**
Robert Balaban, Ph.D.
National Institutes of Health

11:45 am – 12:10 pm **Discussion**

12:10 – 1:00 pm **Lunch**

Session III: Student and Postdoctoral Presentations – Part I
Moderator: TBA

1:00 – 2:00 pm **Six-ten minutes presentations given by undergraduate and graduate students**

Session IV: Focused Session I – Metabolism
Moderator: TBA

2:00 – 2:25 pm **Brain Metabolism with Carbon-13 – Non Polarized One**
Sabrina Ronen, Ph.D.
University of California, San Francisco

2:25 – 2:45 pm **Metabolic Imaging and Spectroscopy Using Hyperpolarized Carbon-13 Pyruvate: The Challenge of Low-Dose Conditions**
Ralph Hurd, Ph.D.
General Electric

2:45 – 3:05 am **Pre-clinical Studies Profiling Tumor Metabolism and Physiology to Guide Treatment**
Murali K. Cherukuri, Ph.D.
National Institutes of Health

3:05 – 3:25 pm **Hyperpolarized Metabolic Imaging of Rat C6 Glioma: Looking Beyond Lactate**
Dirk Mayer, Ph.D.
University of Maryland

3:25 – 3:45 pm **Imaging of Cardiac Metabolism and Perfusion**
Angus Lau, Ph.D.
Oxford University, United Kingdom

3:45 – 4:00 pm **Discussion**

4:00 – 4:30 pm **Break**

Session V: Applications of Carbon-13 in Metabolism – Session I
Moderator: TBA

4:30 – 4:50 pm **New and Old Molecular Targets for Parahydrogen Induced Polarization**
Eduard Chekmenev, Ph.D.
Vanderbilt University

4:50 – 5:10 pm **ParaHydrogen Hyperpolarization of Pyruvate for Metabolic Studies**
Francesca Reineri, Ph.D.
University of Torino, Italy

5:10 – 5:30 am **PHIP Amino Acid and Peptide Hyperpolarization**
Shawn Wagner, Ph.D.
Cedars-Sinai Medical Center

5:30 – 5:50 am **Preclinical Metabolic Studies Using Hyperpolarized ¹³C-Labeled Endogenous Substrates**
Arnaud Comment, Ph.D.
Ecole Polytechnique Fédérale de Lausanne, Switzerland

5:50 – 6:10 pm **Novel Approaches for Enhancing NMR and MRI via SABRE Involving Heterogeneous Conditions, Aqueous Solutions, and Heteronuclei**
Boyd Goodson, Ph.D.
Southern Illinois University

6:10 – 6:30 pm **Monitoring of Reactions and Kinetics Using Rapid Injection – In vitro Dissolution DNP**
Christian Hilty, Ph.D.

Texas A&M University

6:30 – 7:30 pm

Poster Session

Friday, February 26, 2016

7:00 – 8:00 am

Breakfast

Session VI: Technological Advances in Hyperpolarized Carbon-13 Moderator: TBA

8:00 – 8:30 am

New Hyper Polarization Approaches: Faster, Longer-lived, Cheaper, Better

Warren S. Warren, Ph.D.
Duke University

8:30 – 9:00 am

Progress Towards *In Vivo* Imaging Using SABRE Derived Hyperpolarization

Simon Duckett, Ph.D.
University of York, United Kingdom

9:00 – 9:30 am

A Comprehensive Picture of Metabolism by Integrated ^{13}C Isotopomer Methods and Hyperpolarization

Craig Malloy, Ph.D.
University of Texas, Dallas

9:30 – 10:00 am

Preclinical Hyperpolarized MR Molecular Imaging and Translation for Clinical Research

Daniel Vigneron, Ph.D.
University of California, San Francisco

10:00 – 10:15 am

Refreshment Break

Session VII: Metabolism and Metabolic Imaging Moderator: TBA

10:15 – 10:40 am

What Can We Learn from Hyperpolarized ^{13}C MR Studies of Brain Function and Disease?

Douglas Rothman, Ph.D.
Yale University

10:40 – 11:05 am	Metabolomic Studies of Lonidamine and Tumor Metabolism Jerry Glickson, Ph.D. University of Pennsylvania
11:05 – 11:25 am	Metabolic Imaging of Pulmonary Disorders with Polarized Carbon-13 TBA University of Pennsylvania
11:25 – 11:45 am	Hyperpolarized ^{13}C Spectroscopy and Imaging with a Pre-clinical 1T Permanent Magnet System Peter Bendel, Ph.D. Aspect Imaging
11:45 am – 12:00 pm	Discussion
12:00 – 1:00 pm	Lunch

Session VIII: TBA
Moderator: TBA

1:00 – 1:20 pm	Latest Development in PET/MRI and Carbon-13 Polarizer TBA General Electric
1:20 – 1:40 pm	The NCI (formerly GE) IND for C-13 Pyruvate: A Resource for the Community Paula Jacobs, Ph.D. National Institutes of Health
1:40 – 2:00 pm	An Isolator for Spinlab Sample Preparation Todd Flanery, Ph.D. Getinge Inc.

Session IX: Focused Session II – Metabolism II
Moderator: TBA

2:00 – 2:30 pm	PET Molecular Imaging to Probe Cancer Metabolism
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David Mankoff, M.D., Ph.D.
University of Pennsylvania

2:30 – 2:55 pm

Imaging Glutamine Metabolism with PET

Robert Mach, Ph.D.
University of Pennsylvania

2:55 – 3:20 pm

Stress and Atherosclerotic Plaque Macrophages – A System Biology Approach

Zahi Fayad, Ph.D.
Mount Sinai Hospital

3:20 – 3:45 pm

Initial Experience with Simultaneous PET/MR and Hyperpolarized ^{13}C

Daniel Spielman, Ph.D.
Stanford University

3:45 – 4:00 pm

Discussion

4:00 – 4:15 pm

Break

Session X: Applications of Carbon-13 in Metabolism – Session II
Moderator: TBA

4:15 – 4:35 pm

Methods to Improve Quantitation of *In Vivo* Metabolism Using Hyperpolarized ^{13}C Agents

Sean Fain, Ph.D.
University of Wisconsin

4:35 – 4:55 pm

Recent Advances in Inverse ^1H - ^{13}C MR Spectroscopy

Robin de Graaf, Ph.D.
Yale University

4:55 – 5:15 pm

Towards Targeted Molecular and Metabolic Imaging of Ovarian Cancer *In Vivo*

Pratip Bhattacharya, Ph.D.
University of Texas, MD Anderson Cancer Center

5:15 – 5:35 pm

Using Hyperpolarized ^{13}C Labeled as a Possible

Endogenous Marker for Identifying Renal Impairment

Christoffer Laustsen, Ph.D.

Aarhus University, Denmark

5:35 – 6:00 pm

Discussion

Saturday, February 27, 2016

7:00 – 8:00 am

Breakfast

Session XI: TBA

Moderator: TBA

8:00 – 8:30 am

Pulse Sequences Optimized for Hyperpolarized Carbon-13

John P. Mugler, Ph.D.

University of Virginia

8:30 – 9:00 am

RF Pulses for ^{13}C MRSI and How to Use Them in to Make Interesting Pulse Sequences

John Pauly, Ph.D.

Stanford University

9:00 – 9:20 am

Recent Development of Hyperpolarized Carbon-13 for Studying Cardiac Disorders

Charles H. Cunningham, Ph.D.

University of Toronto, Canada

9:20 – 9:40 am

Advanced Imaging Methods for Hyperpolarized Carbon-13 MRI

Peder Larson, Ph.D.

University of California, San Francisco

9:40 – 10:00 am

Discussion

10:00 – 10:15 am

Break

Session XII: TBA

Moderator: TBA

10:15 – 10:35 am

Tracing Metabolic Pathways at the Cellular and

Subcellular Level Using Mass Spectrometry

Christian Metallo, Ph.D.

University of California, San Diego

10:35 – 10:55 am	Isotopic Tracing Through Acyl-CoA Analysis by Liquid Chromatography-mass Spectrometry Nate Snyder, Ph.D. Drexel University
10:55 – 11:15 pm	Molecular Clock Control of Metabolism and Implications in Cancer Aalim Weljie, Ph.D. University of Pennsylvania
11:15 – 11:35 pm	TBA TBA
11:35 am – 12:00 pm	Discussion
12:00 – 1:00 pm	Lunch

Session XIII: General Submissions Presentation

Moderator: TBA

1:00 – 2:00 pm	Six-ten minutes presentation given by general submissions
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Session XIV: TBA

Moderator: TBA

2:00 – 2:20 pm	TBA
2:20 – 2:40 pm	TBA
2:40 – 3:00 pm	TBA
3:00 – 3:20 pm	Discussion
3:20 – 3:30 pm	Final Remarks Rahim R. Rizzi, Ph.D.

University of Pennsylvania