

## PROGRAM SCHEDULE

**THURSDAY, OCTOBER 13<sup>TH</sup>**

### WELCOME

8:00 – 8:05                                      **Kamil Ugurbil**

8:05 – 10:10

### HIGH FIELD INSTRUMENTATION

#### CURRENT PROJECTS OF HIGH FIELD IMAGING MAGNETS

**Moderator:                                      J. Thomas Vaughan**

8:05 – 8:25	<b>Magnex</b>	<b>Josef Boehm</b>
8:25 – 8:45	<b>Siemens</b>	<b>Franz Schmitt</b>
8:45 – 9:05	<b>GE</b>	<b>Douglas Kelley</b>
9:05 – 9:25	<b>Philips</b>	<b>Mike Morich</b>
9:25 – 9:40	<b>Varian</b>	<b>Alan Rath</b>
9:40 – 9:55	<b>Bruker</b>	<b>Hans Post</b>
9:55 – 10:10	<b>MR Instruments</b>	<b>Kevin Sundquist</b>

10:10 – 10:30      **BREAK**

### IMAGING

**Moderator:                                      Michael Garwood**

10:30 – 11:00      **Kamil Ugurbil**

*“Ultra-High Magnetic Fields in Neuroimaging”*

11:00 – 11:30      **Roger Ordidge**

*“Human Brain MRI at 4.7 Tesla”*

11:30 – 12:00      **Mark Haacke**

*“High Resolution Imaging: Why is it Important for T<sub>1</sub> Weighted Imaging, MRA, and SWI?”*

12:00 – 1:15                                      **LUNCH**

## **RF HARDWARE / MODELING / METHODS / SAFETY**

- Moderator:** Pierre-Francois van de Moortele
- 1:15 – 1:45** Christopher Collins  
*“Tissue-Field Interactions in High Field MRI: Models, Interpretation, and Application”*
- 1:45 – 2:15** J. Thomas Vaughan  
*“Human Imaging at the Highest Fields”*
- 2:15 – 2:45** Lawrence Wald  
*“Highly Parallel Arrays for High Field Neuro- imaging”*
- 2:45 – 3:15** Gregor Adriany  
*“Transmit Arrays for High Magnetic Fields”*
- 3:15 – 3:30** **BREAK**

## **PARALLEL IMAGING**

- Moderator:** Steen Moeller
- 3:30 – 4:00** Klaas Pruessmann (Overview)  
*“Parallel MRI: (I) Introduction and (II) Assessing and Addressing Field Perturbations”*
- 4:00 – 4:30** Mark Griswold  
*“K-Space Parallel Imaging Methods and Their Application at High Fields”*
- 4:30 – 5:00** Xiaoping Hu  
*“Auto-Calibrated Parallel Spiral Imaging”*
- 5:00 – 5:30** Jeff Duyn  
*“Making the Most of High Field: Parallel MRI”*
- 5:30 – 6:00** Pierre-Francois Van de Moortele  
*“B<sub>1</sub> Destructive Interferences and Spatial Phase Patterns at Ultra High Magnetic Field with Head Transceiver Array Coil: Impact on Transmit B<sub>1</sub>”*

*Management”*

**Immediately Following the Talks**

**Reception at the CMRR**

**FRIDAY, OCTOBER 14<sup>TH</sup>**

**HIGH FIELD PROTON SPECTROSCOPY / METHODS & APPLICATIONS**

**Moderator: Patrick Bolan**

**8:30 – 9:15 Ivan Tkac – Overview**

*“In Vivo <sup>1</sup>H NMR Spectroscopy at Very High Magnetic Fields”*

**9:15 – 9:45 Ray Somorjai**

*“The Analysis of Biomedical Data – Curses, Caveats, Challenges”*

**9:45 – 10:15 Leo Cheng**

*“Metabolomic Profiling of Human Cancer with Ex Vivo Tissue MR Spectroscopy”*

**10:15 – 10:45 Peter Vermathen**

*“Proton MRS in Human Skeletal Muscle: Observation of Ordering Effects and Intra-Myocellular Lipids”*

**10:45 – 11:00 BREAK**

**SPECTROSCOPY & DISEASE**

**Moderator: Elizabeth Seaquist**

**11:00 – 11:30 Brian Ross**

*“Clinical MRS – Are We There Yet? EBM and the High Field Imperatives!”*

**11:30 – 12:00 Malgorzata Marjanska**

*“Monitoring Disease Progression in Transgenic Mouse Models of Alzheimer’s Disease Using  $^1\text{H}$  MRS”*

**12:00 – 12:30**     **Rolf Gruetter**

*“New Horizons at High Field For Metabolic Studies of Diabetes and its Complications”*

**12:30 – 1:00**

**Gulin Oz**

*“What Can Spectroscopy at High Fields Do for Neurological Disorders?”*

**1:00 – 2:15**

**LUNCH**

**2:15 – 2:45**

**Arend Heerschap**

*“Creatine Uptake and its Functions in Skeletal Muscle and Brain. Insights from Studies at 7T of Mice Deficient in Creatine Synthesis and Phosphorylation”*

**2:45 – 3:15**

**Michael Garwood**

*“Clinical Assessment of Breast Cancer using  $^1\text{H}$  MRS at 4 Tesla”*

## **LOW GAMMA NUCLEI**

**Moderator:**             **Gil Navon**

**3:15 – 3:45**

**Sebastian Cerdan**

*“ $^{13}\text{C}$  NMR Detected Deuterium Turnover; A Novel Metabolic Tool”*

**3:45 – 4:15**

**Pierre-Gilles Henry**

*“New Strategies for  $^{13}\text{C}$  and  $^1\text{H}\{^{13}\text{C}\}$  NMR Spectroscopy at High Fields”*

**4:15 – 4:45**

**BREAK**

**4:45 – 5:15**

**Ravinder Reddy**

*“Sodium MR and Molecular Imaging”*

**5:15 – 5:45**

**Wei Chen**

*“In Vivo  $^{31}\text{P}$  and  $^{17}\text{O}$  MRS Study of Cerebral Metabolism,*

*Bioenergetics and Brain Function”*

**6:30 PM**

**Dinner Radisson Hotel Metrodome**

**Speaker: Dr. Alexander Pines**

*“Novel Methods of Imaging and Spectroscopy from Meters to Nanometers”*

**SATURDAY, OCTOBER 15th**

**NOVEL TECHNIQUES**

**Moderator: Malgorzata Marjanska**

**8:30 – 9:00**

**Dimitri Sakellariou**

*“Ex-Situ NMR and MRI”*

**9:00 – 9:30**

**Jan-Henrik Ardenkjaer-Larsen**

*“In Vivo MR of Agents Pre-Polarized by the DNP-NMR Method”*

**FUNCTIONAL IMAGING SIGNALS**

**Moderator: Seiji Ogawa**

**9:30 10:15**

**Richard Buxton – Overview**

*“Do We Understand the Physiologic Basis of the Signals We Measure with fMRI?”*

**10:15 – 10:45**

**Mark Mintum**

*“Metabolic Correlates of Human Brain Activation”*

**10:45 – 11:00**

**BREAK**

- 11:00 – 11:30**     **Karl Kasischke**  
*“High Field MR Imaging and Spectroscopy & Magnetic Resonance Imaging of Brain Function”*
- 11:30 – 12:00**     **Nikos Logothetis**  
*“Functional MRI in Monkeys: Studying Mass Action by Means of Imaging Connectivity & Electrophysiology Techniques”*
- 12:00 – 12:30**     **Seong-Gi Kim**  
*“Spatial Specificity, Sensitivity and Reproducibility of Columnar-Resolution of CBV-weighted fMRI”*
- 12:30 – 1:45**                     **LUNCH**
- Moderator:**                     **Xiaoping Hu**  
**1:45 – 2:15**                     **Fahmeed Hyder**  
*“Energetics of Neural Populations by fMRI”*
- 2:15 – 2:45**                     **S. Lalith Talagala**  
*“Continuous ASL Perfusion MRI with a Separate Labeling Coil”*
- 2:45 – 3:15**                     **Nanyin Zhang**  
*“Utilization of Binocular Inhibitory Interaction for Reliable Mapping of Ocular Dominance Columns”*
- 3:15 – 3:30**                     **BREAK**
- 3:30 – 4:00**                     **Noam Harel**  
*“Uncovering the Origin of Tissue-fMRI Signals”*
- 4:00 – 4:30**                     **Essa Yacoub**  
*“Spatial Characteristics of the Post-Stimulus Response”*
- 4:45**                             **POSTER SESSION**

## **SUNDAY, OCTOBER 16, 2005**

### **DIFFUSION IMAGING**

- Moderator:** Charles Springer
- 8:00 – 8:45** Joseph Ackerman (Overview)  
*“Progress (?) Toward Quantitative Interpretation of the MR Diffusion Signal”*
- 8:45 – 9:15** Robert Gillies  
*“Measuring Chemotherapy Response with Diffusion MRI”*
- 9:15 – 9:45** Brian Ross (MI)  
*“Brain Tumor Diffusion MRI: A Biomarker for Treatment Response”*
- 9:45 – 10:00** **BREAK**
- 10:00 – 10:30** Jacques-Donald Tournier  
*“Resolving Multiple White Matter Fibre Orientations from Diffusion-Weighted MRI”*
- 10:30 – 11:00** Stephane Lehericy  
*“Applications of Diffusion Fiber Tracking in the Study of Basal Ganglia Circuitry”*

### **MOLECULAR MECHANISM**

- Moderator:** Kamil Ugurbil
- 11:00 – 11:45** Charles Springer (Overview)  
*“The Persistence of Motion: The Ubiquity of the NMR Shutter-Speed”*
- 11:45 – 12:15** Shalom Michaeli  
*“MR Relaxation in the Rotating Frame: A Novel In Vivo”*

*Approach Using Adiabatic RF Pulses”*

**12:15 – 1:30**

**LUNCH**

**1:30 – 2:00**

**Murali Krishna**

*“Imaging Tissue Oxygen Using Low Field Magnetic Resonance Imaging”*

**2:00 – 2:30**

**Alan Koretsky**

*“Cellular Imaging with Micron Sized Particle of Iron Oxide”*

**2:30 – 3:00**

**Gil Navon**

*“The Effect of Wallerian Degeneration on the Rat Sciatic Nerve Compartments Studied by  $^2\text{H}$  DQF NMR”*

**3:00 – 3:30**

**Dean Sherry**

*“Imaging Tissue Physiology with lanthanide-based Molecular Imaging Agents”*

**CLOSING REMARKS**

**3:30 – 3:40**

**Kamil Ugurbil**