Martinos Workshop on Magnetic Resonance Spectroscopy

Mon-Fri Dec 6 – 10, 2021 (*via zoom*)

Daily Schedule: Start at 9:00am; End at 5:00pm; One-Hour-Lunch starting 12:00 or 12:30

Informal discussion times: Tue/Wed/Thu/Fri mornings from 8:00-8:50am; Mon-Thu afternoons 5:00-6:00pm

Day 1: Introduction to MRS: Basic Principles and Clinical Applications		***Monday, Dec 6th***
9:00 – 9:15	**Welcome and General Introduction**	Robert Savoy
9:15 – 9:30	**Program Overview**	Eva-Maria Ratai
9:30 – 10:00	**Background and Historical Perspective of MRS (MRI vs. MRS)**	Eva-Maria Ratai
10:00 – 11:00	**Basic Principles of MRS (Chemical Shift, J-Coupling, Relaxation, B, etc.)**	Eva-Maria Ratai
11:00 – 11:30	**Break**	
11:30 -12:30	**Detectable Metabolites and their significance**	Eva-Maria Ratai
12:30 – 1:30	**Lunch**	
1:30 – 2:00	**Basic Readout Strategies (Sequences, Localization Techniques, etc.)**	Eva-Maria Ratai
2:00 – 2:30	**Study Design and Acquisition Parameters**	Akila Weerasekera
2:30 – 3:30	**Break**	
3:00 -4:00	**Overview of Clinical Applications in the CNS**	Eva-Maria Ratai
4:00 – 4:30	**Neuropsychiatric Applications in the CNS**	Antoine Hone-Blanchet
4:30 – 5:00	**Clinical Applications of MRS in Areas other than the Brain**	Akila Weerasekera
Day 2: Data Acquisition and Analysis		***Tuesday, Dec 7th***
9:00 – 9:15	**Review and remaining questions from prior day**	Eva-Maria Ratai
9:15 – 9:45	**Advanced MRSI Readout Strategies**	Borjan Gagoski
9:45 – 11:00	**Motion & Instability Correction in MRS/MRSI**	Ovidiu Andronesi
11:00 – 11:30	**Break**	
11:30 – 12:30	**A day at MGH I - Clinical MRS from the Perspective of a Radiologist**	Otto Rapalino
12:30 -1:30	**Lunch**	
1:30 -2:30	**MRS Acquisition Demo (pre-acquisition adjustments)**	Antoine Hone-Blanchet, Akila Weerasekera
2:30 – 3:00	**Break**	
3:00 – 4:00	**Data Analysis: Quantification & Spectral Quality (Post-processing)**	Antoine Hone-Blanchet, Akila Weerasekera
4:00 – 5:00	**Challenges of Clinical MRS from the Perspective of a Radiologist**	Otto Rapalino
Day 3: State of the Art MR Spectroscopy Techniques		***Wednesday, Dec 8th***
9:00 – 9:15	**Review and remaining questions from prior day**	Eva-Maria Ratai
9:15 – 10:15	**Editing Sequences**	Georg Oeltzschner
10:15 – 11:00	**Brain Temperature & its Applications**	Marc Kaufman
11:00 – 11:30	**Break**	
11:30 – 12:30	**Insights into Neuronal Activation from Functional MRS**	Katie Breedlove
12:30 – 1:30	**Lunch**	
1:30 – 2:30	**MRS outside the Brain**	Alex Lin
2:30 – 3:30	**Break**	
3:00 – 4 00	**Clinical applications of MSK MRS**	Martin Torriani
4:00 – 5:00	**Imaging Exchangeable Protons: Technique & Applications (CEST)**	Chris Farrar
Day 4: Morning: Ex vivo and preclinical MRS & Afternoon: X-Nuclei		***Thursday, Dec 9th***
9:00 – 9:15	**Review and remaining questions from prior day**	Eva-Maria Ratai
9:15 – 10:00	**Overview of X-nuclei MRS and Preclinical Models**	Eva-Maria Ratai
10:00 – 11:00	**Preclinical Models of Neurodegenerative diseases**	Bruce Jenkins
11:00 – 11:30	**Break**	
11:30 – 12:30	***Ex Vivo* MRS of Biopsy Samples**	Leo Cheng
12:30 – 1:30	**Lunch**	
1:30 - 2:30	**^{13}C MRS**	Alex Lin
2:30 – 3:00	**Break**	
3:00 – 4:00	**Hyperpolarization**	Yi-Fen Yen
4:00 – 5:00	**Deuterium MRS**	Robin de Graaf
Day 5: Ultra-High-Field MRS; Review; General Discussion		***Friday, Dec 10th***
9:00 – 9:30	**Review and remaining questions from prior day**	Eva-Maria Ratai
9:30 – 10:30	**Field Dependence: Gains & Challenges of Ultra-High-Field MRS**	Gulin Oz
10:30 – 11:00	**Break**	
11:00 – 12:00	**TBD**	Ravinder Reddy
12:00 – 1:00	**Lunch**	
1:00 – 2:00	**General Discussion; Class Review and Feedback**	Eva-Maria Ratai