

## **Abstract**

Magnetic resonance spectroscopy (MRS) is the only method capable of obtaining quantitative in vivo measures of neurochemical concentrations in brain tissue non-invasively. Common applications of MRS include diagnosis and staging of various types of cancer, as well as neuropsychiatric imaging research. In this talk, I will introduce the method of MRS, describe its implementation, and outline some of the practical aspects of MRS data collection. I will discuss the use of time-resolved spectroscopic measures - such as functional MRS and carbon-13 MRS - to assess the dynamics of metabolic processes in the brain. Finally, I will describe the application of conventional and dynamic MRS methods to study neurochemical and metabolic changes in a rodent model of Alzheimer's disease.