

# EE 691: Advanced MRI

Instructor: Krishna Nayak, [knayak@usc.edu](mailto:knayak@usc.edu)  
EEB 406, 213-740-3494

Meeting Time: Tuesday 5pm - 8pm, GFS 223

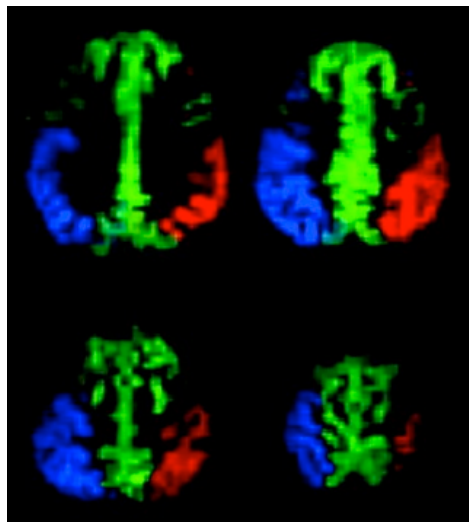
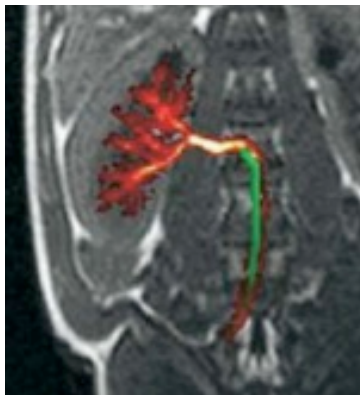
Course Materials: <http://mrel.usc.edu/class/691/>

Prerequisites: EE 591

This course is meant for individuals interested in pursuing advanced research related to the development and/or use of new MRI techniques. An emphasis will be placed on recent developments that 1) have had high impact on the field and/or show strong promise, 2) involve novel pulse sequence design, and/or 3) enable imaging of anatomy and function in a way that surpasses what is currently possible with any modality.

The format will be similar to that of a journal club. There will be one or two assigned readings per week. Each class meeting will consist of a 30-60 minute lecture, followed by a group discussion (with occasional guests). The final 30 minutes will be an introduction to the following week's topic. Grading will be based on class participation and quizzes. Topics will include:

Arterial Spin Labeling  
Compressed Sensing MRI  
Hyperpolarized Carbon-13 Imaging  
Adiabatic RF Pulse Design  
New Strategies for Motion Encoding  
New Strategies for Angiography  
Starting an MRI Business



what's so special about these images?