BME 599 - Special Topics in functional MRI  
Instructor: Luis Hernandez-Garcia and guests  
**hernan@umich.edu**  
Time: Tuesdays 14:30-16:30  
Location: 1301 EECS (North Campus)

This course is intended to be a follow-up to the "Introduction to Functional MRI" course. Each week a current topic from the field of neuroimaging will be presented in depth by a student who is registered for credit. A paper or two are suggested below with each topic, but the students are not limited to those papers for illustration of the topic. In depth research is encouraged.

The discussion will take place as an interactive seminar and will be moderated by the instructor. Some papers will be moderated by invited faculty, depending on the topic.

Grades will be based on attendance, depth of the presentation, and class participation. Auditors are welcome and encouraged to participate in the discussion.

Prerequisites: BIOS 642, BME 499, PSYCH 808, Intro to fMRI

**Syllabus**

**TBA. What is in the BOLD Time Series? I: close up view of the signal**  
Presented by Sumati Krishnan


**9/13. What is in the BOLD Time Series? II:Non-Linearity of the response:**  
Presented by YoonChung Kim


**9/20. The brain at rest I: Metabolism of the brain**  
Presented by Joaquin Anguera

9/27. Exotic Imaging techniques I: ASL analysis (Williams, Hernandez, Liu)
Presented by Kiran Pandey

10/4. Functional connectivity I: Diffusion Tensor imaging
Presented by Will Grissom

10/11. Exotic Imaging techniques II: SENSE (Boesinger paper)
Presented by Greg Lee

10/18 (Fall Break) Multi-Subject and multi-contrast analysis I: mixed effects
Presented by Will Grissom


10/25. Multi-Subject and multi-contrast analysis II: Conjunctions
Presented by Joaquin Anguera

11/1. Multi-Subject and multi-contrast analysis III: Statistical Power (Desmond and Glover)
Presented by Kiran Pandey

11/8. Inferring relationships between active areas I: DCM
Presented by Luyun Chen
11/15. **Inferring relationships between active areas II: Granger causality**
Presented by Luyun Chen


11/22. **The brain at rest II: Low frequency activity at rest**
Presented by Christine Walsh


11/29. **Inferring relationships between active areas III: Ascendancy**
Presented by Greg Lee


12/6. **Functional connectivity II: Self organizing maps**
Presented by Christine Walsh


12/13. **Data driven analysis I: independent components**
Presented by Yoonchung Kim
