Fall 2016 Elective Course: *Neurobiology of Cortical Systems*

**What:** Survey course on the development, function and dysfunction of the cortex.

**When:** One 1½ hour lecture (*Tues 3-4:30 PM*) and discussion (*Fri 3-4:30 PM*) per week. Classes start Tuesday, September 6th and run through Friday, December 16th. Please also note that we will NOT have class the week of November 8th because of the SfN Meeting.

**Where:** SHM I-116*

**For Whom:** Neuroscience students interested in learning more about cortical development, function and dysfunction. This is an elective course for INP and Neurobiology graduate students, but postdocs are also welcome.

**By Whom:** Neurobiology of Cortical Systems Training Grant/Department of Neuroscience Faculty (Michael Crair and Daeyeol Lee are course directors).

**Questions?** Contact Michael Crair michael.crair@yale.edu or Daeyeol Lee daeyeol.lee@yale.edu

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### Outline

**Lecture/Discussion Week 1:** Molecular and phenotypic evolution of the cortex.  
*Nenad Sestan*: T Sept 6, F Sept 9.

**Lecture/Discussion Week 2:** Mechanisms of cortical development; neuronal proliferation, migration and specification.  
*Nenad Sestan*: T Sept 13, F Sept 16 (*Crair*).

**Lecture/Discussion Week 3:** What is the cortex? The canonical cortical circuit.  

**Lecture/Discussion Week 4:** Cortical circuit development and plasticity.  

**Lecture/Discussion Week 5:** Cortical circuits for sensation.  

**Lecture/Discussion Week 6:** Diversity and function of cortical inhibitory interneurons.  

**Lecture/Discussion Week 7:** Parietal cortex and decision making.  

**Lecture/Discussion Week 8:** Visual cortex.  
*Jess Cardin*: T Nov 1, F Nov 4.

**Lecture/Discussion Week 9:** Motor and pre-motor cortex.  
*Daeyeol Lee*: T Nov 8, *Thu Nov 10 (SHM I-304)*.

**Lecture/Discussion Week 10:** Normal (and abnormal) persistent cortical activity.  
*David McCormick*: T Nov 29, F Dec 2.

**Lecture/Discussion Week 11:** Prefrontal cortex and social cognition.  
*Steve Chang*: T Dec 6, *Thu Dec 8 (SHM C325A)*.

**Lecture/Discussion Week 12:** Pre-frontal cortex: relevance to disease and aging.  
*Amy Arnsten*: T Dec 13, F Dec 16.

*Note the exception to Week 9 - Discussion will take place on Thursday, Nov. 10 in SHM I304*  
*Note the exception to Week 11 – Discussion will take place on Thursday, Dec. 8 in SHM C325A*