

Sensory & motor development seminar

Course #101-1-0034

Tuesdays 10-12, Room 302, Bldg #98

The semester will start with introductory lectures about sensory and motor systems and research techniques, which will be followed by weekly presentations of scientific papers by the students. The goal of the seminar is to expose the students to recent neuroscience research regarding the development of sensory and motor systems in the human brain by discussing neuroimaging studies in humans and electrophysiology studies in animals. The necessary methodological background will be covered when discussing each of these topics. Each student will present a scientific paper (30% of the final grade) and write a final paper, which will contain a proposal for future research (70% of the final grade).

Attendance in **80%** of the classes is obligatory.

Passing grade is 56.

Instructions for how to build a presentation for your scientific paper can be found [here](#).

Instructions for how to write your final paper can be found [here](#).

There are no scheduled office hours. If you want to speak with me please email me first.

Lesson 1: Introduction to sensory systems – [Presentation](#)

Lesson 2: Introduction to the motor system - [Presentation](#)

Lesson 3: Introduction to brain development – [Presentation](#)

Lesson 4: Development of visual orientation selectivity - [Sharma, Nature 2000](#) & [Sengpiel, Nature 1999](#)

Lesson 5: Amblyopia and Strabismus - [Li, PLOS Bio 2011](#)

Lesson 6: Development of face processing - [Golarai, Nat Neuro 2007](#) & [Pascalis, Science 2002](#)

Lesson 7: Auditory development - [Chang, Science 2003](#) & [Sharma, Hearing Res 2005](#)

Lesson 8: Development of language system areas - [Newman, Nat Neuro 2002](#) & [Dehaene Science 2002](#)

Lesson 9: Affects of maternal deprivation - [Liu, Nat Neuro 2000](#), [Ellenbroek, Bio Psych 2004](#)

Lesson 10: Importance of sensory enrichment - [Praag, Nat Rev Neuro 2000](#), [Sheridan, PNAS 2012](#)

Lesson 11: Motor system development - [Olveczky, PLOS Biology 2005](#), [Martin, Neuroscientist 2005](#)

Lesson 12: Neural plasticity in children and adults - [Bavelier, J Neurosci 2010](#)