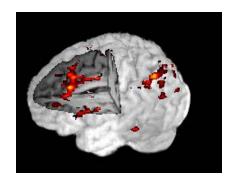
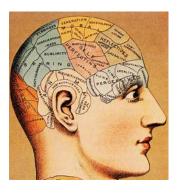
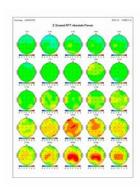
NBIO 727

Translational Seminar in Cognitive and Clinical Neuroscience







Course Coordinator: Aysenil Belger, Ph.D.

Instructors: Aysenil Belger Ph.D., Gabriel Dichter, Ph.D., Aldo Rustioni, MD PHD, Franc Donkers, Ph.D., Sarah Hart, Ph.D., Karen Grewen, Ph.D, Charlotte Boettiger,

Ph.D.

Time: Fri 12:00 –2:00pm

Location: TBA

Dr. Belger's Phone: 843-7368

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Recent years have seen the surge of many new neuroimaging techniques that open a window into the functioning of the human brain, and their relation to human behavior. These techniques enable us to examine the neural and biological substrates of both normal cognitive operations, such as attention, memory, and emotions, as well as their deregulation in neuropsychiatric and neurodevelopmental disorders, like schizophrenia and autism. The aim of this course is to introduce these new neuroimaging techniques, and their application to the study of the neural correlates of cognitive and behavioral impairments in a number of brain disorders. We will begin with a brief review of the theories and research methodologies that investigate how brain functions support and give rise to mental operations such as attention, memory, emotions, social cognition in the healthy brain. These lectures will also encompass a review of basic functional neuroanatomy. This review of the theories pertaining to the organization of normal cognitive operations within each domain will be followed by presentations by expert researchers and clinicians using and/or developing the various neuroimaging techniques in clinical populations.

Schedule: The course will meet once a week on Fridays, from 12:00 PM to 2:00 PM. Each class will consist of about 1 hour of a didactic lecture, followed by a student-led discussion of clinical research papers focusing on cognitive neuroscience approaches to understanding brain disorders.

<u>Course requirements:</u> As the lectures revolve around evaluation of the assigned readings, all students should come to class prepared to join the discussion. Each student will have to prepare 2 in-class presentations throughout the course of the semester, on one of the selected lecture topics. Please sign-up for your week by the second week of classes. Your final grade will be based on your in-class presentations, as well as your participation.

Presentation 1: 30%
Presentation 2: 30%
Participation /attendance 40%
TOTAL 100%

Reading materials: Relevant reading materials and lecture notes will be available on Blackboard.

Additional recommended readings:

Methods in Mind (Ed., Gazzaniga)

Cognitive neuroscience and neuropsychology (Marie T. Banich) Published: Boston: Houghton Mifflin Co., c2004.

Principles of cognitive neuroscience (Dale Purves ... [et al.]. Published: Sunderland, Mass. : Sinauer Associates, c2008.

Timetable:

DATE	INSTRUCTOR	TOPIC	Student presenters
13-Jan	Belger/Rustioni	Introduction to Human Functional Anatomy	
20-Jan	Belger	Brain Development/Maturation and neurodevelopmental disorders (autism)	
27-Jan	Hart/Donkers	Methods of Cognitive Neuroscience	
3-Feb	Belger	Cognitive neuroscience of perception and attention	
10-Feb	Belger	Social Cognitive neuroscience and exploration of deficits in this domain in neurodevelopmental and neuropsychiatric disorders.	
17-Feb	Belger	Cognitive neuroscience of Memory	
24-Feb	Belger	Brain Disorders of Memory Function (Alzheimer, amnesia)	
2-Mar	Belger	Cognitive Affective Neuroscience	
9-Mar	No class		

16-Mar	Dichter	Brain Disorders of Affective Processing and Depression	
10-iviai	Dictite	Reinforcement Pathways Of The Brain And Brain Disorders Of Reinforcement And	
23-Mar	Charlotte Boettiger	Addiction	
30- Mar	Belger	Executive Function and frontal lobe impairments in neuropsychiatric disorders (schizophrenia, autism, bipolar)	
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6-Apr	No class		
13-Apr	Belger	Executive Function and frontal lobe impairments in neuropsychiatric disorders (schizophrenia, autism, bipolar)	
20-Apr	Grewen	Neuroendocrine modulation of Cognitive function in development and disease	
27-Apr	Belger et al.	Wrap-up and general discussion	