NGG 588: Topics in Translational Neuroscience
This 1 CU class will be offered every spring beginning spring 2018

This course will introduce graduate students in neuroscience and related disciplines to basic mechanisms and clinical features of major categories of nervous system disease. Each two-hour class will consist of two parts; a formal lecture followed by a seminar on the same topic. The formal basic science lectures will discuss genetic, molecular, and cellular mechanisms relevant to the disease examined while the seminar will illustrate how that information can be used in the clinical setting to promote further discovery and inform treatment. Some of the seminars will be associated with the Clinical Neuroscience Training Program (CNST) to provide the opportunity to interact with medical students and clinicians. The course will rely on assigned readings of primary research papers and discussions during class.

This is a weekly spring semester course consisting of two components:
- A one-hour lecture detailing the neurobiology of a particular disease
- A one-hour seminar delivered by the Clinical Neurosciences Training Program (CNST) Seminar Series

Participating faculty include:
- Course director Mariella De Biasi who will select weekly special lecturers and run the course
- A weekly lecturer who specializes in the disease being covered that week
- The CNST seminar speaker for that week, selected by the CNST directors Roy Hamilton and Dan Wolf

Contact Hours:
- 2.5 hours per week on Fridays
- 1CU

Activity Types:
- Lecture
- Seminar
- Small Group Discussion

Course Materials:
- Readings selected by the weekly lecturer

Prerequisites:
- Graduate-level students, senior undergraduates with permission from the Instructor
- Open to PSOM students with permission from the Department
- Priority given to NGG students, then other BGS, then other PSOM, then other Penn students on space-available basis

Student Details:
- Class size limit = 20 students
- Expected to attract second-year NGG, first or second year PGG and other PSOM

Evaluation of Student Performance: Students will be evaluated based on their ability to identify gaps in the current knowledge for the topic presented in each class/seminar (25%) and submit questions based on readings assigned before each class (25%). There will also be evaluated on a final short paper on a topic of their choice among those presented in class (45 %), and their general participation to the group discussions (5%).
Calendar of lectures for 2018

01-12-2018: Introduction to the course (NGG students only)
   12-1: Mariella De Biasi, PhD, Course Director

01-19-2018 Topic 1. Synaptogenesis/circuitogenesis & schizophrenia (NGG and CNST)
   12-1 PM Synaptic deficits and iPSc cell technology, Stuart Anderson MD, Children’s Hospital of Philadelphia and Department of Psychiatry, PSOM.
   1-2 PM Translational/clinical: Neural circuitry of negative symptoms/psychosis. Dan Wolf MD, PhD, Department of Psychiatry, PSOM

01-26-2018 Topic 2. Fear Circuitry, Depression & Anxiety Disorders (NGG)
   12-1 PM: Circuitry of fear & anxiety. Amelia Eisch, PhD, Department of Anesthesiology and Critical Care, Children’s Hospital of Philadelphia
   1-2: Translational/clinical: anxiety – Desmond Oathes, Department of Psychiatry, PSOM

02-02-2018 Topic 3. Hunger circuits and Obesity/Eating Disorders (NGG)
   12-1PM: Harvey Grill, PhD, Department of Psychology, SAS
   1-2 PM: Translational/clinical: Compulsive eating – Matt Hayes, PhD, Department of Psychiatry, PSOM

02-09-2018 Topic 4. Impulse control disorders (ICDs) and the dopaminergic system (NGG-CNST):
   12-1 PM: Dopamine/Impulse part-I: Mariella De Biasi, PhD, Department of Psychiatry, PSOM
   1-2 PM: Translational/clinical impulse control: hoarding – Daniel Weintraub, MD, Department of Psychiatry, PSOM

02-16-2018 Topic 5. Impulse control disorders (ICDs) and the dopaminergic system (NGG-CNST):
   12-1 PM: Dopamine/Impulse part-II: Mariella De Biasi, PhD, Department of Psychiatry, PSOM
   1-2 PM: Translational Addiction studies: Becky Ashare, PhD, Department of Psychiatry, PSOM
02-23-2018  Topic 6: Neuroinflammation (NGG and CNST)

12-1PM: Immunotherapy and basic immunomechanisms in Alzheimer’s and Neuroautoimmune diseases. Kelly Jordan-Sciutto PhD, Department of Pathology, Penn Dental School.

1-2 PM: MS and the immune system. Amit Bar-Or MD, Department of Neurology, PSOM

03-02-2018  Topic 7  Epigenetics and chromosomal architecture (NGG)

12-1PM: Benjamin Garcia, PhD, Epigenetics Program
Department of Biochemistry and Biophysics

1-2PM: Jennifer Phillips-Cremins, Ph.D., Department of Bioengineering, School of Engineering and Applied Sciences, University of Pennsylvania

03-09-2018 Spring Break - no class

03-16-2018  Topic 8   Taste (NGG & CNST)

12-1PM: Minghong Ma, PhD, Department of Neuroscience, PSOM

1-2 PM: Translational: Taste receptors in innate immunity in the nose and ramifications for treating respiratory infections Noam Cohen, MD PhD, Department of Otorhinolaryngology: Head and Neck Surgery, PSOM

03-23-2018  Topic 9      Visual system & Retinal degeneration (NGG & CNST)

12-1PM: visual/retinal physiology: Gustavo Aguirre VMD, PhD, Department of Medical Genetics and Ophthalmology, University of Pennsylvania School of Veterinary Medicine

1-2 PM: Translational talk: retinal gene therapy: Geoff Aguirre, MD, PhD, Department of Neurology, PSOM

03-30-2018  Topic 10     Auditory system

12-1PM: Yale Cohen, PhD, Department of Otorhinolaryngology: Head and Neck Surgery, PSOM

1-2 PM: Translational/clinical: TBD. Steven Eliades, MD PhD, Department of Otorhinolaryngology: Head and Neck Surgery, PSOM

04-06-2018  Topic 11    Pain
12-1PM: Somatosensory mechanisms of pain & itch – Wenquin Luo, PhD, Department of Neuroscience, PSOM

1-2PM: Translational: Mechanism(s) for persistent pain – Beth Winkelstein, PhD, Department of Bioengineering, UPenn.

04-13-2018  Topic 12  Translational research on neuro-regeneration (NGG and CNST)

12-1PM: Axon regeneration in zebrafish: Michael Granato PhD, Department of Neuroscience, PSOM.

1-2PM: Translational regenerative medicine. D. Kacy Cullen, PhD, Departments of Neurosurgery & Bioengineering,

04-20-2018  Topic 13  Mini-Symposium on traumatic brain injury (pending)