

NGG 588: Topics in Translational Neuroscience

Location: Remote

Time: Fridays: Noon to 2:30 PM

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
- A 30 minute discussion on the topic presented in each lecture and seminar

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 Daniel Wolf and Xilma Ortiz-Gonzalez

Contact Hours:

- 2.5 hours per week on Fridays
- 1CU

Activity Types:

- Lecture
- Seminar
- Small Group Discussion

Course Materials:

- Readings selected by the weekly lecturers

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, other PSOM students

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 and answer questions based on the lectures

and readings assigned before each class (40%). They will also be evaluated on a final short paper on a topic of their choice among those presented in class (40 %), and their general participation to the group discussions (20%).

Calendar of lectures for 2021

01-22-2021: Introduction to the course and CNST seminar

12-1PM: Mariella De Biasi, PhD, Course Director. Department of Psychiatry, PSOM

1-2 PM: Jacob Dubroff, MD PhD, Division of Nuclear Medicine Imaging and Therapy
PSOM

01-29-2021 Topic 1: Sleep & anesthesia

12-1 PM: David Dinges PhD, Department of Psychiatry, PSOM

1-2 PM: Alexander Proekt, M.D. Ph.D., Department of Anesthesiology and Critical Care,
PSOM

02-05-2021 Topic 2: Brain-Computer interfaces/Robotic Therapy:

12-1 PM: Brian Litt, MD, Departments of Neurology and Bioengineering

1-2 PM: Michelle J. Johnson, PhD, Departments of Physical Medicine & Rehabilitation
and Bioengineering

02-12-2021 Topic 3: Pain and opiates

12-1PM: Gregory Corder, PhD, Department of Psychiatry, PSOM

1-2 PM: Tom Scott, MD, Department of Anesthesia and Critical Care Medicine, PSOM

02-19-2021 Topic 4: Traumatic Brain Injury

12-1 PM: Akiva Cohen, PhD, Department of Anesthesiology and Critical Care

1-2 PM: M. Shawn Grady, MD, Department of Neurosurgery/

02-26-2019 Topic 5: Neurodegenerative Disease

12-1 PM: Edward B. Lee, MD, PhD, Department of Pathology and Laboratory Medicine,
PSOM

1-2 PM: David John Irwin, MD, Department of Neurology, PSOM

03-05-2021 Topic 6: Neurodevelopment

12-1 PM: Kimberly M. Christian, PhD, Department of Neuroscience, PSOM (organoids)

1-2 PM: Aaron Alexander-Bloch, MD, PhD, Department of Psychiatry, PSOM, and
CHOP Research Institute

03-06 to 03-14 2021 **SPRING BREAK- NO NGG classes**

03-19-2021 Topic 7: Epilepsy

12-1 PM: Ethan Goldberg, MD, PhD, Department Neurology, PSOM

1-2 PM: Ingo Helbig, MD, Departments of Neurology and Pediatrics, PSOM and
Division of Neurology, CHOP

03-26 2021 Topic 8: Social cognition/Psychopathy

12-1 PM: Adrianna C. Jenkins, Ph.D, Department of Psychology, University of
Pennsylvania

1-2 PM: Rebecca Waller, PhD, Department of Psychology, University of Pennsylvania

04-02 2021 Topic 9: Autism

12- 1 PM: Marc Fuccillo, MD, PhD, Department of Neuroscience, PSOM

1-2 PM: Julia Parish-Morris, PhD, Department of Psychiatry, PSOM and
Center for Autism Research, CHOP

04-09-2021 Topic 10: Neurovascular Disorders

12-1 PM: Jacob S. Brenner MD, PhD, Department of Medicine, PSOM

1-2 PM: Daniel J Licht, MD, Department of Neurology, PSOM and CHOP

04-14-2021 **FINAL PAPER DUE**

04-16-2021 Topic 11: Olfaction

12-1 PM: Joel Mainland, PhD, Monell Chemical Senses Center with NGG affiliation.

1-2 PM: Jay A. Gottfried, M.D., Ph.D., Department of Neurology

04-23-2021 Topic 12: Mitochondrial Dysfunction

12-1 PM: Meagan McManus, PhD, Center for Mitochondrial and Epigenomic Medicine
CHOP

1-2 PM: Douglas C. Wallace, PhD, Department of Pediatrics, Division of Human
Genetics, PSOM