

May 13, 2019

# Neurotransmitter



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## Neurotransmitter Schedule

The next *Neurotransmitter* will be published and mailed electronically on **Tuesday, May 28, 2019**. All seminar announcements and notices must be submitted to Natalee Bright via email ([CNUP@pitt.edu](mailto:CNUP@pitt.edu)) **no later than 12:00 noon on Thursday, May 23, 2019**.

All seminars are listed in the "News and Events" section on the CNUP web site, <http://cnup.pitt.edu>. The web site is updated as information is received so you can find additions or changes between issues of the *Neurotransmitter*.

## Seminars

Mon., 5/13  
4:00 p.m. ***From song to synapse: Neural mechanisms of vocal learning***

University Club, Ballroom A  
Richard Mooney, PhD  
George Barth Geller Professor for Research in Neurobiology  
Duke University

*(Sponsored by the Department of Neurobiology, Distinguished Lecture in Neurobiology)*

Wed., 5/15  
10:00 a.m. ***Subtype-specific modulation of NMDA receptors by glycine site agonists***

Langley Hall- A219B  
Kasper Hansen, PhD  
Assistant Professor  
Department of Biomedical and Pharmaceutical Sciences  
University of Montana

*(Sponsored by the Department of Neuroscience)*

Wed., 5/15  
12:00 p.m. ***PhD Dissertation Defense  
Membrane to Channel Inhibition of NMDA Receptors***

Langley Hall- A219B  
Madeleine Wilcox, BS  
Center for Neuroscience (CNUP)- School

of Arts & Sciences/ Neuroscience –  
Graduate Program

Wed., 5/15.  
4:00 p.m. ***Anesthesia, sleep, and pain***

University Club, Ballroom B  
Fan Wang, PhD, PI  
Professor  
Department of Neurobiology  
Duke University

*(Sponsored by the Pittsburgh Center for Pain Research and University of Pittsburgh Brain Institute)*

Mon., 5/20  
11:00 a.m. ***Prefrontal functioning and Deep Brain Stimulation in Obsessive Compulsive Disorder (OCD)***

BST 1495, Conference Room  
Annemieke Apergis-Schoute, PhD  
Assistant Professor  
Department of Neuroscience, Psychology and Behaviour  
University of Leicester (UK)

*(Sponsored by the Department of Psychiatry)*

Fri., 5/31  
12:00 p.m. ***Can we Detect and Treat Alzheimer's Disease a Decade***

### ***Before the Onset of Dementia?***

UPMC Western Psychiatric Institute - 2nd Floor Auditorium  
Reisa A. Sperling, MD, MMSc  
Professor of Neurology, Harvard Medical School; Director, Center for Alzheimer's Research and Treatment; Director of Clinical Research, Memory Disorders Unit, Brigham and Women's Hospital; Director, Neuroimaging Program, Massachusetts Alzheimer's Disease Research Center  
Brigham and Women's Hospital

*(Sponsored by the Department of Psychiatry, Distinguished Scientist Lecture)*

Thurs., 6/27  
12:30 p.m.  
**PhD Dissertation Defense**  
***Targeting Kv2.1/Syntaxin Interaction for Neuroprotection***

BST 1495, Conference Room  
Chung-Yang Yeh, BS  
Center for Neuroscience (CNUP)- School of Medicine/Neurobiology – Graduate Program

## **Notices**

### **Course Announcement**

MSNBIO 2070: Human Physiology  
Fall Semester, 2019  
MW: 6:00 – 7:15 p.m.  
F: 3:00 – 5:00 p.m.

Crawford Hall Room 169

During the Fall Semester, Dr. Bill Yates ([byates@pitt.edu](mailto:byates@pitt.edu)) will teach MSNBIO 2070, Human Physiology. This advanced survey course covers the integrative physiology of all of the major organ systems, including the cardiovascular system, respiratory system, renal system, immune system, gastrointestinal system, and reproductive system.

Lectures are coupled with problem-based learning exercises to provide a comprehensive and detailed background regarding physiological processes. This course is ideal for graduate students who desire a comprehensive yet thorough course in human physiology in preparation for advanced coursework or as background for research projects.

Undergraduate students who previously took a

physiology course, but who would like an advanced treatment of the material to prepare for medical or graduate school, are also welcome to enroll in this class.

Questions about the course can be directed to Bill Yates (email: [byates@pitt.edu](mailto:byates@pitt.edu)).

Interested students may also refer to the course website for information: <http://honorshumanphysiology.com>.

### **Postdoctoral Associate in Neuroelectronic Device Development**

Info Currently there is a large movement towards therapeutic device development targeting the vagus nerve to treat chronic diseases (for review see, <https://bit.ly/2uxNhdE>). A scientifically diverse research team of neuroscientists and engineers at the University of Pittsburgh is looking for a postdoctoral scientist to develop next-generation devices focused on modulating vagus nerve signaling for the treatment of obesity, cancer, and gastrointestinal diseases. Our team projects are focused on those functions of the vagus nerve that connect to abdominal organs, including the upper gastrointestinal tract and the immune system. Specifically, the associate will contribute to animal surgery, physiological and behavioral testing, histological tissue analysis, data analytics, and manuscript writing. These research efforts are currently funded by two awards from the NIH SPARC Program (<https://bit.ly/2HWJ7nx>).

#### **Essential Qualifications**

- PhD in neuroscience or a related discipline.
- Strong written and verbal presentation skills in English
- Animal surgical skills and anatomical knowledge of the nervous system
- Knowledge of statistical analysis and experimental design
- Strong organizational skills and ability to work independently
- Ability to function in a highly interactive cross-disciplinary environment

#### **Preferred Qualifications**

- Technical computing skills including: (1) programming in Python or R; (2) operating systems - Linux, Windows, macOS; (3) command-line usage and scripting; (3) associated programming tools,

Github, Jupyter notebook, etc.

- Experience with histological processing of tissue and immunohistochemistry

Interested candidates should submit the following to Charles Horn, Ph.D. (chorn@pitt.edu):

1. Cover letter outlining research accomplishments and goals
2. Curriculum vitae
3. Names of at least three references, including mailing address, phone number and e-mail address
4. Date of availability

The University of Pittsburgh is an Affirmative Action/Equal Opportunity Employer and values equality of opportunity, human dignity and diversity.  
EEO/AA/M/F/Vets/Disabled

### **Research Technician Position Available to Study Circuits Underlying Motor Control and Motor Learning**

A research technician position is available in the Hooks lab at the University of Pittsburgh School of Medicine for a highly motivated young researcher interested in mapping neural circuitry of motor control and motor learning.

Our lab uses state-of-the-art methods for circuits mapping: cell-type specific mice to identify subtypes of neurons, stereotaxic surgery and viral vectors to target, label, excite, and manipulate selected neurons, and neurophysiological methods to map local and long-range circuits. An ideal candidate will have experience with animal husbandry, stereotaxic surgery, histology/immunostaining, and fluorescence microscopy. These techniques will be most crucial to on-the-job success. We can train exceptional candidates in these skills as well.

Scientific creativity, excellent verbal and written communication skills, and technical expertise are essential. Interested candidates should send a resume or curriculum vitae (CV), a cover letter stating research interests, and contact information for three references to **Bryan (Mac) Hooks** ([hooksm@pitt.edu](mailto:hooksm@pitt.edu)).

More information about the lab is available at:

<http://www.neurobio.pitt.edu/faculty/hooks.htm>

The lab is funded by NINDS (NIH 1R01 NS103993), The Brain and Behavior Research Foundation, and the University of Pittsburgh. Positions are available immediately with competitive salary and benefits (NIH scale). The Department of Neurobiology has exceptional strength in motor systems and excellent resources for collaboration and career development. The Pittsburgh neuroscience community (including Neuroscience, Neurobiology, Biomedical Engineering, and Mathematics at Pitt and Carnegie Mellon) is extensive.

### **Postdoctoral Position in Neurophysiology and Neuroimaging**

The laboratory of Dr. Ferrarelli at the University of Pittsburgh has an opening for a postdoctoral researcher. The goal of the research is to investigate the neurobiology of psychiatric disorders, and especially schizophrenia and related disorders, employing neurophysiological and neuroimaging techniques. These techniques include high-density (hd)-EEG, Transcranial Magnetic Stimulation (TMS), fMRI, and 7T Magnetic Resonance Spectroscopy Imaging (MRSI), applied both during wakefulness and sleep.

Our lab recently utilized some of these techniques to identify several putative biomarkers in patients with chronic schizophrenia, and you will be involved in novel studies assessing these biomarkers in early course psychosis and individuals at clinical high risk for schizophrenia and related disorders. Some of these biomarkers have been associated to memory, plasticity, and general cognitive ability, and tend to predict post-learning performance improvement in healthy individuals. Thus, by collecting these measures in adolescents and young adults, our studies could not only significantly contribute to an early detection and assessment of the level of risk for psychosis, but could also contribute to elucidate some of the neural circuits and mechanisms underlying learning and memory in the normally developing brain.

This position is therefore ideal for candidates who are interested in employing a multi-modal imaging approach to characterize brain circuits implicated in risk for psychosis and related cognitive dysfunctions during a

critical phase of brain maturation. It will also provide the opportunity to spend time in Pittsburgh, one of the most livable and vibrant cities in the country, and to work in the Department of Psychiatry, a unique environment for young researchers to foster collaboration, be productive, and develop an independent program of research.

Applicants should send a CV and a statement of interest to the PI ([ferrarellif@upmc.edu](mailto:ferrarellif@upmc.edu)).

Candidate Profile:

- 1) Ph.D. in neuroscience, psychology, biology, physics, mathematics or other neuroscience-related disciplines
- 2) Preferred experience in one or more of the above-mentioned techniques
- 3) One or more first-author publications in an international, peer-reviewed neuroscience journal
- 4) Strong data-analysis and programming skills (MATLAB, C, R, MNE-Python, or related programming languages)
- 5) Proficient in spoken and written English

### **Post-Doctoral Position in Translational Auditory Neuroimaging Available at the Western Psychiatric Institute and Clinic, University of Pittsburgh School of Medicine**

The main research goal of the CNRL is to further understand the progressive pathology and pathophysiology of emerging psychosis. We utilize multimodal imaging including concurrent electroencephalography (EEG) and magnetoencephalography (MEG), structural MRI, MR diffusion spectrum imaging, fMRI, and MR pseudo-continuous arterial spin labeling measures of blood perfusion. Brain activity measures span simple sensory and perceptual processes to complex higher-order cognition. Within our collaborative basic program of research into auditory neurophysiology, our currently NIH-funded cross-species study of auditory processing in non-human primates and humans is seeking a post-doctoral associate with interest in brain imaging, neurophysiological source analysis, and advanced signal processing.

We seek an exceptional individual with training in EEG or MEG, or advanced signal processing and modeling techniques to undertake the human component of this project. Familiarity with and skills in multimodal imaging, advanced signal processing (e.g., ICA, fusion), source localization, or other analytic methods are desired. Interest in signal processing and mathematical modeling are necessary.

The interdepartmental team includes Prof Salisbury's laboratory: (<https://psychiatry.pitt.edu/news/dr-dean-f-salisbury-forges-new-ground-detect-underlying-brain-abnormalities-giving-rise>),

Dr. Tobias Teichert's laboratory: (<http://www.psychiatry.pitt.edu/about-us/our-people/faculty/tobias-teichert-phd>),

and Dr. Brent Doiron's group: (<https://www.mathematics.pitt.edu/people/brent-doiron>).

The post-doctoral associate will also work closely with the animal and neural modeling groups.

The postdoctoral position is for one year with a potential for renewal pending funding and satisfactory performance. If interested, please contact Prof. Salisbury via e-mail (attach your CV): [salisburyd@upmc.edu](mailto:salisburyd@upmc.edu)

Check out our website [www.cnrl.pitt.edu](http://www.cnrl.pitt.edu)

### **Postdoctoral Position in Population Neuroscience of Aging**

A postdoctoral position is available for a highly-motivated individual to study the problems of brain aging by applying neuroscience and epidemiological methods.

The fellow will work with our eBRAIN research group, led by Dr. Caterina Rosano, at the University of Pittsburgh. eBRAIN applies cutting-edge brain imaging methods and longitudinal trajectories of risk factors to understand brain aging effects on cognitive and physical function. The anticipated research project involves collection and

analysis of DTI and PET imaging of the dopaminergic system, as well as analyses and data collection of ultra-high field images at 7 Tesla. The fellow will be exposed to a highly interactive and interdisciplinary group of neuroscientists, neuro-epidemiologists, neuroimagers, and psychiatrists.

Candidates must have a doctoral degree in neuroscience, epidemiology or related fields with strong quantitative skills. Technical expertise in neuroimaging techniques and the ability to learn and develop new skills are required. A strong fundamental understanding of study design is highly desirable. The successful candidate should have an excellent publication record, solid written/verbal English communication skills, strong organizational skills, and the ability to work independently.

The eBRAIN research group is situated within the Department of Epidemiology at the Graduate School of Public Health, located in the heart of the Oakland Campus, in Pittsburgh, Pennsylvania. The University of Pittsburgh is an integrated global health enterprise and one of the leading health care systems in the United States. Diverse and inclusive, University of Pittsburgh educates medical students, scientists, health care professionals and the public; conducts biomedical research; and provides patient-centered medicine to prevent, diagnose and treat human illness.

Interested and qualified applicants are encouraged to consult <http://www.publichealth.pitt.edu/home/directory/caterina-rosano>  
<https://www.facebook.com/e.brain.pitt>

Applications must include:

- 1) a cover letter outlining research accomplishments and career goals,
- 2) curriculum vitae, and
- 3) a list of three references with contact information (including mailing address, phone number and e-mail address) to:

Caterina Rosano, MD, MPH  
Professor of Epidemiology  
Graduate School of Public Health  
University of Pittsburgh,  
130 De Soto Street,  
South Parran Hall, 5139  
Pittsburgh PA, 15261  
(412)-383-1294 or (412)-759-3572

<http://www.publichealth.pitt.edu/home/directory/caterina-rosano>

<https://www.facebook.com/e.brain.pitt>

<http://www.caph.pitt.edu/researchprog.html>

### **Newly-Funded T32 in Population Neuroscience**

The Graduate School of Public Health and the Department of Psychiatry at the University of Pittsburgh are pleased to announce a **new pre- and postdoctoral training program in Population Neuroscience of Aging & Alzheimer's Disease**. The program is co-directed by Drs. C. Rosano and M. Ganguli, with positions available immediately.

The PNA program trains highly talented individuals to pursue successful independent research in the etiology of Alzheimer's Disease and other age-related dementia (ADRD). Eligible applicants must have backgrounds in either contemporary neuroscience or population/data science. For example: PhD graduates or candidates in Epidemiology, Neuroscience, Information Science, Biostatistics, Biomedical informatics and MD/DO graduates with training in Neurology, Psychiatry, Geriatric medicine, and related disciplines. Please contact [stc15@pitt.edu](mailto:stc15@pitt.edu) with questions.

### **Postdoctoral Associate Positions in Systems Neuroscience**

Postdoctoral positions are available in the Runyan lab in the Department of Neuroscience at the University of Pittsburgh. Our research involves dissecting inhibitory and neuromodulatory circuits across the cortical hierarchy. Our goal is to understand how changes in behavioral context and brain state shift local information processing and the transmission of information between cortical networks. We use two-photon imaging of population activity and optogenetics in head-fixed mice performing perceptual decision-making tasks. See [carolinerunyan.org](http://carolinerunyan.org) for more information about our work.

We are seeking individuals with experience in two-

photon imaging, large-scale electrophysiology, optogenetics, and/or mouse behavior. As we build our laboratory and our own approach to understanding the brain, the ideal candidates should have strongly driven scientific curiosity and problem-solving skills, as well as excellent interpersonal skills. This position offers the opportunity to participate in building a new research program, and to work in the highly collaborative, collegial environment at the University of Pittsburgh and Carnegie Mellon University. See [cnbc.cmu.edu](http://cnbc.cmu.edu) and [cnp.pitt.neurobio.edu](http://cnp.pitt.neurobio.edu) for more details.

Interested candidates should send a CV, statement of research interests, and contact information for two references to [runyan@pitt.edu](mailto:runyan@pitt.edu).

### **Postdoctoral Research Fellow in the Neuroimaging Laboratory**

The Neuroimaging Laboratory at the University of Pittsburgh has a postdoctoral research fellow position open immediately. The candidate should possess a Ph.D. degree in biomedical engineering, neuroscience, or a related field, and have published scholarly articles in peer-reviewed scientific journals. The candidate should have a strong research background in brain imaging, systems neuroscience, neurophysiology (electrophysiology, neuro-metabolism and/or blood flow regulation), computation, neural engineering, and/or data analysis (signal/image processing).

Experience with rodent experimentation, advanced biological imaging (two-photon or optical microscopy or fMRI), neural tissue histology, and data analysis in MATLAB/Python are essential. The candidate will work on longitudinal imaging of rodent brain dynamics in health and disease. The candidate may also be involved in projects related to early detection of Alzheimer's disease and neural engineering depending on interests. The candidate will be working with an interdisciplinary team of radiologists, neurologists, neural engineers, material scientists and biophysicists. Candidates with experience in calcium imaging or MRI/fMRI (especially in animals) are strongly encouraged to apply.

Interested candidates should submit curriculum vitae, the names of three references, a statement of research experience, and date of availability to Alberto L. Vazquez

([alv15@pitt.edu](mailto:alv15@pitt.edu)). Information on the Neuroimaging Laboratory can be found on this website (<http://neuroimaginglab.pitt.edu>).

The Department of Radiology is strongly committed to a diverse academic environment and places high priority on attracting female and underrepresented minority candidates. We strongly encourage candidates from these groups to apply for the position.

The University affirms and actively promotes the rights of all individuals to equal opportunity in education and employment without regard to race, color, sex, national origin, age, religion, marital status, disability, veteran status, sexual orientation, gender identity, gender expression, or any other protected class.

### **Postdoctoral Fellow in LNCD Lab**

A postdoctoral research position is available in the Laboratory of Neurocognitive Development (LNCD) directed by Dr. Beatriz Luna at the University of Pittsburgh.

The LNCD uses multimodal approaches to characterize the neural basis of the normative development of cognitive and motivational processes during the transition through adolescence to adulthood to construct a normative template of development to inform impaired development in clinical populations.

Current projects utilize: fMRI, rsfMRI, DTI/DSI, PET, MT, R2', and MRSI, as well as a comprehensive neurocognitive battery and assessments related to mental health to probe the mechanisms underlying neurocognitive development. Unique tasks that probe reinforcement learning and working memory as well as contextual learning are used with fMRI to further inform mechanisms.

The successful applicant would develop their unique projects beginning with available data from ongoing studies and later transitioning into establishing their unique scientific trajectory. They will also be expected to help mentor trainees and provide input and direction on existing projects. Opportunities for transition to faculty positions are available.

**Qualifications**

- PhD with a background in psychology, neuroscience, cognitive science and/or development who is interested in neurocognitive development through adolescence.
- Strong written and verbal presentation skills
- A promising research publication record, and an interest in using multiple methodologies

**Preferred Technical Qualifications**

- Experience with fMRI (including analyses in FSL, AFNI, or similar)
- Strong programming skills (e.g., Matlab, Python)
- The ability to run or learn to run basic and more complex statistical

Preferably but not exclusively, applicants must be eligible to work in the United States to apply for T32s.

LNCD projects are supported by ongoing R01 NIMH grants and endowments to provide a stable research environment. Pittsburgh has uniquely strong neuroscience, psychiatry, and psychology communities through the University of Pittsburgh and Carnegie Mellon University, which are highly collaborative. The city was recently named one of the most affordable cities in the U.S., has a long-standing culture and large university population, and is a hotspot for major entrepreneurship such as Google and Uber.

If you are interested in applying, email Dr. Luna at [lunab@upmc.edu](mailto:lunab@upmc.edu) with a CV and statement of interest.