# 16th Annual Neuropsychology Research Day

Friday, March 8, 2019
10:00 AM – 5:00 PM
Rosenthal Auditorium, 230

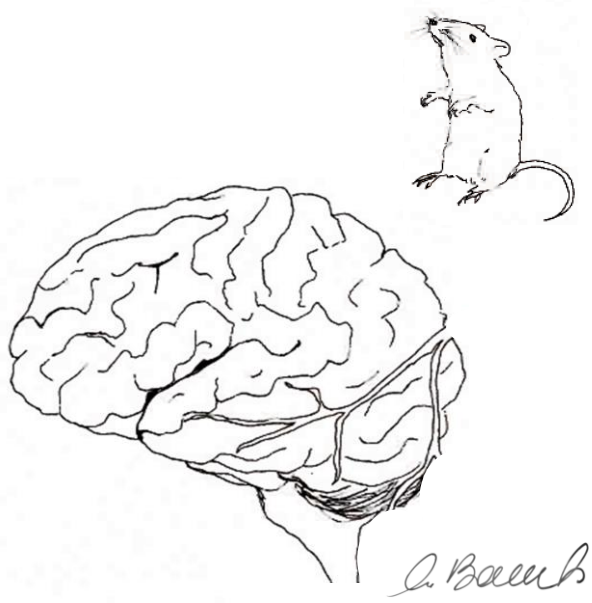
**Keynote Address**
**1:00-2:00**

## Elizabeth A. Phelps, Ph.D.

*Julius Silver Professor of Psychology and Neural Science, New York University*

## "Mechanisms of Threat Control"

1:00-2:00



**Rosenthal Library Auditorium: Rm 230, Ground Floor**
**Queens College, CUNY**

For questions or program information
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**Sixteenth Annual**
**Neuropsychology Research Day**
**at Queens College**

10:00-10:05 **Opening Remarks:**
**Nancy Foldi, Ph.D.**
Professor of Psychology, Queens College, CUNY
Director, Neuropsychology Laboratory of Aging and Dementia, Queens College, CUNY
Director, Memory and Cognitive Disorders Center, New York University-NYU Winthrop Hospital

**Session I: 10:05-11:05**
**Moderator: Susan McHugh, M.A.**
*Clinical Psychology at Queens College, The Graduate Center, CUNY.*

10:05-10:20 **Emotion regulation, heart rate variability, and reducing negative affect.** Gabriella Robinson, MA[1], Justin Storbeck, PhD[1,2], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2] Department of Psychology, Queens College, CUNY.*

10:20-10:35 **Serial position effect contrast profiles: Predictors of conversion from mild cognitive impairment to Alzheimer's disease**. Isabelle Avildsen[1], Emnet Gammada[1], Aditya Kulkarni[1], Paul Crane[2], Laura Gibbons[2], Nancy S. Foldi, PhD[1, 3], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2] Department of Medicine, School of Medicine, University of Washington; [3]Department of Psychology, Queens College, CUNY.*

10:35-10:50 **The children of Superstorm Sandy: Maternal prenatal depression blunts offspring electrodermal activity.** Jessica Buthmann[1], Finik J,[2] Ventura G[3], Zhang W[4], Shereen, AD, PhD[5, 6], Nomura Y, PhD[1,2,3,5,7], *[1]Behavioral and Cognitive Neuroscience, The Graduate Center, CUNY; [2]Graduate School of Public Health and Health Policy, CUNY; [3]Department of Psychology, Queens College, CUNY; [4]New Jersey City University, Dept. of Psychology; [5]Advanced Science Research Center, CUNY; [6]University of California, Irvine, Dept. of Neurology; [7]Mount Sinai School of Medicine, Dept. of Psychiatry.*

10:50-11:05 **Testing the mechanism of action of computerized cognitive training in young adults with depression: clinical, cognitive, and neuroimaging outcomes.** Dakota Egglefield[1,2], Sophie Schiff[1,2], Sara Rushia[1,2], Jeffrey Motter[1,2], Alice Grinberg[1,2], Joel Sneed, PhD[1,2,3], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY;[3]Columbia University and the New York State Psychiatric Institute.*

**11:05-11:15 Coffee Break**

**Session II: 11:15-12:15**
**Moderator: Daniel Saldana**
*Clinical Psychology at Queens College, The Graduate Center, CUNY.*

11:15-11:30 **Exploring the role of microglia and the perineuronal net as effectors of plasticity during barrel cortex development.** Alicia C. Barrientos[1], Sara Mroziuk[2], Arya Lahijani[2], Juan E. Muñoz[2], Joshua C. Brumberg, PhD [1,2], *[1]Behavioral and Cognitive Neuroscience, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY.*

11:30-11:45 **Muscarinic cholinergic antagonism inhibits fat intake in three inbred mouse strains.** Tatjana Mustac[1], Iskhakov, B[1], Dohnalova, P[1], Iskhakova J[1], Yuabov, A[1], Macanian, J[1], Israel, E[1], Bodnar, RJ, PhD[1,2], *[1]Department of Psychology, Queens College, CUNY; [2]Psychology Department, The Graduate Center, CUNY.*

11:45-12:00 **Exploring the complex mechanism underlying working memory output gating.** Chen Tiferet-Dweck[1], Kerstin Unger, PhD[2], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY.*

12:00-12:15 **The behavioral phenotype of pediatric acute-onset neuropsychiatric syndrome.** Susan Vanessa McHugh, MA[1], Emily A. Jones, PhD, BCBA-D, LBA[1,2], *[1]Clinical Psychology at Queens*

*College, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY.*

**12:15-1:00 Lunch**

**Session III: Keynote Address 1:00-2:15**

***Welcome Address:***
**Joshua Brumberg, Ph.D.**
Professor of Psychology, Queens College, CUNY
Dean for the Sciences at The Graduate Center, CUNY

***Introduction of Keynote Speaker:***
**Kerstin Unger, Ph.D.**
Assistant Professor, Psychology Department, Queens College and The Graduate Center, CUNY

***Keynote Address:***
**Elizabeth A. Phelps, Ph.D.**
*Julius Silver Professor of Psychology and Neural Science, New York University*
**Mechanisms of Threat Control**

**2:15-2:25 Break**

**Session IV: 2:25-4:55**
**Moderator: Jessica Buthmann**
*Behavioral and Cognitive Neuroscience, The Graduate Center, CUNY*

2:25-2:40 **Learning and memory in split-brain mice.** Jake Jordan[1], Yi Tong[2], Carolyn Pytte, PhD [1,2], *[1]Neuroscience, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY.*

2:40-2:55 **Environmental regulation of silent synapses in the dorsolateral striatum.** Allison Meyers[1], Jeff Beeler, PhD[1,2], *[1]Behavioral and Cognitive Neuroscience, The Graduate Center, CUNY, [2]Department of Psychology, Queens College, CUNY.*

2:55-3:10 **Rats and heroin: targeting dopamine receptors for relapse prevention.** Scott Ewing[1], Robert Ranaldi, PhD[1,2], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY.*

3:10-3:25 **Risk-taking propensity and sensation seeking in emerging adult survivors of adverse childhood experiences.** Sara Babad[1,2], A. Zwilling[1,2], K.W. Carson[1,2], V. Fairchild[1,2], G. Robinson[1,2], S. Razak[2], T. Wendol[2], V. Nikulina, PhD[2], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY, [2]Department of Psychology, Queens College, CUNY.*

3:25-3:40 **The behavioral and cognitive profile associated with the Fragile X pre-mutation.** Veronica J. Hinton, PhD, *Clinical Psychology at Queens College, The Graduate Center, CUNY, Department of Psychology, Queens College, CUNY.*

3:40-3:55 **Serial position profile of recognition: Recollection and familiarity in Alzheimer's disease.** Aditya Kulkarni[1], Isabelle K. Avildsen[1], Emnet Z. Gammada[1], Nancy S. Foldi, PhD[1,2], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY.*

3:55-4:10 **Health disparities in HIV-associated neurocognitive disorders: Neuroinflammatory contributions.** Desiree Byrd, PhD, *Clinical Psychology at Queens College, The Graduate Center, CUNY, Department of Psychology, Queens College, CUNY.*

4:10-4:25 **Remote connections: Online support's impact on the well-being of TGNC people.** Karen Abraham, Claudia Brumbaugh, PhD, *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY.*

4:25-4:40 **Female perpetrated intimate partner violence in emerging adults.** Victoria. P. Fairchild[1], K.W. Carson[1], S. Babad[1], G. Robinson[1], M. Kosuri[1], S. Razak[2], K. Tineo[2], and V. Nikulina, PhD[1,2], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY.*

4:40-4:55 **Mobile-based resonant frequency breathing training for emotional and cognitive functioning.** Daniel G. Saldana, MA,[1] Al Amira Safa Shehab, MSc[1], Joel R. Sneed, PhD[1,2,3], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY; [3]Columbia University and the New York State Psychiatric Institute.*

## Abstracts

**Emotion regulation, heart rate variability, and reducing negative affect**
Gabriella Robinson, MA[1], Justin Storbeck, PhD[1,2], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2] Department of Psychology, Queens College, CUNY.*

An individual's cardiac vagal tone (as measured by the variability in one's heart rate) is thought to be a physiological index of parasympathetic regulation of the heart and overall homeostasis, and is thought to facilitate the regulation of emotional states. This study seeks to replicate knowledge in the literature concerning the effect of different breathing rates and inhalation/exhalation durations on various indices of heart rate variability, and to examine if directed emotion regulation (ER) strategies can enhance effectiveness of coping with stress. In a sample of college students, this project plans to assess the effectiveness of different breathing patterns paired with ER strategies at reducing distress when viewing negative, stressful scenes. Physiological (vagal tone and skin conductance) and emotional self-report scales will serve as the dependent variables. It is anticipated that combined breathing rate and reappraisal ER strategy will be most effective at minimizing physiological reactivity and negative self-reported emotions.

**Serial position effect contrast profiles: Predictors of conversion from mild cognitive impairment to Alzheimer's disease**. Isabelle Avildsen[1], Emnet Gammada[1], Aditya Kulkarni[1], Paul Crane[2], Laura Gibbons[2], Nancy S. Foldi, PhD[1, 3], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2] Department of Medicine, School of Medicine, University of Washington; [3]Department of Psychology, Queens College, CUNY.*

Serial Position Effects (SPE) of list learning are highly sensitive cognitive markers that characterize amnestic mechanisms of encoding, learning, and retrieval. Our objective was to compare SPE-contrast profiles and total list-lea nrning scores from the Rey Auditory Verbal Learning Test (RAVLT) as predictors of conversion from Mild Cognitive Impairment (MCI) to Alzheimer's disease (AD). Participants with MCI (N=353) from the Alzheimer's Disease Neuroimaging Initiative were followed longitudinally for up to 12 years. Using the RAVLT, we calculated SPE measures reflecting primacy, middle, and recency accuracy across Learning trials (TR15), short and long delay recall (LD). We derived SPE-contrast profiles: "J-shape" captured differences in recency and primacy scores at Learning ($Recency_{TR15}$-$Primacy_{TR15}$), and "Primacy Progression" captured how primacy accuracy progressed

from Learning to LD ($Primacy_{TR15}$-$Primacy_{LD}$). Cox regression analyses evaluated conversion to AD. SPE-contrast profiles predicted disease conversion: J-shape: *HR* = 2.71, 95%CI [1.44, 5.09], $p = 0.002$; Primacy Progression: *HR* = 2.79, 95%CI [1.47, 5.28], $p = 0.002$. Total RAVLT list scores at Learning also predicted group membership: *HR* = 0.95, 95%CI [0.92, 0.97], $p<0.001$. Both SPE-contrast profiles and total RAVLT at Learning predicted conversion. As SPE-contrast profiles capture qualitative performance subserved by distinct brain regions, future investigations will characterize prediction incorporating biomarkers.

**The children of Superstorm Sandy: Maternal prenatal depression blunts offspring electrodermal activity.** Buthmann J,[1] Finik J,[2] Ventura G,[3] Zhang W,[4] Shereen, A D, PhD[5, 6] Nomura Y, PhD[1,2,3,5,7], *[1]Behavioral and Cognitive Neuroscience, The Graduate Center, CUNY; [2]Graduate School of Public Health and Health Policy, CUNY; [3]Department of Psychology, Queens College, CUNY; [4]New Jersey City University, Dept. of Psychology; [5]Advanced Science Research Center, CUNY; [6]University of California, Irvine, Dept. of Neurology; [7]Mount Sinai School of Medicine, Dept. of Psychiatry.*

We set out to examine the relations between prenatal exposure to the natural disaster Superstorm Sandy, maternal depression, and offspring electrodermal activity (EDA). EDA was measured via skin conductance response (SCR) magnitude in 198 children (M = 42.54 months, SD = 12.76) during a startle paradigm. In keeping with prior research, we expected prenatal depression to be associated with hyporeactive EDA and prenatal stress to be associated with hyperreactive EDA. SCR magnitude was lower in children prenatally exposed to depression alone compared with Superstorm Sandy alone and controls. SCR magnitude of children prenatally exposed to both maternal depression and the storm was lower than that of all other groups. Our results emphasize the influence of maternal prenatal mental health, support targeted risk assessment for children who experienced an adverse prenatal environment, and the need for a deeper understanding of the interactions between maternal mood and stress on the developing child.

**Testing the mechanism of action of computerized cognitive training in young adults with depression: clinical, cognitive, and neuroimaging outcomes.** Dakota Egglefield[1,2], Sophie Schiff[1,2], Sara Rushia[1,2], Jeffrey Motter[1,2], Alice Grinberg[1,2], Joel Sneed, PhD[1,2,3], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY;[3]Columbia University and the New York State Psychiatric Institute.*

Depression is associated with a broad range of cognitive deficits, including

attention, verbal learning and memory, executive functioning (EF), and processing speed (PS). Cognitive symptoms commonly predate, co-occur, and persist even with the resolution of affective symptoms, increase risk of relapse and recurrence, and interfere with full recovery of Major Depressive Disorder (MDD). In a meta-analysis, we showed that computerized cognitive training (CCT) is effective in alleviating symptoms of depression, improving cognition, and everyday functioning. Subsequently, our group randomized 46 young adults with depression to two conditions, one in which participants completed 8 weeks of processing speed and executive function focused computerized cognitive training (PS/EF CCT), and the other in which participants completed 8 weeks of verbal ability CCT. We found that forms of CCT improved mood, cognition, and daily functioning; however, in the EF/PS condition, improvements occurred in half the training time. In the current study, we are randomizing participants to one of three conditions: (1) PS/EF CCT (2) verbal CCT and (3) waitlist control. We will compare changes in mood, cognition, daily functioning, and fMRI data across conditions and test the hypothesis that PS/EF training will be associated with increased functional connectivity within the cognitive control network (CCN), a network implicated in EF and mood regulatory functions. We will also explore CCN functioning using task-based fMRI with an emotional go/no-go task.

**Exploring the role of microglia and the perineuronal net as effectors of plasticity during barrel cortex development.** Alicia C. Barrientos[1], Sara Mroziuk[2], Arya Lahijani[2], Juan E. Muñoz[2], Joshua C. Brumberg, PhD [1,2], *[1]Behavioral and Cognitive Neuroscience, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY.*

Organisms rely on touch to make sense of their environment and adapt to it. To understand how tactile experience shapes the brain, it is necessary to study the interaction of the cellular and molecular constituents in the primary somatosensory cortex (S1) during critical period development. Using the mouse barrel cortex as a model system, we examined two key components in neural development and plasticity: Microglia (MG) and the Perineuronal Net (PNN). In early post-natal development, MG fine-tune the cortical grand wiring diagram in an experience-dependent manner by strengthening synapses while also removing weak or dying synapses. Mature PNNs emerge at the closure of developmental critical periods, “cementing in” past alterations, thereby restricting plasticity into adulthood. Previous work from the laboratory has shown that sensory deprivation via whisker trimming leads to activation of MG, and a reduction in PNN density across cortical laminae. To determine whether extrinsic manipulations that trigger MG activity

during S1 critical period development would yield similar effects on the PNN comparable to sensory deprivation, we altered the physiological state of MG with pharmacological agents through random assignment of IP injections of saline (control), minocycline (a MG inhibitor) and lipopolysaccharide (LPS; an inflammatory agent) to C57BL/6 mouse litters. Pups received chronic injections until post-natal day 30. We examined MG morphology and PNN density using immunohistochemical and histochemical staining and stereology (Neurolucida, MBF). We hypothesized that LPS-treated mice would show greater activated MG and fewer PNNs relative to minocycline- and saline-treated mice. Preliminary work indicates that minocycline and LPS treatment led to significant differences in MG soma contours and process features. We found significant differences in PNN density in a laminar-specific manner. This suggests that MG activity may influence PNN maturation in the somatosensory cortex.

**Muscarinic cholinergic antagonism inhibits fat intake in three inbred mouse strains.** Tatjana Mustac, T[1], Iskhakov, B[1], Dohnalova, P[1], Iskhakova J[1], Yuabov, A[1], Macanian, J[1], Israel, E[1], Bodnar, RJ, PhD[1,2], *[1]Department of Psychology, Queens College, CUNY; [2]Psychology Department, The Graduate Center, CUNY.*

Murine genetic variance occurs in the pharmacological mediation of sucrose and fat intake. Sucrose intake is markedly reduced by opioid, dopamine D1 and muscarinic cholinergic receptor antagonism in inbred C57BL/6 and BALB/c, but less so in SWR mice. In contrast, fat intake is markedly reduced by dopamine D1 antagonism in C57BL/6 and SWR, but not BALB/c mice. Fat intake is also reduced to a greater degree by opioid antagonism in SWR relative to C57BL/6 and BALB/c mice. The present study examined whether scopolamine (0.1-10 mg/kg) dose-dependently reduced emulsified fat (Intralipid) intake in inbred BALB/c, C57BL/6 and SWR mice. Intralipid intake was potently inhibited by scopolamine across the dose range in all three inbred strains. Thus, a unique pharmacological profile for muscarinic cholinergic signaling in mediating fat intake is observed along with dissociable effects in SWR mice in this system's inhibition of fat, but not sugar intake.

**Exploring the complex mechanism underlying working memory output gating.** Chen Tiferet-Dweck[1], Kerstin Unger, PhD[2], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY.*

Working memory (WM) is a cognitive system responsible for keeping information in a state of direct accessibility and available for further processing. Since WM is strictly capacity-limited, its content must be continuously updated to

support ongoing task performance. Recent neurocomputational models have hypothesized that such updating or *gating* is controlled by a network that includes the basal ganglia and its connections with the prefrontal cortex. Importantly, cortico-basal ganglia circuits are not only thought to select task-relevant information to be updated into WM, i.e., act as an *input gate*, but also to control which subset of the currently maintained WM representations can exert an influence over behavior, i.e., act as an *output gate*. Input gating filters the information to be entered into and maintained in WM and output gating allows us to select and retrieve specific information from all information that is held in WM at a given point in time. Somewhat unexpectedly, previous work has indicated that output gating is more demanding—as reflected in greater RT cost and stronger cortico-basal ganglia functional connectivity—when selecting one out of two items held in WM as compared to selecting both items. These findings are inconsistent with the intuitive assumption that the selection process will take the longer the more items need to be retrieved. In the first part of my talk, I will present preliminary data from a modified behavioral paradigm that was designed to resolve some of these inconsistencies and provide a better understanding of the output gating mechanism. In the second part of my talk, I will give a brief overview of a planned EEG study, in which we aim to track the temporal dynamics of WM gating processes.

**The behavioral phenotype of pediatric acute-onset neuropsychiatric syndrome.**
Susan Vanessa McHugh, MA[1], Emily A. Jones, PhD, BCBA-D, LBA[1,2], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY.*

Pediatric acute-onset neuropsychiatric syndrome (PANS) is a group of psychosocial, neurological, and immunological symptoms for which diagnosis remains controversial. PANS serves as an umbrella term that encompasses pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections (PANDAS), and other psychiatric illnesses possibly related to infectious disease. Characterized primarily by early, acute-onset obsessive-compulsive disorder (OCD), secondary symptoms include food restriction, emotional lability, separation anxiety, deterioration in handwriting and other motoric difficulties, enuresis, sleep disturbances, and developmental regression. Furthermore, PANS is typically characterized as having a sudden and dramatic acute onset unlike that of traditional OCD, and onset is restricted to pre-adolescent children. Our systematic review will add to the growing body of literature on PANS by examining psychosocial characteristics associated with its behavioral phenotype, and will inform therapeutic intervention.

**Learning and memory in split-brain mice.** Jake Jordan[1], Yi Tong[2], Carolyn Pytte, PhD [1,2], *[1]Neuroscience, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY.*

The hippocampus is essential for spatial and contextual memory; however, little is known about the functional role of inter-hemispheric communication between hippocampi. We found that split-brain mice, with a severed hippocampal commissure, were impaired in spatial learning and memory. Unexpectedly, split-brain mice were not impaired in hippocampus-dependent contextual fear memory. Thus, interhemispheric communication is not required for hippocampus-dependent memory per se, but instead may be necessary for binding composite memories of events to spatial coordinates.

**Environmental regulation of silent synapses in the dorsolateral striatum** Allison Meyers[1], Jeff Beeler, PhD[1,2], *[1]Behavioral and Cognitive Neuroscience, The Graduate Center, CUNY, [2]Department of Psychology, Queens College, CUNY.*

Silent synapses are glutamatergic synapses lacking AMPA mediated responses. As a consequence, they are 'silent' in response to glutamate release at resting membrane potentials due to Mg++ block of NMDA receptors. Prevalent during early development, silent synapses nearly disappear in adulthood, with low levels of residual expression (~5-10%), particularly in striatal projection neurons. Drugs of abuse such as cocaine, opioids, and chronic nicotine increase the prevalence of silent synapses in medium spiny neurons in adult animals. It has been proposed that increased silent synapses may provide a mechanism by which drugs of abuse reorganize circuits in the brain around drug-related stimuli, contributing to the resilience of drug-reinforced behavior to extinction and the incubation phenomenon where cravings can increase, rather than diminish, with time following abstinence. There has been little examination of what role silent synapses may play in a normal, healthy organism, nor how environmental factors may regulate the prevalence of silent synapses. To address these questions, we examined the effect of high fat diet in the prevalence of silent synapses in the dorsolateral striatum. Using patch-clamp electrophysiology (minimal stimulation assay) and identifying direct and indirect pathway medium spiny neurons via genetic fluorescent labeling (iMSNs, GFP driven by D2 promoter; dMSNs, tdTomato driven by D1 promoter via D1-cre mouse line crossed with floxed tdTomato mice), we tested the impact of chronic high fat diet on silent synapses in both the direct and indirect pathways. Mice received ad libitum access to high fat diet (Teklad TD. 06414, 60% calories from fat) for minimally four weeks before testing. Similar to drugs of abuse, we observe a substantial increase in

silent synapses in medium-spiny neurons in mice fed high fat diet. Cocaine and opioids increase silent synapses in only the direct and indirect pathways, respectively. In contrast, high fat diet increases prevalence of silent synapses in both pathways. These data suggest that high fat diet, like drugs of abuse, may alter fundamental mechanisms of circuit remodeling.

**Rats and heroin: targeting dopamine receptors for relapse prevention.** Scott Ewing[1], Robert Ranaldi, PhD[1,2], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY.*

With treatment, individuals who are addicted to heroin and other opioids can often achieve abstinence; however, studies have shown that the rates of relapse are extremely high, even among treatment-compliant patients. One concern is drug-associated cues: when heroin users are presented with stimuli that they have associated with drug use (e.g., pictures of needles, sounds and smells experienced while high), they can elicit similar patterns of activation in the 'reward system' of the brain as heroin itself, and human subjects often report a powerful increase in craving for the drug. This talk describes a study with heroin-seeking rats, investigating drugs that target dopamine receptors to reduce the power of drug-associated cues.

**Risk-taking propensity and sensation seeking in emerging adult survivors of adverse childhood experiences.** Sara Babad[1,2], A. Zwilling[1,2], K.W. Carson[1,2], V. Fairchild[1,2], G. Robinson[1,2], S. Razak[2], T. Wendol[2], V. Nikulina, PhD[2], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY, [2]Department of Psychology, Queens College, CUNY.*

Adverse childhood experiences (ACEs), such as physical abuse and neglect, have been associated with poor life outcomes (e.g., psychopathology, drug use), but the mechanisms through which this occurs remain unclear. Risk-taking propensity and sensation seeking are theorized as separate, but related constructs that are associated with many of the same negative outcomes as ACEs, but their relationship to ACEs has not been well explored. Emerging adulthood (ages 18-25) is a time marked by instability and transitions, during which individuals engage in increased risk taking. This study, therefore, aims to further understand the relationship between ACEs and risk-taking propensity and sensation seeking in an emerging adult sample of undergraduates ($N = 436$; $M$ Age = 19.73, 67% female, 22% Hispanic) from an urban college in the Northeast US. Participants completed an online survey in which ACEs were measured using the Adverse Childhood Experiences Survey, risk-taking propensity using the Domain Specific Risk-Taking Scale, and sensation seeking using the Behavior Inhibition System/Behavior Approach System Scale. Risk-taking

propensity was comprised of five subscales and one overall scale and sensation seeking was comprised of 4 subscales. Bivariate analyses indicated that risk-taking propensity and sensation seeking were significantly correlated. However, multivariate linear regressions revealed that, despite these significant correlations, only sensation seeking domains were significantly predicted by the individual ACEs of emotional abuse and neglect, physical neglect, substance use, and mental illness. These findings provide empirical evidence that risk-taking propensity and sensation seeking are distinct traits, and that individual ACEs have unique relationships with sensation seeking.

**The behavioral and cognitive profile associated with the Fragile X pre-mutation.** Veronica J. Hinton, PhD, *Clinical Psychology at Queens College, The Graduate Center, CUNY, Department of Psychology, Queens College, CUNY.*

Little is known about the specific neurodevelopmental outcomes associated with children who carry a fragile X pre-mutation allele (PM). Fragile X Syndrome, which presents with intellectual delays and autism spectrum behaviors, is associated with a trinucleotide expansion in the FMR1 gene with methylation that effectively silences the FMR1 gene on the X chromosome. The PM allele is expanded more than what is typically found in the population, but not as much as in Fragile X Syndrome. The PM allele is found in about 1 in 300 women and about half of their offspring may inherit it. There is significant evidence for PM-associated disorders in adulthood, and anecdotal reports of behavioral difficulties in children with the PM, but no clear data are available about relative risk of behavioral and cognitive problems in children with the PM. Working with a cohort of children who were prenatally identified as having the PM, along with their unaffected sibling controls, we have collected parent-reported information from parents of 101 PM carriers and 123 sibling controls. Results show increased parent reporting of anxiety, hyperactivity and autism spectrum disorder among the PM group relative to their unaffected siblings. A follow-up study is planned to bring the children in for thorough cognitive and behavioral evaluations to examine their neuropsychological phenotype and compare it to specific underlying genetic characteristics including size of trinucleotide expansion and methylation status of the FMR1 gene. This study will provide information about whether relatively subtle neuropsychological findings may be associated with a unique genotype.

**Serial position profile of recognition: Recollection and familiarity in Alzheimer's disease.** Aditya Kulkarni[1], Isabelle K. Avildsen[1], Emnet Z. Gammada[1], Nancy S. Foldi, PhD[1,2], [1]*Clinical Psychology at Queens College, The Graduate*

*Center, CUNY; [2]Department of Psychology, Queens College, CUNY.*

This project examines Serial Position Effects of Verbal Recognition Memory (SPE-Recognition) in Alzheimer's Disease (AD), building on our current research of brain-behavior profiles of SPE-Free Recall. Recognition consists of Recollection and Familiarity; different from free-recall, recognition has different encoding and retrieval processes and is subserved by either hippocampal (Recollection) or non-hippocampal (Familiarity) mechanisms. We aim to demonstrate these dissociable aspects of verbal recognition memory using AD, as these patients have difficulty on Recollection tasks (Yes/No), but perform well on Familiarity tasks (Forced-Choice). The study aims are to: (1) establish two SPE-Recognition profiles, SPE-Recollection and SPE-Familiarity; (2) associate cognitive-biomarkers with SPE-Recognition profiles, using region of interest analyses and fluid-biomarker indicators (amyloid and tau burden). This study will be the first to document the relationship of SPE profiles within recognition and establish neurobiological correlates in AD.

**Health disparities in HIV-associated neurocognitive disorders: Neuroinflammatory contributions.** Desiree Byrd, PhD, *Clinical Psychology at Queens College, The Graduate Center, CUNY, Department of Psychology, Queens College, CUNY.*

Despite effective combined antiretroviral treatment (cART), HIV-Associated Neurocognitive Disorders (HAND) prevalence remains high and reflects a health disparity in illness burden, disability and related mortality for American ethnic minority groups. The precise neuropathogenic mechanisms & neural substrates of HAND remain unknown, though chronic neuroinflammation is one established contributor. Comprehensive biopsychosocial conceptual frameworks are required for holistic scientific understandings of these HIV-related cognitive disparities. In this talk, I will review evidence for the role of metabolic risks and inflammation as primary biologic drivers for HAND disparities and describe planned research among an ethnically diverse group of HIV-infected adults to test related hypotheses.

**Remote connections: Online support's impact on the well-being of TGNC people.** Karen Abraham, Claudia Brumbaugh, PhD, *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY.*

Due, in part, to lack of social support, trans and gender non-conforming (TGNC) people face higher prevalences of depression and anxiety. People in rural areas have access to fewer LGBT centers and have been shown to be warier of visiting them for health information and community. Online communities provide

spaces for TGNC individuals to access support, however their effect on well-being has not been studied. This study examines the relationship between use of online message boards and mental health, and how rurality interacts with this relationship.

**Female perpetrated intimate partner violence in emerging adults.** Victoria. P. Fairchild[1], K.W. Carson[1], S. Babad[1], G. Robinson[1], M. Kosuri[1], S. Razak[2], K. Tineo[2], and V. Nikulina, PhD[1,2], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY.*

Intimate partner violence (IPV) is perpetrated both by men and women, and often peaks during emerging adulthood (ages 18 to 25 years). Research indicates that female perpetrators of IPV are most likely to engage in psychological violence, but they also engage in physical and sexual violence, albeit at lower rates. However, little is known about the differences in women who perpetrate these different kinds of aggression. In an online questionnaire 220 women who reported having been in a relationship during their lifetime completed the Revised Conflict Tactics Scale (CTS2) which was used to assess presence, type and frequency of violence, and the Alcohol Use Disorders Identification Test (AUDIT), which was used to assess alcohol intake. The current study examines whether demographic variables and alcohol use predicts differences in the types of aggression perpetrated by emerging adult women.

**Mobile-based resonant frequency breathing training for emotional and cognitive functioning.** Daniel G. Saldana, MA,[1] Al Amira Safa Shehab, MSc[1], Joel R. Sneed, PhD [1,2,3], *[1]Clinical Psychology at Queens College, The Graduate Center, CUNY; [2]Department of Psychology, Queens College, CUNY; [3]Columbia University and the New York State Psychiatric Institute.*

Studies demonstrate that breathing interventions are associated with improved mood, cognitive functions, and reduced stress levels, as a consequence of changes in heart rate variability (HRV) after breathing at resonance frequency (5-7 breaths per minute). However, these effects are confounded by lack of appropriate control groups. Additionally, studies do not disentangle the independent effects of breathing and mindfulness. The current study proposes to evaluate the feasibility and efficacy of mobile-based resonant frequency breathing training (mRFBT) in a randomized control pilot study in a non-clinical, young adult population with elevated stress and anxiety. It is expected that after 6 weeks of training, participants in the mRFBT group will demonstrate higher HRV measures, and greater improvements in stress, anxiety, and cognitive performance, as compared to a non-breathing based mindfulness practice (candle meditation) and waitlist control.