

15th Annual Neuropsychology Research Day

Friday, February 23, 2018
9:30 AM – 4:30 PM
Rosenthal Auditorium

Keynote Address
1:00-2:00

Patrizia Casaccia MD. PhD.

*Director Neuroscience Initiative, Advanced Science Research Center,
City University of New York
Professor of Neuroscience, Genetics and Genomic Sciences, Neurology,
Icahn School of Medicine at Mt. Sinai*

**“Oligodendrocytes as
Environmental Sensors”**

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

For questions or program information
contact Dr. Carolyn Pytte
Carolyn.Pytte@qc.cuny.edu

Cover art by Alicia Barrientos



**Fifteenth Annual
Neuropsychology Research Day
at Queens College**

- 9:30-9:35 **Opening Remarks:**
Richard Bodnar, Ph.D.
Executive Officer, Psychology Doctoral Program, The Graduate Center, CUNY
Professor of Psychology, Queens College, CUNY
- Session I: 9:35-10:50**
Moderator: Jake Jordan
CUNY Neuroscience Collaborative, The Graduate Center, CUNY.
- 9:35-9:50 **Aberrant signaling in the indirect pathway induces behavioral thrift.** Devry Mourra¹, Jeff Beeler^{1,2}, ¹*CUNY Neuroscience Collaborative, The Graduate Center, CUNY;* ²*Psychology Department, Queens College, CUNY.*
- 9:50-10:05 **The extracellular matrix and microglia as effectors of plasticity in neural development.** Alicia Barrientos¹, Joshua Brumberg¹⁻³, ¹*CUNY Neuroscience Collaborative, The Graduate Center, CUNY;* ²*Dean for the Sciences at the Graduate Center, CUNY;* ³*Psychology Department, Queens College, CUNY.*
- 10:05-10:20 **The Effects of Maternal and Prenatal Stress and Trauma on Expression of the Genes Driving Neurodevelopment in Children.** Kaitlin Walsh Carson¹, Sara Babad¹, Jackie Finik², Yoko Nomura^{1,3,4}, and Valentina Nikulina^{1,3}, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY;* ²*Graduate School of Public Health and Health Policy, CUNY;* ³*Psychology Department, Queens College, CUNY;* ⁴*Icahn School of Medicine at Mount Sinai.*
- 10:20-10:35 **HSD11B2 Expression and Early Childhood Temperament Profiles.** Jackie Finik¹, Yoko Nomura^{2,3}, ¹*School of Public Health, The Graduate Center, CUNY;* ²*CUNY Neuroscience Collaborative, The Graduate Center;* ³*Psychology Department, Queens College, CUNY.*

- 10:35-10:50 **Adult Insecure Attachment Styles and Health Risk Behaviors in Child Sexual Abuse Survivors.** Sara Babad¹, Kaitlin Walsh Carson¹, Valentina Nikulina^{1,2}, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY;*²*Psychology Department, Queens College, CUNY.*
- 10:50-11:00 Coffee Break**
- Session II: 11:00-12:15**
Moderator: Sara Babad
Clinical Psychology at Queens College, The Graduate Center, CUNY.
- 11:00-11:15 **EEG Asymmetry during Emotional Challenge Predicts Future Depressive Symptoms.** Aliza Schwartzblatt¹, Jennifer Stewart^{1,2}, John J.B. Allen³, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY;* ²*Psychology Department, Queens College, CUNY;* ³*The University of Arizona.*
- 11:15-11:30 **Hemispheric Asymmetry and Memory.** Jake Jordan¹, Yi Tong², Carolyn Pytte^{1,2}; *CUNY Neuroscience Collaborative, The Graduate Center, CUNY;* ²*Psychology Department, Queens College, CUNY.*
- 11:30-11:45 **Cognitive change after open-trial antidepressant treatment in comorbid depression and cognitive impairment.** Sara Rushia¹, Jeff Motter¹, Davangere Devanand², P. Murali Doraiswamy³, Joel Sneed^{1,2,4}, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY;* ²*Columbia University and the New York State Psychiatric Institute;* ³*Duke University;* ⁴*Psychology Department, Queens College, CUNY.*
- 11:45-12:00 **Sex Differences of Serial Position Effects in Verbal Learning.** Emnet Z. Gammada¹, Isabelle K. Avildsen¹, Anthony L. Giorno², Aditya Kulkarni¹, Nancy S. Foldi^{1,2}, and Alzheimer's Disease Neuroimaging Initiative (ADNI), ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY;* ²*Behavioral Neuroscience Master's Program, Psychology Department, Queens College, CUNY.*

12:00-12:15 **Neural Biomarkers to Predict Problem Stimulant Use.** Melanie A. Blair¹, Jennifer L. Stewart^{1,2}, April C. May³, Martina Reske⁴, Susan F. Tapert. Ph.D.³, and Martin P. Paulus⁵, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY*; ²*Psychology Department, Queens College, CUNY*; ³*Department of Psychiatry, University of California San Diego*; ⁴*Institute of Neuroscience and Medicine (INM-6), Computational and Systems Neuroscience, Jülich Research Centre*; ⁵*Laureate Institute of Brain Research.*

12:15-1:00 Lunch

Session III: Keynote Address

1:00-2:15 ***Welcome Address:***
Susan A. Rotenberg, Ph.D.
Interim Dean of Faculty
Division of Math & Natural Sciences
Professor of Chemistry & Biochemistry
Queens College, The City University of New York

Introduction of Keynote Speaker:

Jeff Beeler, Ph.D.
Associate Professor, Psychology Department, Queens College and
The Graduate Center, CUNY

Keynote Address:

Patrizia Casaccia MD., PhD.
Director Neuroscience Initiative, *Advanced Science Research Center, CUNY, Professor of Neuroscience, Genetics and Genomic Sciences, Neurology, Icahn School of Medicine at Mt. Sinai*

Oligodendrocytes as Environmental Sensors

2:15-2:25 Break

Session IV: 2:25-4:25

Moderator: Scott T. Ewing

Clinical Psychology at Queens College, The Graduate Center, CUNY.

- 2:25-2:40 **Development of rule-guided behavior and attentional control from childhood through adolescence.** Kerstin Unger, *Department of Psychology, Queens College, CUNY.*
- 2:40-2:55 **Drug abstinence and relapse prevention in animal models of drug addiction.** Scott Ewing¹, Robert Ranaldi¹⁻³; ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY*; ²*Behavioral Analysis Doctoral Program, The Graduate Center, CUNY*; ³*Psychology Department, Queens College, CUNY.*
- 2:55-3:10 **Association between Vagal Flexibility, Psychological Risk Factors, and Smoking Cravings in African American Adult Daily Smokers.** Gabriella Robinson¹, Justin Storbeck^{1,2,3}, Teresa Lopez-Castro⁴, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY*; ²*Basic and Applied Social Psychology, The Graduate Center, CUNY*; ³*Psychology Department, Queens College, CUNY*; ⁴*Psychology Department, City College, CUNY.*
- 3:10-3:25 **Pilot Study of Chess Training as Cognitive Training in Children with Parent-Reported Attentional Problems.** Daniel Saldana¹, Joel Sneed¹⁻³, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY*; ²*Psychology Department, Queens College, CUNY*; ³*Columbia University and the New York State Psychiatric Institute.*
- 3:25-3:40 **Emotion Guides Top-Down Influences on Object Recognition.** Jordan Wylie¹, Justin Storbeck^{1,2,3}, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY*; ²*Basic and Applied Social Psychology, The Graduate Center, CUNY*; ³*Psychology Department, Queens College, CUNY.*
- 3:40-3:55 **Effects of simulated impairment on orientation and shape perception.** Khalid Barnes¹, Andrea Li^{1,2,3}, ¹*Behavioral Neuroscience Master's Program, Queens College, CUNY*; ²*Department of Psychology, Queens College, CUNY*; ³*CUNY Neuroscience*

Collaborative, The Graduate Center, CUNY.

- 3:55-4:10 **Opto/chemogenetic investigation of cognitive control.** Yu Chen¹, Jin Fan¹⁻⁴, ²*CUNY Neuroscience Collaborative, The Graduate Center, CUNY;* ²*Psychology Department, Queens College, CUNY;* ³*Psychiatry and* ⁴*Neuroscience, Icahn School of Medicine at Mount Sinai.*
- 4:10-4:25 **Surfing for Support: Mental Health and Sense of Community in Online TGNC Message Board Users.** Karen Abraham¹, Claudia Brumbaugh^{1,2}; ¹*Basic and Applied Social Psychology, The Graduate Center, CUNY;* ²*Psychology Department, Queens College, CUNY.*
- 4:25-4:40 **Does Social Affiliation Protect Women Against Symptoms of PTSD? A Study of Latina and Non-Latina women.** Evelyn Ramirez-Coombs¹, Castillo, B., K.², Valentina Nikulina^{1,2}, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY;* ²*Psychology Department, Queens College, CUNY.*

ABSTRACTS

The extracellular matrix and microglia as effectors of plasticity in neural development. Alicia Barrientos¹, Joshua Brumberg¹⁻³, ¹*CUNY Neuroscience Collaborative, The Graduate Center, CUNY*; ²*Dean for the Sciences at the Graduate Center, CUNY*; ³*Psychology Department, Queens College, CUNY*. The sense of touch is one of many means by which organisms make contact and interact with the physical world to make sense of it and adapt to it. What remains poorly understood is how somatosensation develops, and how tactile experience changes the brain. The rodent whisker-to-barrel system is a useful model to address these knowledge gaps. Two understudied neural components that mediate plastic changes as a function of activity and experience are the perineuronal net (PNN; a component of the extracellular matrix), and microglia. PNNs appear to restrict plasticity across a number of systems. Microglia, on the other hand, by virtue of their dynamic vigilance, motility and phagocytic nature are potent effectors of plasticity. Microglia strip away dysfunctional, or dying synapses, while supporting and strengthening others in response to cues from their immediate environment. This study aims to determine how sensory experience alters microglia physiology, and whether their activation alters PNN integrity. We hypothesize that the mechanism mediating alterations to the PNN is tissue-type plasminogen activator (tPA), which is an enzyme produced by microglia. Understanding the limits of plasticity and the cellular and molecular factors that regulate brain plasticity are important points of investigation, not simply to answer a fundamental question of science, but to employ this knowledge to better understand pathologies of the nervous system with the aim to treat or correct them.

The Effects of Maternal and Prenatal Stress and Trauma on Expression of the Genes Driving Neurodevelopment in Children. Kaitlin Walsh Carson¹, Sara Babad¹, Jackie Finik², Yoko Nomura^{1,3,4}, and Valentina Nikulina^{1,3}, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY*; ²*Graduate School of Public Health and Health Policy, CUNY*; ³*Psychology Department, Queens College, CUNY*; ⁴*Icahn School of Medicine at Mount Sinai*. Research has shown that women with lifetime trauma history and those exposed to trauma during pregnancy may manifest disrupted physiological states, which could disrupt the programming of their fetus' developing HPA-axis. However, little is known about the specific processes involved. The "Stress in Pregnancy" study has followed women ($M=27.54$ years; 88.7% ethnic minorities) during pregnancy and as their children develop ($N=$

701; 48.4% female). Some of these mothers were exposed to Hurricane Sandy during pregnancy and participants were classified into one of four groups: (i) neither lifetime trauma nor exposure to Sandy in-utero ($n = 309$), (ii) lifetime trauma alone ($n = 124$), (iii) Sandy-exposure alone ($n = 172$), and (iv) both Sandy-exposure and lifetime trauma ($n = 96$). We hypothesized that the groups would differ in placenta neurodevelopment gene (*MAOB*, *ATP1A1*, and *SLC6A4*) expression, in a dose-response fashion where children of mothers with two types of traumas manifest the greatest dysregulation and children of mothers with neither have the lowest dysregulation. A one-way analysis of variance was conducted. Overall differences were found among the groups on *MAOB* ($p < .001$), *ATP1A1* ($p < .001$), and *SLC6A4* ($p < .001$) expression. However, the results did not demonstrate a dose-response relationship. Across the three types of genes examined, both the Sandy-only group and the Sandy-exposure/trauma group had greater dysregulation than the trauma only group and the neither Sandy-exposure/trauma group. These results suggest that stress during pregnancy has a stronger influence on driving neurodevelopment than lifetime history.

HSD11B2 Expression and Early Childhood Temperament Profiles. Jackie Finik¹, Yoko Nomura^{2,3}, ¹*School of Public Health, The Graduate Center, CUNY*; ²*CUNY Neuroscience Collaborative, The Graduate Center*; ³*Psychology Department, Queens College, CUNY*. The present study is a preliminary analysis focused on HSD11B2, a key regulator of fetal exposure to glucocorticoids via the placenta. The expression of HSD11B2 protects the fetus from exposure to excessive maternal stress hormones by converting active glucocorticoids (i.e. cortisol) into inactive (i.e. cortisone). Recent findings suggest that HSD11B2 may be an underlying mechanism by which maternal stress during pregnancy affects long-term offspring neurobehavior. Capitalizing on longitudinal measures of infant temperament at 6, 12 and 18 months, the present analysis will examine the relation between HSD11B2 expression and broad domains of temperament (surgency, negative affect, and emotion regulation), using linear mixed effects models.

Adult Insecure Attachment Styles and Health Risk Behaviors in Child Sexual Abuse Survivors. Sara Babad¹, Kaitlin Walsh Carson¹, Valentina Nikulina^{1,2}, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY*; ²*Psychology Department, Queens College, CUNY*. Child Sexual Abuse (CSA) survivors engage in unhealthy lifestyles and risk behavior (e.g., risky sex, substance use, and social isolation) at higher rates than the general population. The literature shows that CSA survivors are also at risk for adult insecure anxious and avoidant attachment styles,

and according to theoretical and empirical research, these types of attachment may help explain why CSA survivors engage in risky and unhealthy lifestyles. Specifically, CSA survivors with avoidant attachments may be more likely engage in risky sexual behaviors and use substances. CSA survivors with anxious attachments may be more likely to experience coercion during consensual sex and be socially isolated. However, these associations remain largely underexplored empirically. The present study aims to address this gap by testing moderation and mediation models using a longitudinal design. Participants will be 150 non-clinical, emerging adult CSA female survivors. We aim to assess whether attachment styles mediate or moderate the associations between CSA and a range of health risk behaviors.

EEG Asymmetry during Emotional Challenge Predicts Future Depressive Symptoms. *Aliza Schwartzblatt*¹, Jennifer Stewart^{1,2}, John J.B. Allen³, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY*; ²*Psychology Department, Queens College, CUNY*; ³*The University of Arizona*. Research supports electroencephalographic (EEG) asymmetry as a promising biomarker for depression risk. Greater depressive symptoms are linked to greater right than left prefrontal cortex (PFC) activity, a relationship that is more robust when EEG is recorded during emotional challenge as opposed to a resting state. Although PFC asymmetry recorded at rest also predicts future depressive symptoms in never-depressed individuals, bolstering its potential role as a biomarker of depression, research has yet to demonstrate this relationship in EEG recorded during emotional challenge. At baseline, current-source-density (CSD) transformed EEG was recorded while 54 healthy control participants experienced a directed facial action (DFA) task, wherein they were instructed to move facial muscles into configurations reflecting joy, anger, sadness, and fear. Participants completed the Beck Depression Inventory–II (BDI-II) at baseline and also one year following the EEG recording, the latter reflecting their worst month during the past year. A linear-mixed model was computed for alpha-band (8-12 Hz) PFC asymmetry score as the dependent variable, with DFA condition (approach: joy, anger; withdrawal: sadness, fear), channel (F2F1, F4F3, F6F5, F8F7), and BDI-II at follow-up (with and without accounting for baseline BDI-II) as independent variables. A main effect of follow-up BDI-II score demonstrated that baseline right PFC asymmetry was associated with higher BDI-II at follow-up, regardless of whether BDI-II baseline variance had first been removed ($p < .01$). The present study extends previous research indicating that CSD-referenced EEG asymmetry measured during emotional challenge may be a biomarker for first onset depression or depressive symptom increase in healthy adults.

Hemispheric Asymmetry and Memory. Jake Jordan¹, Yi Tong², Carolyn Pytte^{1,2}; *CUNY Neuroscience Collaborative, The Graduate Center, CUNY*; ²*Psychology Department, Queens College, CUNY*. Hemispheric lateralization is an organizing principle of nervous systems across taxa. Lateralization in the hippocampus, a structure important for learning and memory, was long thought to be a uniquely human phenomenon. Several studies have now shown hemispheric lateralization in plasticity and function in the rodent hippocampus. Further, isolation of the hemispheres via split-brain surgery may impair memory. Here, we will review the literature and present our data on rodent hippocampal lateralization. We will then propose a novel model for how the left and right hippocampus contribute to memory, focusing in particular on how interaction between hemispheres may lead to lateralized storage of memory. Finally, we will discuss ongoing and future experiments in our lab that test specific predictions of this model.

Cognitive change after open-trial antidepressant treatment in comorbid depression and cognitive impairment. Sara Rushia¹, Jeff Motter¹, Davangere Devanand², P. Murali Doraiswamy³, Joel Sneed^{1,2,4}, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY*; ²*Columbia University and the New York State Psychiatric Institute*; ³*Duke University*; ⁴*Psychology Department, Queens College, CUNY*. **Background:** Older adults with depression (DEP) frequently present with symptoms of mild cognitive impairment (CI). Those who present with symptoms of depression and cognitive impairment (DEP-CI) may be at an increased risk for progression to dementia. Treatment with antidepressant medication in this group can further complicate matters because patients who do not respond are cognitively worse off than patients who do respond (Culang et al., 2009). Our aim was to evaluate the impact of antidepressant medication treatment on cognitive change after a 16-week open trial in DEP-CI patients. **Method:** 81 DEP-CI patients were recruited as part of the DOTCODE trial, a randomized controlled trial of open-trial antidepressant treatment for 16 weeks followed by add-on donepezil or placebo for 62 weeks. Patients were evaluated before and after the 16-week treatment on mood and cognition. Mood was assessed with the Hamilton Depression Rating Scale and cognition was assessed with a neuropsychological battery including tests of overall functioning, memory, executive functioning, visuospatial skills, and naming. **Results:** No differences were observed between responders and non-responders (or between remitters and non-remitters) in these data. Participants overall improved on the MMSE ($p = .001$, Cohen's $d = .23$), Trail Making Test B ($p = .009$, Cohen's $d = .39$), WMS-III Block Design ($p = .042$, Cohen's $d = .13$), WMS-R Visual Reproduction II ($p = .016$, Cohen's $d = .03$), and Buschke's Selective Reminding

Test (SRT) for both Immediate Recall ($p = .004$, Cohen's $d = .25$) and Delayed Recall ($p = .005$, Cohen's $d = .31$). **Conclusions:** The present study investigated cognitive change after a 16-week open-trial antidepressant treatment in DEP-CI patients. No differences were observed among responders and non-responders with regard to cognitive change. For most measures the effect size was small, consistent with a practice effect, but in Trail Making Test B and SRT Delayed Recall the effect size associated with change was in the small to medium range.

Sex Differences of Serial Position Effects in Verbal Learning. Emnet Z. Gammada¹, Isabelle K. Avildsen¹, Anthony L. Giorno², Aditya Kulkarni¹, Nancy S. Foldi^{1,2}, and Alzheimer's Disease Neuroimaging Initiative (ADNI),¹*Clinical Psychology at Queens College, The Graduate Center, CUNY;* ²*Behavioral Neuroscience Master's Program, Psychology Department, Queens College, CUNY.* Literature suggests that women have a verbal memory advantage across the lifespan. Paradoxically, incidence of mild memory deficits of amnesic Mild Cognitive Impairment appear higher in men, but more severe impairment of Alzheimer's disease disproportionately affects women. Recent findings suggest that the female advantage in verbal memory may reflect sex-specific cognitive reserve, such that more advanced neurodegeneration is required to manifest the clinical verbal memory impairment. Unfortunately, typical measures of verbal memory utilize total list recall scores and may overlook the value of the word position within the list. We propose that measures of word position, Serial Position Effects (SPE), could serve as a better markers to identify the relationships between disease load, verbal memory, and sex differences. This study will examine how SPE profiles vary in men and women during healthy aging and across the development from mild to severe stages of Alzheimer's disease.

Neural Biomarkers to Predict Problem Stimulant Use. Melanie A. Blair¹, Jennifer L. Stewart^{1,2}, April C. May³, Martina Reske⁴, Susan F. Tapert, Ph.D.³, and Martin P. Paulus⁵, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY;* ²*Psychology Department, Queens College, CUNY;* ³*Department of Psychiatry, University of California San Diego;* ⁴*Institute of Neuroscience and Medicine (INM- 6), Computational and Systems Neuroscience, Jülich Research Centre;* ⁵*Laureate Institute of Brain Research.* Recreational stimulant (amphetamine and cocaine) use is a growing concern among young adults, with 16% of individuals who experiment eventually developing stimulant dependence. Despite the importance of understanding how to predict which recreational users will become problem users, little is known about the behavioral or neural indices that can forecast

the trajectory of occasional to problematic stimulant use. The present longitudinal study utilized follow-up data from a sample of 110 occasional stimulant users (OSU) three years after baseline functional magnetic resonance imaging (fMRI) and clinical interview sessions were obtained. Baseline fMRI recording during a Risky Gains Task (RGT) was analyzed to determine if preexisting neural activation patterns differentiated individuals who became problem stimulant users (PSU) from those who desisted stimulant use (DSU). The RGT was assessed from two distinct perspectives: (1) decision phase analyses evaluated neural and behavioral differences when individuals made a “risky” versus “safe” decision; and (2) outcome phase analyses assessed differences in response to wins versus losses on “risky” trials. For each voxel, a linear mixed effects (LME) analysis was computed to identify significant regions of percent signal change between PSU and DSU and voxelwise clusters were extracted, correcting for familywise error. Results indicate that compared to DSU, PSU exhibited lower activation in frontal executive control, sensory, and emotional processing regions during decision making as well as greater sensitivity to risky rewards and reduced sensitivity to losses. Findings suggest that PSU and DSU can be differentiated by neural biomarkers in several regions of the brain critical for decision making.

Development of rule-guided behavior and attentional control from childhood through adolescence. Kerstin Unger, *Department of Psychology, Queens College, CUNY*. Recent work has indicated that developmental change in rule-guided behavior from childhood through adolescence largely derives from improvements in the capacity to manage higher levels of rule abstraction, i.e., higher-order rules that specify relationships between context and a class of simpler rules. I will present evidence supporting the view that updating (or gating) mechanisms in WM as well as increasing functional specialization within frontal cortex may underlie age differences in abstract rule use. Specifically, the data indicate that developmental change in WM updating is resultant from mechanisms that determine which of the currently maintained WM representations can exert an influence over behavior (*output gating*) rather than from *input gating* of higher-order context information into WM. Despite their difficulties with output gating, children take less advantage of receiving context information before the relevant stimuli in order to proactively prepare a response but rather seem to rely on a more costly output gating strategy that operates on given input in a reactive fashion. While the IFS resolves competition among abstract rule representations in adults, children show task-related parametric activation only in regions that are involved in overcoming competition between lower-order action sets, indicating less efficient selection of the abstract

policy (or goal representation) that constrains the arbitration among lower-order action rules.

Drug abstinence and relapse prevention in animal models of drug addiction.

Scott Ewing¹, Robert Ranaldi¹⁻³; ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY*; ²*Behavior Analysis Doctoral Program, The Graduate Center, CUNY*; ³*Psychology Department, Queens College, CUNY*. Substance abuse and dependence impair the lives of millions of users and cost our society billions each year. Research using animal models of drug addiction has given us immeasurable insight into the neural mechanisms underlying addiction-related behaviors and led to many effective (though insufficient) human interventions available today. My work in the Learning, Motivation and Addiction Lab seeks to further our understanding of drug incentive and investigate novel interventions for encouraging abstinence and preventing relapse. This talk provides a brief overview of my current and previous studies with rats in models of cocaine and heroin addiction.

Association between Vagal Flexibility, Psychological Risk Factors, and Smoking Cravings in African American Adult Daily Smokers.

Gabriella Robinson¹, Justin Storbeck^{1,2,3}, Teresa Lopez-Castro⁴, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY*; ²*Basic and Applied Social Psychology, The Graduate Center, CUNY*; ³*Psychology Department, Queens College, CUNY*; ⁴*Psychology Department, City College, CUNY*. Cigarette smoking and its health consequences have been identified as a major public health concern. African Americans are disproportionately affected by the health consequences of smoking, and have lower abstinence rates compared to that of other groups. Exposure to stress, efforts to alleviate the symptoms of anxiety sensitivity, and distress tolerance have each been linked to motivation to begin and maintain smoking behavior, but this research has been conducted on predominately Caucasian samples. Additionally, research points to vagal reactivity as a biological index of one's stress response, and change in vagal tone in response to stress has been shown to predict ability to resist smoking, and general relapse vulnerability. The current project aims to examine the relationship between vagal tone, anxiety sensitivity, distress tolerance, perceived discrimination, and stress-based smoking cravings in a sample of African American, adult, daily smokers. The study aims to further the literature in identifying salient psychological and biological risk factors – affective reactivity and deficits in regulating affect – pertinent to African Americans to lessen the disparity in smoking research and treatment of this population.

Pilot Study of Chess Training as Cognitive Training in Children with Parent-Reported Attentional Problems. Daniel Saldana¹, Joel Sneed¹⁻³, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY;* ²*Psychology Department, Queens College, CUNY;* ³*Columbia University and the New York State Psychiatric Institute.* Our aim was to examine the feasibility of implementing a 12-week chess training program to ameliorate attentional difficulties in children with parent-reported attentional issues. Twenty-four children, aged 5-12, with parent reported attentional issues were recruited in a 12-week chess training program that included online chess tactical puzzle practice starting at the 4th week of training and were compared pre- and post-chess training on a number of neuropsychological and clinical measures. Post-treatment, children significantly improved in neuropsychological, clinical, and chess measures. Additionally, there was no evidence of mediation in the relationship between chess measures and clinical measures, through the relationship between chess measures and cognitive measures. Chess as cognitive training is provisionally feasible for implementation with children with attentional difficulties. Future research should have different forms of control and more methodological rigor to rule out any expectancy biases and practice effects.

Emotion Guides Top-Down Influences on Object Recognition. Jordan Wylie¹, Justin Storbeck^{1,2,3}, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY;* ²*Basic and Applied Social Psychology, The Graduate Center, CUNY;* ³*Psychology Department, Queens College, CUNY.* Research suggests that when observing our surroundings, the human visual system quickly processes low-level features, during which fine-tuned visual information fills in as we process the incoming visual information (Chen et al., 2007; Phelps, Ling, & Carrasco, 2006). We are examining how emotions, specifically fear, influence initial perception. Further, through examining top-down influences from the lens of affective predictions, we can see how these biases exist elsewhere (such as visual attention) and have profound effects on downstream cognitive processes like judgments and behavior. For instance, evidence clearly shows that biases influence important social customs like eye-witness reporting (MacLeod, 2002; Storbeck & Clore, 2005). The consequences of these decisions are clear and understanding how emotion regulates and biases affective feelings and associations may contribute to understanding how to recalibrate social systems where a great deal of the ultimate decision depend on individual accounts.

Opto/chemogenetic investigation of cognitive control. Yu Chen¹, Jin Fan¹⁻⁴,
²*CUNY Neuroscience Collaborative, The Graduate Center, CUNY*; ²*Psychology Department, Queens College, CUNY*; ³*Psychiatry and* ⁴*Neuroscience, Icahn School of Medicine at Mount Sinai.* Cognitive control is a high-level mental operation to coordinate thoughts and actions, supported by a commonly activated cognitive control network. However, the causal relationships between neural activity and complex behaviors cannot be established due to the inherent limitation of conventional neuroimaging methods such as functional magnetic resonance imaging. Over the past decade, optogenetic and chemogenetic techniques have been rapidly developed in manipulating the activity of defined neurons to examine the circuits underlying cognitive processes. Here, we review recent studies that have investigated cognitive control using optogenetics and chemogenetics. These new methods would contribute substantially to dissecting the brain circuits subserving cognitive control.

Surfing for Support: Mental Health and Sense of Community in Online TGNC Message Board Users. Karen Abraham¹, Claudia Brumbaugh^{1,2}; ¹*Basic and Applied Social Psychology, The Graduate Center, CUNY*; ²*Psychology Department, Queens College, CUNY.* Currently, 1.4 million people in the United States identify as transgender, or as having a personal identity and gender that does not correspond with their birth sex. Transgender people face higher prevalence of depression and anxiety, and greater risk of suicide. For rural transgender individuals, this risk is often further elevated due to less access to competent care, stricter attitudes about gender roles, and less in-person support. Online peer support communities may be a useful alternative in obtaining protective social and informational resources that rural transgender people cannot access locally. The current study seeks to examine the relationship between use of online support message boards and measures of mental health, and to identify personality correlates that may have an impact of the perception and outcome of these benefits. If engagement with online support does correspond to better mental health, professional providers may be encouraged to provide online community spaces that are accessible nationally.

Does Social Affiliation Protect Women Against Symptoms of PTSD? A Study of Latina and Non-Latina women. Evelyn Ramirez-Coombs¹, Castillo, B., K.², Valentina Nikulina^{1,2}, ¹*Clinical Psychology at Queens College, The Graduate Center, CUNY*; ²*Psychology Department, Queens College, CUNY.* Previous research suggests ethnic identity (a sense of belonging to a particular cultural group) may be protective against symptoms of post-traumatic stress disorder (PTSD). However, the

role of ethnic identity and social affiliation (an individual's preference for interactions with members of their own ethnic group) as protective factors for PTSD has not been studied in Latinas with a history of sexual trauma. In this study, ethnic identity and social affiliation were assessed via self-report on the Scale of Ethnic Experience in a sample of undergraduate Latina women ($N = 132$) and non-Latina women ($N = 58$) who had been sexually victimized. PTSD was assessed with the PTSD Symptom Scale. Data were analyzed with hierarchical ordinary least squares regression with controls for age, race, and immigration status. A significant interaction was observed ($\beta = -.51, p = .03$): social affiliation was *negatively* associated with PTSD symptoms in Non-Latina women and *marginally positively* associated with PTSD in Latinas. Ethnic identity was not associated with PTSD. Affiliation with members of the same background may be protective against symptoms of PTSD in non-Latina women. This protective relationship is absent in Latinas, perhaps due to the negative stigma associated with sexual victimization in this community.