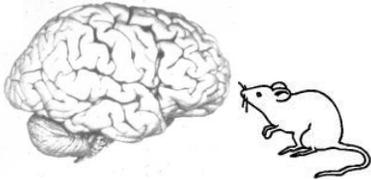


12th Annual Neuropsychology Research Day



Keynote Speaker:

Mary Kritzer, Ph.D.

Professor of Neurobiology and Behavior at SUNY Stony Brook, Research Scientist and member of the Research Board of Directors of the Matt and Debra Cody Center for Autism and Developmental Disabilities.

“Sex and sex hormone effects on prefrontal dopamine systems: Implications for executive function in health and disease”

1:00-2:00

January 22, Thursday, 2015

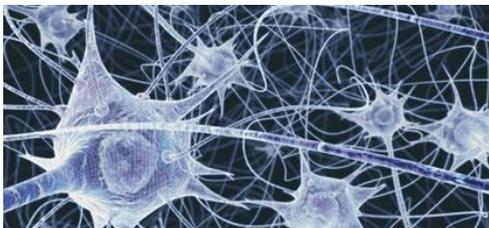
9:30 AM – 3:30 PM

Rosenthal Library Auditorium, Rm 230
Queens College, CUNY

Behaviors to Neurons

Neurons to Behaviors

Perineuronal Nets
Neural Effects of Lipitor
A New Model for Dopamine
Neural Plasticity
Learning & Memory
Sensory Processing
Vision
Feeding Behaviors
Attention
Attachment
Drugs of Addiction
Developmental Disabilities
ADHD
Depression
Epigenetics



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

**Twelfth Annual
Neuropsychology Research Day
at Queens College
January 22, 2015**

- 9:30 **Welcome Address**
Joshua Brumberg, Ph.D.
Professor
Acting Executive Officer, Psychology, The Graduate Center, CUNY
Department of Psychology
Queens College and The Graduate Center, CUNY
- Session I: 9:35-10:50**
- Moderator: Joshua Brumberg, Ph.D.**
Acting Executive Officer, Psychology, The Graduate Center, CUNY
- 9:35-9:50 **The effects of cholinergic signaling on the acquisition and expression of fructose-CFP in rats.** *Frank M. Rotella¹, I. Yenko², J. Pagirsky², K. Olsson², V. Vig², I. Kohen², A. Aminov², R.J. Bodnar^{1,2}*,
¹The Graduate Center, CUNY; ²Psychology Department, Queens College, CUNY.
- 9:50-10:05 **Perineuronal nets as regulators of the intrinsic physiology of barrel cortex.** *Philip Chu¹, Reena Abraham², Usma Khan², Kumarie Budhu³, Joshua C. Brumberg^{1,2,3,4}*, ¹Psychology PhD Program, The Graduate Center, City University of New York (CUNY); ²Neuroscience Major, Queens College, CUNY; ³Psychology Department, Queens College, CUNY; ⁴Neuroscience-Biology PhD Subprogram, The Graduate Center, CUNY.
- 10:05-10:20 **A novel D3 antagonist, SR 21502, facilitates the extinction of well-established cocaine conditioned place preference.** *Ewa Pawul¹, Joseph Haynes², Jesenia Marin², Robert Rinaldi¹* ¹The Graduate Center, CUNY; ²Psychology Department, Queens College, CUNY.
- 10:20-10:35 **Cholesterol-lowering drug Lipitor alters the morphology and location of adult-born neurons.** *Shuk C. Tsoi¹, Jenny Moncion², Alicia Barrientos³, Mimi L. Phan, Ph.D.⁴, David S. Vicario, Ph.D.⁴*,

Carolyn L. Pytte^{1,3}, ¹Biology Department (Neuroscience subprogram); The Graduate Center, CUNY; ²Natural Sciences Department, Hostos Community College, CUNY; ³Psychology Department, Queens College; ⁴Psychology Department, Rutgers University.

10:35-10:50 **Meta-analysis of cognitive training for the treatment of depressed adults.** *Jeffrey N. Motter¹, Monique A. Pimontel¹, Bret R. Rutherford³, Patrick J. Brown³, Steve P. Roose³, Davangere P. Devanand³, P. Murali Doraiswamy⁴, Shelli R. Kesler⁵, Joel R. Sneed^{2,3}, ¹The Graduate Center, CUNY; ²Queens College, CUNY; ³Columbia University and the New York State Psychiatric Institute; ⁴Duke University; ⁵Stanford University.*

10:50-11:05 Coffee Break

Session II: 11:05-12:05

Moderator: Philip Chu

Behavioral and Cognitive Neuroscience Doctoral Candidate
The Graduate Center, City University of New York - Queens College
Campus

11:05-11:20 **Good holders, bad shufflers: An examination of working memory processes and modalities among children with and without ADHD.** *Ashley N. Simone¹, Anne-Claude Bedard, Ph.D.², David J. Marks, Ph.D.³, Jeffrey M. Halperin, Ph.D.^{1,4}, ¹The Graduate Center, CUNY; ²Ichan School of Medicine at Mount Sinai; ³Langone Medical Center, New York University; ⁴Queens College, CUNY.*

11:20-11:35 **Orientation perception under simulated visual impairment.** *Andrea Li^{1,2}, Ph.D., Deborah Watman³, Byron Johnson⁴, and Gideon Glass⁵, ¹Psychology PhD Program, The Graduate Center, CUNY; ²Psychology Department, Queens College, CUNY; ³Urban Studies Major, Queens College, CUNY; ⁴Psychology Major, St. Johns University; ⁵Computer Science Major, Queens College, CUNY.*

11:35-11:50 **Supramodal executive control of attention.** *Alfredo Spagna¹, Melissa-Ann Mackie^{1,2}, Jin Fan, Ph.D.^{1,2,3,4}, ¹Department of Psychology, Queens College, CUNY; ²The Graduate Center, CUNY;;*

Departments of ³Psychiatry and ⁴Neuroscience, Icahn School of Medicine at Mount Sinai, New York, NY.

11:50-12:05 **A bird in hand . . . Dopamine plasticity and the neural transduction of economic conditions.** Jeff Beeler, Ph.D., Queens College and The Graduate Center, CUNY.

12:05-1:00 Lunch

Session III: Keynote Address

1:00-2:15 **Words of Welcome**
Richard Bodnar, Ph.D.
Dean of Research and Graduate Studies

Introduction of Keynote Speaker
Jeff Beeler, Ph.D.
Associate Professor
Department of Psychology
Queens College and the Graduate Center, CUNY

Keynote Address: Sex and Sex Hormone Effects on Prefrontal Dopamine Systems: Implications for Executive Function in Health and Disease.

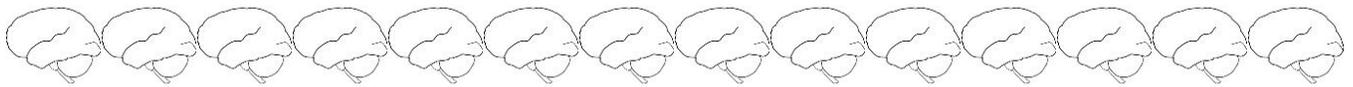
Mary Kritzer, Ph.D.
Professor of Neurobiology and Behavior at SUNY Stony Brook,
Research Scientist and member of the Research Board of Directors of
the Matt and Debra Cody Center for Autism and Developmental
Disabilities

2:15-2:30 Break

Session IV: 2:30-3:45

Moderator: Kimberly Page
Neuropsychology Doctoral Candidate
The Graduate Center, City University of New York - Queens College
Campus

- 2:30-2:45 **Predictors and consequences of childhood maltreatment: An ecological perspective** *Valentina Nikulina, Ph.D.*, Queens College and The Graduate Center, CUNY.
- 2:45-3:00 **Self-disclosure & social media: Reciprocity and the "Passing Stranger Effect" in an anonymous online setting.** *Anna Behler¹, Claudia Brumbaugh, Ph.D.^{1,2}*, ¹Psychology Department, Queens College, CUNY; ²The Graduate Center, CUNY.
- 3:00-3:15 **The infants of superstorm sandy: The epigenetic and developmental impact of natural disaster.** *Yoko Nomura, Ph.D.*, Queens College and The Graduate Center, CUNY
- 3:15-3:30 **Psychophysiology of stress in mother and child: The enduring impacts of superstorm sandy.** *Jessica Buthmann,¹ Jenny Porter², Yoko Nomura, Ph.D.^{2,3}*, ¹Masters in Behavioral Neuroscience Queens College, CUNY, ²Queens College, CUNY; ³The Graduate Center, CUNY.



ABSTRACTS

Session I

The effects of cholinergic signaling on the acquisition and expression of fructose-CFP in rats. *Frank M. Rotella¹, I. Yenko², J. Pagirsky², K. Olsson², V. Vig², I. Kohen², A. Aminov², R.J. Bodnar^{1,2}*, ¹The Graduate Center, CUNY; ²Psychology Department, Queens College, CUNY.

In addition to its intrinsic sweetness, fructose conditions flavor preferences (CFP). The acquisition and expression of fructose-CFP is differentially affected by dopamine (DA) D1, DA D2, NMDA and CB-1 receptor antagonists. Because acetylcholine and cholinergic receptors have been implicated in intake of sweet solutions and food-related learning, the present study examined whether the acquisition and expression of fructose-CFP was affected by systemic administration of muscarinic (scopolamine (SCOP)) or nicotinic (mecamylamine (MEC))

cholinergic receptor antagonists. In expression, food-restricted rats received 10 daily alternating 1-bottle (0.5 h) training sessions with one flavor (e.g., 0.05% cherry) paired with a fructose (8%) + saccharin (0.2%) solution (CS+), and a second flavor (e.g., 0.05% grape) paired with a 0.2% saccharin solution (CS-). Two-bottle choice tests with CS+ and CS- flavors mixed in a 0.2% saccharin solution counterbalanced for bottle position followed with vehicle (VEH, 0.9% saline, IP) administered on the first two days. Separate groups received either ascending or descending doses of SCOP (0.1-10.0 mg/kg) or MEC (1.0-8.0 mg/kg) 0.5 h prior to the choice tests (0.5 h). The higher doses of SCOP (2.5-10 mg/kg: 65-68%) and MEC (4-8 mg/kg: 67-73%) significantly reduced fructose-CFP expression, and total saccharin intake. In acquisition, rats received 8 1-bottle (1.0 h) training sessions with one flavor paired with the CS+ solution, and a second flavor paired with the CS- solution 0.5 h after receiving vehicle, SCOP (1.0 or 2.5 mg/kg) or MEC (4.0 or 6.0 mg/kg) with six subsequent 2-bottle choice tests. Whereas MEC (70-82%) failed to significantly alter fructose-CFP acquisition, SCOP (46-52%) eliminated acquisition of fructose-CFP relative to VEH (87%) and a limited intake vehicle control (82%). These data indicate that muscarinic cholinergic receptor signaling is integral for acquisition of fructose-CFP, and that both muscarinic and nicotinic receptors participate in the full expression of this preference.

Perineuronal nets as regulators of the intrinsic physiology of barrel cortex.

Philip Chu¹, Reena Abraham², Uσμα Khan², Kumarie Budhu³, Joshua C. Brumberg^{1,2,3,4}, ¹Psychology PhD Program, The Graduate Center, City University of New York (CUNY); ²Neuroscience Major, Queens College, CUNY; ³Psychology Department, Queens College, CUNY; ⁴Neuroscience-Biology PhD Subprogram, The Graduate Center, CUNY.

Perineuronal nets (PNNs) are an aggregated form of extracellular matrix that exists in the central nervous system. The removal of PNN components genetically and enzymatically results in enhanced plasticity in adult animals. However, the mechanism for the enhancement is not well understood. We sought to determine the role of PNNs in regulating neuronal physiology through enzymatic digestion and *in vitro* whole cell patch clamping in the mouse barrel cortex. Following enzymatic digestion with chondroitinase ABC (ChABC), we recorded from cells in layers 2/3, 4 and 5. In response to hyperpolarizing and depolarizing current pulses, the intrinsic properties of multiple neuronal subtypes were recorded from. Fast spiking interneurons (FS), putative parvalbumin+ inhibitory interneurons, showed a 10-20% reduction in action potential amplitude and a decrease in input resistance. Regular spiking cells (RS-S), putative excitatory neurons, showed increases in decay slopes

following depolarizing current pulses and low threshold spiking (LTS), putative somatostatin inhibitory interneurons, showed a reduction in the rebound action potential rise slope. We measured and analyzed the spontaneous excitatory post synaptic potentials (EPSPs) to elucidate how PNNs may modulate synaptic communication and found that LTS cells had pronounced decreases in their EPSP frequency. Additionally, FS cells showed slight increases in their EPSP frequency and significant decreases in their EPSP half widths. Other intrinsic properties were not affected in any other cell class. Overall our results suggest that PNNs in the barrel cortex modulate the intrinsic properties of inhibitory interneurons more than other cell types.

A novel D3 antagonist, SR 21502, facilitates the extinction of well-established cocaine conditioned place preference. *Ewa Pawul¹, Joseph Haynes², Jesenia Marin², Robert Ranaldi¹, The Graduate Center and ²Queens College, CUNY.*

The mesolimbic dopamine system is involved in the rewarding effects of cocaine and cocaine-related stimuli. D3 receptors appear to play a role in cocaine-related behavior maintained by conditioned stimuli. However, it is unknown whether the association between cocaine and cocaine cues can be disrupted by D3 receptors blockade and if it does, whether such disruption would inhibit cocaine-related behavior (e.g. well established cocaine conditioned place preference; CPP). To test this, in experiment 1, animals were conditioned to experience cocaine (10 mg/kg intraperitoneal injection) in one of the two compartments of the CPP apparatus and saline in the other compartment. After 8 days of conditioning, animals were tested for the initial CPP and then subjected to D3 antagonist treatment while being exposed to cocaine cues. During this extinction phase, animals were injected with vehicle or 15 mg/kg of SR 21502, D3 antagonist, and placed immediately in the CPP compartment previously associated with cocaine. This treatment occurred for four days every other day. On four alternating days animals were injected with distilled water and placed in the non-cocaine compartment. Next, the animals were retested for their cocaine CPP. In experiment 2, a separate group of animals was conditioned with SR 21502 and tested for aversive effects of SR 21502 using the CPP paradigm. The results from Experiment 1 show that all animals spent significantly more time in the cocaine-paired compartment after cocaine conditioning than they did before conditioning. Subsequently, the animals treated with 15 mg /kg dose of SR 21502 during the extinction phase spent significantly less time in the cocaine-paired compartment than the vehicle group. In experiment 2, animals conditioned with SR 21502 preferred neither side of CPP apparatus and were indistinguishable from the vehicle group. These findings suggest that the

chronic blockade of D3 receptors disrupts the established association between cocaine and cocaine-related cues and subsequently, such disruption inhibits cocaine CPP, behavior maintained by conditioned stimuli.

Cholesterol-lowering drug Lipitor alters the morphology and location of adult-born neurons. *Shuk C. Tsoi¹, Jenny Moncion², Alicia Barrientos³, Mimi L. Phan, Ph.D.⁴, David S. Vicario, Ph.D.⁴, Carolyn L. Pytte^{1,3}.* ¹Biology Department (Neuroscience subprogram); The Graduate Center, CUNY; ²Natural Sciences Department, Hostos Community College, CUNY; ³Psychology Department, Queens College; ⁴Psychology Department, Rutgers University.

The recent rise in childhood obesity and associated high cholesterol has led to the use of 4 statins, cholesterol-lowering drugs for treating children with a genetic risk for high cholesterol. Statins lower cholesterol by inhibiting HMG-CoA reductase, a rate limiting enzyme in the cholesterol synthesis pathway in the liver. Oral administration of statins can reduce the level of brain cholesterol by crossing the blood brain barrier. In vitro, exposure to statins altered the structure of neuronal cell membranes, largely composed of lipids. Effects of statins on cognition in adults include reports of memory loss and confusion. It is unclear whether statins affect children's brains differently than adults'. We used the songbird as a model system to examine the potential cognitive and neural effects of atorvastatin (Lipitor ®) on learning, memory and the development of neurons in HVC of the song system. Song learning was measured by comparing the bird's own song to the tutor's song using Sound Analysis Pro. Memory was recorded electrophysiologically to playbacks of tutor's song and novel songs. We used immunohistochemistry to label doublecortin- (DCX) expressing new neurons (< 3 weeks old) and used Neurolucida software (Microbrightfield) to quantify the number of DCX-expressing neurons and trace the somas of these neurons in HVC. We found that statin-treated birds had weaker memory of the tutor's song and poorer song learning than control birds. We also found that statin treatment did not affect the number of new neurons but resulted in altered neuronal morphology. Birds given statins had neurons that were flatter, more convoluted, and had rough or pocked cell membranes than those of controls. We propose that altered neuron structure may be one factor contributing to the song learning and memory deficits we observed during juvenile statin treatment.

Meta-analysis of cognitive training for the treatment of depressed adults. *Jeffrey N. Motter¹, Monique A. Pimontel¹, Bret R. Rutherford³, Patrick J. Brown³, Steve P. Roose³, Davangere P. Devanand³, P. Murali Doraiswamy⁴, Shelli R. Kesler⁵, Joel R. Sneed^{2,3},* ¹The Graduate Center, City University of New York; ²Queens College, City

University of New York; ³Columbia University and the New York State Psychiatric Institute; ⁴Duke University; ⁵Stanford University.

Depression is common, frequently resistant to antidepressant treatment, and associated with impairments in cognition and everyday functioning. While cognitive training (CT) has been used successfully in a number of diagnostic conditions to improve cognitive and everyday functioning, there has been limited use of CT in depression. To determine whether CT improves cognitive functioning, everyday functioning, and depressed mood in adults, a Medline and PsycINFO search was conducted. 9 randomized trials for depressed adults (age 18 or greater) comparing CT to controls met inclusion criteria and were included in the analysis. Effect sizes (Hedge's g) were calculated for 57 individual measures and for each of the following categories: symptom severity, daily functioning, attention, executive functioning, working memory, verbal memory, and global functioning. Publication bias was assessed using Classic Fail Safe N 's (N_{fs}) and homogeneity was evaluated using Q and I^2 indexes. Significant effects were found for attention, working memory, and global functioning. While there was no evidence of publication bias, there was significant heterogeneity overall and in verbal memory. Taken together, CT is associated with improved cognitive functioning in several domains, in particular attention and working memory, and depressed mood, but not daily functioning. Small sample size and heterogeneity of effects limit the conclusions that can be drawn from these results.

Session II

Good holders, bad shufflers: An examination of working memory processes and modalities among children with and without ADHD. *Ashley N. Simone¹, Anne-Claude Bedard, Ph.D.², David J. Marks, Ph.D.³, Jeffrey M. Halperin, Ph.D.^{1,4}, ¹The Graduate Center, City University of New York; ²Ichan School of Medicine at Mount Sinai; ³Langone Medical Center, New York University; ⁴Queens College, City University of New York*

Objective: To examine working memory (WM) modalities (visual-spatial and auditory-verbal) and processes (maintenance and manipulation) in children with and without attention-deficit/hyperactivity disorder (ADHD). **Method:** The sample consisted of 63 8-year-old children with ADHD and an age- and sex-matched non-ADHD comparison group ($N = 51$). Auditory-verbal and visual-spatial WM was assessed using the Digit Span and Spatial Span subtests from the Wechsler Intelligence Scale for Children Integrated - Fourth Edition. WM maintenance and manipulation were assessed via forward and backward span indices, respectively.

Data were analyzed using 3-way Group (ADHD vs. non-ADHD) x Modality (Auditory-Verbal vs. Visual-Spatial) x Condition (Forward vs. Backward) ANOVA. Secondary analyses examined differences across Combined and Predominantly Inattentive ADHD presentations. **Results:** Significant Group x Condition ($p = 0.02$) and Group x Modality ($p = 0.03$) interactions indicated differentially poorer performance by those with ADHD on backward relative to forward and visual-spatial relative to auditory-verbal tasks, respectively. The 3-way interaction was not significant. Analyses targeting ADHD presentations yielded a significant Group x Condition interaction ($p = 0.009$) such that children with ADHD-Predominantly Inattentive Presentation performed differentially poorer on backward relative to forward tasks compared to the children with ADHD-Combined Presentation. Further, children with ADHD-Combined Presentation exhibited incrementally weaker visual-spatial WM. **Conclusion:** Findings indicate a specific pattern of WM weaknesses (i.e., WM manipulation and visual-spatial tasks) for children with ADHD. Further, differential patterns of WM weaknesses were found for children with Inattentive and Combined presentations of ADHD.

Orientation perception under simulated visual impairment. *Andrea Li^{1,2}, Ph.D., Deborah Watman³, Byron Johnson⁴, Gideon Glass⁵,¹Psychology PhD Program, The Graduate Center, CUNY, ²Psychology Department, Queens College, CUNY. ³Urban Studies Major, Queens College, CUNY. ⁴Psychology Major, St. Johns University, ⁵Computer Science Major, Queens College CUNY.*

Visual impairment is reduced vision that results from aging, disease, or injury that cannot be corrected by corrective lenses or surgery. With an aging population, there is a greater prevalence of, and thus growing interest in understanding, visual impairment. We aim to understand how visual impairment affects the way individuals visually perceive objects and how it thus affects interaction with the environment. The brain is well equipped to perceive the orientation, or tilt, of object boundaries in the visual field. Any condition of visual impairment that affects orientation or tilt perception will thus influence object perception in general. We will explore the effects of simulated low vision conditions on tilt perception in individuals with normal or corrected-to-normal vision. Using image processing techniques, two forms of impairment, blur and contrast reduction, will be applied to oriented stimuli of different spatial frequencies. Impaired and unimpaired stimuli will be presented psychophysically to quantify sensitivity to tilt under normal and impaired conditions. Sensitivity will be quantified by measuring tilt thresholds, the smallest amount of tilt that is still detectable. It is hypothesized that blur will impair tilt sensitivity at low frequencies, while reduced contrast will impair tilt sensitivity at

low and high frequencies. By understanding how different impairments influence underlying visual thresholds, we can predict how they will affect perception of objects in real visual scenes. Results could lead to the development of devices and/or apps that could enhance vision for an individual based specifically on their particular visual loss.

Supramodal executive control of attention. *Alfredo Spagna¹, Melissa-Ann Mackie^{1,2}, Jin Fan, Ph.D.^{1,2,3,4}, ¹Department of Psychology, Queens College, City University of New York, Queens, NY; ²The Graduate Center, City University of New York, New York, NY; Departments of ³Psychiatry and ⁴Neuroscience, Icahn School of Medicine at Mount Sinai, New York, NY.*

The human attentional system can be subdivided into three functional networks of alerting, orienting, and executive control. Although these networks have been extensively studied in the visuospatial modality, whether the same mechanisms are deployed across different sensory modalities remains unclear. In this study we used the attention network test for visuospatial modality, in addition to two auditory variants with spatial and frequency manipulations to examine cross-modal correlations between network functions. Results showed that among the visual and auditory tasks the effects of executive control, but not effects of alerting and orienting were significantly correlated. These findings suggest that while alerting and orienting functions rely more upon modality specific processes, the executive control of attention coordinates complex behavior via supramodal mechanisms.

A bird in hand . . . dopamine plasticity and the neural transduction of economic conditions. *Jeff A Beeler, Ph.D., Queens College and the Graduate Center, CUNY.*

Decades of research have focused on the dopamine system as a prime driver of appetitive behavior, with pathophysiology in dopamine resulting in compulsive behavior, such as addiction. More recently, neuroeconomic perspectives have highlighted the role of dopamine in learning about value, playing a central role in economic decision-making. In both cases, dopamine is generally construed as a 'reward' neurotransmitter and alterations in dopamine function viewed as pathological. However, what constitutes 'normal' dopamine function is ill-defined, or not defined at all. We are developing a different perspective on dopamine that suggests its primary role is to regulate and allocate energy expenditure. Optimal energy expenditure and decision-making is contingent upon environmental conditions. As a consequence, the neuroeconomic functions of dopamine should adapt to different economic environments, making the dopamine system a crucial contributor to behavioral flexibility. It is well-known that the dopamine system is plastic and can up- and down-regulate many of its aspects, but how this is regulated

and what function it may serve is unknown and not systematically studied. In this presentation, I will present a hypothesis suggesting that plasticity in the dopamine system occurs in response to economic conditions in the environment and that this plasticity facilitates adaptive behavior by adjusting parameters regulating learning and decision-making; that is, dopamine plasticity changes how we learn and make decisions, a form of metaplasticity that adapts behavior to the environment.

Session IV

Predictors and consequences of childhood maltreatment: An ecological perspective. *Valentina Nikulina, Ph. D., Queens College and The Graduate Center, CUNY.*

The work in my lab takes on an ecological perspective to examine the consequences of childhood maltreatment and the risk factors for the perpetration of childhood abuse and neglect. This approach takes into consideration: 1) the environment in which maltreatment is occurring; and 2) the individual factors (*e.g.* gender, race, and genes) that may influence the risk of victimization and outcomes for maltreated children. Currently there are two developing areas of research in my lab. The first examines risk factors for the perpetration of physical abuse in two distinct samples, a birth cohort and a sample of undergraduate students at Queens College. The goal of my second line of inquiry is to use a birth cohort to examine middle childhood health consequences of childhood physical abuse. The overarching goal of my work is to add to the field's knowledge of childhood maltreatment in ways that can lead to more effective interventions.

Self-disclosure & social media: reciprocity and the "Passing Stranger Effect" in an anonymous online setting. *Anna Behler¹, Claudia Brumbaugh, Ph.D.^{1,2},*

¹Psychology Department, Queens College, CUNY; ²The Graduate Center, CUNY. Interactions on social media have been of great interest to psychologists in recent years. Sharing personal information with close others via online social networks is extremely commonplace. However, self-disclosure also occurs when individuals are engaging with anonymous others online. This phenomenon is similar to the "passing stranger effect" (Rubin 1974;1975), in which individuals feel less inhibited when meeting strangers because these interactions are not intended to result in longer relationships. The present study proposes that individuals will share more information about themselves and will also experience greater feelings of closeness with an interaction partner dependent upon how anonymous they are made to feel. Participants were placed in either a High Anonymity or Low Anonymity situation,

asked to read an "About Me" target profile of a typical Queens College student, and then instructed to create their own to be shared with other students. Participants' feelings towards the target were assessed through an Interaction Impression Scale. Results revealed that levels of anonymity did, in fact, impact an individual's feelings of closeness to their interaction partner, but did not affect the amount of information that was disclosed. Furthermore, levels of anonymity also impacted how difficult participants felt it was to share personal information.

The infants of Superstorm Sandy: The epigenetic and developmental impact of natural disaster. *Yoko Nomura, Ph.D., Queens College and The Graduate Center, CUNY.*

The Stress in Pregnancy (SIP) Study is an epi/genetically informative neurobehavioral developmental study, partnered with New York Hospital Queens and Mount Sinai Hospital. It has recruited over 600 pregnant women, who are followed throughout their pregnancy and as their young children develop over the first five years. The study aims at uncovering the interplay between child genetic susceptibility and disaster-induced psychosocial stress that mothers experience during pregnancy. The study has focused on a variety of outcomes in infancy and early childhood, including early signs of psychopathology, suboptimal neurobehavioral development, HPA axis functioning, and gene expression. A portion of the SIP Study is currently following a cohort of women exposed to “Superstorm Sandy” and the related devastation at different stages of pregnancy, providing the study with the rare opportunity to investigate the influence of variable timing of prenatal stress on a potential underlying mechanism of fetal programming, via changes in gene expression in-utero. The overarching goals of the study are to understand the impact of stress in pregnancy, chart the course of mental and metabolic disorders from in-utero through birth and early childhood, and further understand the critical periods of development during pregnancy on a molecular level. In this presentation, the study plans and current progress will be discussed.

Psychophysiology of stress in mother and child: The enduring impacts of Superstorm Sandy. *Jessica Buthmann,¹ Jenny Porter², Yoko Nomura, Ph.D.^{2,3},¹Masters in Behavioral Neuroscience Queens College, CUNY, ²Queens College, CUNY; ³The Graduate Center, CUNY.*

This study seeks to reaffirm prior research that demonstrates that stressful life

experiences result in a more pronounced physiological stress response. Over 600 pregnant women, some of whom were negatively impacted by Superstorm Sandy in 2012, were recruited from New York Hospital Queens and Mount Sinai Hospital. These women were re-contacted and assessed with their children at 18, 36, and 42 months postpartum. Assessments included an evaluation of the child's cognitive development, a structured clinical interview of the mother, collection of hair, toenail, saliva, and buccal cell samples from mother and child, and a startle probe. During the startle probe both the mother and the child watched a video with six 90 dB startle stimuli with varying inter-stimulus intervals. Heart rate, respiration, and skin conductance data were collected from mother and child during the startle probe. We hypothesize that women whose lives were negatively impacted by Superstorm Sandy while pregnant will have children with more pronounced stress responses in terms of their heart rate and skin conductance levels to the startle probe, and that women with high levels of anxiety overall will have children with more pronounced stress responses in terms of their heart rate and skin conductance regardless of their exposure to Superstorm Sandy. Finally, we expect to see an interaction between mother's general anxiety level and exposure to Superstorm Sandy that would result in children whose mothers had both a high level of general anxiety and a high level of exposure to Superstorm Sandy having the most pronounced stress responses, as measured by physiological reactivity during the startle probe task.