

19TH ANNUAL
NEUROPSYCHOLOGY RESEARCH DAY

**FRIDAY, APRIL 21ST, 2023
9:30AM-4:30PM (EDT)**

CHORAL ROOM (264) IN THE MUSIC BUILDING @ QUEENS COLLEGE

History and Evolution of the Neuropsychological Test Battery

KEYNOTE ADDRESS

WILLIAM BARR, PHD, ABPP-CN

Professor, Neurology, NYU Grossman School of Medicine
Director, Neuropsychology Division, NYU Langone Health
NYU Langone Comprehensive Epilepsy Center

1:30-2:35PM (EDT)

**SPECIAL PANEL
DEVOTED TO ISSUES
OF DIVERSITY
IN NEUROPSYCHOLOGY
3:30-4:30PM (EDT)**

Acknowledgements

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Queens College Psychology Department, Chair Dr. Jeff Beeler
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in alphabetical order

Priyanka Alluri
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Moderators

Priyanka Alluri
Annalise Caviasco
Melissa Pocsai
Shathani Rampa

Cover design

Melissa Pocsai

Program layout

Rachel Goldman

Nineteenth Annual Neuropsychology Research Day at Queens College, CUNY

- 9:30-9:35 **Opening Remarks**
Nancy Foldi, Ph.D.
Clinical Psychology at Queens College
Queens College and The Graduate Center, City University of New York
- Session I: 9:35-10:50**
Moderator: Annalise Caviasco
Clinical Psychology at Queens College
Queens College and The Graduate Center, City University of New York
- 9:35-9:50 **The impact of the highly palatable properties of food on dopamine release and satiation during naturalistic feeding.** Cayla Murphy¹ (she/her), Devry Mourra^{1,2}, Jeff Beeler^{1,3}, ¹*The Neuroscience Collaborative, The Graduate Center, City University of New York*, ²*New York University Langone Medical Center*, ³*Department of Psychology, Queens College, City University of New York*
- 9:50-10:05 **Preference for Masculinity: The effects of Covid-19 on attraction.** Justin Moyer¹ (they/them), Claudia Brumbaugh^{1,2}, ¹*Department of Psychology, Queens College of the City University of New York*, ²*Department of Psychology, The Graduate Center of the City University of New York*
- 10:05-10:20 **An analysis of the California Verbal Learning Test in explaining the underlying memory impairments seen in Systemic Lupus Erythematosus.** Simran Kang (she/her)^{1,2,3}, Philip Watson³, Meggan Mackay³, Justin Storbeck^{1,2}, ¹*The Graduate Center, City University of New York*, ²*Queens College, City University of New York*, ³*The Feinstein Institutes for Medical Research*
- 10:20-10:35 **Brain Injury & Psychosocial Trauma: Outcomes among justice-involved individuals.** Mahathi Kosuri¹, Casey LaDuke^{1,2}. ¹*The Graduate Center, City University of New York*, ²*John Jay College of Criminal Justice*
- 10:35-10:50 **Did Interpersonal Violence Impact Psychological Functioning of Trauma Survivors Differently During The COVID-19 Pandemic? A Study of Adults from Across the United States.** Marisol Flores-Ortega¹ (she/her), Alexandra Iskhakova¹, Reena Maharaj¹, Victoria Fairchild^{1,2}, Katherine Tineo^{1,2}, Diego A Cordova¹, Sara Babad^{1,2}, Valentina Nikulina^{1,2}, ¹*Queens College, City University of New York*, ²*The Graduate Center, City University of New York*
- 10:50-11:10 Coffee Break in Atrium

Session II: 11:10-12:20

Moderator: Melissa Pocsai

Clinical Psychology at Queens College
Queens College and The Graduate Center, City University of New York

- 11:10-11:35 **The Role of Placenta Gene Expression on the Relationship between Maternal Mental Health During Pregnancy and Subsequent Child Behavioral Outcomes.** Christine L. Ginalis^{1,2} (she/her), Donato DeIngeniis¹, Labiba Aziz¹, Warda Azhar¹, and Yoko Nomura^{1,2,3,4}, ¹*Department of Psychology, Queens College, City University of New York*; ²*Department of Psychology, The Graduate Center, City University of New York*; ³*Department of Neuroscience, Advanced Science Research Center, City University of New York*; ⁴*Department of Psychiatry, Mount Sinai School of Medicine*
- 11:35-11:50 **Exploring Molecular and Genetic Interactions in the Murine Barrel Cortex After Sensory Deprivation during Development.** Katherine Rivera Gómez^{1,2} (she/her) Alicia Barrientos^{1,2}, Victoria Bamwo², Ezekiel Willerson^{1,2}, Joshua Brumberg^{1,2}, ¹*The Graduate Center, City University of New York*, ²*Queens College, City University of New York*
- 11:50-12:05 **Postnatal Appetition Actions of Isomaltulose and Sucrose in C57BL/6 and FVB/N Mice.** Alex Castillo¹ (he/him) Ion Carata¹, Rachel Pines¹, Eli Berglas¹, Serena Joseph¹, Joya Sarker¹, Mirna Nashed¹, Matthew Roland¹, Sebastian Arzayus¹, John I. Glendinning², Anthony Sclafani³, Richard J. Bodnar¹, ¹*Queens College, City University of New York*, ²*Barnard College, Columbia University*, ³*Brooklyn College, City University of New York*
- 12:05-12:20 **The Role of the Medial Prefrontal Cortex (mPFC) in the Acquisition and Expression of Conditioned Approach.** Rudolf Nisanov^{1,2} (he/him), Gabrielle Safier², Nima Patel², Robert Ranaldi PhD^{1,2}, ¹*The Graduate Center, City University of New York*, ²*Queens College, City University of New York*

12:20-1:30 Lunch and Poster Session

Session III: Keynote Address

1:30-2:45

Welcome Address

Nancy Foldi, Ph.D.

Clinical Psychology at Queens College
Queens College and The Graduate Center, City University of New York

Introduction of Keynote Speaker:

Veronica Hinton, Ph.D.

Professor of Psychology
Director of Clinical Training, Clinical Psychology at Queens College
The Graduate Center and Queens College, The City University of New York

Keynote Address:

William B. Barr, Ph.D.

Professor, Department of Neurology, NYU Grossman School of Medicine

Director of the Neuropsychology Division, NYU Langone Health

NYU Langone Comprehensive Epilepsy Center

History and Evolution of the Neuropsychological Test Battery

2:35-2:45 Break

Session IV: 2:45-3:30

Moderator: Priyanka Alluri (she/her)

Clinical Psychology at Queens College

Queens College and The Graduate Center, City University of New York

2:45-3:00 **Latinx Experiences of Discrimination: Examining Cognitive Impacts in Native and Immigrant Samples.** Shana S. Samuel^{1,2} (she/her), Dominika Seblova³, Adam M. Brickman³, Jennifer J. Manly³, Desiree A. Byrd^{1,2}, ¹*The Graduate Center, City University of New York*, ²*Queens College, City University of New York*, ³*Taub Institute for Research on Alzheimer's Disease and the Aging Brain, Columbia University*

3:00-3:15 **Parent-Report of Health-Related Quality of Life of Children with Duchenne Muscular Dystrophy.** Sonia Seehra^{1,2} (she/her), Amanda Kenepp^{1,2}, Shira Russell-Giller^{1,2}, Robert J. Fee³, Veronica J. Hinton^{1,2}, ¹*The Graduate Center, City University of New York*, ²*Queens College, City University of New York*, ³*Department of Neurology, Columbia University*

3:15-3:30 **Motoric Cognitive Risk Syndrome: A Path to Reducing Health Disparities in Early Dementia Diagnosis.** Caroline O. Nester^{1,2} (she/her), Qi Gao³, Cuiling Wang³, Ali Axon⁴, Emmeline Ayers³, Mindy J. Katz³, Carol A. Derby³, Richard B. Lipton³, Joe Verghese³, Laura A. Rabin^{2,3}, ¹*Queens College, City University of New York*; ²*The Graduate Center, City University of New York*; ³*Albert Einstein College of Medicine*; ⁴*Brooklyn College, City University of New York*

Session V: 3:30-4:30

Moderator: Shathani Rampa (she/her)

Clinical Psychology at Queens College

Queens College and The Graduate Center, City University of New York

Panel Discussion

One Step at a Time: Addressing Diversity in Neuropsychology Research

Shana Samuel (she/her)

Mahathi Kosuri

Simran Kang (she/her)

ABSTRACTS

The impact of the highly palatable properties of food on dopamine release and satiation during naturalistic feeding. Cayla Murphy¹ (she/her), Devry Mourra^{1,2}, Jeff Beeler^{1,3}, ¹*The Neuroscience Collaborative, The Graduate Center, City University of New York*, ²*New York University Langone Medical Center*, ³*Department of Psychology, Queens College, City University of New York*

Obesity remains a global public health crisis. This can be attributed to the influence of the Western diet, identified by processed foods that are highly palatable and energy-dense, consisting of large amounts of added sugar and harmful fat content. The hedonic properties of these foods can lead to the compulsive eating and overconsumption behaviors present in obesity and are thought to be reinforced by dopaminergic reward mechanisms. However, how highly palatable foods alter dopaminergic signaling and naturalistic food intake in real time is unclear. Thus, we aimed to assess whether acute access to a diet containing high levels of fat and sugar influences dopaminergic signaling by overriding the satiation and satiety processes. We used a naturalistic free-feeding mouse behavioral paradigm with automatic feeders that measured the feeding patterns of lean D1-Cre (dopamine D1 receptor) mice with exposure to either a grain-based diet or a diet containing a combination of grain and high-fat, high-sugar (HFHS) food pellets. To measure dopamine (DA) and direct medium spiny neuron (dMSN) activity across a meal, we used dual-color fiber photometry. Behaviorally, we hypothesized that mice with access to the HFHS diet will exhibit increased pellet intake and prolonged consumption, reflecting a delay in the mice reaching satiation which initiates the termination of feeding. We predicted that phasic DA release would be increased in response to the HFHS diet, along with increased activity of dMSNs. We found that mice with access to a HFHS diet consumed increased quantities of HFHS pellets and ate more meals when compared to mice fed only a grain-based diet. Notably, these mice had significantly increased dMSN activity during food approach but not during consumption. DA attenuated similarly in both diets, suggesting that there were no effects of a HFHS diet on satiation. These findings may suggest that HFHS pellets increase motivation to approach food, rather than prolonging satiation, consistent with incentive theories of motivation.

Preference for Masculinity: The Effects of Covid-19 on Attraction. Justin Moyer¹ (they/them), Claudia Brumbaugh^{1,2}, ¹*Department of Psychology, Queens College of the City University of New York*, ²*Department of Psychology, The Graduate Center of the City University of New York*

An amalgam of literature finds that communal health and pathogen prevalence affects mate preferences (DeBruine et al., 2010; Beall, 2021). Our goal is to examine how the COVID-19 pandemic affected romantic preferences. Mainstream evolutionary psychology theories maintain that women generally prefer more masculine men, because masculine features indicate higher testosterone, and thus greater genetic fitness (Trivers, 1972). In times of low public health, it is adaptive to mate and reproduce with men who are more genetically fit (DeBruine et al., 2010; Beall, 2021). In the current study, participants will be primed for COVID-19 and rate their attraction to men that vary on masculinity. We predict women's attraction to masculinity will be greater in the Covid compared to the control condition. Research also finds that anxiously attached individuals (i.e., people who have concerns about rejection) are more likely to adopt pandemic-related safety precautions and less likely to compromise genetic fitness traits in a partner, such as masculinity (Alexopoulos et al., 2021). Thus, we predict that anxiously attached women will be even more likely to prefer masculinity when primed with Covid. As the first study to analyze the effects of pandemic concerns on attraction in gay men, we additionally take an exploratory approach to assess the effects of COVID-19 priming in a gay male subsample.

An analysis of the California Verbal Learning Test in explaining the underlying memory impairments seen in Systemic Lupus Erythematosus. Simran Kang (she/her), Justin Storbeck

Objective: Systemic Lupus Erythematosus (SLE) is an autoimmune disorder characterized by the presence of autoantibodies (ABs) that can impact any system in the body, including the central nervous system (CNS). These ABs are directed against *N*-Methyl-D-aspartic acid receptors (NMDARs), specifically the NR2A and NR2B subunits, which are responsible for excitatory neurotransmission. The result of NMDA receptor cell death leads to cognitive dysfunction and emotional disturbance. Memory difficulties are one of the more notable and severe areas of impairment in SLE. However, little is particularly known about the verbal learning dysfunction exhibited in this population. Thus, we sought to identify differences in verbal learning characteristics in people with SLE with or without ABs when compared to healthy individuals.

Participants and Methods: We administered the California Verbal Learning Test: second edition (CVLT-II) to 59 female participants. Of those, 23 were healthy controls (HC), and within those diagnosed with SLE, 24 were AB- and 11 were AB+.

Results: We observed generally that those with little or no AB status, performed worse when compared to HCs on areas of the CVLT such as short-delay free recall, $p = 0.052$; short-delay free recall vs. trial 5, $p = 0.045$; total recognition discrimination, $p = 0.039$; source recognition discrimination, $p = 0.020$; and semantic recognition discrimination $p = 0.023$.

Conclusions: Participants with AB- status had worse performance on measures of learning and memory compared to HCs, specifically measures sensitive to retroactive interference, which can have a decremental effect on learning new information. Impairment on discrimination between words on the CVLT-II was also seen in participants with AB- status compared to HCs, which is a phenomenon that also occurs in patients with frontal lesions. Future directions for this research could involve exploring other AB levels prominent in the frontal cortex of patients with SLE that could be more heavily pronounced than NMDAR ABs, and better explain their worse performance when compared to HCs on measures of learning and memory. Furthermore, analysis of other neuropsychological measures that utilize frontal systems should be compared to aspects of the CVLT-II that also require frontal involvement.

Brain Injury & Psychosocial Trauma: Outcomes Among Justice-Involved Individuals. Mahathi Kosuri¹, Casey LaDuke^{1,2}. ¹*The Graduate Center, City University of New York*, ²*John Jay College of Criminal Justice*.

Justice-involved individuals experience disproportionately high rates of both traumatic brain injuries (TBI) and psychosocial traumas. However, these traumas have yet to be conceptualized together, leaving a chasm of research on the effects of how they effect this vulnerable population. The current study was the first measure the effects of TBIs as well as psychosocial trauma among justice-involved men, within the context of executive functioning, history of justice involvement, and recidivism. A sample of men ($N=95$) from a private correctional facility were given the Ohio State University Traumatic Brain Injury Questionnaire (OSU-TBI-ID), the Lifetime Stressor Checklist- Revised (LSC-R), along with several widely used neuropsychological assessments that measure executive functioning. History of prior incarceration, and recidivism at one-year post-release, were attained through institutional files and available public records, respectively. Bivariate correlations, multivariate ordinary least squares regression, binary logistic regressions, etc. demonstrated that neither TBI nor cumulative psychosocial trauma predicted executive functioning difficulties. Individuals who had a TBI history and psychosocial trauma were found to have an association with prior adult justice involvement. Findings can provide

insight to mental health practitioners and correctional staff education on the significance of cooccurring traumas and help them successfully remain out of the criminal justice system.

Keywords: traumatic brain injury (TBI), trauma, neuropsychological assessment, executive functioning, recidivism, incarceration, criminal justice.

Did Interpersonal Violence Impact Psychological Functioning of Trauma Survivors Differently During The COVID-19 Pandemic? A Study of Adults from Across the United States, Marisol

Flores-Ortega¹ (she/her), Alexandra Iskhakova¹, Reena Maharaj¹, Victoria Fairchild^{1,2}, Katherine Tineo^{1,2}, Diego A Cordova¹, Sara Babad^{1,2}, Valentina Nikulina^{1,2}, ¹*Queens College, City University of New York*, ²*The Graduate Center, City University of New York*

The COVID-19 pandemic precipitated an increase in intimate partner violence (IPV) and mental health difficulties. Previous research shows an association between IPV and psychopathology, however the role of past trauma history in moderating this relationship is unclear. This study explored the interaction of trauma type (interpersonal and non-interpersonal (NIPT)) and IPV (perpetration and victimization) in association with depression, anxiety, and stress. A sample of $N = 324$ participants, ages 19-71 ($M = 37.80$, $SD = 18.11$), was recruited from across the United States through MTurk in April/May 2020. Participants reported IPV behaviors (CTS2 Short Form, Straus & Douglas, 2004), trauma history (PTSD Symptom Scale, APA, 2013), and psychological symptoms (DASS-21, Henry & Crawford, 2005). Hierarchical multiple regressions, controlling for demographic factors, were used to test the moderation. Results revealed significant interactions; for physical assault, compared to lack of intimate physical violence, both interpersonal trauma (IPT) ($\beta = .21$, $p < .05$) and NIPT ($\beta = .27$, $p < .01$) were associated with higher levels of anxiety; for injury, compared to injury-free relationships, NIPT history was significantly associated with depression ($\beta = .24$, $p < .05$), and both IPT ($\beta = .17$, $p < .05$) and NIPT ($\beta = .26$, $p < .01$) were associated with anxiety; and for sexual coercion, compared to coercion-free relationships, NIPT was significantly associated with anxiety ($\beta = .21$, $p < .05$). Findings highlight the psychological impacts of IPV on trauma survivors during the pandemic and suggest a need for targeted interventions to protect those at greater risk.

The Role of Placenta Gene Expression on the Relationship between Maternal Mental Health During Pregnancy and Subsequent Child Behavioral Outcomes

Christine L. Ginalis^{1,2} (she/her), Donato DeIngeniis¹, Labiba Aziz¹, Warda Azhar¹, and Yoko Nomura^{1,2,3,4}, ¹*Department of Psychology, Queens College, City University of New York*; ²*Department of Psychology, The Graduate Center, City University of New York*; ³*Department of Neuroscience, Advanced Science Research Center, City University of New York*; ⁴*Department of Psychiatry, Mount Sinai School of Medicine*

Research supports the association between exposure to prenatal stress and long-term neurodevelopmental consequences on the developing child. To understand one of pertinent underlying mechanisms, the placental gene expression component of the glucocorticoid pathway has been implicated that links maternal stress and the development of fetus/child. Exploiting availability of placental gene expression and longitudinally followed children's developmental data, the objective of this study is to test placental gene expression of HSD11B type 1 and 2 as a possible mechanism of action for the connection between maternal anxiety during pregnancy and subsequent child behavioral outcomes. The study examines mother-child dyads (subsample of $N = 61$) from the Stress in Pregnancy study. Prenatal anxiety was self-reported by the mother via the State-Trait Anxiety Scale during the second trimester of pregnancy. Expression levels of HSD11B type 1 and 2 were profiled in placental tissues collected from the cohort. Child behavioral measures (Externalizing and Internalizing Behaviors)

were measured by the Behavioral Assessment System for Children-2 at ages 3, 4, 5, and 6 years. A series of mediation analyses were utilized to examine the associations. Results showed that in-utero exposure to prenatal anxiety has a lasting impact on the child's behavioral outcomes across developmental time points under investigation. Specifically, HSD11B1, but not HSD11B2, was a significant mediator for the relationship between prenatal anxiety and child's externalizing behaviors, but not internalizing behaviors, at 36 and 48 months. However, the HSD11B1 effects dissipated at 60 and 72 months. It is possible that the shift in significance of the HSD11B1 as a mediator could be because postnatal environmental factors assume greater significance in developing phenotypic characteristics as the child develops, compared to earlier in development when biological influence may be more predominant. Furthermore, across time points there was a significant direct association between prenatal anxiety and child's behavioral outcomes, indicating the importance of investigating other potential mechanisms driving this association. We will discuss a potential genetic pathway mediating maternal risk factors and child behavior while keeping in mind the importance of considering multidimensional mechanisms of action that include genetic factors as well as other biological and environmental variables to gain a more comprehensive understanding of the interplay between prenatal maternal stress, fetal development, and child behavior.

Exploring Molecular and Genetic Interactions in the Murine barrel Cortex After Sensory Deprivation During Development. Katherine Rivera Gómez, Joshua Brumbers, *Affiliations* Sensory deprivation (SD) instigates changes in brain structure, wiring, and connectivity^{1,2}. In humans, severe socioemotional deprivation during development has been linked with abnormal brain connectivity³. SD can directly impact gene expression and, thus, neural patterning and plasticity. In the Central Nervous System (CNS), microglia are responsible for the nourishment of neurons, support synaptogenesis and synaptic signaling, and can contribute to synaptic pruning. Restricting sensory input via whisker trimming reduces perineuronal nets (PNN), the specialized extracellular matrix component surrounding parvalbumin containing fast-firing GABAergic interneurons, which is essential for information processing and cognition. Previous findings from our lab suggest that microglia are active and PNNs are reduced in SD animals compared to wild type. Consistent with the possibility that microglia are acting on the PNNs, yet it is unknown which pathway is triggered in the microglial response to SD. Our experiments target markers from multiple microglia activation states to elucidate novel genetic interactions that establish neural networks when the peripheral input is removed.

Postoral Appetition Actions of Isomaltulose and Sucrose in C57BL/6 and FVB/N Mice. Alex Castillo¹, Ion Carata¹, Rachel Pines¹, Eli Berglas¹, Serena Joseph¹, Joya Sarker¹, Mirna Nashed¹, Matthew Roland¹, Sebastian Arzayus¹, John I. Glendinning², Anthony Sclafani³, Richard J. Bodnar¹, ¹*Queens College, City University of New York*, ²*Barnard College, Columbia University*, ³*Brooklyn College, City University of New York*

Obesity is a global health crisis, influenced by the wide availability of sugar and fat-rich foods and beverages. One approach to combat obesity is to improve the food environment by substituting widely used non-nutritive sweeteners such as sucrose with isomaltulose. Isomaltulose (ISO), is a digestible isomer from sucrose and is equicaloric. ISO is considered a healthy alternative due to its slower absorption rate, leading to increased satiety and lower blood glucose levels. This study compared the postoral preference condition actions of 8% ISO and 8% sucrose in C57BL/6 and FVB/N mice. Experiment 1A found that the preference for 8% SUC over 8% ISO in 24-h 2-bottle choice tests was reversed by adding sucralose and saccharin (SS) mixtures at concentrations of 0.1, 0.05 and 0.025, but not 0.0125% to the ISO. Experiment 1B compared the conditioning actions of 8% ISO + 0.01% SS and

8% SUC in male and female B6 and FVB mice given choice tests with the caloric sugars and noncaloric 0.1% SS. In an initial choice test, the ISO and SUC mice preferred both sugars to SS and increased their sugar preferences in a final test following separate experience with the sugars and SS. This indicates that ISO, like SUC has postoral appetite effects that enhances the sugar's reward value. In Experiment 2, the appetite actions of the two sugars were directly compared by giving mice ISO vs. SUC choice tests before and after separate experience with the two sugars. An intermediate amount of SS (0.05%) was added to the ISO to enhance its taste relative to SUC. Initially the B6 and FVB mice preferred ISO+SS to SUC but reduced or reversed this preference after separate experience with the two sugars. This indicates that SUC has stronger postoral appetite effects than ISO perhaps to its more rapid activation of gut glucose sensors that mediate sugar reward. Some sex differences in sugar conditioning were also observed. Overall, ISO and SUC conditioning was stronger in FVB than B6 mice consistent with findings that both digestive products (fructose and glucose) of the disaccharides condition preferences in FVB, but only glucose is effective in B6 mice.

The Role of the Medial Prefrontal Cortex (mPFC) in the Acquisition and Expression of Conditioned Approach. Rudolf Nisanov^{1,2} (he/him), Gabrielle Safier², Nima Patel², Robert Ranaldi PhD^{1,2}, ¹*The Graduate Center, City University of New York*, ²*Queens College, City University of New York*

A series of experiments were conducted to assess the role of glutamatergic stimulation in the dorsal and ventral regions of the medial prefrontal cortex (mPFC) in both the acquisition and expression of reward-related learning using the conditioned approach paradigm. Rats with surgically implanted cannulas were exposed to Pavlovian conditioning sessions that occurred on 3 alternative days (acquisition) or 7 consecutive days (expression). These 60-min conditioning sessions consisted of 30 pairings of light (CS) and food pellets (US) presented at random schedule. After a two-day break, rats underwent a session with no CS or US and a CS-only test session on the following day. For the acquisition of conditioned approach, NMDA receptors were blocked with AP5 prior to each of the 3 conditioning sessions. For expression, AMPA receptors were blocked with CNQX prior to the CS-only test session. The results from the acquisition experiments show significantly greater responding for the CS (conditioned approach), in rats with inhibited NMDA receptors in both regions of mPFC in comparison to control groups. In the expression experiments, however, inhibition of AMPA receptors in the dorsal region resulted in significant dose-dependent impairment of conditioned approach but in the ventral region, showed dose-dependent facilitation of conditioned approach in comparison to the control group. An RNAscope experiment was conducted to assess whether the CS activated more neurons than the non-CS. The results revealed that the CS resulted in significantly higher neuronal activation than the non-CS and that the neuronal population that was affected were glutamatergic neurons.

Latinx Experiences of Discrimination: Examining Cognitive Impacts in Native and Immigrant Samples

Shana S. Samuel^{1,2}, Dominika Seblova³, Adam M. Brickman³, Jennifer J. Manly³, Desiree A. Byrd^{1,2}, ¹*The Graduate Center, City University of New York*, ²*Queens College, City University of New York*, ³*Taub Institute for Research on Alzheimer's Disease and the Aging Brain, Columbia University*

Background: Discrimination is associated with lower quality of life, higher stress, and worse physical health outcomes in Latinx, but its relationship to cognition is not well understood. Immigration status is a primary social identifier for Latinx people that carries significant stigma, but positive effects related to enculturation may protect immigrant Latinx from the cognitive costs of discrimination. This study

evaluates the relationship between discrimination and cognition in Latinx adult US-natives and immigrants and examines depression as a mediator of this relationship.

Methods: Healthy Latinx participants (n=650) of a prospective cohort study (Offspring) in northern NYC were administered cognitive measures of attention, language, and memory in their preferred language. Discrimination, measured with the Everyday Discrimination Scale and Major Experiences of Discrimination Scale, was chronicity coded to weigh experiences of discrimination according to yearly frequency. An independent-samples t-test was utilized to determine differences in endorsement of discrimination between US-born and immigrant groups. Linear regression models were employed for to assess the relationship between both discrimination measures and each cognitive measure, and the Sobel test was utilized to examine depression as a mediator.

Results: US-born Latinx endorsed more experiences of everyday and major discrimination than Latinx immigrants. Within US natives, everyday experiences of discrimination predicted better semantic and letter fluency, while major experiences of discrimination only predicted better semantic fluency. For immigrants, major experiences of discrimination emerged as a significant predictor of better letter and semantic fluency. Depression did not significantly mediate any of these relationships.

Conclusion: These findings suggest that a complex relationship exists between discrimination and cognition for Latinx living in the US, which may be confounded by nuanced sociodemographic factors like bilingualism, acculturation, and socioeconomic status. Future investigations are required to better understand Latinx experiences of discrimination and implications for brain health.

Parent-Report of Health-Related Quality of Life of Children with Duchenne Muscular Dystrophy.

Sonia Seehra^{1,2}, Amanda Kenepp^{1,2}, Shira Russell- Giller^{1,2}, Robert J. Fee³, Veronica J. Hinton^{1,2}, ¹*The Graduate Center, City University of New York*, ²*Queens College, City University of New York*, ³*Department of Neurology, Columbia University*

Children with Duchenne muscular dystrophy (DMD), an X-linked muscular degenerative disease, have been shown to have a specific cognitive profile that includes decreased verbal span and lower than expected academic skills. Prior work has shown that per their parent's report, health-related quality of life (HRQoL) is lower among these children than in age-matched peers, and parents and providers identify physical ability as the primary factor impacting HRQoL in this population. The purpose of this study was twofold: 1) to examine parent reported school, emotional and social quality of life (QoL), in addition to physical HRQoL among boys with DMD and 2) to determine which factors (including demographic information, child's physical strength, and child's performance on cognitive and academic factors) contribute to HRQOL. Parents of 38 boys with DMD who attended the Columbia University Muscular Dystrophy Clinic (60.5 % Non-Hispanic White, 23.7% Hispanic, 10.3% Black, 5.3 % Asian; income range <\$10,000 to \$199,999) completed the Pediatric Quality of Life Inventory Generic (PedsQL). Children were tested on the Brooke and Vignos measures of motor function by a trained physical therapist and completed a neuropsychological test battery that included measures of nonverbal IQ, academic achievement, and verbal working memory. As expected, overall HRQoL was lower among children with DMD relative to normative population scores (p<0.001) and among the PedsQL subscales, physical QoL subscale score was the lowest (p<0.001). Additionally, children with DMD had lower scores on all PedsQL subscales relative to the normative population indicating that they are at increased risk for generalized declines across HRQoL areas. Regression analyses indicated that, contrary to expectations, measures of physical ability did not contribute significantly to overall Total HRQoL. Findings indicate that among children with DMD, QoL is determined by much more than physical ability alone.

Motoric Cognitive Risk Syndrome: A Path to Reducing Health Disparities in Early Dementia Diagnosis

Caroline O. Nester^{1,2} (she/her), Qi Gao³, Cuiling Wang³, Ali Axon⁴, Emmeline Ayers³, Mindy J. Katz³, Carol A. Derby³, Richard B. Lipton³, Joe Verghese³, Laura A. Rabin^{2,3}, ¹*Queens College, City University of New York*; ²*The Graduate Center, City University of New York*; ³*Albert Einstein College of Medicine*; ⁴*Brooklyn College, City University of New York*

The global population is aging at an unprecedented rate, motivating early identification of older adults at-risk for dementia. Unfortunately, for health disparity populations, dementia is frequently underdiagnosed or detected in advanced disease stages, when it is too late to implement preventative measures. In response to growing public health concerns, Motoric Cognitive Risk Syndrome (MCR) was recently characterized as a prodementia condition that combines slow gait speed and subjective cognitive concerns (SCC), and predicts incident dementia in diverse global populations. MCR status is simple and inexpensive to ascertain, facilitating assessment in low resource or remote settings. Though the slow gait component of MCR diagnosis is well operationalized, there is no standardized approach to SCC assessment. We hypothesized that in older adults with slow gait, the SCC questions that best predicted cognitive decline would most successfully operationalize SCC in MCR. Einstein Aging Study participants ($n=324$; $M_{age}=70.4$; $M_{education}=15$; 67% women; 46.3% non-Hispanic White) completed the Cognitive Change Index (CCI-40) as part of a comprehensive neuropsychological assessment at baseline and over up-to-5 annual follow-ups ($M_{wave}=1.48$). Slow gait was diagnosed based on established MCR criteria (1 SD below age/sex adjusted means). We used linear mixed effects models (LME) for continuous, and generalized LME for binary longitudinal cognitive outcomes, to examine how SCC at baseline predict cognitive decline, adjusting for age, sex, education, race/ethnicity, and depression. The final sample included 43 participants (13%) who met slow gait criteria at baseline. The CCI-40 total score was associated with decline on a global dementia scale ($\beta =0.03$, $p=0.020$). Item-by-item analysis revealed a subset of items that were significantly associated with decline in key neuropsychological domains, including attention, executive functioning, language, and memory. Our findings suggest that consideration of SCC assessment in older adults with slow gait may provide key insight into individuals at risk for cognitive decline. SCC in MCR may be best operationalized through comprehensive assessment across broad cognitive domains.

POSTERS

Authors	Title
Nima Patel, Rudolf Nisanov	Conditioned stimulus increases cell activity in dorsal medial prefrontal cortex
Israt Uddin, Ezekiel Willerson, Giuseppe Cataldo, Joshua C. Brumberg	Degradation of perineuronal nets by the infusion of hyaluronic acid in the barrel cortex of mice
Antonio Tan, Lara Klyachman, Alicia C. Barrientos, Joshua Brumberg, Carolyn Pytte, Shuk C. Tsoi	Distinct microglia response to immune challenge or sensory deprivation differs by cortical layer in the mouse barrel cortex.
Tasmia Ali, Patrick Timken, Daleya Parasram, Kirk Persaud, Robert Ranaldi	The D3 receptor antagonist, SR 21502, reduces cue-induced reinstatement of methamphetamine-seeking in rats
Warda Azhar, Elisa Ceasar, and Yoko Nomura	The effect of prenatal stress on clinical problems and competency at 18-36 months.
Abigail Kaminetsky	The effect of rumination in multilinguals
Barbara Kinsella-Kammerer, Labiba Aziz, Elisa Ceasar, Warda Azhar, & Yoko Nomura	The Effects of Progesterone on Child Cognition at 2 Years
Daniel Fedida, Christopher Enriquez, Ezekiel Willerson, Giuseppe Cataldo, Joshua C. Brumberg	Electrophysiological characterization of neurons in the trigeminal principle sensory nucleus in Prrx11 knockout mice
Leah Kramer, Eliana Eichler, Jacob Zar, Ezekiel Willerson, Giuseppe Cataldo, Joshua C. Brumberg	Grooming in the Prrx11 knockout mouse behavioral differentiation between pain and itch
Joanna Lutchman, Sarah Lutchman, Ezekiel Willerson, Joshua Brumberg	The Impact of Open-Field Testing on the Exploratory Behavior of Mice.
Priyanka R. Alluri, Yoko Nomura	Language Environment and Socioeconomic Disparities in Cognitive Skills of 5-year-olds
Donato DeIngeniis, Labiba Aziz, Christine Ginalis, Yoko Nomura	The Long-Term Impact of Prenatal Maternal PTSD Symptoms on Child Behavioral Problems: Moderating Role of Stress-Reactive Respiratory Sinus Arrhythmia
Kirk Persaud, Rudolf Nisanov, Nima Patel, Zaki Ahmed, Robert Ranaldi	The Pedunculo-ponto-nigral Pathway is Involved in Acquisition of Food-based Conditioned Approach Learning in Rats