**2022 NIDA Virtual Genetics and Epigenetics Cross-Cutting Research Team Meeting Agenda**

April 27\(^{th}\), May 4\(^{th}\), and May 11\(^{th}\), 2022

Zoom and GatherTown

Welcome to the National Institute on Drug Abuse (NIDA) Virtual Genetics and Epigenetics Cross-Cutting Research Team (GECCRT) multi-institute working group with members from the intramural and extramural program staff from NIDA, NIAAA, and NIMH. The goal of the GECCRT is to support the use of genetic and epigenetic tools to uncover new genetic, biochemical, and epigenetic pathways that contribute to substance use disorders. The GECCRT is hosting a multi-day annual meeting, attended by ~250 extramural and intramural investigators who will present their newest studies through talks (Zoom Webinar) and poster sessions (GatherTown). Join us on three consecutive Wednesdays: April 27\(^{th}\), May 4\(^{th}\), and May 11\(^{th}\)!

Please register for the meeting here: [https://seiservices.zoom.us/meeting/register/tJcucO2qqTIsE9N_dnj_6Oq9vhuGnUMnhjNM](https://seiservices.zoom.us/meeting/register/tJcucO2qqTIsE9N_dnj_6Oq9vhuGnUMnhjNM)

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<thead>
<tr>
<th>Day 1 Link:</th>
<th>April 27, 2022</th>
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<tbody>
<tr>
<td><strong>10:30</strong></td>
<td>Welcome by Nora Volkow, MD, Director, National Institute on Drug Abuse</td>
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<td><strong>10:45</strong></td>
<td>Welcome by Anthony K. Wutoh, PhD, RPh, Provost and Chief Academic Officer, Howard University</td>
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<tr>
<td><strong>11:00 to 12:00</strong></td>
<td>Session 1: Data Science in HBCUs: Leveraging Scientific Expertise to Tackle the Genetics of Addiction (Drs. Earl Etienne and Evaristus Nwulia Co-chairs)</td>
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<tr>
<td><strong>11:00</strong></td>
<td>William M. Southerland, PhD</td>
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<td>Howard University</td>
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<td>The Howard University Center of Applied Data Science and Analytics (CADSA)</td>
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<td><strong>11:15</strong></td>
<td>Anil Shanker, MS, PhD</td>
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<td>Meharry Medical School</td>
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<td>Genomics and Health Equity Research: Current Challenges and Opportunities</td>
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<td><strong>11:30</strong></td>
<td>Jennifer Troyer, PhD (video)</td>
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<td>Coordinator, Human Heredity and Health in Africa (H3Africa)</td>
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<td><strong>11:45</strong></td>
<td>Adaku Ofoegbu, PhD</td>
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<td>Howard University</td>
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<td>The Role of Phase II Metabolic Enzymes and Drug Transporters on Buprenorphine Pharmacogenomics in Opioid Use Disorder Management</td>
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<td><strong>12:00</strong></td>
<td>Evaristus Nwulia, PhD</td>
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<td>Comparative Response to Alcohol in Individuals with ADH1B<em>1 and ADH1B</em>3 Polymorphisms</td>
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<td><strong>12:15</strong></td>
<td>Discussion</td>
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<td><strong>12:30</strong></td>
<td>Break</td>
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<td><strong>1:00 to 2:30</strong></td>
<td>Session 2: Tools and Methods to Visualize Genomic Signals in GWAS (Drs. Susan Wright and Amy Lossie, Session Chairs)</td>
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<td><strong>1:00</strong></td>
<td>Xiaoyu Liang, PhD</td>
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<td>University of Tennessee Health Science Center</td>
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<td>A Mediating Role for Epigenetic Aging in the Relationship Between People Who Inject Drugs with HCV and All-Cause Mortality</td>
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<td><strong>1:15</strong></td>
<td>Luis FS Castro-de-Araujo, PhD</td>
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<td>Virginia Commonwealth University</td>
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<td>Bidirectional causal modeling with instrumental variables and data from relatives</td>
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<td><strong>1:30</strong></td>
<td>Brittany Kuhn, PhD</td>
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Medical University of South Carolina

Network-based clustering approach models multi-symptomatic opioid use disorder vulnerability

1:45 Kyle Sullivan, PhD
Oak Ridge National Laboratory
Multi-omic network analysis identifies key neurobiological pathways in opioid addiction

2:00 Andy Chen, PhD
Indiana University School of Medicine
Functional Screening of 3’-UTR Variants Combined with Genome-wide Association Identifies Causal Regulatory Mechanisms Impacting Alcohol Consumption and Alcohol Use Disorder

2:15 Discussion

2:30 Lived Experiences (Drs. Denise Scott and Amy Lossie, Session Chairs)
Jessie Gambrell
Peer Recovery Coach
Program Coordinator for Rusty Hound Wellness Program

3:00 Poster Session A (GatherTown)
4:15 Poster Session B (GatherTown)
5:30 Adjourn

Day 2
Link: May 4, 2022

10:45 AM Welcome

11:00 to 12:30 Session 3: Can Increasing Diversity Lead to Deeper Understanding of Addiction? (Dr. Jonathan Pollock, Session Chair)

11:00 Alexander Hatoum, PhD
Washington University School of Medicine
Cross-Ancestral Genome-wide analysis of Broad Addiction Vulnerability Leads to Additional Insight Over European GWAS Alone

11:45 Discussion

12:00 Break

12:30 Session 4: Leveraging Multi-Species Analyses (Dr. Amy Lossie, Session Chair)

12:30 Andreas Pfenning, PhD
Carnegie Mellon University
What can bats, capybaras, and tree shrews tell us about the genetic basis of addiction?

12:45 Brenda Cabrera-Mendoza, PhD
Yale University School of Medicine
Cross-tissue Evaluation of Epigenetic Clocks in Substance Use Disorder

1:00 Abraham Palmer, PhD
University of California, San Diego
Comparing polygenic signals across species

1:15 Rohan Palmer, PhD
Emory University
Molecular Brain Signatures of Chronic Alcohol Use Across Species

1:30 Robyn Ball, PhD
Jackson Laboratory
Integrating past, present and future mouse and human population genetics of addiction using multi-trait meta-analyses to identify conserved human polysubstance use genes

1:45 Discussion

2:00 to 3:00 Session 5: Understanding Comorbidities and Addiction (Drs. Naimah Weinberg and Udi Ghitza, Session Chairs)
2:00 Amelia Cuarenta, PhD—Talk Cancelled
Temple University
The effect of resource scarcity early in life on the rat basolateral amygdala transcriptome

2:15 Bonnie Alberry, PhD
McGill University
Sex-specific prefrontal cortex gene networks moderate the effect of early adversity on childhood behavior and adult substance abuse

2:30 Ditte Demontis, PhD
Aarhus University
Genome-wide cross-disorder analysis of ADHD and cannabis use disorder and cannabis use

2:45 Discussion

3:00 Poster Session C (GatherTown)

4:15 Poster Session D (GatherTown)

5:30 Adjourn

Day 3
Link: May 11, 2022

11:00 Welcome

11:15 to 12:30 Session 6: Epigenetics, Gene Regulation and the SUD Brain (Dr. Jean Lud Cadet, Session Chair)

11:15 Consuelo Wals-Bass, PhD
University of Texas Health Science Center at Houston
Postmortem brain multi-omic profiling and vertical data integration in cocaine and opioid use disorder

11:30 Jessica Childs, PhD
University of California, Irvine
Dominant negative of transcription factor NR4A2 in medial habenula attenuates reinstatement of cocaine self-administration in mice

11:45 Delaney Fischer, Graduate Student
University of Pennsylvania
Investigating the transcriptomic and epigenomic profile of the mouse striatum following cocaine exposure

12:00 Erin Calipari, PhD
Vanderbilt University
Histone acetyltransferase KAT2A is a critical epigenetic regulator of cocaine responses in the nucleus accumbens

12:15 Discussion

12:30 Break

1:00 Session 7: The Power of Single Cell Analyses (Dr. John Satterlee, Session Chair)

1:00 ZhuZhu Zhang, PhD
The Salk Institute
Single-cell characterization of epigenomic remodeling in cocaine self-administration in mice

1:15 Ming-Fen Ho, PhD
Mayo Clinic
Single cell transcriptomics reveals distinct transcriptional response to oxycodone and buprenorphine by iPSC-derived brain organoids from patients with opioid use disorder

1:30 Francesca Telese, PhD
University of California, San Diego
Computational analysis of snATAC-seq from amygdala reveals cell type-specific chromatin regions associated with cocaine addiction

1:45 BaDoi Phan, MSTP Student
University of Pittsburgh
Single cell multi-omics of the rhesus macaque striatum reveal regulatory mechanisms underlying the genetic basis of addiction

2:00 Discussion

2:15 Wrap Up

2:30 Poster Session E (GatherTown)

3:45 Poster Session F (GatherTown)

5:00 Adjourn