National Institute on Drug Abuse
Summer Research Internship Program
2025

Applications due Monday, January 6, 2025, at 11:59 PM PST

Program Email: nsrip@nih.gov

Program Overview:

The NIDA Summer Research Internship Program offers internship opportunities to increase diversity in the substance use and addiction-related research workforce. The program introduces undergraduate students (aged 18 and older) to substance use and addiction research through eight-week internships with NIDA-affiliated scientists at research institutions across the U.S. Projects may involve laboratory work, data analysis, formal courses, and participation in lab meetings, among other research activities. Since its launch in 1997, the program has hosted over 1,400 students

Eligibility:

- Must be at least 18 years old by May 31, 2025
- Must be U.S. citizens or permanent residents
- Open to full-time sophomores, juniors, and seniors (including those graduating in 2025)
- Must be available to work full-time for eight consecutive weeks over the summer

Please note: Returning interns are eligible by invitation only.

Support Provided:

NIDA partners with Rose Li & Associates, Inc. (RLA) to manage intern payments, including:

- $15/hour, up to a maximum of $4,800 for eight weeks
- Up to $2,500 for housing reimbursement (additional housing reimbursement considered on a case-by-case basis with documentation)
- Up to $500 for travel expenses (additional housing reimbursement considered on a case-by-case basis with documentation)

NIDA does not cover costs for conference attendance, meals, utilities, or household furnishings. Interns should consult RLA for clarification on reimbursable expenses.

Housing:

Interns are responsible for securing housing for the duration of the internship if they do not live near their internship site. The program guide will specify whether on-campus or off-campus housing is available. If on-campus housing includes meals, separate documentation for housing costs must be provided, as the program does not cover meal expenses. RLA reimburses up to $2,500 for housing costs with proper documentation of these expenses and additional support is available on a case-by-case basis

Intern agreement:

Participants must:
- Work closely with their internship site supervisor to determine internship start/end dates, arrange housing and travel accommodations, and obtain any preparatory materials prior to the start of the internship
- Submit documentation of housing and travel expenses to NIDA's contractors, Rose Li & Associates, Inc. for reimbursement
- Adhere to lab policies, be punctual, and respond to all correspondence from NIDA, Rose Li & Associates, Inc. and/or internship site staff within 48 hours
- Complete the full 8-week internship and provide your supervisor with advanced notice when requesting any changes to your schedule
- Track and report their hours accurately

- Be aware of tax liabilities as interns are considered self-employed individuals
- Present their research at the virtual NIDA Summer Research Internship Program Project Showcase in August 2025

Application Process:

Complete all sections of the application, including selecting three preferred internship sites from the program guide, and explain how each aligns with your research interests. Application materials include:

- Completed application
- Unofficial transcripts in PDF format
- Two letters of recommendation **on letterhead** submitted electronically

Applications and supporting materials must be submitted by Monday, January 6, 2025, at 11:59 PM PST. Ensure letters of recommendation are submitted on time, and contact Julie Huffman (nsrip@nih.gov) if any issues arise. To request letters of recommendation, complete the applicant and references information sections and click the request for references button.

Applicants can update and submit their applications multiple times before the deadline. Once applicants submit their application the first time, they will receive a link to edit their applications as many times as needed before the deadline (Monday, January 6, 2025, at 11:59 PM PST).

Selection Criteria:

Interns are chosen based on:

- Educational and career goals, Research interests
- Accomplishments
- Recommendation letters
- Alignment with program priorities
- Site Justifications

Contact:

If you have additional questions, please feel free to contact Julie Huffman, nsrip@nih.gov, phone 301-443-9798.

Site Number	State	Institution	Project Title	Housing Availability
1.	Alabama	Auburn University	In vitro assessment of kratom pharmacokinetic CYP interactions with HIV ART drug metabolism	Off Campus Housing Only
2.	Alabama	The University of Alabama at Birmingham	Targeting Tiam1-mediated synaptic plasticity for the relief of opioid tolerance	Off Campus Housing Only
3.	Arizona	Arizona State University	Substance use HeAlth REcord Sharing	On Campus Housing Available
4.	Arizona	Arizona State University	Leveraging Community-Engaged Research to Co-Create Youth Vaping Prevention with Urban Indigenous Communities of the Southwest	On Campus Housing Available
5.	Arizona	University of Arizona	Methadone Patient Access to Collaborative Treatment (MPACT)	Off Campus Housing Only
6.	Arkansas	University of Arkansas for Medical Sciences	Developing and Testing Innovative Care Pathways for Screening and Treatment of OUD/PTSD in Jails	Off Campus Housing Only
7.	Arkansas	University of Arkansas for Medical Sciences	Effectiveness, Implementation, and Cost of Cognitive Processing Therapy in Prisons	Off Campus Housing Only
8.	Arkansas	University of Arkansas for Medical Sciences	Translational Training in Addiction	On Campus Housing Available
9.	California	Alcohol Research Group, Public Health Institute	Trauma, substance use, and incarceration over the lifecourse: Identifying social supports to promote resiliency in a US national cohort study	Off Campus Housing Only
10.	California	CDU	The Next Generation Substance Abuse Research Training at Charles R. Drew University (CDU) and UCLA (NGSART-CU)	Off Campus Housing Only
11.	California	Instanosis Inc.	Addressing Emerging Drug Threats with InstaStrip Rapid Tests	Off Campus Housing Only
12.	California	RAND	Comparing Two Federal Financing Strategies on Treatment Penetration and Sustainment	Off Campus Housing Only
13.	California	San Diego Biomedical Research Institute	Molecular effects of cannabinoids on the Blood Brain Barrier in HIV-infected brain	Off Campus Housing Only
14.	California	San Francisco State University	Substance Use and Perceived Discrimination Based on Socioeconomic Status Among Adolescents	Off Campus Housing Only
15.	California	Stanford School of Medicine	A Patch Circuit Dissection of Opioid Addiction	Off Campus Housing Only

16.	California	Stanford University School of Medicine	Research and Mentoring in Innovative Patient Oriented Pain and Opioid Science	Off Campus Housing Only
17.	California	UCLA	Development of Tetrahydrocannabivarin as a Treatment for Smokers	Off Campus Housing Only
18.	California	UCSF	The impact of early life opioid exposure on the molecular and functional trajectories of septal cell types	Off Campus Housing Only
19.	California	University of California San Diego	Policy Dissemination Strategies to Improve the Use of Research Evidence in Medicaid Benefits for Opioid Use Disorder Treatment	Off Campus Housing Only
20.	California	University of California Santa Barbara	Incubated drug-craving and neurochemical interactions	Off Campus Housing Only
21.	California	University of California, Irvine	Teaching Youth & Families Self-Regulation Skills to Disrupt the Impact of Adverse Childhood Experiences: Preventing Substance Use in Adversity-Impacted Youth	On Campus Housing Available
22.	California	University of California, Irvine	Impact of Cannabinoid Across the Lifespan (ICAL): Behavioral Project	Off Campus Housing Only
23.	California	University of California, Irvine	Effects of Early Life Adversity on Substance Use Problems in Adolescents: Biobehavioral Risk Mechanisms	Off Campus Housing Only
24.	California	University of California, Los Angeles, Department of Family Medicine, Center for Behavioral and Addiction Medicine	Trajectories of socially regulated gene expression, methamphetamine use, and viral load among HIV-positive men who have sex with men (MSM) receiving contingency management	Off Campus Housing Only
25.	California	University of California, San Francisco	WISH (Women, Intersectionality, Substance Use and HIV)	Off Campus Housing Only
26.	California	University of California, San Francisco	Short-term and long-term effects of methamphetamine exposure on residual viral transcription during treated HIV disease	Off Campus Housing Only
27.	Colorado	University of Colorado	Improving pain management and opioid safety through a systemwide, data driven evaluation of the CDC opioid prescribing guideline best practices and the use of Clinical Decision Support	Off Campus Housing Only

28.	Colorado	University of Colorado at Boulder	Rocky Mountain Cannabis Research Center - Cannabidiol and Older Adult Cannabis Users: A Randomized, Placebo Controlled Study	Off Campus Housing Only
29.	Colorado	University of Colorado Boulder	ERP studies of acute influences of THC and CBD on memory encoding and retrieval processes	Off Campus Housing Only
30.	Connecticut	University of Connecticut	Optimizing a Just-in-Time Adaptive Intervention to Increase Uptake of Chemsex Harm Reduction Services in MSM: A Micro-randomized Trial	Off Campus Housing Only
31.	Connecticut	Yale School of Medicine	Evaluating the potential impact of a menthol ban in cigarettes and e-cigarettes among current menthol smokers	On Campus Housing Available
32.	Connecticut	Yale School of Medicine	A Family-Based Digital Intervention to Address Early Substance Misuse among Black Adolescents	Off Campus Housing Only
33.	Connecticut	Yale School of Medicine, Department of Internal Medicine	Integrated eHealth for HIV and Substance Use Disorders in Justice-involved Women	Off Campus Housing Only
34.	Connecticut	Yale School Of Medicine, Dept of Psychiatry	Culturally-responsive community-driven substance use recovery for Black and Latinx populations	Off Campus Housing Only
35.	District of Columbia	The Catholic University of America	Engineering Bacteriophage T4 as a Targeted Gene Therapy Drug for in vivo HIV Cure	Off Campus Housing Only
36.	Florida	Florida International University	OPTIMIZING PREP ADHERENCE IN SEXUAL MINORITY MEN WHO USE STIMULANTS	Off Campus Housing Only
37.	Florida	Florida International University	Function of astrocytes autophagy in brain homeostasis and opioid-induced maladaptive behavior and addiction, in the context of HIV	On Campus Housing Available
38.	Florida	PASCALL SYSTEMS, INC.	Developing novel technologies to monitor nociception and opioid administration during surgery and general anesthesia in order to minimize post-operative opioid requirements	Off Campus Housing Only
39.	Florida	University of Florida	Substance Abuse Training Center in Public Health	On Campus Housing Available
40.	Florida	University of Florida, College of Medicine, Department of Pathology, Immunology and Laboratory Medicine	Innovative In-Situ Imaging Techniques for the Visualization of CNS associated HIV reservoirs in the Context of Substance Abuse	Off Campus Housing Only

41.	Georgia	Georgia Center for Developmental Science- UGA	Building Resilience and Nurturing Children's Health (BRANCH)	Off Campus Housing Only
42.	Georgia	Georgia State University	Delineating the epigenetic and neural mechanisms by which early life scarcity alters motivated behavior	Off Campus Housing Only
43.	Georgia	Mercer University	Norepinephrine modulates medial prefrontal cortex neural ensembles that control cocaine seeking behavior	Off Campus Housing Only
44.	Illinois	Northwestern University	Network Canvas 2.0: Enhancing network data capture for drug use and HIV research	Off Campus Housing Only
45.	Illinois	Northwestern University	Community Engagement: A Short Course to Optimize Research Endeavors (CE-SCORE)	Off Campus Housing Only
46.	Illinois	Northwestern University	SILOS: Understanding Structural Inequities across Layers Of Social-Context as Drivers of HIV and Substance Use	Off Campus Housing Only
47.	Illinois	Northwestern University	Leveraging data synthesis to identify optimal and robust strategies for HIV elimination among substance-using MSM	Off Campus Housing Only
48.	Illinois	Northwestern University Feinberg School of Medicine	Pilot Implementation of Measurement-Based Care in Community Opioid Treatment Programs	Off Campus Housing Only
49.	Illinois	Northwestern University Feinberg School of Medicine	Improving Outcomes of Adolescent in Residential Substance Use Treatment via a Technology-Assisted Parenting Intervention	Off Campus Housing Only
50.	Illinois	Northwestern University Feinberg School of Medicine (Chicago)	Development and Preliminary Testing of an Adjunct Smartphone App to Reduce Marijuana Use in Court-Involved, Non-Incarcerated Adolescents	Off Campus Housing Only
51.	Illinois	Northwestern University, Feinberg School of Medicine	HEALthy Brain and Child Development (HBCD) Study	Off Campus Housing Only
52.	Illinois	University of Chicago	Hippocampal memory mechanisms in nicotine relapse	Off Campus Housing Only
53.	Illinois	University of Illinois Chicago	Selective Targeting of Nicotinic Acetylcholine Receptor Subtypes for Cocaine Use Disorder	Off Campus Housing Only
54.	Kentucky	Northern Kentucky University	GluN2B subunit as mediator of risky choice and resurgence of cocaine seeking	Off Campus Housing Only
55.	Kentucky	University of Kentucky	Neurobehavioral mechanisms underlying xylazine and fentanyl co-use and withdrawal	On Campus Housing Available

56.	Kentucky	University of Kentucky	Rapid Actionable Data for Opioid Response in Kentucky	On Campus Housing Available
57.	Louisiana	LSU Health Sciences Center New Orleans	A dynamic diversity of dopamine neurons	On Campus Housing Available
58.	Maine	The Jackson Laboratory	Establishment and Characterization of Novel Mutant Mouse Models for the Addiction Research Community	On Campus Housing Available
59.	Maryland	Johns Hopkins University	Project SHIELD: Police Education Partnership to Support Public Health in Kentucky	Off Campus Housing Only
60.	Maryland	Maryland Treatment Centers	Peer Recovery Support Services for Individuals in Recovery Residences on MOUD	Off Campus Housing Only
61.	Maryland	UMB	Cocaine Abstinence or Reduced Use May Retard Alterations in Brain Structure and Function, and Associated Cognitive Changes among African American Cocaine Users with HIV	Off Campus Housing Only
62.	Maryland	University of Maryland	16/24 Healthy Brain and Child Development National Consortium	Off Campus Housing Only
63.	Maryland; New York	Friends Research Institute; NY State Office of Mental Health	Addressing racial disparities in opioid overdose deaths using an open source peer recovery coach training and mobile health platform	Off Campus Housing Only
64.	Massachusetts	Boston Children's Hospital	Developing a Telehealth + mHealth Cannabis Use Intervention for Young Adults (MOMENT-V)	Off Campus Housing Only
65.	Massachusetts	Boston Medical Center	Researching Effective Strategies to Prevent Opioid Death (RESPOND)	Off Campus Housing Only
66.	Massachusetts	Boston University Chobanian and Avedisian School of Medicine	Mitigating the Impact of Stigma and Shame as a Barrier to Viral Suppression Among MSM Living with HIV and Substance Abuse Disorders	Off Campus Housing Only
67.	Massachusetts	Brigham and Women's Hospital	Semaglutide for the treatment of opioid use disorder: A pilot randomized trial	Off Campus Housing Only
68.	Massachusetts	Fenway Health	Smart Steps: A context-aware adherence intervention to improve PrEP adherence among men who have sex with men (MSM) with substance use disorder	Off Campus Housing Only
69.	Massachusetts	Massachusetts General Hospital	The neuropharmacology of brain activation during stages of drug abuse	Off Campus Housing Only
70.	Massachusetts	McLean Hospital	The Role of Behavior Therapy Combined with Buprenorphine for Opioid Use Disorder	Off Campus Housing Only

71.	Massachusetts	McLean Hospital / Harvard Medical School	Improving Treatment Engagement in Individuals with Co- occurring Substance Use and Psychosis: A Telemedicine Family- Based Approach	Off Campus Housing Only
72.	Massachusetts	Northeastern University	Systems genetics of premorbid and cocaine use traits in a rat reduced complexity cross	On Campus Housing Available
73.	Massachusetts	Northeastern University	Project SHIELD: Police Education Partnership to Support Public Health in Kentucky	Off Campus Housing Only
74.	Massachusetts	The Baker Center for Children and Families	Community-driven, drug prevention implementation strategies for Native Hawaiian and Pacific Islander youth in rural Hawai'i	Off Campus Housing Only
75.	Massachusetts	UMass Chan - Baystate	Conversations can save lives: TALKing About Buprenorphine & methadone for Opioid Use Treatment Initiation (TALK ABOUT)	Off Campus Housing Only
76.	Michigan	University of Michigan School of Public Health	The Impact of Surgery on Outcomes for Patients Taking Medications for Opioid Use Disorder	On Campus Housing Available
77.	Michigan	Wayne State University	An Examination of the Joint Contributions of Socioeconomic Disadvantage, Genetics, and COVID-19 on the Development of Delay Discounting and Substance Use Across Adolescence	Off Campus Housing Only
78.	Michigan	Wayne State University	The effects of gestational opioid exposure on the maternal brain, behavior and microbiome	On Campus Housing Available
79.	Minnesota	University of Minnesota	Psychopharmacological effects of cannabidiol on responses to stress and nicotine withdrawal	On Campus Housing Available
80.	Mississippi	University of Mississippi	Ionic liquid-assisted drug delivery to brain reservoirs for treatment of neuroHIV	On Campus Housing Available
81.	Mississippi	University of Mississippi	Vulnerability and Persistence of Neuroinflammation and Behavioral Deficits from Developmental Cannabinoid Exposure	On Campus Housing Available
82.	Missouri	Washington University in Saint Louis	Cannabis, HIV and Mental Processing Systems (CHAMPS)	Off Campus Housing Only
83.	Missouri	Washington University School of Medicine	Testing the feasibility and acceptability of social media and digital therapeutics to decrease vaping behaviors	On Campus Housing Available
84.	Montana	University of Montana	Reducing opioid misuse among urban Indigenous young adults in	On Campus Housing Available

			Montana using a culturally centered intervention	
85.	Nebraska	University of Nebraska Medical Center	Epigenetic regulation of astrocyte-specific NLRP6 inflammasome and PANoptosis in HIV Tat and methamphetamine-mediated neuroinflammation	Off Campus Housing Only
86.	Nebraska	University of Nebraska Medical Center	Mechanistic studies of opiate withdrawal-induced sleep disturbances	Off Campus Housing Only
87.	Nebraska	University of Nebraska Medical Center	HIV Tat and Opiate-mediated aberrations in glial-neuronal crosstalk: Implications for the role of extracellular RNA in HAND	Off Campus Housing Only
88.	Nebraska	University of Nebraska Medical Center	Sex differences in modulating HIV/SIV reservoirs in the context of opioids	On Campus Housing Available
89.	Nevada	University of Nevada, Las Vegas	award Development of a digital therapeutic targeting anxiety sensitivity to reduce PTSD-SUD in women presenting for emergency care after sexual assault.	On Campus Housing Available
90.	New Jersey	Rutgers	Cannabis, HIV and Mental Processing Systems (CHAMPS)	Off Campus Housing Only
91.	New Jersey	Rutgers Cancer Institute of New Jersey	Using Mobile Technology to Examine Mechanisms Linking Sleep and Smoking Cessation	Off Campus Housing Only
92.	New Jersey	Rutgers New Jersey Medical School..	The Epidemiology of the Weiss Cohort Project	Off Campus Housing Only
93.	New Jersey	Rutgers University Institute for Nicotine & Tobacco Studies	The C'RILLOS Project: Impact of Tobacco Regulatory Policy on Dynamic Use of Exclusive, Dual or Poly Cigar and Other Tobacco Product Use among Young Adults	On Campus Housing Available
94.	New York	Albert Einstein College of Medicine	Computational Tools for assessing mechanisms and functional relevance of divisive normalization	Off Campus Housing Only
95.	New York	Hunter College, City University of New York	Couples Motivational Interviewing to reduce drug use and HIV risk in vulnerable male couples	Off Campus Housing Only
96.	New York	Icahn School of Medicine at Mount Sinai	Determining the role of tripartite cell populations in THC-induced behavioral changes	Off Campus Housing Only
97.	New York	Icahn School of Medicine at Mount Sinai	Molecular underpinnings of the developmental Effects of Cannabis	Off Campus Housing Only
98.	New York	New York University Grossman School of Medicine	Person-centered quality measurement and management in a system for addictions treatment in New York State	Off Campus Housing Only
99.	New York	New York University School of Medicine	Dissection of spatiotemporal activity from large-scale, multi-	Off Campus Housing Only

			modal, multi-resolution hippocampal-neocortical recordings	
100.	New York	New York University School of Medicine	8/24 The HEALthy Brain and Child Development National Consortium	Off Campus Housing Only
101.	New York	NYU Langone Medical Center	Investigating the Ketamine Landscape: Availability, Medical and Recreational Use, and Effects	On Campus Housing Available
102.	New York	NYU Langone Medical Center	New psychoactive substance exposure among NYC nightclub and festival attendees	On Campus Housing Available
103.	New York	NYU School of Medicine	Development of a novel polysubstance assessment tool for vulnerable subpopulations	On Campus Housing Available
104.	New York	NYU School of Medicine	Implementation of Overdose Prevention Practices in Permanent Supportive Housing	On Campus Housing Available
105.	New York	Renaissance School of Medicine, Stony Brook Univer	Opioids and Maternal Brain-Behavior Adaptation During the Early Postpartum	On Campus Housing Available
106.	New York	Stony Brook Renaissance School of Medicine	Neuromelanin MRI: A tool for non-invasive investigation of dopaminergic abnormalities in adolescent substance use.	Off Campus Housing Only
107.	New York	University at Buffalo	Dopamine Neuronal Microcircuits Controlling Methamphetamine Seeking Behavior	On Campus Housing Available
108.	New York	Weill Cornell Medicine	Expansion of Mail-Delivered Harm Reduction Services in the U.S.	Off Campus Housing Only
109.	New York	Weill Cornell Medicine	Delivery of Addiction Treatment for Medicaid Enrollees with Serious Injection-Related Infections	Off Campus Housing Only
110.	North Carolina	University of North Carolina at Chapel Hill	Developmental Pathophysiology of Adverse Patterns of Substance Use in Adolescents with Anxiety	On Campus Housing Available
111.	North Carolina	University of North Carolina at Chapel Hill	Promoting Collaborative Research on Human Connectome Analysis for Substance Use Disorders	Off Campus Housing Only
112.	North Carolina	University of North Carolina Wilmington	Transfer of function across equivalence classes: Implications for substance use	On Campus Housing Available
113.	North Carolina	Wake Forest University School of Medicine	Drd3 transcript variants and cocaine self-administration	Off Campus Housing Only
114.	Ohio	Abigail Wexner Research Institute at Nationwide Children's Hospital	Evaluating the impact of fentanyl test strip use among rural and urban populations	On Campus Housing Available
115.	Ohio	Case Western Reserve University	CWRU Center for Excellence on the Impact of Substance Use on HIV	On Campus Housing Available

116.	Ohio	Miami University	Cholinergic interneuron regulation of opioid-related behaviors	Off Campus Housing Only
117.	Ohio	Ohio State University	Behavior-based discovery of small-molecule modulators of neurochemical signaling pathways that underlie addiction	On Campus Housing Available
118.	Ohio	The Ohio State University	Opioid and SUD Data Enclave (O-SUDDEn): Bringing real-time data to the opioid crisis	Off Campus Housing Only
119.	Ohio	University of Cincinnati College of Medicine	Omics analysis of HIV during synthetic opioid exposure	On Campus Housing Available
120.	Ohio	University of Cincinnati College of Medicine	Role of prelimbic cortical endocannabinoid signaling in enhanced cocaine-seeking behavior following combined repeated stress and cocaine use in rats	On Campus Housing Available
121.	Oregon	Oregon Health & Science University	Examining the Effects of Medicaid Managed Care Organizations' Entries and Exits for Medicaid Enrollees with Substance Use Disorders	Off Campus Housing Only
122.	Pennsylvania	Bryn Mawr College	Nicotine Vaping and Electronic Nicotine Delivery Systems Addiction Treatment through Innovative E-Vape Administration of Cytisine to Enhance Patient Adherence and Treatment Completion.	On Campus Housing Available
123.	Pennsylvania	Drexel College of Medicine	Innovative In-Situ Imaging Techniques for the Visualization of CNS associated HIV reservoirs in the Context of Substance Abuse	Off Campus Housing Only
124.	Pennsylvania	Penn State College of Medicine	Circuit-specific molecular mechanisms in fentanyl use and relapse	Off Campus Housing Only
125.	Pennsylvania	Temple University	HIV, Methamphetamine and Human iPSC-derived Microglia-containing Cerebral Organoids	Off Campus Housing Only
126.	Pennsylvania	Temple University Lewis Katz School of Medicine	Kappa Opioid Receptor in Paraventricular Nucleus of Thalamus	Off Campus Housing Only
127.	Pennsylvania	University of Pennsylvania	Title: Combining Pregabalin with Lofexidine: Can it Increase the Success of Transition to Naltrexone?	On Campus Housing Available
128.	Pennsylvania	University of Pennsylvania	Integrating brain, neurocognitive, and computational tools in Opioid Use Disorder (OUD) to characterize executive function and to predict clinical outcomes	Off Campus Housing Only

129.	Pennsylvania	University of Pittsburgh	Impact of collaborative care for pregnant persons with opioid use disorder in low-resource obstetric settings	Off Campus Housing Only
130.	Pennsylvania	University of Pittsburgh	HEALing Measurement Center: Enhancing Opioid Use Disorder Recovery through Measurement Based Care	On Campus Housing Available
131.	Pennsylvania	University of Pittsburgh Medical Center - Magee and Children's hospitals	Multimodal Fetal and Placental Imaging and Biomarkers of Clinical Outcomes in Opioid Use Disorder	On Campus Housing Available
132.	Rhode Island	Alpert Medical School at Brown University	Injectable Extended-Release Buprenorphine (XR-B) in a Correctional Setting: A Pilot Randomized Controlled Trial	On Campus Housing Available
133.	Rhode Island	Brown University	Using Implementation Interventions and Peer Recovery Support to Improve Opioid Treatment Outcomes in Community Supervision	On Campus Housing Available
134.	Rhode Island	Brown University School of Public Health	The Impact of Social-Contextual Stressors on Psychopharmacological Mechanisms of Smoking Cessation and Relapse among Socioeconomically Disadvantaged Young Adults Who Smoke Cigarettes	Off Campus Housing Only
135.	Rhode Island	Warren Alpert Medical School of Brown University & EP Bradley Hospital	Investigating mechanisms underpinning outcomes in people on opioid agonist treatment for OUD: Disentangling sleep and circadian rhythm influences on craving and emotional regulation.	Off Campus Housing Only
136.	South Carolina	Medical University of South Carolina	Integrated Treatment for Opioid Use Disorder and Posttraumatic Stress Disorder	Off Campus Housing Only
137.	South Carolina	Medical University of South Carolina	RTMS manipulates imbalanced drive-reward and executive control circuitry for smoking cessation	Off Campus Housing Only
138.	Texas	Texas A&M University College of Medicine	Oxytocin Neurotransmission Overcomes Sleep Apnea-Related OIRD Hypersensitivity	On Campus Housing Available
139.	Texas	The University of Texas at Dallas	Vagus Nerve Stimulation Modulates Synaptic Plasticity in the Rat Prefrontal Cortex during the Extinction of Drug-seeking	On Campus Housing Available
140.	Texas	The University of Texas at El Paso	Sex Differences and The Influence of Ovarian Hormones on the Mechanisms that Promote Nicotine Withdrawal	On Campus Housing Available

141.	Texas	University of Texas	Randomized trial of a data-driven technical assistance system for drug prevention coalitions	On Campus Housing Available
142.	Texas	University of Texas at El Paso	Development of NLRP3 inhibitors for HIV-associated neuroinflammation in cocaine use.	Off Campus Housing Only
143.	Texas	University of Texas Medical Branch	Novel Addiction Neurocircuits in Cocaine Taking	Off Campus Housing Only
144.	Texas	University of Texas Medical Branch	5-HT2 Receptor Allosterism in Cocaine Use Disorder	Off Campus Housing Only
145.	Texas	University of Texas Medical Branch	Frustration effects on drug taking	Off Campus Housing Only
146.	Virginia	George Mason University	Efficacy and Neurobiological Mechanisms of a Parenting-Focused Mindfulness Intervention to Prevent Adolescent Substance Use	Off Campus Housing Only
147.	Virginia	Virginia Commonwealth University	Reprogramming KZFP function to understand drug-specific transcription and behavior	On Campus Housing Available
148.	Virginia	Virginia Commonwealth University School of Medicine	Long-term microglia-targeted endogenous retrovirus-like particle (ERVLP) delivery of Cas12f editor to cure HIV	Off Campus Housing Only
149.	Virginia	Virginia Tech	Towards treatment for the complex patient: investigations of low-intensity focused ultrasound.	On Campus Housing Available
150.	Washington	University of Washington	Brain and behavior correlates of prenatal cannabis exposure	On Campus Housing Available
151.	Washington	University of Washington	Effects of Direct and Vicarious Discrimination on Alcohol and Cannabis Cravings: Virtual Reality Experiment	On Campus Housing Available

Site # 1

Principal Investigator: Angela I. Calderon

Institution: Auburn University, Auburn, AL

Research Keywords: Kratom; Polydrug use; HIV antiretroviral therapies (ART); Pharmacokinetic interactions; Cytochromes P450 (CYPs)

Project Title: In vitro assessment of kratom pharmacokinetic CYP interactions with HIV ART drug metabolism

Project Description: Determining human serum protein binding of kratom alkaloids. Since displacement of HIV ART drugs from plasma proteins (such as human serum albumin) can be another cause of kratom-drug interactions, the extent of plasma protein binding of mitragynine and all other major kratom alkaloids will be determined. As we reported previously, rapid equilibrium dialysis and LC-MS/MS will measure the binding of each kratom alkaloid at concentrations clinically relevant to human plasma proteins from pooled donors. For comparison, serum protein binding of HIV ART drugs at average steady-state concentration will also be determined. Briefly, 200 µL of each test compound (10 µM) in pooled human plasma will be added to a rapid equilibrium dialysis device and placed in PBS at 37°C with orbital shaking. After equilibrium is achieved, aliquots will be removed from the buffer and plasma chamber, and test-compound concentrations will be determined after protein precipitation and extraction using LC-MS/MS. The corresponding data analysis will be performed.

The undergraduate student will evaluate how kratom alkaloids affect the binding of HIV ART drugs and human plasma protein binding. The human plasma protein binding will be a parameter that can be used to study the mechanism of botanical Drug Interactions.

Student Qualifications:

- Undergraduate student with major in Chemistry/Biochemistry
- Previous lab experience
- Proficient in scientific reading and writing
- Career insterests in Ph.D. in Pharmaceutical Sciences/Medicinal Chemistry
- Student will be using human plasma in the experiments

Earliest Start Date: 6/9/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Lingyong Li

Institution: The University of Alabama at Birmingham, Birmingham, AL

Research Keywords: Synaptic plasticity, neural circuit, opioid use disorder, chronic pain

Project Title: Targeting Tiam1-mediated synaptic plasticity for the relief of opioid tolerance

Project Description: My research mainly focuses on synaptic and neural circuit mechanisms of chronic pain and opioid use disorder using a combination of cutting-edge approaches, such as Patch-seq, snRNA-seq, multi-patch recording, neuroanatomical circuit tracing, in vivo Ca2+/voltage imaging, opto/chemogenetics, high-speed camera with the machine learning platform, and behavior.

Student Qualifications:

- Work with animal behaviors.

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 3

Principal Investigator: Maria Adela Grando

Institution: Arizona State University, Tempe, AZ

Research Keywords: informatics, technology, data science, programming

Project Title: Substance use HeAlth REcord Sharing

Project Description: They will join the www.asushares.com team. Our mission is to improve the lives of patients with substance use disorders and remove stigma. There are multipel projects to consider, I will mention one as an example. We are happy to discuss others with the candidate.

They will use de-identified electronic medical records from patients to simulate real-life clinical scenarios involving the care of individuals with substance use disorders. If the candidate has programming training, they could simulate the clinical scenarios. If they have no programming skills, they could document those scenarios and discuss those scenarios with patients and providers those scenarios to identify ways to improve electronic medical record sharing.

Student Qualifications:

- All the required training will be provided.
- Individuals with career interests in healthcare, medicine, social sciences, technology and informatics could be a good fit for this opportunity.

Earliest Start Date:12/2/2024

Housing Type Available: On Campus Housing Available

<u>**Site # 4**</u>

Principal Investigator: Stephanie Ayers

Institution: Arizona State University, Tempe, AZ

Research Keywords: nicotine and cannabis vaping prevention, urban Indigenous adolescents, mixed method intervention research

Project Title: Leveraging Community-Engaged Research to Co-Create Youth Vaping Prevention with Urban Indigenous Communities of the Southwest

Project Description: Nicotine vaping is more common among Indigenous youth, especially in cities, where many start at a younger age. Vaping prevention is challenging due to the ease of hiding products and their perceived low harm. Existing substance use interventions may not fully address vaping risks, and no proven programs exist for urban Indigenous youth. To tackle this, we are partnering with the Phoenix Indian Center to adapt the Living in 2 Worlds program, originally focused on substance use, to include vaping risks for Indigenous teens. An Indigenous Youth Advisory Board will help ensure cultural relevance. Our goals include identifying risk factors, testing the program's effectiveness, exploring its implementation, and studying how racial and ethnic identity influences outcomes. This research will provide valuable insights to reduce vaping among urban Indigenous youth and improve their health.

The NIDA summer intern will play an integral role in supporting the research team and community partner by helping to organize and facilitate focus groups with both adolescents and parents to gather insights about vaping behaviors. The intern will assist in preparing materials, coordinating sessions, and actively participating in the focus group discussions. After the focus groups, the intern will collaborate with the research team to analyze the collected data, identifying key themes and patterns related to the risks and protective factors influencing vaping. Additionally, the intern will engage closely with the Indigenous Youth Advisory Board, contributing to summer projects, which may involve program development, cultural adaptation, and youth-focused research activities. Through this experience, the intern will gain hands-on experience in community-based research and youth engagement.

Student Qualifications:

- Pursuing a degree in social work, psychology, public health, sociology, anthropology, or a related social science discipline.
- Experience working with youth, Indigenous communities, or other culturally diverse populations would be advantageous.
- Interest in academic research addressing adolescent health disparities and equity, substance use prevention, and understanding the social determinants of health.
- Willingness to engage in discussions that explore how data can be applied to adapt or improve programs aimed at vaping prevention.
- An awareness of and sensitivity to cultural issues, particularly within Indigenous populations.

Earliest Start Date: 5/19/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Beth Meyerson

Institution: University of Arizona, Tucson, AZ

Research Keywords: Translational research; Community based participatory action research; Policy and systems research; Intervention design and testing; Practice based research (methadone treatment)

Project Title: Methadone Patient Access to Collaborative Treatment (MPACT)

Project Description: Methadone Patient Access to Collaborative Treatment (MPACT) is a staff-level, clinic intervention to improve methadone patient outcomes by intervening to reduce staff vicarious (work related) trauma. The MPACT intervention is a combination of 4 evidence-based elements which will have been pilot tested by the time the internship begins. The study is advised by three stakeholder groups: methadone patients, methadone treatment staff, and a statewide, transdisciplinary Drug Policy Research and Advocacy Board (DPRAB). Research faculty hail from severa universities including University of Arizona (the primary location), Indiana University, Western Michigan University, University of Kentucky, Columbia University and New York University. Undergraduate, graduate and post graduate (Medical Residents and Postdoctoral fellows) engage on the study team.

Student Qualifications:

- High level of independence and self-organization
- Strong communication skills - oral and written
- Skills with software including: excel, power point, qualtrics (survey platform, not hard to learn), MS word; and platforms such as google drive and box
- Basic statistics (intro to statistics is fine)
- Appreciation for team science
- CITI certification (research in social and behavioral science) - can complete this upon acceptance

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

<u>**Site # 6**</u>

Principal Investigator: Melissa Zielinski

Institution: University of Arkansas for Medical Sciences, Little Rock, AR

Research Keywords: Opioids, Stimulants, Incarceration, Jail, PTSD, Community Engaged Research, SBIRT, Cognitive Processing Therapy, Written Exposure Therapy, Hybrid Trial, Randomized Controlled Trial, Reentry

Project Title: Developing and Testing Innovative Care Pathways for Screening and Treatment of OUD/PTSD in Jails

Project Description: Opioid overdose is the leading cause of death among people recently released from incarceration. Yet, while there is growing research on opioid use disorder (OUD) and medications for OUD (MOUD) in jails and prisons, studies find that few people who are referred to post-release community MOUD initiate treatment. Emerging research suggests that therapy for posttraumatic stress disorder (PTSD), a common and deleterious OUD comorbidity, could profoundly increase the likelihood of MOUD engagement; however, this has not been tested in jails and considerable work to first tailor PTSD screening and treatment to jails and to people with OUD/PTSD in this setting would be required. Therefore, this 6-year R61/R33 aims to develop and test innovative approaches to PTSD screening and treatment among people who are eligible for jail-based OUD services. In the R61, we will form a coalition of carceral, community, and academic stakeholders to collaboratively adapt the Screening, Brief Intervention, and Referral to Treatment model to the jail context and to the needs of jailed adults with OUD/PTSD (SBIRT-J). In the R33, we will 1) assess the implementation outcomes of SBIRT-J for linking jailed adults with OUD/PTSD to therapy for PTSD via a summative evaluation guided by the Consolidated Framework for Implementation Research and 2) assess the effectiveness and implementation outcomes of competing models of PTSD therapy timing. To evaluate the latter, we will use a patient-randomized Hybrid type I implementation-effectiveness design in which jailed adults identified as having OUD/PTSD through the SBIRT-J model are randomly assigned to either immediate initiation of therapy for PTSD in jail or initiation of PTSD therapy upon release.

Student Qualifications:

- Background in psychology or other social science fields would be ideal
- Interested in community-engaged and developmental research
- Strong interpersonal and professional skills (e.g., reliable, active learner, intellectually curious, interpersonally flexible)
- Ability to articulate specific goals for the research experience (e.g., desired skills training, professional experiences, etc.)

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Melissa Zielinski

Institution: University of Arkansas for Medical Sciences, Little Rock, AR

Research Keywords: Drug addiction, Prison, PTSD, Implementation Science, Cognitive Processing Therapy, Coping Skills, Mental Health, Hybrid Trials, RCT, Incarcerated Men, Incarcerated Women, Reentry

Project Title: Effectiveness, Implementation, and Cost of Cognitive Processing Therapy in Prisons

Project Description: Trauma exposure and drug addiction go hand-in-hand for the 2.17 million people who are incarcerated in the US, as prevalence rates of both exceed 80% among prisoners. Increasing access to proven trauma therapies in prisons may reduce drug use, crime, costs, and community burden associated with incarceration by improving prisoners' mental health prior to release. This study will test group-delivered Cognitive Processing Therapy that has been adapted for implementation in criminal justice settings (CPT-CJ) as an intervention for reducing post-incarceration drug and alcohol use, mental health symptoms, and drug-related crime. We will use a patient-randomized Hybrid type II implementation-effectiveness design in which CPT-CJ is compared to individual self-help via workbook (i.e., bibliotherapy, an enhanced treatment-as-usual comparison condition) and concurrently evaluate implementation facilitation as a strategy to support CPT-CJ uptake in prisons. We will also collect data on the costs and cost offsets of both CPT-CJ and facilitation.

Student Qualifications:

- Previous experience conducting behavioral human subjects research and/or interacting, in a professional capacity, with people with mental illness and/or addiction is preferred (though this experience is not required
- Comfort working on a project that will involve hearing about traumatic event exposure is important given the project's focus.
- Background in psychology or other social science fields would be ideal.
- Additional foundational qualifications of importance are strong interpersonal and professional skills (e.g., reliable, active learner, intellectually curious, interpersonally flexible), and the ability to articulate specific goals for the research experience (e.g., desired skills training, professional experiences, etc.)

Earliest Start Date: 5/12/2025

Housing Type Available: Off Campus Housing Only

Site # 8

Principal Investigator: William Fantegrossi

Institution: University of Arkansas for Medical Sciences, Little Rock, AR

Research Keywords: Behavioral pharmacology, drug-receptor interactions, drug abuse, drug addiction

Project Title: Translational Training in Addiction

Project Description: In the past few years, a number of relatively obscure compounds have proliferated on the illicit drug market. In most cases, these new drugs of abuse have turned out to be established research chemicals that have diffused out of laboratories and scientific journals and onto the streets. As novel pharmacological entities, the legal ramifications for selling and possessing these drugs are initially unclear, and enterprising individuals typically exploit the novelty of these substances to make rapid and substantial profits selling them over-the-counter and online. Indeed, emerging drugs of abuse occupy a legal grey area until emergency scheduling powers are invoked, typically first at the municipal and state level, then nationally.

Research in my laboratory is currently focused on several categories of these drugs, including synthetic cannabinoids (constituents of K2/"Spice" smoking blends), analogues of cathinone (present in "bath salts" preparations), hallucinogens (related to mescaline) and novel opioids (including extremely potent fentanyl analogues.) In an effort to better understand the biological actions of these emerging drugs of abuse, we use behavioral pharmacology techniques in rodents to compare these compounds with more the well-known drugs of abuse which these emerging drugs are designed to mimic (such as the phytocannabinoid delta9-THC, psychostimulants like MDMA and methamphetamine, research psychedelics like DOI, and traditional opioids like fentanyl and morphine).

Students interested in working in my laboratory will have the opportunity to assist with surgeries (intraperitoneal implantation of biotelemetry probes which simultaneously measure core temperature and locomotor activity), to work with mice or rats in behavioral assays (including operant tests of food- or drug-maintained responding, and assays of drug-elicited effects such as analgesia and catalepsy), and assist with dissections for studies involving tissue distribution and disposition of drug, neurotoxicity, or molecular correlates of tolerance and withdrawal.

Student Qualifications:

- Interested in neuroscience, experimental or biological psychology, in vivo pharmacology or veterinary research are encouraged to apply.
- Interns will work with awake, behaving rodents (mice and rats) and should be comfortable doing so.
- No prior experience with animal handling is needed -- interns will be trained on site.
- Prior coursework with neuroscience, drugs and behavior, experimental psychology, or biology will be advantageous.

Earliest Start Date: 6/2/2025

Housing Type Available: On Campus Housing Available

Site # 9

Principal Investigator: Christina Tam

Institution: Alcohol Research Group, Public Health Institute, Emeryville, CA

Research Keywords: incarceration, social supports, racial and ethnic disparities, emerging adulthood, resiliency, lifecourse, substance use, US national survey, secondary data analysis

Project Title: Trauma, substance use, and incarceration over the lifecourse: Identifying social supports to promote resiliency in a US national cohort study

Project Description: This study examines the long-term effects of trauma exposures, particularly during emerging adulthood (or ages 18-25), on substance use behaviors and criminal legal outcomes later in life. Using data from the US National Longitudinal Study of Adolescent to Adult Health (Add Health), the project applies a socioecological framework to understand how social and behavioral pathways contribute to substance use and criminal legal system involvement across the lifecourse. A secondary aim will identify potential points for intervention to reduce racial and ethnic disparities in substance use and incarceration.

More on this project: https://arg.org/project/trauma-substance-use-and-incarceration-over-the-lifecourse/

More on the Add Health data: https://addhealth.cpc.unc.edu/

This summer internship at the Alcohol Research Group (ARG) of the Public Health Institute in the Bay Area, California provides students with hands-on experience in public health and social sciences research. This internship offers an opportunity to contribute to an ongoing NIH-funded project while developing critical research skills across all stages of the research process, including conducting literature reviews, data management and analysis, and effective scientific communication and academic writing. The intern will work with the Add Health dataset to explore variables related to trauma, substance use, and incarceration. While structure is provided, the intern will have flexibility to develop their own research question aligned with the overall scope of the project.

The intern will be expected to: Attend all scheduled project and mentorship meetings; complete assigned tasks within an agreed-upon timeline; ask questions to actively seek feedback from mentor(s); engage with the research team and the broader ARG scientific community to gain exposure to working on multidisciplinary research teams and other research projects at ARG; actively participate in professional development opportunities, such as attending ARG-wide meetings and workshops; and be interested in exploring potential research career options.

Student Qualifications:

- Interest - The ideal intern will have a strong interest in secondary data analysis in public health, social work, or a related field, especially as it pertains to racial and ethnic disparities, the US criminal legal system, and/or the lifecourse;
- Exposure to basic research methods - The intern should have some familiarity with basic research methods (e.g., ethics, critically reading and interpreting peer-reviewed research), though prior direct experience is not required.
- Organizational skills - Strong attention to detail and effective time/task management are important for an independent research role within the scientific research environment; and

- Willingness to learn - The intern will be curious and ready to enthusiastically engage in the research process.

Earliest Start Date: 6/16/2025

Housing Type Available: Off Campus Housing Only

Site # 10

Principal Investigator: Theodore Friedman, MD PhD

Institution: CDU, Los Angeles, CA

Research Keywords: e-cigaretttes, nicotine , smoking

Project Title: The Next Generation Substance Abuse Research Training at Charles R. Drew University (CDU) and UCLA (NGSART-CU)

Project Description: Most of our research focuses on the endocrine effects of drugs of abuse, especially nicotine and e-cigarettes. We are using mouse models to understand the detrimental effects of e-cigarettes and have found that nicotine plus a high fat diet leads to weight loss and reduced abdominal fat, yet ectopic fat depositions in liver and muscle. We are also looking at how nicotine plus soft drinks leads to hepatic steatosis. Additional opportunities exist for PET scanning projects, clinical projects, literature review projects and epidemiology projects related to drug addiction.

Student Qualifications:

- Computer and animal skills preferred

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Xiaofeng Xia

Institution: Instanosis Inc., Palo Alto, CA

Research Keywords: rapid test, diagnostics development, drugs of abuse, xylazine

Project Title: Addressing Emerging Drug Threats with InstaStrip Rapid Tests

Project Description: The project focuses on developing and commercializing the first regulatory approved rapid xylazine diagnostic screening device and rapid fentanyl diagnostic screening device, from prototype development all the way to regulatory submission and commercialization. The intern will work closely with the PIs and the rest of the team on all aspects of the research, including antibody development, device optimization and FDA-required verification and validation studies.

Student Qualifications:

- Basic laboratory research skills, including cell culture and molecular biology
- Comfortable working with deidentified human samples

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 12

Principal Investigator: Alex Dopp

Institution: RAND, Santa Monica, CA

Research Keywords: Youth substance use treatment; Implementation; Sustainment; Public finance; Policy

Project Title: Comparing Two Federal Financing Strategies on Treatment Penetration and Sustainment

Project Description: Rigorous research has shown that use of evidence-based practices can improve adolescent substance use disorder outcomes. However, effective strategies are needed to financially support use of evidence-based practices in substance use service systems. This project aims to compare two grant-making strategies used by the U.S. Substance Abuse and Mental Health Services Administration on key implementation outcomes. Specifically, we are comparing organization-focused versus state-focused grants on their ability to achieve widespread adoption and sustained use of an evidence-based practice for substance use, the Adolescent Community Reinforcement Approach, in a large national sample over a 15-year implementation period. Results will provide critically needed information about the effects of different grant-making strategies in supporting widespread and long-term availability of evidence-based practices, which is necessary to achieving large-scale reductions in adolescent substance use disorders and their associated public health and societal impacts.

Student Qualifications: The research team is open to interns from a wide variety of backgrounds and skill levels.

- Strong interest in learning about substance use treatment services and systems (especially about efforts to improve those systems through evidence-based practice implementation) and openness to working with quantitative data, statistical analyses, and programming languages (such as STATA, R, or SAS).
- Interested in careers and/or graduate training in a variety of substance use/mental health fields (counseling, social work, psychology, psychiatry, etc.) as well as health policy fields.
- Applicants who have personal connection to substance use disorder – whether personal, family, community, or otherwise – would be welcomed on our team, which cultivates an open, supportive culture that explicitly addresses and resists stigma toward substance use.

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Maria Cecilia Marcondes

Institution: San Diego Biomedical Research Institute, San Diego, CA

Research Keywords: Neuroimmunology, Dopamine, Microglia, HIV, substance use

Project Title: Molecular effects of cannabinoids on the Blood Brain Barrier in HIV-infected brain

Project Description: Molecular effects of cannabinoids on the Blood Brain Barrier in HIV-infected brain Infection with the human immunodeficiency virus (HIV) causes significant disease morbidity in the brain, largely due to HIV-associated blood-brain barrier (BBB) disruption, inflammation, and persistence of HIV-infected CNS target cells such as microglia and macrophages, in spite of antiretroviral therapies (ART). Cannabis is a commonly used drug by people with HIV (PWH). Recently, we made the important observation that the impact of cannabis on BBB integrity markers is context-dependent, with signs of BBB disruption in non-HIV subjects, but paradoxically improving BBB integrity in PWH. This observation makes it a high priority to understand the mechanistic basis of this dichotamous influence of cannabis on the BBB. Cannabis and HIV interact in multifactorial ways that are still poorly understood. Importantly, HIV brain target cells microglia/macrophages express the cannabinoid receptor 2 (CB2R), while endothelial cells of the blood brain barrier (BBB) express both CB1R and CB2R and other cannabinoid receptors such as GPR55. It is also unknown how cannabis influences HIV-associated brain inflammation or the active/latent status of HIV in infected microglia. By protecting vascular integrity, it follows that cannabis will not only affect the select transport of substrates into the CNS, it will also directly influence the infiltration of inflammatory cells and the passage of ART or other treatments to the brain. The goal of this application is to test the hypothesis that cannabinoids positively impact BBB integrity in the HIV-infected brain environment, leading to reduced inflammatory cell infiltration and ultimately protection from HIV-associated neurocognitive disorders. Our analysis of two human brain microvascular endothelial cell (HBMEC) lines (hCMEC/D3 and HBMEC/ci18) with opposing vascular integrity responses to cannabinoids in the context of HIV suggest a molecular mechanism that can explain the context-dependent effects of cannabis in human BBB properties. Based on this preliminary data, our hypothesis posits that beneficial effects of cannabinoids in the context of HIV occur via CB2R, while cannabinoid signaling via GPR55 may be damaging. In the proposed studies we will model the human BBB in vitro using multicellular systems containing the two HBMEC lines in parallel, along with pericytes, astrocytes and microglia, to replicate HIV-induced vascular phenotypes characterized by loss of tight junction proteins and increased permeability to fluorescent labelled- dextran. Implications to infection in the brain will be validated in vivo using the EcoHIV mouse model, which develops BBB disorders. Successful completion of these experiments will define the molecular mechanisms that underlie the dichotomous influence of cannabis on the BBB in the context of HIV, forming the basis of new approaches aimed at optimizing BBB integrity.

Student Qualifications:

- Basic knowledge on immune cells, maybe some computational skills.

Earliest Start Date: 6/21/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Zena Mello

Institution: San Francisco State University, San Francisco, CA

Research Keywords: Adolescents, substance use, social determinants of health, discrimination, socioeconomic status.

Project Title: Substance Use and Perceived Discrimination Based on Socioeconomic Status Among Adolescents

Project Description: The proposed summer research project would include the following activites. The primary specific aim is to determine how socioeconomic status discrimination is associated with substance use among adolescents. This includes examining subgroups based on gender, race/ethnicity, and social class. Note, data are from humans, but have already been collected.

Student Qualifications:

- Excellent writing skills

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 15

Principal Investigator: Jason Tucciarone

Institution: Stanford School of Medicine, Stanford, CA

Research Keywords: Opioid Use Disorder, Nucleus Accumbens, Optogenetics

Project Title: A Patch Circuit Dissection of Opioid Addiction

Project Description: The summer intern will assist a post-doctorate on experiments involving IV mouse self administration of opioids along with wireless fiber photometry imaging. The student will learn to handle and load mice into the behavioral chambers, record neural data, and learn data analysis pipelines. Depending on interest level, some students can learn to conduct rodent brain stereotaxic surgery and optic fiber implantation. Only the most skilled surgeons could learn IV jugular vein catheterizations and interest level will be guaged on a case by case basis. The student will also learn and analyze animal behavioral video data using manual and automated methods (deep lab cut).

Student Qualifications:

- Handing Rodents
- Brain tissue histology
- Rodent tissue processing, perfusions
- confocal Imaging
- Programming (not necessary)

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 16

Principal Investigator: Beth Darnall

Institution: Stanford University School of Medicine, Stanford, CA

Research Keywords: Chronic pain, digital health, opioid misuse, online, brief behavioral intervention

Project Title: Research and Mentoring in Innovative Patient Oriented Pain and Opioid Science

Project Description: We have an active, national, virtual, randomized controlled trial of scalable digital behavioral pain treatment (Empowered Relief) for people with comorbid chronic pain and prescription opioid misuse, and are investigating impacts on pain and opioid outcomes. Additionally, we have national data from 1,350 patients taking prescription opioids (600 of whom were involved in voluntary opioid tapering) with opportunities to develop a project using existing data from this PCORI-funded project.

Student Qualifications:

- Interest in chronic pain, opioid misuse, and pain psychology are preferred
- Prior work with patients is desired but not required

Earliest Start Date: 5/1/2024

Housing Type Available: Off Campus Housing Only

Site # 17

Principal Investigator: Lara Ray

Institution: UCLA, Los Angeles, CA

Research Keywords: Tetrahydrocannabivarin; medications development; smoking cessation; human laboratory; craving; lapse

Project Title: Development of Tetrahydrocannabivarin as a Treatment for Smokers

Project Description: The intern will assist on a human laboratory study of Δ9-Tetrahydrocannabivarin (Δ9-THCV) for daily smokers. A total of 32 daily smokers will complete two outpatient study visits after 5 days under Δ9-THCV and matched placebo, during which they will undergo a Smoking Lapse task to assess: (a) the ability to resist smoking, (b) cigarette smoking self-administration, (c) subjective craving, (d) withdrawal, and (e) subjective effects of nicotine. This study will test the initial efficacy of Δ9-THCV, which is essential for understanding the clinical potential of this naturally occurring cannabinoid as a treatment for smoking cessation. The study PIs will collaborate with the intern to identify a scientific question related to smoking cessation treatment and behavioral pharmacology.

Student Qualifications:

- Prefer interns with previous human subjects experience, especially related to the conduct of human laboratory and/or clinical trials
- Experience with participants with substance use disorders or mental health disorders would be beneficial

Earliest Start Date: 6/9/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Corey Harwell

Institution: UCSF, San Francisco, CA

Research Keywords: Opioids, neurogenesis, gliogenesis, synapse formation, cell migration, septum, basal forebrain

Project Title: The impact of early life opioid exposure on the molecular and functional trajectories of septal cell types

Project Description: The Harwell lab is focused on understanding how the brain wires up during development and how genetic and environmental perturbations may disrupt proper wiring. Thousands of babies are born dependent on opioids because some expecting mothers misuse opioids during pregnancy, and the long-term consequences of in utero opioid exposure remains unknown. A mouse model of early life fentanyl exposure will be used evaluate whether opioids impact the production, migration, and maturation of neurons in the septum, a brain area important for regulating addictional related behaviors. Students will be trained to slice, stain, and image brain tissue of mouse pups that have been treated with fentanyl.

Student Qualifications:

- Students will work with mouse tissue samples
- No other qualifications are required

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Erika Crable

Institution: University of California San Diego, La Jolla, CA

Research Keywords: Implementation Science, Dissemination Science, Health Policy, Medicaid

Project Title: Policy Dissemination Strategies to Improve the Use of Research Evidence in Medicaid Benefits for Opioid Use Disorder Treatment

Project Description: More than one-third of Americans living with an opioid use disorder are publicly insured by state Medicaid or Children's Health Insurance Plan (CHIP), but many of these state programs fail to provide sufficient access to lifesaving medications for opioid use disorder [(MOUD), i.e., buprenorphine, methadone and naltrexone] in their plan benefits. Research is critically needed to understand how policymakers overseeing Medicaid/CHIP benefit arrays solicit, receive, and use evidence to define their benefit and utilization management policies for MOUD. Aligned with NIDA's goals to support evidence-based policies supporting substance use treatment, the proposed study will advance policy dissemination science methods to: (1) develop and administer a national survey to Medicaid/CHIP agency and MCO policymakers to identify determinants, mechanisms, and intermediaries that influence their evidence use behaviors; (2) empirically identify and describe distinct subgroups of Medicaid/CHIP agencies and MCOs based on their evidence use behaviors when designing MOUD benefits; and, (3) design and pilot test the acceptability, appropriateness and feasibility of dissemination strategies, tailored to each latent class, for promoting policymakers' evidence-based decision-making regarding MOUD benefits. Internship activities will include conducting policy document review to identify contextual factors that can influence policy decision-makers' use of evidence, reviewing policies (e.g., state plans, benefit arrays) to identify how policies are consistent or inconsistent with best practices for MOUD access. Interns will be involved in basic quantitative survey data analyses (e.g., descriptive statistics) and qualitative analyses (e.g., thematic review of policy documents or interview data). Interns will support the creation of study presentation materials (e.g., PowerPoints conveying study results, presentations for diverse research and/or policymaker audiences), and dissemination strategy materials/tools. Interns will work in a lab setting with a diverse array of projects focused on addressing the research to policy gap around substance use treatment and harm reduction services.

Student Qualifications:

- Have an interest in policy and policymaking processes
- Completed at least 2 courses related to health policy from disciplines such as public health, public administration, political science, and/or pre-law
- Backgrounds in anthropology and sociology who have an studied how policy impacts health and wellness are also encouraged to apply
- Interested in how policy shapes access to substance use treatment for publicly insured populations
- Completed introductory research methods coursework in qualitative and/or statistical methods
- An understanding and/or interest in health equity and pubilc insurance (e.g. Medicaid) are strongly encouraged to apply

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Karen Kathleen Szumlinski

Institution: University of California Santa Barbara, Santa Barbara, CA

Research Keywords: behavioral pharmacology, rat model, drug self-administration, immunoblotting, glutamate

Project Title: Incubated drug-craving and neurochemical interactions

Project Description: This project seeks to understand the role played by the ionotropic glutamate receptors AMPA and NMDA, as well as D1- and D2-like dopamine receptors within the prelimbic cortex of the prefrontal cortex in regulating the time-dependent increase in cocaine, methamphetamine and sucrose-craving during abstinence (incubation of craving). This project employs rat models of intravenous drug or sucrose pellet self-administration to study the effects of inhibitors of the aforementioned receptors in regulating drug/sucrose-craving behavior. Studies also employ immunoblotting procedures to relate inhibitor effects on behavior to the expression of these receptors and their intracellular signaling pathways in prefrontal cortex tissue.

Student Qualifications:

- Involved in behavioral studies must be comfortable working with rats. Those who are not will be placed on the immunoblotting project to work with rat tissue. While experience handling rats or mice is preferred, it is not necessary as all of the appropriate training can be conducted on-site
- Educational background in biological psychology and/or behavioral neuroscience is also preferred and will facilitate comprehension of the background literature surrounding the project
- Interns are expected to participate fully in the research project and work with a team of other undergraduate students to accomplish the research goals
- Strong communication skills, enjoy working with others and dedicated to acquiring the technical stills to advance the research project and their own personal development as a scientist

Earliest Start Date: 6/13/2025

Housing Type Available: Off Campus Housing Only

Site # 21

Principal Investigator: Dawn Bounds

Institution: University of California, Irvine, Irvine, CA

Research Keywords: adversity, trauma, alcohol, cannabis, prevention, self-regulation, co-regulation, adolescents, family

Project Title: Teaching Youth & Families Self-Regulation Skills to Disrupt the Impact of Adverse Childhood Experiences: Preventing Substance Use in Adversity-Impacted Youth

Project Description: Adverse Childhood Experiences (ACEs) are a major public health concern, impacting over half of the US population, and are associated with negative coping responses such as alcohol, cannabis, and other substance misuse. However, positive coping responses can be taught, disrupting negative health trajectories associated with poor mental and physical health. Garnering Resilience in Traumatized youth and families (GRIT) is a program focused on teaching self-regulation skills to adversity-impacted youth and their caregivers; the program's impact on ACE-related responses such as the early initiation of alcohol and cannabis use and other health indicators will be evaluated by recruiting adversity-impacted youth between the ages of 11-14 and their caregivers. Interns will join the Centering Youth and Families for Empowerment and Resilience (CYFER Lab), an active community-engaged lab comprised of undergraduate, graduate, and post-bac students, and assist with outreach and recruitment, data collection assessments, and data management.

Student Qualifications:

- Passion for working with minoritized and marginalized populations in the community
- Ability to work with peers who have experienced trauma and/or adversity
- Knowledge of social determinants of health and adverse childhood experiences
- Ability to complete comprehensive literature searches
- Ability to use Microsoft and Google Tools

Earliest Start Date: 6/23/2025

Housing Type Available: On Campus Housing Available

Site # 22

Principal Investigator: Stephen Mahler

Institution: University of California, Irvine, Irvine, CA

Research Keywords: cannabis, THC, marijuana, neuroscience, pharmacology, neuroimmunology, microglia, adolescence, developmental neuroscience, behavior, brain, rats, drugs, addiction, opioids, heroin, self-administration

Project Title: Impact of Cannabinoid Across the Lifespan (ICAL): Behavioral Project

Project Description: Early cannabis use is associated with long-term psychiatric risks including susceptibility to abuse of harder drugs like opioids. Yet in humans it is difficult to determine the impact of adolescent THC exposure (ado-THC) itself, versus underlying comorbidities or societal factors that also contribute to the association. Despite their shortcomings, rodent models are thus still crucial for establishing causal, biological influences of ado-THC on addiction susceptibility. Indeed, our studies in animals suggest that ado-THC conveys later susceptibility to opioid drugs like heroin. But how might adolescent THC promote opioid reward?

Adolescence is a period of active brain maturation, especially in late-developing structures like the prefrontal cortex (PFC). Microglia, the resident immune cells of the brain parenchyma, play a key role in this process. Our preliminary data support the hypothesis that ado-THC impact microglia in short and long timeframes, and that these changes may be involved in the pro-opioid, sex-dependent phenotype.

Student Qualifications:

- Willingness to work with rodents (training is provided), as well as brain tissues, interest in neuroscience and/or the brain bases of psychiatric disorders including addiction
- Desire to receive wholistic training and thoughtful mentorship from our group and wider UCI neuroscience community

Earliest Start Date: 6/10/2025

Housing Type Available: Off Campus Housing Only

Site # 23

Principal Investigator: Uma Rao

Institution: University of California, Irvine, Irvine, CA

Research Keywords: adolescent, biobehavioral, early-life adversity, inflammation, substance abuse, substance misuse

Project Title: Effects of Early Life Adversity on Substance Use Problems in Adolescents: Biobehavioral Risk Mechanisms

Project Description: Early-life adversity (ELA), including interpersonal trauma or loss, family dysfunction and poverty, is prevalent and has profound biological, psychological and social impacts, as well as lasting negative effects on health and well-being. Persons with ELA misuse alcohol, nicotine and illicit drugs at an earlier age, have a quicker transition to substance use disorders (SUD), and a more pernicious clinical course compared with those who did not experience ELA. The neuroimmune network model postulates that ELA sensitizes the brain circuits involved in threat and reward processing via inflammation, initiating positive feedback loops between these systems. Also, inflammatory mediators engage these neural circuits, predisposing individuals to emotional dysregulation, and "self-medicating" behaviors, such as smoking and alcohol and drug use. Such self-medicating behaviors in adolescence, a period when the brain is highly plastic and responsive to internal and external stimuli, can exacerbate the neurotoxic effects of ELA, with a quicker transition from substance use to disorder. Using a longitudinal design, this project aims to examine the development of SUD during adolescence among youth with none, low and high levels of ELA, and without a prior history of substance misuse or SUD. The overarching aim is to identify the clinical (psychiatric symptoms, family history of SUD), biobehavioral (gene expression in immune cells and their signaling processes, and inflammatory proteins; behavioral responses to threat, reward and executive control processes; and coping skills) and family-contextual (family and neighborhood environment, parent-child relationship, and social support) factors that influence the association between severity of ELA and development of SUD.

Student Qualifications:

- Be enrolled in psychology, biological sciences, psychobiology, neuroscience, public health, or related fields, for optimal research training. This is a clinical research project involving interaction with human research subjects and a vulnerable population (i.e., children)
- Certification in human subjects' protection and GCP is critical for observing the research assessments. NIH sponsored certification is acceptable. Obtaining the training prior to joining the internship (available online via the CITI Program: https://about.citiprogram.org/) will facilitate better use of the 8-week internship program
- For handling biological specimens (blood), interns will have to obtain training on Blood Borne Pathogens through UC Irvine online training program. This project does not involve work with animals or tissue samples

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Michael Li, PhD

Institution: University of California, Los Angeles, Department of Family Medicine, Center for Behavioral and Addiction Medicine, Los Angeles, CA

Research Keywords: methamphetamine use, polysubstance use, HIV, stigma, clinical trials, behavioral interventions, biomedical interventions, sexual minorities, transgender women

Project Title: Trajectories of socially regulated gene expression, methamphetamine use, and viral load among HIV-positive men who have sex with men (MSM) receiving contingency management

Project Description: Interns will participate in research methods workshops, review of literature on substance use prevention and treatment, as well as their own creative endeavors, including a literature review and presentation on a substance use topic of their own choice, brief collection of primary data, or analysis of secondary data on substance use.

Student Qualifications:

- A major in the biological, psychological, or social sciences, as they will be working on topics and/or data on human behavior, social determinants of health, and clinical outcomes relating to substance useVolunteer experience working with underserved communities
- Volunteer experience working in an organization that addresses health and/or social wellfare issues
- Completion of an introductory course on statistics
- Completion of coursework that addresses substance use in one or more lessons
- Prior experience working in a lab for the behavioral or clinical sciences

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Jennifer Jain

Institution: University of California, San Francisco, San Francisco, CA

Research Keywords: Women, intersectionality, substance use, and HIV

Project Title: WISH (Women, Intersectionality, Substance Use and HIV)

Project Description: Interns for this study will help facilitate a pilot randomized controlled trial of an intervention designed to boost enagement in care among women with HIV who use drugs in San Francisco and Oakland, California. Interns will assist with daily resaearch activities assocaited with this trial, including, recruitment, enrollement, retention, data collection, and data entry. Interns may also be involved in assisting with the interveniton portion of the study. This work involves research among human subjects.

Student Qualifications:

- Strong work ethic and who are highly responsible, conscientious, organzied, and detail oriented
- Basic, data collection, entry and analysis skills, or those very interested in gaining these skills

Earliest Start Date: 1/1/2025

Housing Type Available: Off Campus Housing Only

Site # 26

Principal Investigator: Sulggi Lee

Institution: University of California, San Francisco, San Francisco, CA

Research Keywords: Substance use, HIV, inflammation, chronic inflammation, HIV transcription, HIV cure, methamphetamine use

Project Title: Short-term and long-term effects of methamphetamine exposure on residual viral transcription during treated HIV disease

Project Description: The most commonly used illicit stimulant in HIV-infected individuals is methamphetamine (MA). Prior studies demonstrate strong evidence that MA promotes increased HIV transcription as well as poorer clinical outcomes and immune dysregulation. A challenge in achieving worldwide HIV eradication is targeting specific marginalized populations who are most likely to benefit from an HIV cure but possess poorer immune responses.

For Aim 1 of this study, titled Effect of Methamphetamine on Residual Latent HIV Disease (EMRLHD), ART-suppressed PWH with (PWH MA+) and without MA (PWH MA-) use disorder will be sampled longitudinally to determine the effects of long-term MA exposure on residual virus production, host gene expression, and inflammation. For Aim 2 of EMRLHD, HIV+ infected ART-suppressed individuals with no prior history of MA use disorder will be administered oral methamphetamine to determine the effects of short-term MA exposure on residual virus production, gene expression, and inflammation. Intern responsibilities will include, but are not limited to: assisting with patient recruitment and screening, coordinating patient visits, managing sample storage and shipments, and supporting general research team tasks.

The proposed work will leverage a unique observational (Aim 1) and clinical trial (Aim 2) design to identify immunologic signatures that modulate residual viral transcription and inflammation in HIV+ ART-suppressed individuals with and without MA use. This research has the potential to help identify novel targets for reversing HIV latency, reducing inflammation, and personalizing future therapies in HIV+ individuals who use MA.

Student Qualifications:

- An interest in data analysis, genomics, systems biology, and translational research (e.g., not just basic science, but basic science research that is clinically relevant)
- Strong attention to detail, exceptional interpersonal skills, excellent verbal and written communication skills, and the ability to multi-task in a fast-paced environment while working with a diverse subject population
- Ability to maintain a respectful, confidential, and personable demeaner when interacting with study participants is crucial
- Prior experience with Microsoft Office (especially Excel), computer programming in R, and statistical analysis would be a major plus

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 27

Principal Investigator: Jason A Hoppe

Institution: University of Colorado, Boulder, CO

Research Keywords: Opioid safety, pain management, clinical decision support, Health Policy Analysis, Opioid Use Disorder, Controlled Substances

Project Title: Improving pain management and opioid safety through a systemwide, data driven evaluation of the CDC opioid prescribing guideline best practices and the use of Clinical Decision Support

- **Project Description:** The University of Colorado Department of Emergency Medicine Opioid Research Program performs cutting edge research and programmatic implementation in the high priority and high impact areas of opioid safety in pain management and access to treatment for emergency department patients with an opioid use disorder (OUD). The team is finishing up planning and development efforts to conduct a clinical trial testing the use of clinical decision support (CDS) embedded within a hospital system's electronic health record system (EHR) to nudge medical providers to consider adopting the newly released CDC guidelines on opioid prescribing. The team has conducted qualitative interviews and focus groups with key stakeholders including providers, patients, and hospital administration. This qualitative data is being used to determine how best to design provider-facing clinical decision support to facilitate and encourage providers to utilize best practice guideline concordant care for patients with acute and chronic pain and opioid use disorder. The intern will not be working with human or animal research participants or tissue samples.

Student Qualifications:

- Interest in clinical research related to opioid prescribing, clinical practice guidelines, or implementation science
- Career interests in clinical research, medicine, or public health
- strong writing skills, the ability to effectively search and synthesize literature, some familiarity with medical terminology.

Earliest Start Date: 6/1/2025

Housing Type Available: Off Campus Housing Only

Site # 28

Principal Investigator: Angela Bryan

Institution: University of Colorado at Boulder, Boulder, CO

Research Keywords: Cannabis, CBD, pain, sleep, mood, cognition, older adults

Project Title: Rocky Mountain Cannabis Research Center - Cannabidiol and Older Adult Cannabis Users: A Randomized, Placebo Controlled Study

Project Description: Cannabis use is increasing among older adults, making it important to understand the potential risks and benefits of its use. The purpose of the study is to better understand the effects of hemp-derived CBD with and without small amounts of Δ9-tetrahydrocannabinol (THC) (<0.3%) on pain, sleep, mood, medication use, and cognitive and motor function in adults aged 60 and older. This study includes the use of hemp-derived CBD products as a Food and Drug Administration (FDA) Investigational New Drug (IND).

Student Qualifications:

- Coursework in research methods and statistics, content background in psychology, neuroscience, integrative physiology, or related discipline
- An interest in pursuing graduate school or medical school

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

Site # 29

Principal Investigator: L. Cinnamon Bidwell

Institution: University of Colorado Boulder, Boulder, CO

Research Keywords: Health, Legalized Cannabis, EEG

Project Title: ERP studies of acute influences of THC and CBD on memory encoding and retrieval processes

Project Description: The purpose of the study is to investigate the effects of different forms of cannabis on memory. Now that commonly available strains of cannabis contain different amounts of various cannabinoids including THC and CBD, it is important to know how different cannabinoids affect memory and related cognitive abilities. We employ a design that includes both naturalistic and experimental elements, with cannabis users assigned to self-administer one of three randomly assigned cannabis strains immediately prior to memory encoding (i.e., learning) and/or retrieval phases of a recognition memory task while recording memory-related ERPs (via EEG).

Student Qualifications:

- Motivated undergraduate who is interested in gaining research experience at the intersection of public health, neuroscience, and psychological health
- Some coursework in research methods and/or statistics preferred

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

Site # 30

Principal Investigator: Roman Shrestha

Institution: University of Connecticut, Storrs, CT

Research Keywords: Chemsex, men who have sex with men, HIV prevention, just-in-time adaptive interventions.

Project Title: Optimizing a Just-in-Time Adaptive Intervention to Increase Uptake of Chemsex Harm Reduction Services in MSM: A Micro-randomized Trial

Project Description: The use of psychoactive drugs in connection with sexual activity, known as chemsex, is becoming an alarming public health issue, especially due to its association with a sharp rise in HIV cases among men who have sex with men (MSM). This research focuses on refining JomCare, an app-based intervention designed to deliver timely, personalized support to individuals when they are most susceptible to chemsex-related behaviors and more likely to respond to intervention., with the goal of minimizing risk and therefore halting HIV transmission. Our summer intern(s) will collaborate with our local and international teams to assist with app development and optimization. Interns will also help with participant recruitment into the micro-randomized controlled trial and monitor engagement efforts by participants. Additionally, interns will participate in qualitative data coding, and analysis, focusing on data related to chemsex, and assist with manuscript writing.

Student Qualifications:

- Strong interest in HIV, substance use, and mHealth research
- Proficiency in operating computers and research equipment
- Knowledge or willingness to learn specific applications for data acquisition and statistical analysis
- Excellent communication skills (verbal and written)

Earliest Start Date: 10/4/2024

Housing Type Available: Off Campus Housing Only

Principal Investigator: Krysten Bold

Institution: Yale School of Medicine, New Haven, CT

Research Keywords: Tobacco, smoking, e-cigarette, menthol ban, public health, policy

Project Title: Evaluating the potential impact of a menthol ban in cigarettes and e-cigarettes among current menthol smokers

Project Description: The summer intern will work on the ongoing project 'Examining the impact of banning menthol flavor in cigarettes and e-cigarettes on smoking behavior'. It is a Randomized control trial (RCT) that is recruiting adults from the community who smoke menthol cigarettes to examine the extent to which possible flavor bans in cigarettes, e-cigarettes, or both products impacts smoking behavior and health. During the summer internship period, this project will be actively recruiting participants, and ongoing tasks will include data entry, monitoring recruitment, assisting with daily tasks for research visits with participants. Interns will be involved in human subject research.

Student Qualifications:

- Interest in learning clinical research methods
- No prior knowledge of statistical software is required. Some knowledge of, or experience with Microsoft excel, PowerPoint, and word is preferred.
- Those interested in a career in clinical research, medicine, public health, or policy are encouraged to apply for this experience.

Earliest Start Date: 5/19/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Uche Aneni

Institution: Yale School of Medicine, New Haven, CT

Research Keywords: Substance use prevention, black adolescents and families, digital interventions, adolescent mental health, substance misuse, family-based interventions, urban youth, Risk and protective factors, health equity.

Project Title: A Family-Based Digital Intervention to Address Early Substance Misuse among Black Adolescents

Project Description: Over 1 million Black adolescents aged 12-17 years misused substances (tobacco/nicotine, alcohol, and illicit drugs) in 2021. Black adolescents have risk and protective factors that are different from adolescents from other racial/ethnic groups and also experience disparities in access to care.

The ACCESS Lab works to mitigate the risk of developing substance use and barriers to access in care through the use of digital interventions. Digital interventions such as videogames have demonstrated success in impacting healthy behavior among adolescents, including Black adolescents. They are an accessible, evidence-based way of delivering substance use prevention interventions.

At the ACCESS lab, you will work to develop digital interventions to enable risk identification and substance use prevention among adolescents. Our ongoing clinical study involves working within a multidisciplinary team of adolescents, caregivers, and clinicians to develop a family-based videogame to prevent substance use in Black teens.

As an intern, you will contribute to the study by partaking in literature reviews, study recruitment, qualitative data collection, qualitative data analysis, among other tasks.

Student Qualifications:

- Prior experience in clinical research is favorable, but not required.
- Interns will interact with human study participants and must complete required trainings on human subject protection prior to joining the lab. These trainings can be done after being matched to the lab.
- An educational background in psychological sciences, behavioral sciences, social sciences, or neuroscience is preferred.
- A demonstrated interest in the areas of substance use prevention, accessible healthcare, digital interventions.

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Jaimie P. Meyer

Institution: Yale School of Medicine, Department of Internal Medicine, New Haven, CT

Research Keywords: women, criminal justice system, pre-exposure prophylaxis (PrEP), HIV prevention, HIV risk, medications for opioid use disorder, substance use, integrated care, telehealth

Project Title: Integrated eHealth for HIV and Substance Use Disorders in Justice-involved Women

Project Description: There is urgent need to reach women involved in criminal justice (WICJ) for lifesaving, evidence-based PrEP and medications for OUD (MOUD), using innovative healthcare delivery models that surmount existing social and structural barriers to engagement.

This study uses a newly validated decision aid and eHealth to remotely deliver integrated PrEP and MOUD to community based WICJ with OUD in New Haven, Connecticut (CT) and Birmingham, Alabama (AL).

Methods: 250 PrEP-eligible WICJ with OUD will undergo randomization to: a) the "Athena" strategy, which includes the decision aid + eHealth for remote integrated PrEP/MOUD with a provider using outputs from the decision aid; or b) decision aid-only with referral to community-based PrEP/MOUD. Randomization will be stratified by site; past 6-month use of any stimulants; and baseline receipt of MOUD. Follow-up study assessments occur at months 1, 3, and 6. To understand implementation, the investigators will conduct population modeling and engage with relevant stakeholders through focus groups using nominal group technique and in-depth individual interviews.

Aims: The Aims of the project are: 1) To compare the Athena strategy to decision aid-only in terms of patient-level engagement in the PrEP and OUD care continua, considering key site differences; and 2) To assess scale-up potential of the Athena strategy in terms of modelled long-term outcomes and how stakeholders interact with eHealth for integrated PrEP/MOUD in WICJ in two diverse epidemiological and implementation contexts (CT and AL), using standardized definitions of implementation outcomes.

Student Qualifications:

- Completing or has completed training in public health/epidemiology
- Interested in infectious diseases, addiction medicine, criminal justice, and/or women's health
- Quantitative analytic skills and experience (in SAS, SPSS, or R though SAS preferable)
- Able to independently (or with minimal supervision) code, manage data, model, and interpret findings
- Qualitative analytic skills- preferred, not required (in Dedoose or NVivo)
- Experience or interest in scientific writing, manuscript development, publishing, and dissemination

Earliest Start Date: 7/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Chyrell Bellamy

Institution: Yale School Of Medicine, Dept of Psychiatry, New Haven, CT

Research Keywords: Imani Breakthrough

Project Title: Culturally-responsive community-driven substance use recovery for Black and Latinx populations

Project Description: As drug overdose rates among both Black and Latino/x/e people with substance use disorders (SUDs) continue to increase, it is imperative that we address the healthcare inequities that contribute to this disparity gap, so effective interventions can be tailored to the needs of Black and Latino/x/e populations. To tackle the unique challenges of decreased treatment initiation, engagement, and adherence to addiction treatment for Black and Latinx people with SUDs, in collaboration with key community stakeholders (Black/Latinx people with and without SUD), we developed Imani (meaning Faith in Swahili) Breakthrough in 2017 through a community based participatory research process (CBPR). Imani Breakthrough is a faith-based, person-centered, culturally informed harm reduction recovery program that takes place in churches. The main goal of this current study is to develop and optimize methods for increasing access to, uptake of, and engagement in Medication for Addiction Treatment (MAT) among communities of color. Through a multilevel CBPR initiative and a rigorous Randomized Control Trial (RCT) that incorporates elements of choice in participation, we will examine whether adding a church-based telehealth MAT option to Imani (Imani + CTM) will improve outcomes for Black and Latinx people with alcohol use disorders (AUD) or opioid use disorders (OUD) compared to Imani + traditional MAT Referral and Linkage (R&L) in the community.

Interns are responsible for learning about all aspects of the Imani project and will be involved in the following activities:

- o   Learning about human subjects and protections MAT R&L) in the community.
- o   Learning how to engage with community in doing outreach and engagement in communities
- o   Engaging people currently using drugs
- o   Learning about Social determinants of health and working with vulnerable populations
- o   Learning how to facilitate intervention groups
- o   Learning how to conduct data collection in the community
- o   Learning to conduct qualitative interviews
- o   Partnering with faculty on writing

Student Qualifications:

- Interest in working with diverse communities
- Willingness to learn from community and faculty
- Computer skills for data entry of survey data
- Ability to conduct searches
- Use of canva, ppt, for developing presentations
- Some undertanding of the impact of SUD on Black and Latine communities; interest in harm reduction a plus
- Lived experience a plus
- Spanish fluency is a plus
- Open to all across racial ethnic groups and experiences

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 35

Principal Investigator: Dr. Venigalla B. Rao

Institution: The Catholic University of America, Washington, DC

Research Keywords: Bcateriophage T4; HIV Cure; Nanomedicine; Gene Therapy; Stem Cell Therapy; CRISPR Genome Editing; Viral Genome Packaging

Project Title: Engineering Bacteriophage T4 as a Targeted Gene Therapy Drug for in vivo HIV Cure

Project Description: Substance users suffer from high rates of HIV acquisition and transmission, poor adherence to antiretrovirals and drug resistance, and high prevalence of neurodegenerative and mental health problems. Furthermore, more than 40 million people across the globe are living with HIV today. This project will develop a novel bacteriophage-based stem cell gene therapy technology to design a new category in vivo HIV cure "drugs". The 120 x 86 nm bacteriophage T4 capsid nanoparticles will be engineered and targeted to hematopoietic stem cells (HSCs) to deliver a payload of genome editing molecules. These will introduce a delta-32 deletion mutation into the CCR5 HIV co-receptor gene, making the modified HSCs and the cells derived from it, resistant to HIV infection. The delta-32 converted HSCs will then repopulate the body with HIV-resistant blood cells including CD4+ T cells, which would replace the HIV reservoir and result in functional HIV cure. The interns will support this research project by constructing new phage clones which will be used to increase transduction and gene engineering efficiency.

Student Qualifications:

- Good understanding of principles of molecular biology, recombinant clone construction, polymerase chain reaction, and agarose gel electrophoresis is desirable
- Basic hands-on laboratory experience on molecular biology and biochemistry techniques is essential

Earliest Start Date: 5/15/2025

Housing Type Available: Off Campus Housing Only

Site # 36

Principal Investigator: Adam Carrico

Institution: Florida International University, Miami, FL

Research Keywords: Sexual and Gender Minorities, Cocaine, Methamphetamine, Pre-Exposure Prophylaxis, Randomized Controlled Trial

Project Title: OPTIMIZING PREP ADHERENCE IN SEXUAL MINORITY MEN WHO USE STIMULANTS

Project Description: Among men who have sex with men (MSM), there is an urgent need to optimize the unprecedented clinical and public health benefits of pre-exposure prophylaxis (PrEP) to prevent HIV with those who use stimulants (i.e., methamphetamine, cocaine, and crack-cocaine). Stimulant-using MSM display 3-6 fold faster rates of HIV seroconversion, and one-in-ten MSM with newly diagnosed HIV infection report recent stimulant use. Findings from our team and others also demonstrate that stimulant use is a key obstacle to PrEP adherence and persistence. Stimulant-using MSM have a 3-fold greater rate of disengagement from PrEP care and 5-fold greater odds of sub-optimal PrEP adherence. The proposed multi-site randomized controlled trial (RCT) will leverage a promising intervention model of delivering a positive affect intervention during contingency management (CM), which we have recently demonstrated achieves durable and clinically meaningful reductions in viral load among HIV+, methamphetamine-using MSM. In the proposed multi-site RCT, we plan to test whether delivering an Affect Regulation Treatment to Enhance Medication Intervention Success (ARTEMIS) positive affect intervention during smartphone-based CM for directly observed PrEP doses achieves more durable reductions in HIV acquisition risk over 12 months. HIV acquisition risk (the primary outcome) will be operationalized as tenofovir diphosphate (TFV-DP) levels <700 fmol per punchand self- reported recent condomless anal sex (CAS). Up to 300 MSM on PrEP who report stimulant use and CAS in the past 3 months as well as any PrEP non-adherence in the past month will be recruited from social networking applications as well as PrEP clinical services in South Florida and San Francisco. Participants who meet the inclusion and exclusion criteria at an in-person baseline assessment will provide a dried blood spot (DBS) specimen that will be stored to measure TFV-DP levels and begin 3-months of smartphone-based CM that includes financial incentives for completing up to four directly observed PrEP doses per week (48 doses total over the 3 months). Participants will complete a run-in period (waiting period) where they will complete 4 directly observed smartphone-based CM PrEP doses prior to randomization. At a separate randomization visit, 240 participants (120 South Florida and 120 San Francisco) will be randomized to receive their first individually delivered ARTEMIS positive affect intervention or attention-control session. All 5 individually delivered intervention sessions will be delivered during the 3-month CM intervention period. Follow-up assessments will be conducted at 3, 6, and 12 months after beginning CM, with DBS collected to measure TFV-DP at 6 and 12 months. Consistent with the NIH OAR high priority area of "reducing the incidence of HIV/AIDS," this clinical research will meaningfully inform the targeted deployment of limited public health resources to optimize the unprecedented clinical and public health benefits of PrEP in stimulant-using MSM, one of highest priority populations for decreasing HIV incidence.

Student Qualifications:

- Pursing a bachelor's degree in the social/behavioral sciences, public health social work, psychology, or pre-medicine

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Nazira El-Hage

Institution: Florida International University, Miami, FL

Research Keywords: HIV-opioid drug use-autophagy-Nueroinflammation-neurodegeration-aging-drug delivery

Project Title: Function of astrocytes autophagy in brain homeostasis and opioid-induced maladaptive behavior and addiction, in the context of HIV

Project Description: Astrocytes are the focus for these studies, as they are intimately involved in diverse neuronal function, including modulation of synaptic function and plasticity, regulating concentrations of the excitatory neurotransmitter glutamate, and yet secrete and response to neuroinflammatory cytokines, chemokines, and growth factors. These processes are themselves regulated by autophagy: the process by which cells both engage in orderly degradation and recycling of cellular components as well as balancing energy metabolism. Although astrocyte-mediated excitation and inflammation have been implicated in neuroadaptations and drug-seeking behavior, the role of astrocytes autophagy in the mechanism underlying the intersection between the glutamate system and neuroimmune signaling, is not well understood. For this project we will use a mouse model of autophagy to identify and characterize mechanistic pathways in astrocytes responsible for changes in drug-evoked structural and synaptic plasticity that underlie the maladaptive behavior in opioid drug abuse. To this end, we will examine how dysfunction in Beclin1-driven autophagic processes in astrocytes promotes opioid addiction, in HIV infection.

Student Qualifications: Intern will be involved in homogenizing postmortem mouse tissues, in protein and RNA extraction, and in running Western blotting and ELISA. Intern will also analyze data using statistical softwares and present findings during weekly lab meeting.

Earliest Start Date: 7/1/2025

Housing Type Available: On Campus Housing Available

Site # 38

Principal Investigator: Tuan Le Mau

Institution: PASCALL SYSTEMS, INC., Coral Springs, FL

Research Keywords: medical device development, reduction in opiod dependence, intraoperative anesthesia management, personalized algorithm, machine learning and AI

Project Title: Developing novel technologies to monitor nociception and opioid administration during surgery and general anesthesia in order to minimize post-operative opioid requirements

Project Description: PASCALL is a spin-off from MIT/Harvard/MGH. We are a sustainably grown startup with an FDA-510(k)-cleared medical device. Our founding team comprises an MIT PhD Neuroscience graduate as CEO, a joint MIT/Harvard professor, statistician, and anesthesiologist at MGH, and a former Harvard, currently Stanford professor, in Anesthesiology and Bioengineering. Both professors run their own laboratories and are distinguished and key opinion leaders in their field. All 3 are alumni from MIT or Harvard or both.

Under the grant supported by NIDA, PASCALL is conducting an observational studies at Stanford University on surgical population. Our dataset amalgamates pre-operative demographics with over 70 baseline attributes. The intra-operative data includes EEG, anesthetic details, and vital surgical events. Post-operative data comprises comprehensive drug records, cognitive evaluations, pain metrics, opioid equivalents, and outcomes such as hospitalization duration, mortality, 30-day readmissions, and long-term care facility discharges. The data is collected from the Electronic Medical Records.

As part of this project, the student has the opportunity to work with real-world surgical physiological and brain wave data. Some of your main responsibilities include:

1. Understand the data interaction to preprocess the data

2. Use the data to answer an research question related to opioid use/dependence or nociceptive management (due to the fast moving nature of our company, the research question will be determined in discussion with the student)

3. Conduct related literature review/research prior to using data analysis technique to answer the selected research question

Student Qualifications:

- Electrical, electronics, computer science or biomedical engineering
- Strong interest in applying technical and data analysis skills in biomedical problems
- Ability to conduct a independent research project (with guidance)

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Linda B. Cottler

Institution: University of Florida, Gainesville, FL

Research Keywords: national surveillance, substance use trends, novel methods, web monitoring, novel psychoactive substances

Project Title: Substance Abuse Training Center in Public Health

Project Description: This Summer Research with NIDA program is conducted within the Department of Epidemiology, uniquely housed in both the College of Public Health and Health Professions and the College of Medicine, at the University of Florida. The eight-week internship is structured as part of the NIDA-funded U01 National Drug Early Warning System (NDEWS) and will include multiple opportunities for the assigned student to learn about and participate in various aspects of drug abuse research. This project utilizes novel methods of surveillance to provide the field with the most timely, salient, and valuable information on emerging substance use trends. The intern will be exposed to all areas of the project through weekly research team meetings including collaborators from other institutions along with NIDA Scientific Officer Dr. Erin Parker. These varied experiences will provide a solid introduction to methods and topics in drug abuse research, which will facilitate honing and developing the intern's research interests.

Student Qualifications:

- Prefer undergraduate students with interests in behavioral research, ethics, and/or the inclusion of underrepresented minorities in research
- Declared major in anthropology, psychology, sociology, social work, nursing, or other related fields are preferred
- Should be dedicated, reliable, curious, independent, solution-oriented, and have good attention to detail

Earliest Start Date: 5/12/2025

Housing Type Available: On Campus Housing Available

<u>Site # 40</u>

Principal Investigator: Servio H. Ramirez

Institution: University of Florida, College of Medicine, Department of Pathology, Immunology and Laboratory Medicine, Gainesville, FL

Research Keywords: Neuroscience, Neuroinflammation, Neuropathology, Blood-Brain barrier, Cerebral vascular Biology, TissueEngineering, Microfluidics, Substance Abuse Research,

Project Title: Innovative In-Situ Imaging Techniques for the Visualization of CNS associated HIV reservoirs in the Context of Substance Abuse

Project Description: The project envisoned, would involve research in the space of neuroinflammation with a focus on developing translational tissue engineered models of the neurovascular unit. The goal is to generate 3D bioprinted constructs that can be use to evaluate the effects of drugs of abuse on neuronal networks, astrocytes, microglia and brain endothelial cells. The expectaiton is for the student to be trained by and work closely with postdoctoral fellows and laboratory technical staff, help in the design and testing of such constructs. The project will not involve animal work. The project will use primary human cells in culture.

Student Qualifications:

- Majors related to the biological sciences
- Strong desire for a career in biomedical research are prefered

Earliest Start Date: 6/16/2025

Housing Type Available: Off Campus Housing Only

Site # 41

Principal Investigator: Assaf Oshri

Institution: Georgia Center for Developmental Science- UGA, Athens, GA

Research Keywords: Family adversity, Reselience, Substance Use Vulnerabilty, Child development, Brain Development

Project Title: Building Resilience and Nurturing Children's Health (BRANCH)

Project Description: The BRANCH project, funded by NIH (R01 DA055630-01), focuses on understanding resilience development in low-income, rural youth over a five-year period. In the initial phase, we plan to collect data from 265 families over the next 15 months, with data from 80 families already gathered. The study targets children aged 6.5 to 9 years and their primary caregivers. Data collection occurs through two key visits: family visits to participants' homes and BIRC visits at the UGA Bio-Imaging Research Center for MRI scans.

Interns working on BRANCH will be involved in these data collection efforts. They will receive comprehensive training from the GCDS data collection teams for both family and BIRC visits. During family visits, interns will accompany graduate research assistants to families' homes, while for BIRC visits, they will join graduate research assistants at UGA's Bio-Imaging Research Center for MRI scanning sessions. Additionally, interns will help the family and community engagement team and participate in outreach activities, which may include attending events, creating flyers or slides, and assisting with newsletters.

Student Qualifications:

- Highly motivated, passionate about science, and dedicated to their work
- Possess a strong sense of responsibility, excellent organizational skills
- Ability to work both independently and collaboratively within a team
- Punctuality and professionalism are essential, as well as the ability to interact effectively with children.
- Since many family visits occur on weekends due to scheduling constraints, availability on weekends is required
- Be familiar with data analysis software such as SPSS and R, and possess strong proficiency in Microsoft Office, particularly PowerPoint, Word, and Excel
- Strong work ethic and a commitment to contributing to our research efforts are crucial

Earliest Start Date: 5/15/2025

Housing Type Available: Off Campus Housing Only

Site # 42

Principal Investigator: Debra Bangasser

Institution: Georgia State University, Atlanta, GA

Research Keywords: stress, early life adversity, sex differences, motivated behavior, impulsivity, risky decision making, transcriptomics, epigenetics, glia

Project Title: Delineating the epigenetic and neural mechanisms by which early life scarcity alters motivated behavior

Project Description: Early life experiences can have lasting effects on cognition and motivated behavior. The lab uses a rat model of early resource scarcity to understand the neurobiological mechanisms by which early stress can alter opioid self-administration, impulsivity, and risky decision-making. We are finding that male rats are more affected by early resource scarcity than female rats and we are also trying to understand the origin of this sex difference. In addition to looking at changes in rat behavior, we look at molecular endpoints such as changes in gene transcription and epigenetic processes that underlie the lasting effects of early adversity. A new direction for the lab is to look at these changes in glial cells, in addition to neurons. In particular, we are finding that astrocytes, which develop in the postnatal period, are particularly affected by early experience and are understand the role astrocytes play in our behavioral effects.

Student Qualifications:

- Background in neuroscience, biology, or psychology preferred
- Interest in research
- This work will include rat behavioral tasks and tissue processing, so the intern must be willing to work with these approaches, although no prior experience is necessary

Earliest Start Date: 5/26/2025

Housing Type Available: Off Campus Housing Only

Site # 43

Principal Investigator: Ali Gheidi

Institution: Mercer University, Macon, GA

Research Keywords: Cocaine; Fos; Reinstatement; Relapse; Rat; Norepinephrine ; DREADDs; Daun02; Ensemble

Project Title: Norepinephrine modulates medial prefrontal cortex neural ensembles that control cocaine seeking behavior

Project Description: The Gheidi lab is focused on understanding the neurobiology of drug relapse using rat models. The current research investigates how noradrenergic input from the locus coeruleus (LC) to the medial prefrontal cortex (mPFC) modulates Fos neuronal ensembles and cocaine-seeking behavior in both male and female rats. The intern will participate in all aspects of the research, including experiment planning, execution, data collection, and analysis.

Student Qualifications:

- Strong passion for this field above all else. However, students with a background in psychology and/or biology may benefit more from the experience.
- This position involves working with animals and animal tissue.

Earliest Start Date: 10/20/2024

Housing Type Available: Off Campus Housing Only

<u>**Site # 44**</u>

Principal Investigator: Dr. Michelle Birkett

Institution: Northwestern University, Evanston, IL

Research Keywords: social network analysis; public health; HIV; STIs; infectious disease; sexual and gender minorities; substance use; multilevel influence; network data; data collection; social and behavioral health; prevention; population dynamics; comm

Project Title: Network Canvas 2.0: Enhancing network data capture for drug use and HIV research

Project Description: This project emerges from the recognition that social factors drive both drug use and infectious disease, including HIV; yet, to systematically capture social data - such as network and contextual data - from the most at-risk populations presents substantial methodological challenges for researchers. To help simplify the collection and management of these complex data, our team built a free, open-source suite of tools called Network Canvas (www.networkcanvas.com) that allows researchers to easily design their own network surveys, regardless of technical knowledge, and administer these surveys directly to participants using a series of intuitive, touch-optimized interfaces. Although Network Canvas has substantially improved the ability of researchers to quickly and accurately capture network and contextual data, further enhancements are needed to modernize the tool for use in leading-edge substance use and infectious disease research.

Specifically, this project aims to develop a new cloud-based platform, Studio, which will include the functionality of the existing Network Canvas on-premises tools and provide a range of new features to facilitate improved data reproducibility, timeliness, and measurement for researchers and availability and accessibility for study participants. Throughout the development of Studio, our team will conduct user-engagement activities to inform the software's design and rigorously evaluate its value and impact on the measurement of networks relevant to epidemic modeling, HIV and drug use research.

Student Qualifications:

- Knowledge or interest in health disparities research, open-source software development, LGBTQ+ populations, HIV/infectious diseases, public health, and/or community outreach and dissemination.
- Detail-oriented with strong written and oral communication skills
- Majors in social sciences (e.g., sociology, psychology), computer science, public health, or a related field preferred.
- Basic computer proficiency required, and interest in software development a plus.
- Be comfortable engaging members of the public in a professional capacity.

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 45

Principal Investigator: Gregory Phillips II

Institution: Northwestern University, Chicago, IL

Research Keywords: Community Engagement; Critical Adult Education; Program Evaluation; SGM Health; CBPR

Project Title: Community Engagement: A Short Course to Optimize Research Endeavors (CE-SCORE)

Project Description: The first class of CE-SCORE learners have completed the synchronous/asynchronous component of the program and are now moving into the monthly Community of Practice. The proposed project will have two components: 1) evaluating the quantitative and qualitative feedback from both the 5-week course and the Community of Practice to develop reports and manuscripts; 2) supporting the development of the next iteration of CE-SCORE, which will be offered to a new class of learners in Year 2.

Student Qualifications:

- Familiarity with basic qualitative and/or quantitative analyses
- Experience with community-engaged research
- Interest in health disparities research
- Exposure to scientific writing

Earliest Start Date: 6/15/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Michelle Birkett

Institution: Northwestern University, Evanston, IL

Research Keywords: structural inequities; social context; public health; HIV; substance use; infectious disease; racial and ethnic minorities; YMSM; TW; sexual and gender minorities; multilevel influence; network data; social and behavioral health; preven

Project Title: SILOS: Understanding Structural Inequities across Layers Of Social-Context as Drivers of HIV and Substance Use

Project Description: The SILOS project is an innovative observational research study to explore the social and structural drivers of HIV and substance use among racially diverse sexual and gender minority populations. Through 2,700 remote network surveys of young men who have sex with men and transgender women (YMSM-TW) across five U.S. cities, this research aims to quantify the impact of structural inequities and social context on HIV and substance use within these communities. These data will be used to build sophisticated simulation models to examine the role of social position in determining access to people and places, whether these connections are supportive or risky, and how such connections might pool risk and provide fewer resources to those with multiple marginalized identities. To ensure these computational models reflect lived experience and can produce actionable insights, this project will be informed by the expertise of local community advisory boards and other public health experts throughout this research.

The intern will work across multiple research activities of the SILOS project, depending on their interest and experience. This will involve recruitment and outreach support, including the development of study advertisements, fielding participant study-related inquiries, and drafting content for the project website, social media, and for feedback from our community advisors. The intern may also assist in data cleaning and other tasks in support of the project's modeling activities, and may be responsible for early stage manuscript preparation activities, including literature reviews, depending on their research and writing skills. This position will provide hands-on experience in research recruitment, outreach, and community engagement within a large-scale research initiative, and offer opportunities for learning about the application of computational methods to questions in public health.

Student Qualifications:

- Knowledge or interest in health disparities research, LGBTQ+ populations, HIV/infectious disease, substance use, simulation modeling, public health, and/or community outreach and dissemination.
- Detail-oriented with strong written and oral communication skills.
- Majors in social sciences (e.g. sociology, psychology), public health, epidemiology, or related fields preferred.
- Basic computer proficiency required, and interest in research recruitment a plus.
- Be comfortable engaging members of the public in a professional capacity.

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 47

Principal Investigator: Patrick Janulis

Institution: Northwestern University, Evanston, IL

Research Keywords: substance use, HIV, network analysis, epidemic modeling

Project Title: Leveraging data synthesis to identify optimal and robust strategies for HIV elimination among substance-using MSM

Project Description: Alcohol and methamphetamine use increases risk of HIV among men who have sex with men (MSM). Yet, despite a considerable body of research documenting these associations, substantial uncertainty remains regarding the specific behavioral pathways between substance use and HIV that are most responsible for this elevated risk. This project seeks to better identify the behavioral pathways between substance use and HIV acquisition among MSM. To do so, this project leverages several large existing datasets to estimate the effect of these substances on behavior and sexual network characteristics, using these estimates to inform network-based simulation models of HIV. The summer intern will assist ongoing secondary data analysis projects within this study to examine the intersection of substance use and HIV risk among MSM. All research activities will be conducted with existing data.

Student Qualifications:

- Ideal skillsets include a basic knowledge of data analysis or statistical programming (e.g., R, Python, SAS, STATA)
- An interest in HIV prevention and sexual and gender minority health, but no prior research experience is required.
- Majors in epidemiology, psychology, public health, sociology, or related fields preferred.

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Kelli Scott

Institution: Northwestern University Feinberg School of Medicine, Chicago, IL

Research Keywords: Implementation science, community-engaged research, measurement-based care, hybrid effectiveness-implementation study, rapid ethnography, psychosocial interventions, substance use treatment, opioid use disorder, opioid overdose, opioid

Project Title: Pilot Implementation of Measurement-Based Care in Community Opioid Treatment Programs

Project Description: Summer research interns will have the opportunity to participate in a two-phase research project that is focused on improving the quality of treatment for opioid use disorder. This project involves using implementation science methods to develop and test a measurement-based care intervention for use in community opioid treatment programs. Measurement-based care is a research-supported intervention that involves a counselor administering a self-report symptom measure to clients, reviewing measure scores, and discussing the clients' responses in a counseling session. Measurement-based care has not been well-studied in community opioid treatment programs, so this project involves building community partnerships with programs offering opioid use disorder treatment. To help build these community partnerships, the study Principal Investigator (PI) has collected mixed methods data (observational data, qualitative interviews and quantitative surveys) from leaders, counselors, and clients to understand: a) barriers to measurement-based care use; and b) potential ways that measurement-based care should be adapted to fit the needs of counselors providing treatment for opioid use disorder. The PI is also conducting workshop trainings and ongoing consultation meetings to support counselors in using measurement-based care, and is collecting data on the effectiveness and implementation of measurement-based care across four opioid treatment programs. These data will be analyzed and used to inform further adaptations to the measurement-based care protocol in anticipation of future partnered research with treatment programs in the Chicagoland area. This project will require students to work with human participants. This project would be particularly relevant for interns interested in graduate training and/or a career in counseling, clinical psychology and/or implementation science.

Student Qualifications:

- Educational background in psychology or public health is preferred, however no prior research experience is needed for this internship
- Familiarity with Microsoft Word and Excel is preferred
- Strong organizational and communication skills

Earliest Start Date: 6/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Sara Becker, PhD

Institution: Northwestern University Feinberg School of Medicine, Chicago, IL

Research Keywords: implementation; adolescent; digital health; opioid; contingency management

Project Title: Improving Outcomes of Adolescent in Residential Substance Use Treatment via a Technology-Assisted Parenting Intervention

Project Description: The summer intern will have the opportunity to contribute to one of three active grants designed to increase the uptake of effective addiction health services in community and clinical care settings. Interns may select which project(s) to contribute to based on their professional development goals. The first is called Parent SMART and is a pragmatic effectiveness trial testing a technology-assisted intervention among 220 parents of adolescents in residential treatment. The second is called Project MIMIC2 and is a partnership with 10 opioid treatment programs. The trial tests whether a multi-level implementation strategy can help opioid treatment programs to deliver an effective intervention called contingency management (CM) as part of their routine workflow. The third is the Research Adoption Center, a NIDA-funded center of excellence designed to advance the implementation of effective treatments for opioid use disorder and pain management. Opportunities to contribute to manuscripts or conference presentations could be available for students with strong writing skills. Professional development support will be offered for students with interest in applying to graduate school.

Student Qualifications:

- Interest in implementation science, clinical research, and/or community partnerships preferred.
- Interest in substance use interventions is also beneficial.
- Strong interpersonal skills, time management, and attention to detail required.

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Sarah Helseth

Institution: Northwestern University Feinberg School of Medicine (Chicago), Chicago, IL

Research Keywords: Adolescent, Substance use, cannabis, justice-involved, digital health, smartphone, intervention, randomized trial

Project Title: Development and Preliminary Testing of an Adjunct Smartphone App to Reduce Marijuana Use in Court-Involved, Non-Incarcerated Adolescents

Project Description: Dr. Helseth is interested in working with a student seeking treatment research experience on her NIH-funded randomized clinical trial of substance use problems in high-risk youth. Teenagers who use cannabis and go to juvenile court are more likely to face arrest or addiction in the future. Treating their cannabis use within the court system is ideal, but treatments would need to be inexpensive and easy to deliver. This study will test a new smartphone app to help teenagers in the court system cut down on their use of cannabis and other substances. Phase III of the research will occur during Summer 2024, and will involve data collection and analysis to determine the impact of the new smartphone app with court-involved teens. Student will complete a required ethics training prior to engaging in any research activities and will receive dedicated training in all study procedures.

Student Qualifications:

- Coursework in Child or Developmental Psychology & Research Methods
- Some interest/experience in treatment, working with adolescents and families, substance use, technology
- An interest in scientific writing and presentations.

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Lauren Wakschlag and Elizabeth Norton

Institution: Northwestern University, Feinberg School of Medicine, Chicago, IL

Research Keywords: infant and child development; perinatal substance use; infant neuroimaging; parent-child interactions; prenatal exposures

Project Title: HEALthy Brain and Child Development (HBCD) Study

Project Description: Northwestern University (Feinberg School of Medicine) is the Illinois site of the large-scale, longitudinal HEALthy Brain & Child Development Study (HBCD) (PIs Elizabeth Norton & Laurie Wakschlag). The HBCD study aims to examine the impact of prenatal substance exposure and other prenatal adversities and protective factors on child brain and behavioral development using a diverse, nationally representative sample. This study enrolls participants during their second trimester of pregnancy and follows mothers and their child over the first decade of life. A variety of assessment procedures and measures are involved in the study, including mother interviews, infant EEG and MRI, infant behavioral and developmental assessments, parent-child observations, and biospecimen collection. Interns will be responsible for assisting with research visits and tasks, which may include administering the caregiver-child assessments, processing biospeciments, assisting with EEG, and/or other responsibilities that align with their interests. Majors that tend to be a good fit with our lab (though not required) include psychology, human development, neuroscience, cognitive science, social work, and family studies.

Student Qualifications:

- Strong interest in human subjects research, specifically research with families, infants, and young children and/or research on perinatal substance use
- Hard-working, reflective, curious, strong communicators, and work well in a team setting
- CITI human subjects training must be completed prior to the start of the internship

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Seetha Krishnan

Institution: University of Chicago, Chicago, IL

Research Keywords: Hippocampus, neurotransmitters, nicotine, pharmacology, behavior, mouse models, virtual reality, microscopy

Project Title: Hippocampal memory mechanisms in nicotine relapse

Project Description: The summer research project aims to investigate the hippocampus's role in forming drug-place memories. We'll use head-restrained animals to examine hippocampal neural activity with a two-photon microscope. The intern will learn to train mice in a well-established behavioral task. This involves a simple surgery to affix a head plate on mice using dental cement. The intern will then train these head-restrained animals to run on a treadmill and navigate virtual reality environments (see Krishnan et al., 2023, Nature Communications for details on the behavior paradigm). Experiments will compare behavioral differences between mice trained with nicotine versus water rewards. The intern will repeat these procedures on transgenic mice with knocked-out nicotinic receptors and use pharmacology to manipulate receptors and assess the impact on behavior. Through this project, the intern will gain hands-on skills in mouse handling, behavior training, surgery, pharmacology, and data analysis. Time permitting, the intern will also learn viral injections and how to implant an imaging cannula to record hippocampal neural activity during these tasks. The intern will be required to work with mice.

Student Qualifications:

- hands-on, motivated individual who can work well both in a team and independently
- While all relevant skills can be taught, enthusiasm and commitment to working in the lab every day for the duration of the project is essential

Earliest Start Date: 6/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Andrew Riley

Institution: University of Illinois Chicago, Chicago, IL

Research Keywords: medicinal chemistry, drug discovery, nicotinic acetylcholine receptor, natural products, structure-activity relationships, substance use disorders, cocaine use disorder

Project Title: Selective Targeting of Nicotinic Acetylcholine Receptor Subtypes for Cocaine Use Disorder

Project Description: The nicotinic acetylcholine receptors (nAChR) are a family of ion channels found throughout the central and peripheral nervous systems. Certain nAChR subtypes (defined by the subunits that make up the pentameric receptors) have been implicated in a wide range of normal and pathological function. The α3β4 nAChRs have emerged as a potential target for treating several substance use disorders (SUDs) since their inhibition produces reduced drug-seeking behavior and withdraw symptoms in rodents. Our research group is currently developing a novel class of α3β4 inhibitors based on the natural product aristoquinoline. By synthesizing aristoquinoline derivatives and studying their activity at the nAChRs, we gain valuable insight into their structure-activity relationships, and ultimately, develop promising pre-clinical candidates for the treatment of SUDs.

Student Qualifications:

- Although no previous experience in organic synthesis research is required, interest in developing organic and medicinal chemistry experience is preferred
- Students will not be required to work with animals, humans, or tissues samples; however, the option to perform cell-based biological assays is available

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 54

Principal Investigator: Justin Yates

Institution: Northern Kentucky University, Highland Heights, KY

Research Keywords: cocaine self-administration, chemogenetics, rat, behavioral pharmacology, immunohistochemistry, medial prefrontal cortex, basolateral nucleus of the amygdala

Project Title: GluN2B subunit as mediator of risky choice and resurgence of cocaine seeking

Project Description: The purpose of the summer research project is to determine how the pathway between the medial prefrontal cortex (mPFC) and the basolateral nucleus of the amygdala (BLA) mediate compulsive cocaine seeking in rats. A chemogenetic approach will be used in which a designer receptor exclusively activated by a designer drug (DREADD) will be inserted into the brain. During surgery, rats will will be implanted with an indwelling jugular catheter for cocaine self-administration and will receive an intra-BLA (Experiment 1) or an intra-mPFC (Experiment 2) infusion of a viral vector containing the inhibitory hM4Di receptor or viral vector control. To better determine how neurons between the mPFC and BLA mediate compulsive cocaine seeking, rats will also receive an intra-mPFC (Experiment 1) or an intra-BLA (Experiment 2) infusion of the retrograde tracer AAVrg-Cre. AAVrg-Cre is important for ensuring that only neurons in the mPFC-BLA pathway are targeted. Rats will self-administer cocaine (0.25 mg/kg/infusion) for approximately 10 sessions. Rats will then receive three sessions of a compulsive drug-seeking paradigm (each test spaced at least 3 days apart), in which cocaine infusions will be paired with probabilistic delivery of foot shock (0.2 mA delivered with a probability of 0.5). During each compulsive drug-seeking session, rats will receive a systemic injection of deschloroclozapine (DCZ) (0, 1, and 3 µg/kg; dose counterbalanced across rats). DCZ activates the hM4Di receptor, leading to inhibition of neurons in the mPFC-BLA pathway. Following the final test session, brains will be taken for immunohistochemistry. Viral vector placement will be confirmed using a confocal microscope. cFos expression will also be determined to verify that DCZ injection causes inhibition of neurons in the mPFC-BLA pathway. The intern will be responsible for conducting behavioral testing each day and for performing immunohistochemistry assays. The intern will work with Sprague Dawley rats and brain tissue. The intern will be expected to show up to the lab for 40 hours/week during the internship. They will also be expected to read research articles related to the project and will be expected to participate in discussions with the PI and his other research assistants

Student Qualifications:

- Prior experience working with rats is preferred.
- Prior experience performing immunohistochemistry experiments is preferred, but is not a requirement.
- Courses that are relevant to the project include neurosignalling, neuroanatomy, biopsychology, and psychopharmacology.
- Dependability.

Earliest Start Date: 5/12/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Cassandra Gipson-Reichardt

Institution: University of Kentucky, Lexington, KY

Research Keywords: Xylazine, fentanyl, self-administration, kinome, chemogenetics, neural circuits, electrophysiology

Project Title: Neurobehavioral mechanisms underlying xylazine and fentanyl co-use and withdrawal

Project Description: The project that the summer intern will be conducting involves evaluating the role of neuroinflammatory signaling and microglia in the reward pathway in driving nicotine relapse. This project will involve learning nicotine self-administration in rats, as well as learning how to maintain a breeding colony of rats that express a gene that allows for specific targeting of microglia (called CX3CR1-Cre rats). These rats are used in the technique "chemogenetics", which allows for directly activating or inhibiting microglia within the nucleus accumbens, a brain region heavily involved in nicotine addiction. The intern will learn surgical techniques such as intravenous jugular catheter placement, stereotaxic surgery, intracranial viral administration, as well as self-administration behavior, immunohistochemistry, confocal microscopy, and will be given the opportunity to learn about whole cell patch clamp electrophysiology. Interns will directly work with rats and brain tissue samples.

Student Qualifications:

- Preferred (but not required) skills include rodent handling, career interest in addiction neuroscience, and
- Major in areas such as biology, chemistry, psychology, or similar
- Career goals of post-undergraduate education are preferred

Earliest Start Date: 4/1/2025

Housing Type Available: On Campus Housing Available

Site # 56

Principal Investigator: Jeffrey Talbert

Institution: University of Kentucky, Lexington, KY

Research Keywords: data science, data system, drug overdose prevention and response, predictive modeling, forecasting, evaluation

Project Title: Rapid Actionable Data for Opioid Response in Kentucky

Project Description: Researchers at the University of Kentucky are looking for two summer interns to participate in the development and implementation of Rapid Actionable Data for Opioid Response in Kentucky (RADOR-KY). RADOR-KY is an integrated, population-based, near-real time statewide OUD surveillance system that will ingest data from multiple state agencies and implement advanced informatics algorithms for fast data processing, data linkage, machine learning and predictive analytics to shorten the time between data capture and when analytical results are available to support opioid overdose prevention and control. RADOR-KY will have mobile and web-based applications to provide immediate dissemination and access to near-real time community or state level data, reports, and visual analytics. RADOR-KY End-User Advisory Group, including partners in state government and local communities, will guide the development of the RADOR-KY reporting and visualization functionality.

Student Qualifications:

- Knowledge of substance use disorder and related harms,
- Completed courses in the areas of public health or a related field (e.g., premed) including but not limited to: data science (e.g., biostatistics, epidemiology, informatics), health behavior and/or communications

Earliest Start Date: 5/19/2025

Housing Type Available: On Campus Housing Available

Site # 57

Principal Investigator: Carmen Canavier

Institution: LSU Health Sciences Center New Orleans, New Orleans, LA

Research Keywords: computational neuroscience, nonlinear dynamics, oscillations

Project Title: A dynamic diversity of dopamine neurons

Project Description: The project consists of using computer simulations based on electrophysiological data provided by our experimental colleagues to understand the different responses of different subpopulations of midbrain dopamine neurons to inputs from other populations of neurons. The project will generate mechanistic hypotheses for our collaborators to test. The ultimate goal is to define the parameter spaces corresponding to the distinct subpopulations of dopamine neurons.

Student Qualifications:

- knowledge of circuit physics and a background in engineering or physics is preferred.
- Must be able to program; knowledge of Python in a Linux environment is preferred.

Earliest Start Date: 5/15/2025

Housing Type Available: On Campus Housing Available

Site # 58

Principal Investigator: Dr. Vivek Kumar

Institution: The Jackson Laboratory, Bar Harbor, ME

Research Keywords: Addiction, Genetics, Ethology, Machine vision, Machine learning

Project Title: Establishment and Characterization of Novel Mutant Mouse Models for the Addiction Research Community

Project Description: There is a clear and demonstrated genetic component influencing opioid use disorder and opioid related traits in humans and model organisms. Mice are an excellent model to interrogate the genetic factors influencing particular facets of opioid use disorder and specific opioid related traits. However, conventional approaches have made it challenging to survey opioid withdrawal across genetic diversity in mice. These challenges include difficulty understanding the time course of opioid withdrawal across murine genetic diversity, the questionable generalization of reductionist assays like elevated plus maze across genetic diversity, the high time cost of assessing spontaneous withdrawal behaviors manually, and modelling the human condition of spontaneous opioid withdrawal using pharmacologically precipitated withdrawal in mice.

This project will harness machine learning quantification of opioid withdrawal behaviors in mice over extended periods of time to overcome these limitations and begin to understand the impact of genetics on spontaneous opioid withdrawal. Creating machine learning tools to automate the detection and quantification of known opioid withdrawal behaviors will relieve the burden of manually scoring these behaviors. Monitoring continuously over extended periods of time will allow

This project breaks down into the following goals:
    1. Create machine learning classifiers to identify and quantify opioid withdrawal behaviors in naloxone precipitated withdrawal.
    2. Identify spontaneous withdrawal behaviors in C57BL/6J mice (with a known withdrawal timeline) in long term monitoring to validate the created tools.
    3. Expand to assessing spontaneous withdrawal behaviors in the genetically diverse mice readily available at the Jackson Labs.
    4. Comparing the impact of genetic diversity on spontaneous withdrawal behavior including the onset of withdrawal, duration of withdrawal behavior, and the maximum severity of withdrawal.

The anticipated skills responsibilities for this position would be:
    1. The administration of opioids intraperitoneally to create dependence in mice.
    2. Creating and refining behavioral classifiers to quantify opioid withdrawal using the state of the art JAX Animal Behavioral System (JABS).
    3. Testing mice in long term monitoring apparatuses to assess opioid withdrawal over time.
    4. Handling and testing genetically diverse mice.

Student Qualifications:

- Experience in mouse handling (primarily scruffing and intraperitoneal injections),
- Basic experience coding in R or Python,
- Experience interacting with HPC resources or command line interface,
- Strong organizational skills,
- Interest in addiction sciences.

Earliest Start Date: 6/2/2025

Housing Type Available: On Campus Housing Available

Site # 59

Principal Investigator: Javier Cepeda

Institution: Johns Hopkins University, Baltimore, MD

Research Keywords: Appalachian region; behavior assessment; drug user; evidence-based intervention; HIV; harm reduction; justice; law enforcement; longitunal cohort; occupational safety; police; public health; substance use disorder; substance use

Project Title: Project SHIELD: Police Education Partnership to Support Public Health in Kentucky

Project Description: Project SHIELD aims to build capacity of the behavioral health workforce (treatment providers, harm reductionists, mental health services providers, etc.) by training them to deliver an evidence-based police education program to reduce HIV risk among people who use drugs (PWUD). The evidence suggests certain policing practices, such as arrest, can elevate drug-related harm by preventing access to treatment and other harm reduction services, ultimately increasing overdose risk. Arrest and incarceration rates of PWUD remain high, which increase syringe sharing and infectious disease risk. This study examines the impact and scalability of a structural level HIV prevention intervention that shifts policing away from arrest and toward referral to evidence-based medications for opioid use disorder. The Safety and Health Integration in the Enforcement of Laws on Drugs (SHIELD) is a police education program that has been implemented in numerous communities that focuses on reducing occupational risks and burnout among police, and task- shifting to increase referrals to essential services for PWUD. Thus far, delivery of SHIELD has relied on a specialized academic team limiting its scalability. In this study, we are moving SHIELD into the hands of the behavioral health workforce and implementing "SHIELD 2.0" in a region of Eastern Kentucky that has been hard hit by overdose and blood-borne virus transmission. Interns will have the opportunity to support a number of tasks including support data collection, scientific writing, and presentation creation. Interns will be required to work with humans.

Student Qualifications:

- Public health statistics and/or epidemiology experience preferred.

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 60

Principal Investigator: Kevin Wenzel

Institution: Maryland Treatment Centers, Baltimore, MD

Research Keywords: Opioid Use Disorder; Adolescents; Peer Recovery Support Services; Medication for Opioid Use Disorder; Family Involvement; Post Traumatic Stress Disorder

Project Title: Peer Recovery Support Services for Individuals in Recovery Residences on MOUD

Project Description: We have several NIDA funded clinical trial research projects related to the treatment of opioid use disorder and one NIDA funded clinical trial project realted to the treatment of co-occurring PTSD and substance use disorder within a residential addiction treatment setting. For our work with opioid use disorder, we are mainly focused on studing strategies to optimize treatment engagement and medication retention including family involvement, lowering barriers to treatment, contingency management incentives, and peer recovery coaching. For the project related to PTSD, we are adapting a known evidence based treatment for PTSD (Written Exposure Therapy) for use in a residential addiction treatment setting. Interns would be involved in these clinical research projects by helping us recruit potential subjects and shadowing clinical research procedures.

Student Qualifications:

- Interest or experience working with human research subjects is preferred.
- Interest in a clinical research or clinical career would be good fits for our site.
- Strong communicators and able to work as part of a team.

Earliest Start Date: 6/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Shenghan Lai

Institution: UMB, Baltimore, MD

Research Keywords: HIV, cocaine use, contingency management intervention, brain MRI, cognitive assessment, white matter hyperintensity, white matter integrity

Project Title: Cocaine Abstinence or Reduced Use May Retard Alterations in Brain Structure and Function, and Associated Cognitive Changes among African American Cocaine Users with HIV

Project Description: While HIV-associated neurocognitive impairment (NCI) has continued to be recognized in the era of antiretroviral therapy (ART), recent studies suggest that NCI among adults with HIV is currently primarily due to comorbidities and aging. Our over 20-year investigation of HIV-associated comorbidities among African Americans (AAs) demonstrated that while these comorbidities are prevalent among AAs with HIV, other factors, such as cocaine use, may trigger/accelerate their impact. We have shown that although HIV increased the risk of coronary atherosclerosis, the detrimental effect of HIV/ ART predominantly affected cocaine users and not cocaine non-users. Furthermore, our study has shown that a contingency management (CM) intervention was not only effective in achieving a sustained reduction in cocaine use, but also provides compelling evidence that reduced cocaine use leads to a concurrent decrease in high-risk plaque burden among AA cocaine users with HIV-associated coronary atherosclerosis. Our recent data revealed that although HIV is associated with NCI, the adverse effect of HIV primarily impacted cocaine users, and not cocaine non- users among AAs. Thus, we propose to conduct a 5-year investigation examining whether cocaine abstinence or reduced use achieved with a 12-month CM intervention retards the development and/or progression of cognitive decline among AA cocaine users with and without baseline NCI assessed with the NIH Toolbox cognition battery (NIHTB-CB). Since brain MRI may detect signs of cognitive decline in the brain earlier than symptoms appear, brain MRI measures, including arterial spin labeling MRI to assess cerebral blood flow (CBF), volumetric MRI, diffusion tensor imaging to assess white matter connections, and resting state functional MRI (rs-fMRI) to assess brain connectivity, will be obtained along with the cognitive assessments using the NIHTB-CB. We will recruit 180 AA cocaine users, between 40 and 60 years of age, including 45 with HIV and NCI assessed with the NIHTB-CB, 45 with HIV without NCI, 45 without HIV but with NCI, and 45 with neither HIV nor NCI from our ongoing study (U01DA040325). A 12-month CM intervention will be performed for all participants to reinforce cocaine abstinence with an escalating cash incentive approach. The specific aims of this study are: (1) To evaluate the effects of a 12-month CM on MRI measures, including CBF, volumetrics, white mater diffusion and rs-fMRI based connectivity, and on cognitive performance (NIHTB-CB), (2) To evaluate the net effect of HIV on brain MRI measures and cognitive performance and (3) To study whether changes in brain MRI measures over the 12-month study period are associated with changes in cognition. Since brain MRI may detect signs of cognitive decline in the brain earlier than symptoms appear, the proposed study will explore whether brain MRI measures can be used as biomarkers for NCI. If successful, the CM employed in this study may be generalized to address other HIV-related comorbidities among cocaine users.

Student Qualifications:

- Complete human subject protection training

Earliest Start Date: 2/2/2025

Housing Type Available: Off Campus Housing Only

Site # 62

Principal Investigator: Nathan Fox

Institution: University of Maryland, College Park, MD

Research Keywords: brain development; EEG; MRI; infant development; drug exposure pregnancy

Project Title: 16/24 Healthy Brain and Child Development National Consortium

Project Description: The University of Maryland Child Development lab is one of the 26 sites for the Healthy Brain and Child Development (HBCD) study. This is a national study recruiting pregnant women from diverse backgrounds including those using substances during pregnancy. Infants of these women will be followed longitudinally through their eighth birthday. The lab is collecting brain activity and brain imaging data on the infants as well as behavioral assessments. An undergraduate who is placed in the lab will have an opportunity to participate in the study, will be trained in the methods and approaches being used in the study. They will be exposed to brain imaging methods, to assessments of infants, and to the approaches used for recruitment and retention. The intern will work with families who have infants.

Student Qualifications:

- Undergraduates who are psychology or neuroscience majors are preferred.
- Bilingual (Spanish/English) that is preferred.

Earliest Start Date: 5/15/2024

Housing Type Available: Off Campus Housing Only

Site # 63

Principal Investigator: Babak Tofighi

Institution: Friends Research Institute; NY State Office of Mental Health, Baltimore, MD; Albany, NY

Research Keywords: Health disparities, mobile health, educational technologies, community engagement, participatory action research

Project Title: Addressing racial disparities in opioid overdose deaths using an open source peer recovery coach training and mobile health platform

Project Description: This proposal addresses key NIDA priorities and features outlined in PA-21-180 by maximizing receipt of medications for opioid use disorder (MOUD; e.g., buprenorphine) among Black / Latinx PWUO by: (1) adapting a currently staff-led, SAMHSA-funded, evidence-supported, Cultural & Structural Humility (CSH) training to interactive video modules for peer recovery coaches (PRCs) that goes beyond a SDH framework to also incorporate stigma reduction, health habitus, and patient navigation informed by cultural and structural determinants (Aim 1); (2) concurrently with Aim 1, refining AI-driven texting that reinforces core CSH training principles for Black / Latinx PWUO per user-centered design principles (Aim 2); (3) engaging key stakeholders during all study stages to inform intervention development and study conceptualization for a subsequent efficacy trial; (4) aligning with NIH best practices on use of open-source solutions that promote dissemination of research products (e.g., code libraries, workflows); and (5) evaluating the feasibility of integrating a multimodal intervention in a publicly funded health system that may be rapidly scalable across other health systems (Aim 3) . This application is comprised of an interdisciplinary team with extensive experience working with equal-partnership community engagement collaboratives and refining innovative service delivery models to address racial disparities among PWUO.

Student Qualifications:

- Interest in community and health services research, data analysis, and manuscript preparation

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

Site # 64

Principal Investigator: Lydia Shrier

Institution: Boston Children's Hospital, Boston, MA

Research Keywords: cannabis use disorder, telehealth, mHealth, young adults, intervention

Project Title: Developing a Telehealth + mHealth Cannabis Use Intervention for Young Adults (MOMENT-V)

Project Description: The intern will primarily assist with a NIDA-funded clinical research study testing the feasibility of a telehealth-plus-mhealth intervention for young adults with cannabis use disorder. The project is also examining the feasibility of at-home oral fluid (saliva) testing for cannabis use. During summer 2025, this project will be recruiting and enrolling young adult patients of local clinics. Under supervision from the study coordinator and the research assistant, the intern will be expected to participate in a variety of activities that support recruitment and enrollment, including direct interaction with (prospective) participants. The intern will participate in study team meetings, during which there will be ample opportunities and invitations for the intern to contribute thoughts and feedback on our young adult-focused study materials and procedures. The intern may perform literature reviews or otherwise gather information about topics related to the research. The intern will develop and strengthen their skills with platforms that are commonly used in clinical research for data entry, data collection, tracking study progress, etc. The intern will also enhance their writing and speaking skills; interns are expected to deliver ~2 presentations to the study team during their internship. Through this project, the intern will enhance their understanding about substance use epidemiology, behavioral health interventions, and clinical research implementation.

The intern will also have the opportunity to engage with other projects at the Center for Adolescent Behavioral Health Research (CABHRe). CABHRe is based in the Division of Adolescent/Young Adult Medicine at Boston Children's Hospital, the pediatric research and teaching hospital of Harvard Medical School. CABHRe's mission is to develop, test, and disseminate innovative and effective strategies pertaining to prevention, early detection, and intervention for leading behavioral and mental health concerns in adolescence and emerging adulthood.

Student Qualifications:

- Interest in adolescent/young adult behavioral health, particularly substance use
- Prior experience with research
- Experience and comfort with Microsoft Office
- Comfort interacting with young adults – this project will require students to work with humans. Students will not work with animals or tissue samples.
- Ability to work on a team
- Excellent communication skills
- Curiosity and motivation
- Coursework in psychology, sociology, medicine, public health, research methods, statistical methods, and/or neuroscience a plus

Earliest Start Date: 5/12/2025

Housing Type Available: Off Campus Housing Only

Site # 65

Principal Investigator: Benjamin Linas

Institution: Boston Medical Center, Boston, MA

Research Keywords: Simulation Modeling, Evaluating strategies to address opioid use disorder, Public Health, Health Equity, Health Economics, Health Policy, Substance Use Disorder, HIV, HCV, Systematic Review, Methadone

Project Title: Researching Effective Strategies to Prevent Opioid Death (RESPOND)

Project Description: The summer intern will be working on projects involving the model Researching Effective Strategies to Prevent Opioid Deaths (RESPOND). The RESPOND model simulates a population with opioid use disorder (OUD) using characteristics including the natural history of OUD, movements on to and off of medications for opioid use disorder. This model tracks outputs such as overdoses and costs. The RESPOND model is used to evaluate the effectiveness and cost effectiveness of a variety of interventions or policies aimed at addressing opioid use disorder.

Student Qualifications:

- Interest in public health, health equity, substance use disorders, data driven research, simulation modeling, and/or health economics.
- Academic background in public health, health sciences/services, epidemiology, or related field
- Ability to handle multiple responsibilities simultaneously and prioritize accordingly
- Excellent interpersonal skills
- Must have an interest in performing new and varied work assignments
- Must have the ability to maintain confidentiality
- Eager to contribute to an inclusive environment and be able to adhere to BMC core values and ethics

Earliest Start Date: 5/26/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Abigail Batchelder

Institution: Boston University Chobanian and Avedisian School of Medicine, Boston, MA

Research Keywords: Stigma, sexual and gender minority, HIV, substance use, harm reduction, hybrid trial

Project Title: Mitigating the Impact of Stigma and Shame as a Barrier to Viral Suppression Among MSM Living with HIV and Substance Abuse Disorders

Project Description: Men who have sex with men (MSM), and gender minority individuals who have sex with men, living with HIV and substance use disorders (SUDs) are less likely to be virally suppressed, which can lead to HIV transmission and negative health outcomes. This hybrid type 1 study will assess the efficacy, mechanisms, as well as facilitators and barriers to implementing the MATTER intervention, a virtually delivered 5-session text-enhanced psychobehavioral intervention designed to facilitate viral suppression by addressing internalized stigma and shame as barriers to engagement in HIV care among MSM and gender minority individuals living with HIV and SUDs in two locations with different levels of HIV resources (i.e., the Boston, Massachusetts and Miami, Florida metro areas). MATTER aims to mitigate the negative behavioral consequences of internalized stigma and shame on viral suppression by a) developing behavioral self-care goal setting skills and related self-efficacy, b) increasing metacognitive awareness (i.e., non-judgmental awareness of emotions and cognitions), and c) teaching and reinforcing compassionate self-restructuring (i.e., self-compassion), in addition to providing access to phone-based resource navigation. Scalable interventions such as MATTER are essential to our efforts to end the HIV epidemic in high priority regions.

The summer intern on this project would be involved in the data acquisition operations, including facilitating research visits with participants, monitoring data collection (including self-report, text message data, and implementation science related data), as well as assisting with community advisory board meetings and recruitment efforts. This project will require students to work with humans.

Student Qualifications:

- Relevant CITI trainings
- Some experience working with individuals with unmet needs and/or sexual and gender minority people
- Strong attention to detail
- Some coursework in research methods would also be an asset for this position

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

Site # 67

Principal Investigator: Joji Suzuki

Institution: Brigham and Women's Hospital, Boston, MA

Research Keywords: Substance use disorders; opioid use disorders; clinical trials

Project Title: Semaglutide for the treatment of opioid use disorder: A pilot randomized trial

Project Description: The aims of this R21 grant are to 1) conduct a pilot RCT to evaluate the safety of semaglutide for OUD, and 2) evaluate the preliminary efficacy on OUD-related outcomes. The study will be a placebo-controlled RCT, 12 weeks in duration, and conducted on the BWH main campus. A total of 46 individuals will be enrolled during the 2-year project. Interns will attend the weekly project meetings in addition to the weekly lab meetings, and will assist with recruitment, study visits, and provide support to the project as requested by the PI.

Student Qualifications:

- Prior experiece with clinical research
- Basic understanding of IRB rules, will be helpful
- Good communication sklills and interpersonal skills are critically important

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 68

Principal Investigator: Peter Chai

Institution: Fenway Health, Boston, MA

Research Keywords: ingestible sensors, digital phenotyping, PrEP, HIV prevention, substance use disorder, medication adherence, behavioral science

Project Title: Smart Steps: A context-aware adherence intervention to improve PrEP adherence among men who have sex with men (MSM) with substance use disorder

Project Description: We have hosted several NIDA summer interns over the past summers. The overall aim of our lab is to understand how to apply innovative technologies to understand behaviors surrounding HIV risk, adherence to HIV oral pre-exposure prophylaxis (PrEP), and the relationships of these behaviors to substance use. We leverage ingestible sensor technologies to understand real time changes in adherence and pair this with digital phenotyping, a technique where we gather passive data from smartphones to develop phenotypic behaviors surrounding adherence. The ultimate goal is to leverage daily technologies like smartphones to understand and develop patterns that suggest PrEP nonadherence and create behavioral interventions that help individuals anticipate nonadherence and decrease HIV risk and substance use.

Student Qualifications: Students will work with human subjects and undergo training in research ethics.

Earliest Start Date: 6/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Christin Sander

Institution: Massachusetts General Hospital, Boston, MA

Research Keywords: Neuroreceptor Imaging, Stimulant Drugs, Positron Emission Tomography (PET), Functional Magnetic Resonance Imaging (fMRI), Animal Studies

Project Title: The neuropharmacology of brain activation during stages of drug abuse

Project Description: The summer research project will focus on understanding dopamine and glutamate receptor imaging and receptor adaptations resulting from stimulant drug exposure. The intern will be involved in working with image data models or image analysis from nonhuman primates. The imaging techniques utilized in this project include positron emission tomography (PET) and functional magnetic resonance imaging (fMRI). These techniques are applied to examine receptor-specific adaptations in the dopamine system in the living brain. The intern will gain hands-on experience in image analysis methods to improve quantification of dopamine/glutamate receptors, contributing to a deeper understanding of how stimulants affect brain receptor dynamics. In addition, the intern will be immersed in imaging methodologies in addiction research, regularly participating in group meetings, literature discussions, and ongoing projects. By the end of the program, the intern will develop a foundation in neuroimaging techniques and the neurobiology of drug use.

Student Qualifications:

- Interest in neuroimaging and addiction research.
- Programming skills, experience with data analysis.
- Familiarity with basic pharmacology concepts.
- Willingness to learn new imaging and computational methods.
- Strong communication skills and the ability to work collaboratively in a team environment.

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Rebecca McHugh

Institution: McLean Hospital, Belmont, MA

Research Keywords: behavioral therapy; opioid use disorder; buprenorphine

Project Title: The Role of Behavior Therapy Combined with Buprenorphine for Opioid Use Disorder

Project Description: The major goal of this project is to investigate the effects of behavior therapy added to buprenorphine for opioid use disorder, including moderators of treatment response and the impact on functional outcomes. Interns would participate in a variety of activities to build skills in data management and analysis, literature review and local data presentations for this project. Interns will also gain exposure to related projects to gain exposure to behavioral paradigms for studying substance use disorders, clinical interviewing and experimental procedures in randomized trials.

Student Qualifications:

- No prior research or clinical experience is required
- Prior experience working in healthcare, research or customer service is preferred

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Julie M McCarthy

Institution: McLean Hospital / Harvard Medical School, Belmont, MA

Research Keywords: Families, Substance use, Psychosis, Intervention

Project Title: Improving Treatment Engagement in Individuals with Co- occurring Substance Use and Psychosis: A Telemedicine Family- Based Approach

Project Description: Dr. McCarthy's team is developing and evaluating a new telehealth intervention for families of people with early psychosis and substance use. Co-occurring substance use is related to poor treatment outcomes, and our program is designed to help families support a loved one to increase their readiness to change their substance use and improve overall wellbeing of the family through one-on-one coaching. We are interested in understanding what works well for families, what are their challenges, and how we can overcome them through research.

Student Qualifications:

- Background in psychology, statistics,
- Proficiency with Microsoft Office programs (Word, Excel, PowerPoint) and REDCap,
- Effective and responsive communication, attention to detail, initiative, flexibility,
- Interest in learning about intervention development and clinical trials and expanding the reach of evidence-based services to all

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 72

Principal Investigator: Camron D Bryant

Institution: Northeastern University, Boston, MA

Research Keywords: addiction genetics; behavioral genetics; cocaine; psychostimulants; amphetamines; methamphetamine; opioids; morphine; oxycodone; fentanyl; opioid; opiate; substance use disorder; opioid use disorder; psychostimulant use disorder; cocain

Project Title: Systems genetics of premorbid and cocaine use traits in a rat reduced complexity cross

Project Description: Description: The Laboratory of Addiction Genetics, headed by Dr. Camron Bryant in the Center for Drug Discovery in the Department of Pharmaceutical Sciences at Northeastern University is seeking to recruit two NIDA summer fellows for 2025. The major goal of the project is to identify candidate genes underlying differences in the reinforcing and motivational properties of cocaine as assessed by intravenous self-administration and various operant conditioning paradigms. To accomplish this goal, we are phenotyping a cohort of rats from an F2 cross between very closely related spontaneously hypertensive rat (SHR) substrains that differ in cocaine use traits and genotyping them genome-wide with approximately 500 genetic markers and then conducting quantitative trait locus (QTL) mapping of behavior to identify chromosomal regions containing causal genetic variants underlying variance in cocaine behavioral traits. To assist in identifying causal genes and variants, we are also conducting transcriptome analysis via RNA-seq and proteomic analysis via mass spec to triangulate on both expression QTLs (eQTLs; RNA) and protein QTLs (pQTLs) that map to the same chromosomal regions which will allow us to derive hypotheses as to which DNA variants regulate gene expression and in turn, behavior.

Responsibilities and Expectations: The intern will work under the guidance of the lead postdoc on the project and is expected to work 9am-5pm Monday-Friday and will be responsbile for assisting in rat colony maintenance, survival surgeries involving catheter implants into the femoral vein, post-surgical care including flushing of the catheters, and running rats through operant conditioning of intravenous self-administration, curating and analyzing behavioral data, meeting with Dr. Bryant 1-1 weekly for 30-60 min, and presenting data and journal articles at the weekly lab meeting. Additional research duties could potentially include DNA and RNA extractions, genetic, and coding and genomic analyses in R.

Student Qualifications:

- some experience in handling/working with rodents, in particular rats.
- A bonus would be basic molecular biology experience, including anyone of the following: DNA and RNA extractions, PCR and gel electrophoresis, real-time quantitative PCR,immunoblot/immunohistochemical procedures
- Basic knowledge of coding in R would also be a plus, but is not required

Earliest Start Date: 6/2/2025

Housing Type Available: On Campus Housing Available

Site # 73

Principal Investigator: Leo Beletsky

Institution: Northeastern University, Boston, MA

Research Keywords: Appalachian region; behavior assessment; drug user; evidence-based intervention; HIV; harm reduction; justice; law enforcement; longitunal cohort; occupational safety; police; public health; substance use disorder; substance use

Project Title: Project SHIELD: Police Education Partnership to Support Public Health in Kentucky

Project Description: Project SHIELD aims to build capacity of the behavioral health workforce (treatment providers, harm reductionists, mental health services providers, etc.) by training them to deliver an evidence-based police education program to reduce HIV risk among people who use drugs (PWUD). The evidence suggests certain policing practices, such as arrest, can elevate drug-related harm by preventing access to treatment and other harm reduction services, ultimately increasing overdose risk. Arrest and incarceration rates of PWUD remain high, which increase syringe sharing and infectious disease risk. This study examines the impact and scalability of a structural level HIV prevention intervention that shifts policing away from arrest and toward referral to evidence-based medications for opioid use disorder. The Safety and Health Integration in the Enforcement of Laws on Drugs (SHIELD) is a police education program that has been implemented in numerous communities that focuses on reducing occupational risks and burnout among police, and task- shifting to increase referrals to essential services for PWUD. Thus far, delivery of SHIELD has relied on a specialized academic team limiting its scalability. In this study, we are moving SHIELD into the hands of the behavioral health workforce and implementing "SHIELD 2.0" in a region of Eastern Kentucky that has been hard hit by overdose and blood-borne virus transmission. Interns will have the opportunity to support development and tailoring of SHIELD materials, participate in training implementation, collaborate with stakeholders, ensure intervention fidelity, and support scientific writing. This project will require students to work with humans.

Student Qualifications:

- Experience working with community-based public health interventions is not necessary, but would be preferred.

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 74

Principal Investigator: Kelsie Okamura

Institution: The Baker Center for Children and Families, Boston, MA

Research Keywords: Implementation Science, Substance Use Prevention, Culturally Grounded Interventions

Project Title: Community-driven, drug prevention implementation strategies for Native Hawaiian and Pacific Islander youth in rural Hawai'i

Project Description: This high-risk, high-reward proposal addresses racial health equity and challenges the typical scientific paradigm through innovative approaches in youth substance use prevention for Native Hawaiian and Pacific Islander (NHPI) rural populations. Implementation science and participatory methods will shift power, ownership, and responsibility from the project's inception to NHPI communities to actively promote adoption and sustainment of culturally grounded substance use prevention. Community-led innovation tournaments and ecological momentary assessment will produce new generalizable findings for other indigenous and underserved populations, promoting the spread and reach of culturally grounded substance use prevention. During the summer, research interns will assist with planning and executing innovation tournaments and curriculum training.

Student Qualifications:

- Pursuing an undergraduate degree in Psychology, Social Work, Public Health, or related field from an accredited academic program
- Excellent written and oral communication skills, interpersonal skills, ethics, and cultural awareness.
- Proficiency with Microsoft Office and Google Suite
- Ability to ensure confidentiality and a high level of customer service in all interactions
- Commitment to cultural humility, diversity, equity, and inclusion
- Skill and ability to prioritize multiple tasks and deadlines
- Meticulous attention to detail and strong project coordination skills along with a strong commitment to working in an integrity driven environment

Earliest Start Date: 6/15/2025

Housing Type Available: Off Campus Housing Only

Site # 75

Principal Investigator: Elizabeth Schoenfeld

Institution: UMass Chan - Baystate, Springfield, MA

Research Keywords: opioid addiction, emergency medicine, shared decision-making, clinical trial, medications for opioid use disorder, harm reduction

Project Title: Conversations can save lives: TALKing About Buprenorphine & methadone for Opioid Use Treatment Initiation (TALK ABOUT)

Project Description: We are conducting a pilot clinical trial of a decision aid to help Emergency Department patients decide between starting methadone and buprenorphine. Secondarily, this decision aid will help clinicials be better equipt to have these conversations, leading to improved relationships and better care. A summer research intern will help with the conduct of this trial and will also have the opportunity to learn and use qualitative methods regarding the implementation of this internvention. Interns may enroll and interact with Emergency Department patients and clinicians, conduct interviews, collect and analyze data, interpret results, and work on publications.

Student Qualifications:

- Some experience with clinical research such as completed CITI and Human Subjects Research training
- Understanding of clinical research ethics, and a basic understanding of the consent process
- Experience with Excel and RedCap is helpful but not required
- Have good people skills as well as good problem solving skills
- Comfortable working in the chaotic environment of the Emergency Department.

Earliest Start Date: 6/1/2025

Housing Type Available: Off Campus Housing Only

Site # 76

Principal Investigator: Thuy Nguyen, PhD, MPA

Institution: University of Michigan School of Public Health, Ann Arbor, MI

Research Keywords: Opioid Epidemic, Health Policy, Health Economics, Treatment Access, Opioid Addiction

Project Title: The Impact of Surgery on Outcomes for Patients Taking Medications for Opioid Use Disorder

Project Description: The Michigan Public Health - Substance Use Policy and Economic Research (M-SUPER) Network is a consortium of investigators, led by Dr. Nguyen, with expertise in health economics, policy evaluation, and health services research. The network uses quantitative analytical methods, including statistical software and programming, to address pressing knowledge gaps and inform public health policy surrounding the opioid epidemic. Active NIDA funded R01 research projects include an investigation into the effects of surgery on opioid use disorder treatment and an investigation into the effects of insurance barriers on health outcomes among patients with opioid use disorder. The network seeks an enthusiastic and motivated intern to contribute to this collaborative and interdisciplinary work.

Student Qualifications:

- Enthusiastic and motivated
- Strong critical thinking skills
- Strong writing skills
- Strong communication skills – must be comfortable communicating with an interdisciplinary team
- Open and receptive to feedback
- Interest in health policy and the opioid epidemic
- Interest in data analysis and programming (SAS, STATA, SQL)
- Prior research experience strongly preferred, though not required

Earliest Start Date: 5/20/2024

Housing Type Available: On Campus Housing Available

Site # 77

Principal Investigator: Julia Felton

Institution: Wayne State University, Detroit, MI

Research Keywords: Adolescents; Decision Making; Risky Behaviors; Health Disparities; Trauma; Low-Resource Environments

Project Title: An Examination of the Joint Contributions of Socioeconomic Disadvantage, Genetics, and COVID-19 on the Development of Delay Discounting and Substance Use Across Adolescence

Project Description: Students will have the opportunity to work on two NIDA-funded projects. The first is working on a secondary data analysis grant of a large, nationally-representative study of youth. Goals of the study are to understand pathways from children's early exposure to traumatic experiences to risky decision makking and poor health outcomes. Students will have the opportunity to generate research questions, support writing projects (with opportunities for taking part in publications and posters), and conducting basic data analysis. The second project is a NIDA-funded R34 (treatment development) study ongoing in Detroit, MI that examines the implementation of a computerized intervention to improve decision making and subsequent health outcomes. The student will have the opportunity to help with active data collections, analyze results and support dissemination of these findings.

Student Qualifications:

- Interest in working with historically underserved populations
- Willingness to learn from community members
- Passion for reducing health disparities is a plus

Earliest Start Date: 5/19/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Susanne Brummelte

Institution: Wayne State University, Detroit, MI

Research Keywords: Opioids, pregnancy, behavoiral neuroscience, development, maternal brain and behavior

Project Title: The effects of gestational opioid exposure on the maternal brain, behavior and microbiome

Project Description: Due to the opioid crises in the United States, many pregnant women are using opioids or are treated with opioid maintenance therapy drugs like buprenorphine. Buprenorphine exposure during pregnancy and parturition may alter the endogenous opioid regulation of the maternal brain network, which could explain the reduced maternal care and increased offspring mortality and altered long-term outcome of the offspring that is observed in animal studies. Our translational rodent model will help illuminate consequences of gestational opioid exposure for the maternal brain, maternal care and the gut-brain axis and explore interventions to help improve the health and outcome of mothers and their offspring. This summer we will investigate the neurobiological consequences of gestational opioid expsoure for Aim1 of our current grant. Briefly, 5 independent groups of dams will receive either vehicle, morphine, buprenorphine (BUP, medication for opioid use disorder (MOUD)) or morphine followed by a switch to BUP (or vehicle) during gestation (to mimic opioid use followed by MOUD). Maternal behaviors and pup vitality will be assessed and on the second postpartum day (PD2), animals will be sacrificed to analyze changes in neurotransmitter levels and brain activity and connectivity patterns using state-of-the-art imaging techniques such as high-performance liquid chromatography, and immunolabeling-enabled 3-dimensional imaging of solvent-cleared organs (iDISCO) followed by light-sheet microscopy for maternal brain activity mapping. While the behavioral portion should be completed by the summer, the brain analysis will still be ongoing throughout the summer and beyond.

Student Qualifications:

- Experience in immunohistochemistry, microscopy, with rodent research and behavioral testing preferred, but not required.
- Experience (or desire) to learn coding in R or Python preferred, but not required.

Earliest Start Date: 5/12/2025

Housing Type Available: On Campus Housing Available

Site # 79

Principal Investigator: Mustafa al'Absi

Institution: University of Minnesota, Minneapolis, MN

Research Keywords: Stress, psychological trauma, and addiction

Project Title: Psychopharmacological effects of cannabidiol on responses to stress and nicotine withdrawal

Project Description: Stress is one of the most commonly reported triggers of smoking relapse. It increases frequency of smoking among chronic smokers and accelerates progression towards full relapse among abstinent smokers. This relapse risk is particularly high in the presence of other negative affective states, including anxiety, irritability, depression, and craving, especially in women. Our previous research has demonstrated altered hypothalamic-pituitary-adrenocortical (HPA) axis and endogenous opioid system (EOS) regulation of the stress response in smokers. We found that 1) smokers exhibit enhanced basal HPA activity, 2) they exhibit decreased cortisol responses to multiple acute stress procedures, and 3) early smoking relapse can be predicted by attenuated adrenocorticotropin (ACTH) and cortisol responses to stress. Recent results using an opioid blockade challenge demonstrate blunted opioid regulation of the HPA stress response in smokers relative to nonsmokers; and smoking appears to acutely normalize opioid regulation of the stress response. The clinical significance of altered opioid regulation of the stress response has not been tested in the clinical context of smoking cessation and relapse. Building on previous findings, we plan in this new study to take a novel approach in addiction relapse research by identifying indices of risk for relapse using opioid- HPA stress response patterns. Our hypothesis is that smokers who exhibit blunted HPA stress response to opioid blockade are more likely to relapse early in their cessation attempt. Blunted opioid regulation contributes to inefficient stress response and may exacerbate stress effects on craving and withdrawal symptoms. We will establish the link between altered endogenous opioid regulation of the HPA stress response, withdrawal symptoms, and craving during smoking cessation. We will develop a model to predict early smoking relapse using HPA responses to stress and HPA responses to endogenous opioid blockade. Finally, we will examine sex differences in the HPA response to stress, in the HPA response to opioid blockade, and in predictors of relapse. This research represents a step forward in translating established preclinical neurobiological models of addiction and stress. It is grounded in theory, builds on important preliminary results, and uses rigorous and reproducible procedures. Demonstrating the utility of an opioid challenge in predicting relapse is a novel direction in addiction relapse research that will enable indexing two important stress biological pathways, providing both a novel mechanism of long-term effects of tobacco addiction and a marker of treatment outcome and relapse probability. This will facilitate future efforts targeting those susceptible to effects of stress on their risk for relapse with new or existing behavioral and pharmacological treatments. Reducing relapse rates will reduce tobacco use and its devastating health effects.

Student Qualifications:

- Interest in stress and psychological trauma with a background in psychobiology
- Motivation and self-direction are important assets

Earliest Start Date: 5/29/2025

Housing Type Available: On Campus Housing Available

Site # 80

Principal Investigator: Eden Tanner

Institution: University of Mississippi, Oxford, MS

Research Keywords: drug delivery; neuroHIV; nanoparticles; ionic liquids

Project Title: Ionic liquid-assisted drug delivery to brain reservoirs for treatment of neuroHIV

Project Description: NIDA Summer Research interns will have the opportunity to join the Tanner lab at the University of Mississippi, where they will work with a diverse, interdisciplinary group of researchers to develop ionic liquid-coated nanoparticles for the treatment of neuroHIV, especially in the context of substance use. Interns will work to assess different ionic liquid candidates to ensure they are safe (in vitro, ex vivo, and in vivo) and efficacious in carrying cargo into the brain. The project will require students to work with animals and human tissue samples (blood), but a suitable alternative can be designed if the intern is not comfortable with either of these aspects

Student Qualifications: No specific qualifications needed!

Earliest Start Date: 5/19/2025

Housing Type Available: On Campus Housing Available

Site # 81

Principal Investigator: Kristine Willett

Institution: University of Mississippi, Oxford, MS

Research Keywords: cannabinoids, inflammation, behavior, toxicology, development, zebrafish

Project Title: Vulnerability and Persistence of Neuroinflammation and Behavioral Deficits from Developmental Cannabinoid Exposure

Project Description: This overall project will address the critical need to define for cannabinoid exposure: 1) the most sensitive developmental exposure windows; 2) the dose- and sex-dependence of adverse outcomes; 3) developmentally relevant molecular mechanisms of persistent adverse effects; and 4) the relative developmental toxicity of other cannabinoids available to consumers. Cannabis/Δ9-tetrahydro- cannabinol (THC) is the most commonly used illicit drug by pregnant women, and cannabidiol (CBD) is readily available over the counter with suggested benefits in pregnancy for morning sickness, stress, and sleeplessness. Similarly, other minor cannabinoids are marketed directly to consumers with numerous health claims. Because of maternal use, pre- and post-natal cannabinoid exposures occur during critical stages of children's brain development despite our lack of understanding of the acute and long-term consequences. In addition, cannabinoid exposure (e.g. via vaping) frequently occurs during adolescence, another sensitive time of brain development and neuronal pruning. In our zebrafish model system, we have observed persistently altered adult behavior after embryos were exposed to THC and CBD during early development. Our central hypothesis is that exposure to cannabinoids causes alterations in inflammatory mediators in the developing brain leading to the persistent alterations in behavior throughout development and into adulthood. Our research framework, depicted as an adverse outcome pathway (AOP), will specifically investigate three aims to measure: 1) morphological and persistent behavioral alterations in anxiety/locomotion; 2) time-of-exposure susceptibilities; and 3) neuroinflammation resulting from THC and CBD developmental exposure. Interns will participate in experiments associated with one of these three aims based on their research interests. The highly relevant, predictive, and high throughput zebrafish model, including three transgenic lines, will be used to assess the spatial and temporal relationships between microglial response, gene expression, and persistent behavioral adverse outcomes. Cannabinoid-mediated changes in neuroinflammation gene/protein expression and altered cellular trajectories will be identified using single nucleiRNAseq and LC-MS/MS protein validation in larval and adult brains. The dependence of the specific cannabinoid receptors in observed toxicities will be determined by using cannabinoid receptor 1 and 2 null lines. Ongoing and productive collaborations will be leveraged to inform the developmental origins of health and disease caused by cannabinoid exposure. The proposed research is significant because it will provide new, relevant information to guide cannabinoid policy and healthcare decisions made by pediatricians, obstetricians, and policy- makers needed to ensure public health and safety. Interns will learn fish culture best practices and conduct cannabinoid exposures. They will track morphological adverse outcomes, behavioral impacts, and image microglia morphology with microscopy techniques. Tissues will be collected for both molecular and cannabinoid bioaccumulation experiments.

Student Qualifications:

- Expected to become certified to work with vertebrate animals (zebrafish) at the beginning of the program.

Earliest Start Date: 5/26/2025

Housing Type Available: On Campus Housing Available

Site # 82

Principal Investigator: Beau Ances

Institution: Washington University in Saint Louis, St. Louis, MO

Research Keywords: Neuroimaging, HIV, cannabis

Project Title: Cannabis, HIV and Mental Processing Systems (CHAMPS)

Project Description: Our lab employs novel methods to identify key determinants and consequences of concurrent HIV infection and regular cannabis use. We are acquiring extensive phenotype data from peripheral and brain markers of immune activation, brain structure, and neuropsychological performance (NP) in persons living with HIV (PLWH) receiving combination anti-retroviral therapy (cART) (80 regular cannabis users and 80 non-users) and HIV uninfected (HIV-) controls (80 regular cannabis users and 80 non-users). Our overall hypothesis is that cannabis use leads to increases in inflammation in the peripheral and brain compartments. We also hypothesize that phenotypic signatures due to regular cannabis use and HIV will be delineated through NP and brain volumetrics. In Aim 1 we hypothesize that regular cannabis use will increase both peripheral and brain immune indices in PLWH on cART. In Aim 2 we hypothesize that regular cannabis use will lead to a worsening of NP and reductions in brain volumetrics in both PLWH on cART and HIV- controls. This proposal will provide key insights into the effects of regular cannabis and HIV on peripheral and brain markers of immune function and NP in PLWH and HIV- controls. These insights are critical for cure strategies and ongoing HIV treatment initiatives.

Student Qualifications:

- Background in neuroscience and infectious diseases
- Dedication to the project

Earliest Start Date: 6/1/2023

Housing Type Available: Off Campus Housing Only

Principal Investigator: Patricia Cavaos-Rehg

Institution: Washington University School of Medicine, St. Louis, MO

Research Keywords: Clinical Research; Behavioral Research; Addiction Medicine; Social Media; Technology; Digital Health; Mobile Apps; Public Health

Project Title: Testing the feasibility and acceptability of social media and digital therapeutics to decrease vaping behaviors

Project Description: This summer research experience involves research investigating the intersection of mental health, substance use behaviors, and technology. Students will learn to examine how social media content can be used to better understand the needs of at-risk groups (e.g., populations with mental health/substance use symptoms, adolescents and young adults, underrepresented racial/ethnic groups), and to explore ways to leverage technology for targeted outreach and intervention (e.g., social media outreach/risk detection, digital/mobile app interventions). Interns will work with social media data and may work with human subjects.

Student Qualifications:

- Undergraduate student, interest in mental health and substance use research

Earliest Start Date: 5/26/2025

Housing Type Available: On Campus Housing Available

Site # 84

Principal Investigator: Damian Chase-Begay

Institution: University of Montana, Missoula, MT

Research Keywords: Native American; Substance Abuse; Prevention; Cultural Adaptation

Project Title: Reducing opioid misuse among urban Indigenous young adults in Montana using a culturally centered intervention

Project Description: This is a sequential mixed-methods research project (1K01DA061078-01) aimed at the rigorous cultural adaptation of an evidence-based substance abuse prevention intervention (EBI) to incorporate Native American traditional ceremonial and cultural components. The target population is Native American young adults (18-29 years) located in five urban, multi-tribal settings in Montana (Billings, Butte, Great Falls, Helena, and Missoula). By summer 2025, the research team should have completed delivery and analysis of a cross-sectional survey of potential participants to help identify which EBI to adapt. They should be in the process of conducting and analyzing focus groups with potential participants as well as semi-structured interviews with key informants (Urban Indian Health Center behavioral health staff, administrators, traditional practitioners, and community elders). The aim of these qualitative methods is to guide the final design of the adapted EBI. This project will require the intern to work with human subjects.

Student Qualifications:

- A background working in Native American communities is highly preferred, or a demonstrated capacity for cultural sensitivity in working with diverse populations
- Some experience working in R Studio and NVivo would be helpful, but not necessary if the intern is willing to do some learning around these platforms
- Completed coursework in research methods is also preferred

Earliest Start Date: 6/1/2025

Housing Type Available: On Campus Housing Available

Site # 85

Principal Investigator: Palsamy Periyasamy

Institution: University of Nebraska Medical Center, Omaha, NE

Research Keywords: Epigenetics; Neuroinflammation; HIV-associated neurocognitive disorders (HAND); Drug abuse; DNA methylation; Non-coding RNAs; Inflammasomes; CNS inflammation; HIV-1 infection; Neuroimmune interactions; Substance abuse and neurotoxicity; Oxidative

Project Title: Epigenetic regulation of astrocyte-specific NLRP6 inflammasome and PANoptosis in HIV Tat and methamphetamine-mediated neuroinflammation

Project Description: This summer research project offers interns the opportunity to work on an innovative study exploring the molecular mechanisms of neuroinflammation in the context of HIV-associated neurocognitive disorders (NeuroHIV). NeuroHIV is an increasingly prevalent condition in individuals living with HIV, especially among those who abuse drugs like methamphetamine. The central focus of the project is to understand how HIV and methamphetamine trigger neuroinflammation by activating inflammasomes, specifically the NLRP6 inflammasome in astrocytes, a type of glial cell in the central nervous system (CNS).

The primary objective of the study is to investigate how the HIV Transactivator of transcription (Tat) protein and methamphetamine interact to induce astrocyte-specific NLRP6 inflammasome activation and its role in driving neuroinflammation through PANoptosis, a form of regulated cell death. The long-term goal is to identify key molecular pathways that could serve as novel therapeutic targets to mitigate inflammation and neurodegeneration associated with NeuroHIV.

Intern Responsibilities:

1. Laboratory Techniques: Interns will gain hands-on experience with a variety of laboratory techniques, including cell culture (astrocytes), Western blotting, PCR, ELISA, and immunohistochemistry to study protein and gene expression in vitro models.
2. Data Analysis: Interns will learn to analyze experimental data using statistical and bioinformatics tools to identify patterns in gene expression, protein levels, and inflammatory responses.
3. Literature Review: Interns will be expected to conduct literature reviews on neuroinflammation, HIV, methamphetamine, and inflammasomes, and contribute to developing research questions and experimental approaches.
4. Animal Studies: Depending on interest and prior experience, interns may assist with animal model studies to evaluate neuroinflammation and behavioral outcomes in vivo. This will involve monitoring mouse behavior, handling brain tissues, and preparing samples for analysis.
5. Collaboration and Communication: Interns will work closely with postdoctoral fellows and principal investigators, attend lab meetings, and present their findings. They will be encouraged to actively participate in discussions and contribute ideas to advance the project.

Anticipated Learning Outcomes:

1. Mastery of lab techniques essential to neuroscience and molecular biology research.
2. Understanding of neuroinflammatory pathways in the context of NeuroHIV and drug abuse.
3. Development of analytical and critical thinking skills through data analysis and interpretation.

4. Exposure to the drug abuse and HIV research fields, with opportunities to contribute to the broader understanding of neuroinflammation and potential therapeutic strategies.

5. This internship is ideal for students interested in neuroscience, molecular biology, immunology, or pharmacology, and who are eager to contribute to cutting-edge research with potential therapeutic implications for neurodegenerative diseases.

Student Qualifications:

- Strong foundation in biological sciences and a keen interest in neuroscience, molecular biology, or immunology
- Coursework in Molecular Biology, Neuroscience, or Biochemistry: Familiarity with the concepts of cell biology, molecular genetics, and neuroinflammation will be advantageous.Basic Immunology: Knowledge of immune signaling pathways, particularly related to inflammasomes and neuroinflammation, is a plus.
- Previous lab experience through coursework or independent projects, especially in techniques like Western blotting, PCR, or immunohistochemistry, is preferred.
- Some familiarity with maintaining and working with cell lines (e.g., astrocytes, microglia) would be beneficial, but training will be provided if necessary.
- Experience with or interest in learning key lab techniques, including Western blot, quantitative PCR, ELISA, and immunohistochemistry, is encouraged.
- Basic knowledge of statistical tools and software such as GraphPad Prism, ImageJ, or other data analysis programs is preferred but not required. The intern should be willing to learn how to quantify experimental results and conduct statistical analysis.
- Critical Thinking and Problem-Solving: The intern should be able to approach research questions critically and logically, proposing hypotheses and developing experimental approaches.
- Strong attention to detail is essential for accurate data collection and interpretation.
- Communication Skills: The intern will be expected to contribute to lab discussions, present findings, and write reports. Strong oral and written communication skills are key.
- Animal Models: This project may involve work with ex vivo and in vivo models, specifically brain tissues from animal models of NeuroHIV. The intern may have opportunities to assist with handling and preparing brain tissue samples for molecular analysis.
- Tissue Samples: The intern will work with human or animal-derived tissue samples in some aspects of the study (e.g., brain sections for immunohistochemistry). Experience with handling tissue samples is not required but is an advantage.
- Interest in HIV and Substance Abuse Research: The project focuses on the intersection of HIV infection, drug abuse, and neuroinflammation. An intern with a strong interest in public health challenges related to HIV and substance abuse will find this work particularly meaningful.
- Training and Supervision: The intern will receive comprehensive training in all necessary techniques and procedures, and no prior experience with animal models or advanced molecular techniques is required. However, enthusiasm for learning and a proactive attitude are critical for success.

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 86

Principal Investigator: Peng Zhong

Institution: University of Nebraska Medical Center, Omaha, NE

Research Keywords: Opioid withdrawal, sleep disturbances, neural circuits

Project Title: Mechanistic studies of opiate withdrawal-induced sleep disturbances

Project Description: Disrupted sleep is one of such contributing opioid withdrawal symptoms, and has been considered as an important reason for relapse back to opioid use. However, little is known about the underlying mechanisms, the neural circuits and neurotransmitters that are involved, nor do we have any means to mitigate its impact on the individual. This project will combine activity-dependent genetic labelling technique with intersectional cell targeting strategy to specifically probe the noradrenergic neurons in the mouse locus coeruleus and study their function in morphine withdrawal-induced sleep disturbances.

Student Qualifications:

- Programming experience including python or matlab is preffered.

Earliest Start Date: 7/1/2025

Housing Type Available: Off Campus Housing Only

Site # 87

Principal Investigator: Shilpa Buch

Institution: University of Nebraska Medical Center, Omaha, NE

Research Keywords: NeuroHIV; Neuroinflammation; HIV Tat protein; NLRP3 inflammasome; Astrocyte activation; Drug abuse

Project Title: HIV Tat and Opiate-mediated aberrations in glial-neuronal crosstalk: Implications for the role of extracellular RNA in HAND

Project Description: This summer research project focuses on understanding the interplay between HIV-1 Tat protein, opiates (specifically morphine), and their combined effects on synaptic neurodegeneration, which contributes to the development of NeuroHIV. Despite the success of combination antiretroviral therapy (cART) in suppressing peripheral HIV-1 viremia, neurocognitive impairments still affect approximately 50% of infected individuals due to the persistence of viral proteins like Tat in the brain. The project aims to uncover how HIV Tat and morphine together lead to the release of extracellular vesicles (EVs) from astrocytes that carry microRNAs (miRNAs)—specifically miR-7 and miR-23a—causing synaptic injury in neurons.

Key Research Objectives:

> 1. To investigate the release of miR-7 from astrocytes exposed to HIV Tat, which downregulates neuronal targets (NLGN2, GRIN2A, PBX3).
> 2. To study the release of miR-23a from astrocytes exposed to morphine, which downregulates its neuronal targets (NRGN, PCLO, NLGN1).
> 3. To evaluate how the combination of miR-7 and miR-23a results in exacerbated synaptic injury compared to each miRNA alone.
> 4. To test the therapeutic potential of astrocyte-specific AAVs expressing short hairpin RNAs (shRNAs) targeting miR-7 and miR-23a in in vivo rodent models of NeuroHIV and validate findings in macaque brain tissues.

Intern Responsibilities: Interns will participate in various research tasks aimed at advancing the project's scientific goals. The following tasks will be assigned based on the intern's interests, skill level, and experience:

> 1. Cell Culture and Molecular Techniques: Interns will culture human primary astrocytes and A172 cells and conduct experiments involving HIV Tat and morphine exposure. Tasks may include Western blotting, PCR, and RNA extraction to assess miRNA expression.
> 2. Extracellular Vesicle (EV) Isolation and Characterization: Interns will help isolate EVs from astrocyte-conditioned media and perform assays to characterize their contents, including miRNA profiling using PCR or other molecular techniques.
> 3. Neuronal Synaptic Injury Assays: Interns will perform experiments to evaluate synaptic alterations in neurons after exposure to EVs containing miR-7 and miR-23a. Techniques such as immunocytochemistry and ImageJ analysis will be used to quantify synaptic markers.
> 4. Data Analysis and Interpretation: Interns will assist in analyzing experimental data using tools like GraphPad Prism for statistical analysis and participate in lab meetings to discuss findings and their implications.

5. In Vivo Model Work (optional): For those interested and experienced, interns may assist with in vivo studies using rodent models. This may involve administering treatments to brain Tat transgenic or humanized mice, followed by tissue harvesting for downstream molecular analysis.

Expectations: Interns are expected to commit to their assigned tasks with diligence and integrity, contribute to team discussions, and develop a strong understanding of experimental design and data interpretation. By the end of the summer, interns will have gained hands-on experience in cutting-edge neuroHIV research and will have developed key laboratory and critical thinking skills essential for pursuing advanced research careers.

Student Qualifications:

- Foundational interest in neuroscience, molecular biology, or related fields to gain hands-on experience in research
- While prior laboratory experience is beneficial, it is not strictly required
- Enthusiasm for learning and a willingness to engage in a dynamic research environment are key qualities we are looking for
- Required: Students should have taken introductory courses in Biology, Neuroscience, Molecular Biology, or Biochemistry. Preferred: Coursework in Cell Biology or Neuroscience with some lab exposure is helpful but not mandatory.
- Preferred but not required: Experience or coursework involving cell culture, PCR/qPCR, or Western blotting is a plus, but full training will be provided on-site.
- Data Analysis: Familiarity with basic data analysis software like Excel is sufficient.
- Experience with tools like ImageJ or GraphPad Prism is helpful but not essential.
- Attention to Detail: The ability to carefully follow protocols and accurately collect data is important.
- Teamwork and Communication: A collaborative mindset and willingness to engage with the research team during meetings and discussions are key.
- Eagerness to Learn: We value interns who are motivated to learn new techniques and contribute to the project.
- In Vivo Work: The project includes optional opportunities to assist with in vivo studies using rodent models. Interns interested in this aspect will be trained in animal handling and tissue collection under supervision, following ethical guidelines. Prior experience with animals is not required.

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 88

Principal Investigator: Siddappa N Byrareddy

Institution: University of Nebraska Medical Center, Omaha, NE

Research Keywords: HIV/SIV, Substance abuse, Reservoirs, Sex differences, Inflammation, CNS

Project Title: Sex differences in modulating HIV/SIV reservoirs in the context of opioids

Project Description: In this project, we plan to dissect the interplay of sex differences, substance use, and HIV/SIV reservoirs. Because significant sex-based differences in disease pathogenesis complicate the relationship between HIV and substance use. Furthermore, Anatomical, physiological, hormonal, and genetic variations between men and women contribute to disparities in HIV infection rates and disease progression. Beyond biological factors, social, cultural, and economic differences also influence vulnerability to HIV infection and patterns of substance use. Our research is focused on understanding how these sex differences in substance use, particularly opioids, interact with HIV and contribute to the persistence of viral reservoirs, especially in the central nervous system. By exploring these intricate connections, we aim to identify strategies for more effective, tailored treatments for HIV-infected individuals with substance use disorders.

Student Qualifications:

- Experience in laboratory techniques, animal tissue handling
- Interest in pursuing scientific breakthroughs are preferred

Earliest Start Date: 6/1/2025

Housing Type Available: On Campus Housing Available

Site # 89

Principal Investigator: Nicole A Short

Institution: University of Nevada, Las Vegas, Las Vegas, NV

Research Keywords: cannabis use disorder; substance use; posttraumatic stress; sexual assault; digital health

Project Title: award Development of a digital therapeutic targeting anxiety sensitivity to reduce PTSD-SUD in women presenting for emergency care after sexual assault.

Project Description: The RCT for Innovating Stress Related E-Health - Cannabis (RISE-C) study seeks to determine if an online intervention administered in the acute aftermath of sexual assault promotes faster recovery from posttraumatic stress compared to the normal standard of care. RISE-C enrolls women across the United States with a recent sexual assault who are active cannabis users into a brief, smartphone-based cognitive behavioral intervention targeting anxiety sensitivity, a psychological risk factor that may have an impact on the development of posttraumatic stress, cannabis use disorder, and various other mental health outcomes. During study participation, survivors also have the option of wearing a wristband, similar to a Fitbit, to collect biometric data in the aftermath of their assault. In particular, the device collects information about skin conductance response to trauma reminders. The summer research intern will be responsible for teleconsenting interested participants, medical record coding, and biometric data analysis for the RISE-C study.

Specific duties include consent and enrolling participants. Our 24/7 on-call team is available if a participant presenting to an emergency care site expresses interest in RISE-C. When the teleconsenter is on shift receives a call from the emergency care site, the intern will be expected to either screen and consent the survivor, or coordinate a later date/time for the screen and consent. Medical record coding refers to reviewing participants' medical records pertaining to their assault and coding the qualitative data into our data collection software to allow comparison between coders. Biometric data analysis will involve cleaning and processing data from a wrist wearable through Python (or a compatible data processor) to allow for later analysis.

Student Qualifications:

- Working towards a degree in Psychology or another related field
- Will need to complete two trainings through the CITI Program before working with participants, including "Social and Behavioral Research Best Practices for Clinical Research" and "Human Subjects Research - Social/Behavioral IRB," though these trainings can be completed upon acceptance of the position
- Should have the abilities to stay well organized, communicate clearly, multi-task, manage time effectively to complete tasks on deadlines, collaborate on a team, think critically, be empathetic and compassionate to trauma survivors, and be enthusiastic to learn new skills

Earliest Start Date: 5/19/2025

Housing Type Available: On Campus Housing Available

Site # 90

Principal Investigator: Tricia Burdo

Institution: Rutgers, New Brunswick, NJ

Research Keywords: HIV, cannabis, inflammation

Project Title: Cannabis, HIV and Mental Processing Systems (CHAMPS)

Project Description: The goal of this project is to identify key determinants and consequences of concurrent HIV infection and regular cannabis use. In this grant, we will acquire extensive phenotype data from peripheral and brain markers of immune activation, brain structure, and neuropsychological performance (NP) in persons living with HIV (PLWH) receiving combination anti-retroviral therapy (cART) (80 regular cannabis users and 80 non-users) and HIV uninfected (HIV-) controls (80 regular cannabis users and 80 non-users). Specifically, the intern will analyze plasma and CSF samples for immune markers, participate in coordinating the shipment of blood and CSF specimens, orchestrate assays in duplicate, and quality controlling the assays. The intern will phenotype PBMCs by flow cytometry to measure cell populations, including CD14/CD16 subsets and T cell populations. Data will be obtained from our collaborators at Washington University on cohort demographics, cannabis use, neuropsychological performance, and neuroimaging.

Student Qualifications:

- Williness to perform basic lab tasks. Interest in immunology and neurology with relevant classwork

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Chaelin Karen Ra

Institution: Rutgers Cancer Institute of New Jersey, New Brunswick, NJ

Research Keywords: sleep; smoking; mHealth; health disparities

Project Title: Using Mobile Technology to Examine Mechanisms Linking Sleep and Smoking Cessation

Project Description: Under the direction of the Principal Investigator, Chaelin Karen Ra, PhD, the purpose of the summer research internship position is to support research using digital approaches to understand and address the links between sleep/circadian rhythms, mental health, substance use, and cessation in underserved populations. Current lab projects include gaining a better understanding of the potential associations between sleep dysregulation and smoking behavior and cessation outcomes may enhance smoking cessation interventions for smokers. The Research intern will provide research support within the lab, such as recruiting, monitoring, & contacting participants, conducting remote interviews/surveys (shadowing) and data collection and cleaning. This project will require students to work with human participants.

Student Qualifications:

- Curiosity and Discovery: encouraging an environment of continuous inquiry, creativity, and innovation to generate new knowledge
- Integrity: earning the trust of those we serve and each other through honesty, transparency, accountability, and continuous reflection
- Collaboration: approaching all opportunities with an understanding that together we are better and can achieve more; promoting and maintaining an environment of teamwork and shared knowledge
- Cultivating Diversity: making conscientious efforts in all we do to ensure that our leadership, scientists, clinicians, supporting staff, and trainees reflect the rich diversity of the state of New Jersey and the patient populations and communities we serve
- Respect and Caring: consistently demonstrating caring, compassion, and respect through our words and actions
- Perseverance: maintaining an unwavering commitment to our mission; embracing change, overcoming obstacles, and creating and recreating the path to achieve our goals

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 92

Principal Investigator: Stanley H. Weiss, MD

Institution: Rutgers New Jersey Medical School.., Newark, NJ

Research Keywords: epidemiology, mortality, cancer, opioid use disorder, cannabis, alcohol, tobacco, other drugs, polydrug use, HIV/AIDS, prospective cohort, statistical analysis, patterns of drug treatment, infectious diseases, liver disease, diabetes, o

Project Title: The Epidemiology of the Weiss Cohort Project

Project Description: Adults enrolled in drug treatment programs (including medication-assisted treatment programs) suffer from a variety of disadvantages and medical issues, including access to care, complications from infectious agents (such as human immunodeficiency virus [HIV], hepatitis C virus [HCV] and tuberculosis), and drug-related problems such as overdoses. The research team has partnered with multiple types of drug treatment programs (especially including medication-assisted treatment programs) to study such issues in their patients, with some of those relationships with the project's principal investigator (PI) now reaching 40 years. These partnerships are the basis for cohort studies totaling over 11,000 different persons nationally, with over 2,700 from within NJ, and an average follow-up period greater than 35 years, with extensive medical, laboratory, and questionnaire data. These constitute the only large cohort study of adults with high rates of HIV and HCV infection within New Jersey, and furthermore nationally is the only large study that included both men and women and a diverse racial/ethnic mix. There are preserved biospecimens with linkage to subjects' personal information. Nearly 9,000 subjects have been genotyped in collaboration with NIDA. Baseline and (for some subjects) sequential follow-up data include systematically administered interviews of treatment program clients using an extensive structured questionnaire asking about their: demographics; behaviors; patterns of drug abuse, including opioids, cannabis, other classes of drugs, alcohol, and tobacco; and sexual behavior. The PI was the first to document high rates of human T-lymphotropic virus (HTLV-II, a retrovirus of uncertain pathologic significance) infection and, later, of HCV infection in injection drug users.

The original studies from the1980s were augmented with enrollment in NJ of over 300 persons in 2016-2018, including an extensive structured interview of drug abuse patients to learn about their demographics, behaviors, and attitudes, with a particular focus on HCV infection and treatment issues, as well as drug overdose issues. In study subsets, issues such as drug overdose and treatment of HCV and of HIV have been explored in detail. Beyond the epidemiology, the health policy and system implications are being explored. We have extended histories of their daily methadone dose.

Linkage to the National Death Index-Plus was completed in 2022 to ascertain mortality outcomes (including causes of death), with evaluation and adjudication of data ongoing; the majority of subjects have died. Repeat updated matching is anticipated. Collaborations with the New Jersey State Cancer Registry and the Virtual Pooled Registry-Cancer Linkage System (a new national consortium of state cancer registries) are providing detailed data on cancer outcomes in these cohorts, both in New Jersey and then nationally, including those who remain survivors; detailed diagnostic and treatment histories are usually provided. Among the most common cancer outcomes are lung and liver. Virtually every type of outcome exists within our overall mortality data. Data are expected from a match to the NJ AIDS/HIV registry to supplement our data on those with HIV.

Extensive efforts are needed to ascertain the validity of matches to these registries, as well as to obtain additional data to confirm or augment these registry data, from such sources as the Social Security

Administration database and Ancestry.com. One of the envisioned roles for the Intern will be working with these data.

Among the many outcomes of interest are risk factors for lung cancer (for instance, whether smoking cannabis increases lung cancer risk) and hepatocellular carcinoma (the most common form of liver cancer), patterns of mortality due to liver failure, the epidemiology and impact of infection with HCV and HIV over a 40 year period, the occurrence of overdoses, and the long-term medical effects, if any, associated with HTLV-II infection.

An additional component of this research is a collaboration with Oak Ridge National Laboratory's research group that uses supercomputers to apply artificial intelligence and machine learning to biological systems. They are engaged in complex analyses of these studies' genomic data. Other key collaborators are experts from RTI International and the Rutgers Addiction Research Center. Other anticipated projects, including the use of polygenic risk score models, are likely too complex to afford an opportunity for a student working with us for one summer to collaborate on. Nevertheless, the Intern will be exposed to our ongoing findings and will understand how a large, interdisciplinary, international set of collaborations functions as part of science today. The student's work with us will be solely with data. There will be NO work with animals, clinical settings, nor wet lab work (in particular, no work with tissue samples).

Student Qualifications:

- skilled in the use of Microsoft Excel to manage complex data (including, for example, knowledge of Excel expressions for computation and of functions for lookup and statistical computation, use of multiple worksheets within a workbook, formatting data, etc.)
- Knowledge of SAS Software would be a major (but not essential) asset; students who do not know SAS Software will not be expected to learn it during the summer
- Knowledge of medical terminology, such as may have already been learned from experiences as a medical scribe, a paramedic, or similar experiences, will be essential for the intern to assist in detailed review of accuracy of our medical outcomes data and in understanding the research questions we are posing and the analyses addressing these questions
- Completion and certification of training in human subjects protection will be required, specifically, the CITI Program's course in Social, Behavioral, and Epidemiological Research, which is used and required by the Rutgers University institutional review board. We require the intern to complete that CITI training several weeks before they begin with us to ensure sufficient time to request and obtain approval for the intern to be added to our ongoing research protocol
- Majoring or minoring in public health (especially epidemiology), statistics, biological sciences, or empirically oriented social sciences are most likely to be interested in this research
- Interested in careers in public health or health professions such as medicine or nursing are also particularly likely to be interested in this research.

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Kymberle L Sterling

Institution: Rutgers University Institute for Nicotine & Tobacco Studies, New Brunswick, NJ

Research Keywords: tobacco use; cigarillo use; blunt use; tobacco policy; health equity; social justice; intersectionality; quantitative research; qualitative research; mixed methodologies

Project Title: The C'RILLOS Project: Impact of Tobacco Regulatory Policy on Dynamic Use of Exclusive, Dual or Poly Cigar and Other Tobacco Product Use among Young Adults

Project Description: In April 2022, the U.S. Food and Drug Administration (FDA) announced a proposed ban on all characterizing flavors in cigars, including cigarillo brands like Swisher Sweets, Black & Mild, Game, Backwoods, White Owl, and others. African Americans/Black (AA/B) and Hispanic/Latinos (H/L) have high rates of flavored cigar use, which is attributed to the tobacco companies' predatory marketing of their products to AA/B and H/L communities. An extensive body of evidence has documented how the tobacco industry has aggressively targeted AA/B and H/L communities with advertisements for flavored cigars and priced cigars cheaply, and made them readily accessible and available in AA/B and H/L neighborhoods. AA/B and H/L are vastly underrepresented in tobacco regulatory sciences research. Yet, as their smoking persists, these groups bear the greatest burden of tobacco-related health diseases, including cancer. These disparities are due, in part, to the use of tobacco products, like cigarillos, and the tobacco industry's aggressive promotion of cigarillos to AA/B and H/L communities.

In response to the FDA's announcement, the tobacco industry and its sources promulgated disinformation in African American and Latino communities about the increased criminalization and police discrimination for using tobacco products when the rules are enforced. Although the FDA has stated that it cannot and will not enforce actions against individual consumers for possessing or using flavored cigars, disinformation about the flavor ban and its harmful impacts continues spreading among African American and Latino communities.

An intended consequence of the anticipated characterizing flavor ban on cigars is the smoking reduction of flavored cigarillos.4 However, the cigar industry's repackaging of their flavored cigarillo products and fueled rhetoric about over-policing and discrimination against AA/B and H/L smokers (both industry pivoting efforts in response to the anticipated ban) threatens to disrupt the ban's health equity impacts. Critical gaps in the scientific evidence exist about the impact of exposure and receptivity to cigarillo product repackaging and socio-political rhetoric on AA/B and H/L young adults (YA) smoking behavior. Our project, called The C'RILLOS Study, will address gaps by answering the question: "Does cigar repackaging and the socio-political rhetoric influence AA/B and H/L YAs' flavor ban perceptions and predict future LCC smoking behaviors among non-users and current users?

The C'RILLOS Study actively collects data from AA/B and H/L YA via an online survey and focus group and assesses advertisements from popular cigarillo companies to answer our research questions.

Summer interns on The C'RILLOS Study will gain experience in:

- Conducting qualitative analysis of focus group discussions and assisting with quantitative analysis of survey data
- Assessing and evaluating cigarillo advertisements via content analysis for relevance and impact.
- Collaborate effectively within the research team and contribute to discussions.
- Attend regular meetings to discuss project progress and challenges.

Student Qualifications:

- Relevant undergraduate coursework in research methods, statistics, public health, or related field
- Experience in data analysis and research, familiarity with qualitative and quantitative methods
- Experience in statistical software (e.g., SPSS, STATA) and qualitative analysis tools is a plus
- Strong analytical and critical thinking abilities
- Experience or ability to work collaboratively in a team environment
- Willingness to learn and adapt to changing project needs
- Awareness and sensitivity to the cultural backgrounds of participants
- Proficiency in Microsoft Office Suite; familiarity with online survey tools and data collection software is a plus

Earliest Start Date: 6/16/2025

Housing Type Available: On Campus Housing Available

<u>**Site # 94**</u>

Principal Investigator: Ruben Coen-Cagli

Institution: Albert Einstein College of Medicine, Bronx, NY

Research Keywords: Data analytics; Statistical models; visual cortex; extracellular electrophysiology; calcium imaging.

Project Title: Computational Tools for assessing mechanisms and functional relevance of divisive normalization

Project Description: Divisive normalization (DN) is a well-established theory of how interactions between neurons in a circuit modulate the activity of individual neurons. DN has been termed a canonical operation because it describes a wide range of empirical data across species and brain areas, and theory predicts that DN underlies behavioral gains of sensory integration and visual attention.

My lab has developed analytic and computational tools to estimate normalization signals in single neurons and populations from measured spiking activity with single-trial resolution, and to quantify DN's influence on neural coding.

The intern will learn the theory of DN and the statistical tools developed in my lab. The intern will then use the tools to analyze a wide collection of datasets from primary visual cortex of mice and monkeys. The main goals are 1) to compare variants of the models, to establish quantitatively how well DN predicts the statistical structure of neural responses; and 2) to leverage those analyses to study the relation between DN and information content of neural population activity.

Student Qualifications:

- Substantial experience in programming, preferably Matlab and/or python.
- Familiar with Statistics; Linear Algebra; Calculus; Differential equations.

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 95

Principal Investigator: Tyrel J. Starks

Institution: Hunter College, City University of New York, New York, NY

Research Keywords: sexual minority men, couples and relationships, drug use, HIV prevention,

Project Title: Couples Motivational Interviewing to reduce drug use and HIV risk in vulnerable male couples

Project Description: The past two decades have seen increasing attention to primary partner relationships as a context for HIV transmission, particularly among sexual minority men. Motivational interviewing with couples has demonstrated the potential to reduce drug use and associated sexual HIV transmission risk in pilot studies involving cisgender male couples. The Couples Health Project is a randomized controlled trial evaluating the efficacy of a 3-session motivational interviewing intervention ina sample of 180 couples who are randomized to receive the experimental intervention our routine couples HIV testing and counseling. Participants include cisgender male couples in which one partner is aged 18 to 34. In each couple, at least one partner is HIV negative and reports 3 instances of illicit drug use (or more) as well as condomless sex with a casual partner or with a main partner who is non-monogamous or living with HIV. Participants complete a baseline assessment and follow-ups conducted 3, 6, an d9-months post-baseline. All assessments involve survey measures, time-line follow-back assessments of behaviors, and biological testing to corroborate self-reported behavior.

Interns working at this site will therefore have the opportunity to engage in a range of activities. These include:

> 1) participation in dissemination activities from existing and related data. This may encompass creating manuscript tables and contributing to the literature review and manuscript writing.
> 2) coding existing qualitative data obtained from male couples, describing the decisions they make about drug use, HIV prevention practices, and the impact of the intervention on these behaviors as well as their relationship overall.
> 3) scheduling, consenting, and enrolling research participants
> 4) quality assurance and data management tasks
> 5) attendance at weekly lab meetings where project operations and dissemination activities are discussed

Student Qualifications:

- Basic familiary with introductory statistics and research methods
- Some familiarity with or investment in the lived experience of sexual and gender minority people
- Interest in substance use and sexual health.

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Jacqueline-Marie Ferland

Institution: Icahn School of Medicine at Mount Sinai, New York, NY

Research Keywords: Cannabis use disorder, cognition, cell type specificity

Project Title: Determining the role of tripartite cell populations in THC-induced behavioral changes

Project Description: Over the last decade, cannabis use has risen dramatically with 21.9% of Americans reporting use in 2022 and recent data show that daily or near daily use exceeds even that of alcohol. Although many believe that cannabis is safe and not addictive, repeated large-scale reports indicate that 10-30% of users meet the criteria for cannabis use disorder (CUD). CUD often emerges in adolescence, a sensitive period marked by maturation of the prefrontal cortex and subcortical structures. How adolescent cannabis use affects mechanisms underlying CUD-like behavior is poorly understood. We use translational animal models of cannabis use and exposure to interrogate the cell-specific effects of adolescent drug use and protracted impacts on addiction-related behaviors in adulthood. This project involves working or assisting with behavioral experiments done in rats.

Student Qualifications:

- Experience with rodents or interest in working with rodents preferred
- Basic wet lab skills (e.g. pipetting) also preferred but not required

Earliest Start Date: 5/19/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Yasmin Hurd

Institution: Icahn School of Medicine at Mount Sinai, New York, NY

Research Keywords: marijuana, heroin, neurodevelopment, mesocorticolimbic brain regions, developmental effects of drugs, adolescent, prenatal, nucleus accumbens, prefrontal cortex, stress, depression, addiction, epigenetics, mRNA

Project Title: Molecular underpinnings of the developmental Effects of Cannabis

Project Description: Our research studies the long-term impact of developmental cannabis exposure through the use of multiple techniques. We use animal models to provide information about the causal relationship between adolescent or prenatal exposure to tetrahydrocannabinol (THC; the psychoactive component of cannabis) and behaviors in adulthood relevant to addiction and psychiatric vulnerability. We study molecular and biochemical changes in the brains of THC-exposed animals in order to identify the specific genes and brain pathways that are associated with addiction vulnerability. We use state-of-the-art techniques to study molecular mechanisms in discrete cells and their specific link to behavior in order to identify the mechanisms that maintain the long-term effects of cannabis. We also conduct translational studies in humans in order to understand the relevance of our animal work to human addiction populations. In addition, human molecular and genetics studies are conducted in relation to opioid use disorders and in complementary animal models. The research conducted in our lab will provide students with an opportunity to conduct behavioral work with animals (rodents) and to carry out postmortem brain studies on animal and human tissue.

Student Qualifications:

- Interest in neuroscience, but not a requirement
- Previous experience in research areas relevant to biochemistry, molecular biology, animal behavior or anatomy are all welcome
- Although previous research experience is highly regarded it is not a requirement

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Charles Neighbors

Institution: New York University Grossman School of Medicine, New York, NY

Research Keywords: Substance Use Disorders

Project Title: Person-centered quality measurement and management in a system for addictions treatment in New York State

Project Description: The summer intern will participate in a research project focused on implementing an Opioid Use Disorder Quality Measurement and Management (OUD-QM2) strategy developed by the New York State Office of Addiction Services and Supports (OASAS) and NYU Grossman school of Medicine at multiple clinics in New York State. This initiative aims to enhance treatment services for individuals with opioid use disorder by establishing a comprehensive framework for quality measurement.

The internship will provide exposure to an academic-government partnership tasked with developing and testing the OUD-QM2 strategy by leveraging administrative data, qualitative interviews, and surveys, along with a stepped-wedge trial to assess outcomes.

Overall, the project aims to build and validate a scientifically grounded OUD-QM2 strategy that prioritizes person-centered treatment for opioid use disorder, ultimately driving positive change in clinical practices and improving patient outcomes.

Student Qualifications:

- No prior research experience required.
- Studying public health, health care administration, or related field or an equivalent combination of education and relevant experience
- Proficiency in using various Microsoft Office applications such as Word, Excel, Access, PowerPoint, and Outlook. Familiar with Internet applications
- Effective oral, written, communication, interpersonal skills
- Ability to interface effectively with all levels of management and must work and communicate effectively with both internal and external stakeholders
- Ability to work within a team environment as well as independently

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 99

Principal Investigator: Zhe Sage Chen

Institution: New York University School of Medicine, New York, NY

Research Keywords: machine learning, computational neuroscience, tool and software development

Project Title: Dissection of spatiotemporal activity from large-scale, multi-modal, multi-resolution hippocampal-neocortical recordings

Project Description: The summer project will provide a training opportunity for summer interns on applying machine learning techniques for analyzing large-scale neural data such as local field potentials, spikes, calcium imaging, EEG and fMRI , from both animals and humans.

Student Qualifications:

- Background in deep learning, probability, statistics, computer programming (Python/Matlab) is required
- Experiences in neural data analysis is a plus

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Moriah Thomason, PhD

Institution: New York University School of Medicine, New York, NY

Research Keywords: brain development, pregnancy, early childhood, MRI, EEG, substance use, health equity, physiological development

Project Title: 8/24 The HEALthy Brain and Child Development National Consortium

Project Description: This multi-site consortium research study, entitled the HEALthy Brain and Child Development (HBCD) study, will prospectively examine human brain, cognitive, behavioral, social, and emotional development beginning prenatally through age 10 years. The study will determine the short- and long-term impacts of a variety of potentially harmful as well as protective environmental factors. These include prenatal substance use, mental health, stress, sociodemographics, biological and genetic factors, and parent/child interaction. The overall goal of this study is to understand the neurodevelopmental trajectories of children growing up in diverse environments. A sample of ~7,500 pregnant women will be recruited from 25 sites across the U.S. and they and their liveborn children will be followed for 10 years. This project requires working with humans (i.e., infants, toddlers, and caregivers) and biosamples (i.e., urine, stool, saliva).

Interns will be involved in recruiting pregnant individuals in a hospital setting, data acquisition (i.e., MRI, EEG, biosamples, and parent/child interaction), and interacting with and supporting caregivers and babies during study visits.

Student Qualifications:

- Coursework or interest in developmental psychology
- Fluent in Spanish and English
- Wetlab experience (for biospecimen processing)
- Experience working with children/ families
- MRI safe (meets radiology screening requirements)
- Evening and weekend availability

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Joseph Palamar

Institution: NYU Langone Medical Center, New York, NY

Research Keywords: ketamine; drug misuse; drug diversion; prescription drugs; drug diversion; nightclubs; college students; surveys

Project Title: Investigating the Ketamine Landscape: Availability, Medical and Recreational Use, and Effects

Project Description: This study focuses on both prescribed and recreational use of ketamine in the New York tristate area. We collect data on self-reported ketamine use from nightclub attendees (late at night) and from college students (during the daytime) and we oversee electronic surveys of clinicians who prescribe ketamine, patients who receive ketamine, and veterinarians. The intern with help research assistants survey individuals entering nightclubs—typically late at night (from about 11pm to about 1:30am) and colleges, and office work includes helping oversee surveys of patients and clinicians. Interns will help research assistants track the number of individuals entering nightclubs and approach individuals about to enter to determine eligibility and interest in participation. They will also assist research assistants administer the survey, assist in the collection and tracking of saliva samples, and help track recruitment and participant payments. The intern will also attend short periodic team meetings to discuss progress. Emphasis is placed on safety and the interns will always work with a group of research assistants.

Student Qualifications:

- Enrolled in an undergraduate program focusing on public health, psychology, sociology, nursing, or another health- or social science-related discipline
- Excellent English and oral communication skills are necessary, and socially outgoing individuals are preferred as interns must be comfortable approaching passersby on the street
- Familiarity with the EDM scene is preferred
- Must be willing to work late night hours
- No prior research experience necessary

Earliest Start Date: 5/30/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Joseph Palamar

Institution: NYU Langone Medical Center, New York, NY

Research Keywords: club drugs; party drugs; ecstasy; molly; ketamine; nightclubs; harm reduction; surveys; biological testing

Project Title: New psychoactive substance exposure among NYC nightclub and festival attendees

Project Description: This study focuses on drug use among adults in the electronic dance music (EDM) party scene in New York City (NYC). We collect data on self-reported drug use and we also collect saliva samples from participants to determine whether they have unknowingly been exposed to drugs such as fentanyl or "bath salts". The intern with help research assistants survey individuals about to enter nightclubs and dance festivals, typically late at night (from about 11pm to about 1:30am). The majority of parties are in Brooklyn and Manhattan. Interns will help research assistants track the number of individuals entering each party and approach individuals about to enter parties to determine eligibility and interest in participation. They will also assist research assistants administer the survey, assist in the collection and tracking of saliva samples, and help track recruitment and participant payments. The intern will also attend short periodic team meetings to discuss progress. Emphasis is placed on safety and the interns will always work with a group of research assistants.

Student Qualifications:

- Enrolled in an undergraduate program focusing on public health, psychology, sociology, nursing, or another health- or social science-related discipline
- Excellent English and oral communication skills are necessary, and socially outgoing individuals are preferred as interns must be comfortable approaching passersby on the street
- Familiarity with the EDM scene is preferred and must be willing to work late night hours
- No prior research experience necessary

Earliest Start Date: 5/30/2025

Housing Type Available: On Campus Housing Available

Site # 103

Principal Investigator: Amanda Bunting

Institution: NYU School of Medicine, New York, NY

Research Keywords: community, polysubstance use, criminal justice, assessment, screening, instrument development, opioids, psychometrics, vulnerable populations

Project Title: Development of a novel polysubstance assessment tool for vulnerable subpopulations

Project Description: Dr. Bunting's research lab is responsible for testing a new and innovative way to measure polysubstance use- the high-risk pattern of drug use when people mix more than one drug together. Polysubstance use substantially contributes to overdose risk, yet current tools are limited in their ability to measure these patterns of drug use. Interns will have the opportunity to be involved in community recruitment of vulnerable populations (e.g., individuals recently released from incarceration, persons who inject drugs) and assist research staff with study procedures to test the reliability and validity of the new tool. Interns will be included in lab meetings and learn about all lab studies. There are several opportunities to work on publication of quantiative studies, based on intern skillset and goals.

Student Qualifications:

- Interns will work with human subjects, including individuals who are engaged in active drug use
- Respect for research subjects and the use of person-centered language is a requirement for Dr. Bunting's lab
- Social sciences background: sociology, psychology, health services, public health

Earliest Start Date: 5/5/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Kelly Doran

Institution: NYU School of Medicine, New York, NY

Research Keywords: overdose; homelessness; housing; prevention; implementation science; mixed methods; qualitative

Project Title: Implementation of Overdose Prevention Practices in Permanent Supportive Housing

Project Description: Permanent supportive housing (PSH), the gold standard intervention for ending chronic homelessness, has expanded rapidly across the U.S. Due to a confluence of individual and environmental risk factors, PSH tenants face heightened risk for overdose (OD). While evidence-based practices (EBPs) to prevent OD exist, they have not been broadly implemented in PSH settings. We propose to address this significant research to practice gap by tailoring a set of evidence-based OD prevention practices for PSH settings, then studying their implementation in 20 PSH buildings in New York. We will test a package of implementation strategies that includes an implementation toolkit, tenant-staff implementation champion dyads, limited practice facilitation, and learning collaboratives. The project will be conducted in partnership with the Corporation for Supportive Housing, a national organization that advances solutions to improve PSH through education, practice, and policy. Aim 1 is to adapt evidence-based OD prevention practices for PSH, using key stakeholder focus groups, and develop a PSH OD Prevention Toolkit to guide implementation. In this preparation phase we will adapt an existing package of EBPs in consideration of the unique environmental characteristics of PSH and will prepare for implementation. Aim 2 is to evaluate implementation of evidence-based OD prevention practices across diverse PSH buildings and effectiveness on PSH tenant outcomes in a stepped wedge trial. In this Hybrid Type 3 effectiveness-implementation study, the primary implementation outcome is PSH building adoption of the OD prevention EBPs. We will additionally examine secondary implementation outcomes, tenant clinical outcomes, and implementation sustainment. Aim 3 is to explore multilevel factors influencing implementation—including barriers and facilitators—and refine dissemination and implementation frameworks for housing settings, using qualitative interviews with PSH staff. The research draws from the EPIS (Exploration, Preparation, Implementation, Sustainment) implementation framework and Rhodes' Risk Environment Framework. The research will inform implementation frameworks and strategies by examining application of EPIS for PSH and testing novel housing-relevant implementation strategies including staff-tenant implementation champion dyads. Findings from this PSH-focused research are expected to be more broadly applicable to other types of housing and settings serving people experiencing homelessness. The multidisciplinary investigator team will work with a Stakeholder Advisory Board to maximize impact of the research, which has been designed to inform local and national programmatic and policy interventions.

In addition to the project described above, the Lab PI has a second NIDA-funded project that the intern may choose to be involved in. This second project is a community-partnered, mixed methods study to examine substance use and related health impacts of a large-scale initiative to place people experiencing homelessness in New York City into commercial hotels during the COVID-19 pandemic.

Student Qualifications:

- Passionate about topics related to homelessness and housing as they intersect with health
- Interest in working on a study involving people who use drugs and ability to conduct work in a manner that demonstrates sensitivity and is free from stigma.
- Organized and reliable

- Positive attitude, goal-directed and learns from feedback
- Quick learner – enjoys and is able to learn new things quickly; able to follow direction; adaptable
- Hard worker – dedicated to the job
- Proficient writer – able to write well, correctly, and quickly
- Honest – consistently acts with integrity
- Good communicator – demonstrated interpersonal, written and oral communication skills to effectively communicate, collaborate, and establish and maintain good working relationships with a diverse group of multi-disciplinary researchers, staff, and partners
- Fully available for the duration of the NIDA Internship period

Earliest Start Date: 6/2/2025

Housing Type Available: On Campus Housing Available

Site # 105

Principal Investigator: James Swain

Institution: Renaissance School of Medicine, Stony Brook Univer, Stony Brook, NY

Research Keywords: brain research; parenting; opioid use disorder

Project Title: Opioids and Maternal Brain-Behavior Adaptation During the Early Postpartum

Project Description: For the NIDA summer internship, students will become familiar with the R01 and related background literature and procedures. They will be invited to attend and participate in research seminars and presentations, engaging in key scientific literature and related safety and ethical considerations. Activities will also include opportunities to participate in our experiments: interviewing participants (mothers with and without opioid use disorder), and brain-behavior data collection (including data analysis, courses, lab meetings, patient interviews, related grant and manuscript preparation, and literature reviews). In addition, it is expected that each intern will deliver a formal presentation on his/her research project at the end of the internship and potentially serve as co-authorship on manuscripts, as in past summers. Our interdisciplinary research provides a rich menu of topics for summer students to sample as well as specific topics according to specific interests. Our research is exclusively non-invasive (interviews, psychotherapy and brain imaging) and with humans.

Student Qualifications:

- Keen interest and enthusiasm for the topics we are researching, highlighted by the brain-behavior mechanisms that govern parenting and may be affected by opioid use disorder and psychotherapy
- We can accommodate beginners who could assist with specific aspects of performing neuroimaging and exposure to clinical settings as well as those who already have experience with neuroimaging and clinical care for parents and substance use disorders

Earliest Start Date: 5/1/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Greg Perlman

Institution: Stony Brook Renaissance School of Medicine, Stony Brook, NY

Research Keywords: Brain imaging, dopamine, humans, adolescent, substance use, longitudinal, development

Project Title: Neuromelanin MRI: A tool for non-invasive investigation of dopaminergic abnormalities in adolescent substance use.

Project Description: Our ongoing NIDA-funded study recruits 300 adolescents from the community for a comprehensive multi-modal assessment involving psychiatric interview, self-report assessment, and MRI, including neuromelanin (NM)-sensitive MRI. We will also collect two additional NM-MRI sessions over a year apart, a period in youth when they vary naturally in frequency and intensity of substance use. This longitudinal project will test developmentally- informative bi-directional hypotheses about the association between NM accumulation (a proxy for DA biosynthesis) and adolescent substance use over a period of 36 months. Further, it will clarify whether pediatric NM accumulation indexes pediatric reward function, tracks changes in pediatric reward function following substance use, corresponds to activity in functional brain connectivity networks, and is moderated by sex differences. These fundamental translational and neurodevelopmental questions about DA function cannot be answered by PET imaging in a pediatric cohort. NM-MRI is poised to revolutionize translational science of SUDs by enabling a suite of developmentally informative investigations. A summer intern would be expected to be present in the lab and participate in recruitment methods, assist with data collection at in-person labratory visits, attend weekly lab meetings, assist with retention of enrolled participants, and learn data processing/ cleaning procedures (e.g., reviewing neuromelanin-sensitive MRI images for quality).

Student Qualifications:

- Expected to complete necessary CITI trainings for research involving human subjects, including relevant special topics CITI trainings (research with minors)
- Expected to work respectfully within a dynamic team environment involving investigators, full-time staff, undergraduate volunteers, and participants (parents and teens)
- Conscientiousness, detail-oritented, and sociability.

Earliest Start Date: 10/17/2024

Housing Type Available: Off Campus Housing Only

Principal Investigator: Sergio Dominguez-Lopez

Institution: University at Buffalo, Buffalo, NY

Research Keywords: Dopamine, Neuronal Circuits, Methamphetamine, Seeking, Behavior, Self-Administration, Mouse, Mitochondria, RNAseq, Single-Cell, Transcriptomics

Project Title: Dopamine Neuronal Microcircuits Controlling Methamphetamine Seeking Behavior

Project Description: The dopamine system in the brain is believed to be responsible for the acute reinforcing properties of most drugs with high overuse liability, including methamphetamine (METH). Our current knowledge indicates that dopamine neurons are a heterogeneous population of cells with different genetic profiles, which could influence how these cells respond to specific drugs. The Dominguez-Lopez lab at University at Buffalo focused on studying the specific dopamine microcircuits controlling METH-seeking behavior aiming at identifying mitochondrial morphological changes, alterations in axonal projections, and genetic characteristics that provide resistance or vulnerability to dopamine neuronal circuitry after prolonged METH exposure. The proposed summer research project involves training mice to self-administer intravenous infusions of methamphetamine in operant chambers and collect brain samples for mitochondrial morphological studies using confocal microscopy and for single-cell RNAseq experiments.

Student Qualifications:

- Experience handling laboratory animals (mice), immunolabeling, and imaging analysis is a preferred qualification
- Experience with molecular biology methods (RNAseq) at the bench or bioinformatic level is a plus

Earliest Start Date: 5/27/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Czarina N. Behrends

Institution: Weill Cornell Medicine, New York, NY

Research Keywords: Harm Reduction, implementation, health services research, qualitative research

Project Title: Expansion of Mail-Delivered Harm Reduction Services in the U.S.

Project Description: The summer intern will be responsible for assisting with a national online-based survey of people who inject drugs on their harm reduction utilization and access as well as acceptability and willingness to use mail-based harm reduction programs. The intern will assist with survey implementation, follow ups, and data management with guidance from the research team. This may involve assisting with tracking, verifying and recording online survey and/or qualitative interview data to ensure data are complete. The intern will work closely with the PI and study personnel to review incoming data and assist with reporting out findings from the study. Interns matched to this team will have the opportunity to join the CHERISH and Syndemics Lab virtual cohort of summer interns across multiple institutions working with principal investigators conducting public health (specifically, health services / health economics) research in substance use. The summer experience will include skills building sessions with topics ranging from: 1) how to conduct a literature review, 2) online presence and networking, 3) introduction to healthcare systems, 4) introduction to healthcare policy, 5) presentation "do"s and "don't"s, and 6) how to build a CV/resume.

Student Qualifications:

- Interest in mixed methods substance use research and major in public health or other related health and social sciences
- Experience with Excel, PowerPoint, Word, comfortable with speaking directly to study participants highly preferred
- Intern should be organized, detail-oriented, and possess strong communication skills.
- Knowledge of harm reduction and syringe service programs not required but a plus.
- Interest and/or experience with qualitative research also a plus.

Earliest Start Date: 6/3/2024

Housing Type Available: Off Campus Housing Only

Principal Investigator: Shashi N Kapadia

Institution: Weill Cornell Medicine, New York, NY

Research Keywords: injection drug use, infectious diseases, healthcare, hospitalization, qualitative, mixed-methods

Project Title: Delivery of Addiction Treatment for Medicaid Enrollees with Serious Injection-Related Infections

Project Description: This internship opportunity is to work on a project titled "Delivery of Addiction Treatment for Medicaid Enrollees with Serious Injection-Related Infections." This project, funded by NIDA, has the goal of understanding how hospitals provide treatment and support to people who use drugs who are hospitalized with infections. Infections are common complications of injection drug use in particular and they often lead to long hospitalizations. Medical hospitalizations, however, are often negative experiences for people who use drugs: here, they experience stigma and often untreated withdrawal or inadequately treated pain. We are interested in understanding strategies that improve these experiences and eventually improve outcomes.

As part of this project, we are conducting a national qualitative study that interviews healthcare providers at a diverse array of hospitals to learn about the strategies they are using, their perceived needs, and the barriers they face. The intern who joins our project would support this qualitative study. Specific roles might include helping the research team develop data collection instruments, conducting virtual interviews, and analyzing qualitative data. We expect that the intern would participate in team meetings and offer their individual perspectives on the interview data. Likewise, the intern can expect to gain a better understanding of clinical care pathways available for people who use drugs and an introduction to the fields of qualitative research and health services research. As detailed above, the intern may need to communicate with human research participants for data collection. No animal or "wet lab" experience is required, as these are not part of the project.

Student Qualifications:

- Enthusiasm is a feeling of strong interest in participating in team-based research on this topic area
- An interest in health and healthcare delivered in hospitals is a plus, as that is the focus of the project.
- Some exposure to qualitative or social science research is a plus, but not required

Earliest Start Date: 5/15/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Aysenil Belger

Institution: University of North Carolina at Chapel Hill, Chapel Hill, NC

Research Keywords: neuroimaging, neurocognition, adolescents, substance abuse, anxiety

Project Title: Developmental Pathophysiology of Adverse Patterns of Substance Use in Adolescents with Anxiety

Project Description: The proposed 5-year R01 study will examine maturational pathways of biomarkers (neural connectivity and stress physiology) to adverse patterns of substance use (APSU) in adolescents with anxiety symptoms to improve precision-based, targeted intervention. Anxiety remains one of the most commonly diagnosed clinical symptom domains in adolescence and is a potent precursor to and exacerbator of substance use disorder, although there is substantial heterogeneity in outcomes. As such, detection of anxiety symptoms alone provides limited information about the predictability, pathophysiology, progression, and preventability of anxiety-linked APSU. Key to understanding how anxiety symptoms increase risk for APSU may be found in a disruption of neural pathways that subserve executive cognitive modulation of threat information processing and response. We propose that local alterations in threat processing circuitry (e.g., the central extended amygdala) during anticipation or unpredictability of threat, and stress physiological dysregulation (heart rate variability and salivary cortisol) during a social stress task, underpin internalizing symptoms. However, local intra-network alterations likely do not fully explain pathways from internalizing symptoms (anxiety) to externalizing behaviors (APSU). Thus, we further propose that a breakdown in coordination between cognitive control circuity (frontoparietal and cingulo-opercular) and threat processing circuitry will be expressed in both weakened neural connectivity and poorer task performance, which will predict APSU in adolescents with anxiety symptoms at high risk for SUD. Across development, we expect these neuronal and physiological features will become even more pronounced and sex differences will become increasingly prominent. Our objective is to elucidate the role of maturational change across adolescence in neural connectivity between fronto-limbic subsystems and physiological stress responses to an acute stressor in the relationship between anxiety and APSU. We propose to chart the developmental progression of neural and stress physiological factors that confer risk for APSU in adolescents with anxiety symptoms by conducting a prospective, longitudinal study of adolescents (N=180, age 12-14), including three 12 month waves of data collection. Eligible participants will report anxiety symptoms and substance use naïvete and will be oversampled (50%) on the basis of high risk for adolescent SUD using an established cut-off on a well- established risk inventory. Graph theory will be applied to functional connectivity estimates of MRI data at rest and during cognitive control, inhibition, and threat processing tasks to test an integrative, multi-modal model with physiological, behavioral and survey measures to track trajectories of neurodevelopment. Identifying biomarkers predictive of APSU in at-risk adolescents is critical to the design of program components more precisely targeted to neural and physiological systems that support self-regulation, with potential to achieve more than the small to modest effect sizes currently produced by even our most efficacious interventions.

Student Qualifications:

- Accountability
- Organized
- Initiative taker

- Leadership skills
- Communicative
- Respectful
- Excel, Redcap, Endnote or other reference manager experience.
- Prior experience working with human research subejcts, particularly with childrne and adolescents helpful.

Earliest Start Date: 5/31/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Guorong Wu

Institution: University of North Carolina at Chapel Hill, Chapel Hill, NC

Research Keywords: Network neuroscience, neuroimaging, machine learning

Project Title: Promoting Collaborative Research on Human Connectome Analysis for Substance Use Disorders

Project Description: The candidate will conduct a benchmark study for existing machine learning backbones for human connectome data, with a focus on disease diagnosis, subtyping, and multimodality learning.

Student Qualifications:

- Solid background in machine learning and experience of processing neuroimaging data
- A good programming skillset on Python and PyTorch is highly recommended

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 112

Principal Investigator: Kate Bruce

Institution: University of North Carolina Wilmington, Wilmington, NC

Research Keywords: symbols; drug relapse, concept learning; cognitive neuroscience; animal models

Project Title: Transfer of function across equivalence classes: Implications for substance use

Project Description: One of the most obvious and critical faculties that seem to separate humans from other animals is the use of language and symbolic associations. However, scientists have been exploring the possibility that animals, such as rats, may possess rudimentary symbolic processes. For example, rats can be trained that certain odors "go together" or are a "class." Then, if one odor is associated with an outcome (say food), then the rats immediately react to the other odors in the class as if they are also associated with that outcome, even without explicit training. This is called "transfer of function." Once the odor classes are formed, an additional test of transfer of function involves pairing a drug such as morphine with one of the class members and then seeing if the rats respond to other class members as if they had been associated with morphine too. This type of animal model may help us understand phenomena associated with relapse; for example, does exposure to a related non-drug cue (such as location of where drug-taking occurred) trigger drug-taking behavior? Animal models of such symbolic associations are critical for helping us understand more about these type of complex behaviors and associations.

Student Qualifications:

- Majoring in psychology or biology; Interest in animal behavior and animal models
- Completion of a research methodology class is a plus
- Previous handling of rodents is a plus

Earliest Start Date: 5/19/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Rong Chen

Institution: Wake Forest University School of Medicine, Winston-Salem, NC

Research Keywords: dopamine, dopamine D3 receptors, cocaine, cocaine self-administration, transcripts

Project Title: Drd3 transcript variants and cocaine self-administration

Project Description: Dopamine D3 receptors play an important role in regulation of reward, cognition, emotion and motor behavior. There are several transcript variants of Drd3 gene, encoding dopamine D3 receptors, that are conserved across human and rodent brain. However, the function of these transcript variants is largely unknown. We found that cocaine self-administration increases or decreases the expression of specific transcript variants in a region-dependent manner. However, the impact of the altered expression of these variants is unclear. This project will determine the function and cellular localization of these transcript variants using heterologous expression systems. The outcome of this project will provide a critical understanding of the functional roles of these variants in the brain.

We will teach interns to learn: a) how to culture cells; b) transfect cells with cDNA encoding the protein of your interest; c) perform immunocytochemistry and imaging to examine the localization of these variants within the cells; d) conduct western blot and binding assays to assess the function of these variants.

Student Qualifications:

- We can train interns to perform the techniques described above
- Prior skills in cultured cells will be considered favorably

Earliest Start Date: 5/27/2024

Housing Type Available: Off Campus Housing Only

Principal Investigator: Nichole Michaels

Institution: Abigail Wexner Research Institute at Nationwide Children's Hospital, Columbus, OH

Research Keywords: substance use disorders, harm reduction, fentanyl test strip education, overdose prevention, public health

Project Title: Evaluating the impact of fentanyl test strip use among rural and urban populations

Project Description: This study investigates fentanyl test strip (FTS) education and distribution as a harm reduction strategy to prevent overdoses among people who use drugs. FTS use is a promising harm reduction strategy and research shows when people who use drugs receive a positive FTS result, they are more likely to perform overdose risk reduction behaviors. However, access to FTS is limited, and there are barriers to the adoption of this intervention in some communities. The purpose of this study is to investigate the feasibility, acceptability, and associated benefits and harms of integrating FTS education and distribution into select naloxone distribution sites in rural and urban communities in Ohio. Researchers' roles include recruitment of participants at naloxone distribution sites, communication with naloxone distribution sites throughout Ohio, and retention and follow up with participating sites and study participants. Researchers also administer the study's intervention and collect participant data. Our research works with human subjects and the student will be interacting directly with study participants in-person or over the phone.

Student Qualifications:

- No previous research experience required
- Preferred majors and career interests include: public health, social work, sociology, psychology, or similar

Earliest Start Date: 6/2/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Alan D. Levine

Institution: Case Western Reserve University, Cleveland, OH

Research Keywords: Opioid Use Disorder / Opioid Receptor Signal Transdcution / Opioid effects on human T lymphocytes and human intestinal epithelial cells / Opioid regulation of immune function / Fentanyl signaling in the Context of polysubstance use / Fe

Project Title: CWRU Center for Excellence on the Impact of Substance Use on HIV

Project Description: [1] Opioid Receptor Signal Transduction in human Induced Pluripotemt Stem Cell-derived neurons and T lymnphocytes: Define the biochemical events through the G protein and beta-arrestin pathways induced by fentanyl and other opiod receptor agonists: Western blot, cell culture, immunofluoresence confocal microcopy

[2] Bioinformatic analysis of changes in gene expression and resulting pathways in human Induced Pluripotemt Stem Cell-derived neurons and T lymphocytes: Cell culture, RNA isolation, RNA sequencing, bioinfomatic 'big data' analysis

Student Qualifications:

- Undergraduate Junior and above
- Some lab expeirence in cell or molecular biology
- Major in biology, chemistry, biolchemistry, neuroscience
- Goal to remain in biomedical research
- Primary cell culture of human immune cells and brain cells

Earliest Start Date: 5/12/2025

Housing Type Available: On Campus Housing Available

Site # 116

Principal Investigator: Anna Radke

Institution: Miami University, Oxford, OH

Research Keywords: addiction, withdrawal, opioids, rodent, systems, neuroscience, behavior

Project Title: Cholinergic interneuron regulation of opioid-related behaviors

Project Description: Mu-opioid receptors (MORs) in the ventral tegmental area (VTA) are known to contribute to both the rewarding effects of opioid use and the aversive signs and symptoms of opioid withdrawal. However, there is growing evidence that additional populations of MOR, which is broadly expressed throughout emotional and motivational brain circuits, critically contribute to opioid-related behaviors. Striatal cholinergic interneurons (CINs) regulate dopamine release and responding for rewards. Given these important functions of CINs, and because this neuronal subpopulation expresses MOR, we hypothesize that MOR stimulation alters CIN activity and striatal dopamine release to promote opioid reward, consumption, and withdrawal-induced aversion.

Student projects will test the role of cholinergic mu-opioid receptors in behaviors of interest, including oral fentanyl self-administration, locomotor sensitization, and place conditioning. Opportunities to work with transgenic lines of mice, fluorescent in situ hybridization, chemogenetics, and in vivo photometry are available. Students will be expected to work with mice on a daily basis, manage the day-to-day running of an experiment, analyze data, and present their findings to the research group.

Student Qualifications:

- Willingness to work with animals, but prior experience is not required.
- A background in neuroscience/psychology is preferred.

Earliest Start Date: 5/19/2025

Housing Type Available: Off Campus Housing Only

Site # 117

Principal Investigator: Christopher Fang-Yen

Institution: Ohio State University, Columbus, OH

Research Keywords: C. elegans, compound screening, locomotion, dopamine, serotonin

Project Title: Behavior-based discovery of small-molecule modulators of neurochemical signaling pathways that underlie addiction

Project Description: Dopamine and serotonin are critical neuromodulators in brain circuits with many roles in mood and motivated behaviors. In C. elegans, dopamine controls locomotory behavior that controls the speed and gait of foraging animals, and serotonin controls egg laying dynamics. We have developed high-throughput and quantitative methods for assaying C. elegans locomotion and egg laying. These assays use machine-vision to simultaneously monitor the movement and posture and egg laying behavior of hundreds of animals on a microfabricated multi-well substrate. We are using this platform to screen for microbial-derived compounds that either mimic the effects of dopamine/serotonin on behavior or block effects of excess dopamine/serotonin. We will use mutants for signaling receptors and their ligands to determine whether compounds act on endogenous signaling pathways, and we will use functional imaging methods to determine how these compounds alter the function of dopamine and/or serotonin neural circuits. Completion of these aims will identify novel natural products that will be broadly useful for discovery of neuroactive therapeutics and will identify compounds that specifically target key neuromodulatory signaling pathways underlying addiction.

Student Qualifications:

- Biology lab experience is required.
- Some experience with computer programming is preferred.

Earliest Start Date: 5/12/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Naleef Fareed

Institution: The Ohio State University, Columbus, OH

Research Keywords: Prediction models; Data Science; Machine Learning; Statistics; Opioid deaths; Community Health; Population Health; Public Health Crisis; Human-centered Design; Digital Health

Project Title: Opioid and SUD Data Enclave (O-SUDDEn): Bringing real-time data to the opioid crisis

Project Description: The research project will involve two specific activities: 1) data science based approaches to analyze data used to predict adverse outcomes related to the opioid crisis in Ohio and 2) human-centered design approaches to ascertain the need for specific types of digital health tools that can communicate outputs from the aforementioned data science activities. Interns will be expected to engage and learn from the research team.

Student Qualifications:

- Ability to: 1) problem solve; 2) communicate effectively; 3) analyze data; 4) engage actively with an interdisciplinary research team and community members involved in the opioid crisis.

Earliest Start Date: 6/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Jason Blackard

Institution: University of Cincinnati College of Medicine, Cincinnati, OH

Research Keywords: HIV; opioid; fentanyl; viral diversity; transcription factor; microRNA; transcriptome

Project Title: Omics analysis of HIV during synthetic opioid exposure

Project Description: The US is in the midst of a major opioid epidemic largely attributed to synthetic opioids. For example, fentanyl is 50-100 times more potent than heroin and is involved in >60% of overdoses nationwide and >90% of overdoses in Ohio. Individuals with opioid use disorder are at significant risk for transmission of HIV, and new cases of HIV are on the rise in the Midwest and at our institution. Opioid receptors are expressed in a variety of cell types that are susceptible to HIV infection. Commonly abused opioids promote HIV replication and virus-mediated pathology. Thus, translational research on virus-opioid interactions is essential for optimized treatment and limiting viral reactivation. Important knowledge regarding how synthetic opioids influence HIV latency and reactivation is absent from the available literature.

To fill this critical gap and institute a major shift forward in our understanding of this epidemic, our lab is conducting a series of complementary in vivo studies to directly evaluate the impact of synthetic opioids on markers of HIV latency/reactivation, viral diversity, transcription factor expression, microRNA expression, and cell signaling pathways.

Student Qualifications:

- Previous experience in a molecular biology laboratory is preferred
- Biology / biochemistry majors preferred
- Interns may work with virus-infected samples after appropriate training but will not be responsible for patient recruitment or enrollment
- Animal studies are not part of this research

Earliest Start Date: 5/1/2025

Housing Type Available: On Campus Housing Available

Site # 120

Principal Investigator: Jayme McReynolds

Institution: University of Cincinnati College of Medicine, Cincinnati, OH

Research Keywords: Stress, cocaine, drug self-administration, endocannabinoids, prefrontal cortex

Project Title: Role of prelimbic cortical endocannabinoid signaling in enhanced cocaine-seeking behavior following combined repeated stress and cocaine use in rats

Project Description: The project is examining the role of

prefrontal cortical endocannabinoid signaling in cocaine-seeking behavior in rats with a history of stress. Rats that are exposed to a daily stressor, footshock, increase their cocaine self-administration. This also leads to an increase in later cocaine-seeking behavior as both cocaine-primed and stress-induced reinstatement is higher in rats with a history of stress. This effect involves cannabinoid receptor signaling as systemic or intra-prefrontal cortical administration of a receptor antagonist attenuates cocaine-primed reinstatement but only in rats with a history of stress. Interns would be working on examining the role of prefrontal endocannabinoid signaling in this effect by identifying the contribution of a specific endocannabinoid, 2-arachidonoyl glycerol (2-AG), in the prefrontal cortex to stress-enhanced cocaine-seeking behavior. The intern would be responsible for running drug self-administration behavior and reinstatement testing. Additionally, the intern will be involved in examining changes in expression of genes involved in endocannabinoid signaling in the prefrontal cortex using RNAscope. The project will involve work with live animals (rodents) and the intern must be ok with working with live animals.

Student Qualifications:

- Experience with handling rats, conducting learning and memory tests in rats, and conducting drug-self administration in rats is preferred but we are also happy to train interns on these behavioral tasks
- Experience with sectioning tissue and relevant skills for basic molecular techniques such as pipetting, immunofluorescence, wet mounting of tissue on slides, and microscopy
- Courses relevant for the project include basic neuroscience courses, psychology courses that focus on neuropsychiatric disorders, and courses covering drugs and behavior

Earliest Start Date: 5/5/2025

Housing Type Available: On Campus Housing Available

Site # 121

Principal Investigator: Stephan Lindner

Institution: Oregon Health & Science University, Portland, OR

Research Keywords: health services research; Medicaid; substance use disorder; managed care

Project Title: Examining the Effects of Medicaid Managed Care Organizations' Entries and Exits for Medicaid Enrollees with Substance Use Disorders

Project Description: The overall objective of this R01 research project is to study the role of managed care organizations for the delivery of healthcare services of Medicaid enrollees with substance use disorder (SUD). As part of the grant we collected national Medicaid claims and enrollment data, called the Transformed Medicaid Statistical Information System Analytic Files, identified Medicaid enrollees with SUD, their managed care enrollment, and their healthcare utilization.

The intern would have access to aggregated TAF files at the state - managed care organization level. The research project would involve descriptive analyses of the data, possibly followed up by further statistical analysis.

Student Qualifications:

- An introductory course in statistics and ideally have some experience using statistical programs such as stata or R
- Experience working with R is preferred because it is the research center's primary statistical programming language. However, applicants with no data analysis experience will be considered.

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Site # 122

Principal Investigator: Bill Malachowski

Institution: Bryn Mawr College, Bryn Mawr, PA

Research Keywords: Smoking cessation, nicotine addiction, vaping addiction, Electronic Nicotine Delivery (END), vape pen, tobacco, nicotine, and e-cigarette research

Project Title: Nicotine Vaping and Electronic Nicotine Delivery Systems Addiction Treatment through Innovative E-Vape Administration of Cytisine to Enhance Patient Adherence and Treatment Completion.

Project Description: This project focuses on developing novel synthetic routes for cytisine and related heterocyclic compounds to advance smoking and vaping cessation treatments. Two interns will work independently or collaboratively as part of the research team to review existing synthetic methods and explore alternative strategies for optimizing the production of cytisine and synthesizing new analogs.

Under the supervision of the project PI and site PI, interns will conduct multi-step synthesis experiments, employing advanced techniques for the purification of compounds, including column chromatography, recrystallization, and distillation. They will also characterize the synthesized compounds using analytical methods such as NMR, IR spectroscopy, and mass spectrometry. Throughout the project, interns will be expected to maintain accurate and detailed laboratory notebooks and records, ensuring the integrity and reproducibility of experimental results. The project does not involve working with animals, humans, or tissue samples but focuses on synthetic chemistry and analytical research.

Student Qualifications:

- Strongly interested in organic chemistry, drug discovery research, and tobacco, nicotine, and e-cigarette research
- Completed coursework in organic chemistry and possess hands-on laboratory experience, including familiarity with lab safety protocols
- Knowledge of organic synthesis techniques and experience with analytical tools such as NMR, HPLC, and mass spectrometry are highly preferred
- Should be self-motivated, detail-oriented, and eager to engage in hands-on lab work.

Earliest Start Date: 5/27/2024

Housing Type Available: On Campus Housing Available

Site # 123

Principal Investigator: Pooja Jain

Institution: Drexel College of Medicine, Philadelphia, PA

Research Keywords: HIV, immune cells, drugs of abouse.

Project Title: Innovative In-Situ Imaging Techniques for the Visualization of CNS associated HIV reservoirs in the Context of Substance Abuse

Project Description: These studies aim to develop whole tissue in situ hybridization for the detection of SHIV in non-human primate CNS associated reservoirs.

Student Qualifications:

- Basic techniques related to virlogy, immunology and cell biology

Earliest Start Date: 1/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Meg Fox

Institution: Penn State College of Medicine, Hershey, PA

Research Keywords: mouse model, opioids, reward circuitry, molecular biology, self-administration

Project Title: Circuit-specific molecular mechanisms in fentanyl use and relapse

Project Description: The summer research project is focused on how different molecules in specific brain reward regions influence opioid-seeking behavior. First, mice are trained to self-administer fentanyl intravenously in operant conditioning chambers. After self-administration training, mice then receive viral vectors in the brain to increase or decrease expression of certain genes in specific brain regions. After a period of drug abstinence (mimicking incarceration or substance use treatment in humans), mice are tested for drug-seeking behavior. This project is part of a larger endeavor focused on identifying how changes in gene expression lead to persistent opioid use in individuals with Opioid Use Disorder.

Student Qualifications:

- Detail oriented with excellent time management and fine motor skills, and have the ability to follow instructions and work independently
- Be comfortable working with animals and animal tissue samples; experience working with mice is a bonus but not required
- Broadly interested in Biology or Neuroscience, and have completed at least some introductory biology coursework.
- Those without research experience from underrepresented backgrounds (broadly defined) are especially welcome

Earliest Start Date: 5/20/2024

Housing Type Available: Off Campus Housing Only

Site # 125

Principal Investigator: Wenzhe Ho

Institution: Temple University, Philadelphia, PA

Research Keywords: Drug abuse, HIV, Neuro AIDS, Viral Immunology, Innate Immunity, iPSC, Cerebral Organoids

Project Title: HIV, Methamphetamine and Human iPSC-derived Microglia-containing Cerebral Organoids

Project Description: METH, a potent addictive psychostimulant, is one of the most abused drugs in the United States. METH abuse is highly prevalent in HIV-infected individuals, which presents unique challenges for HIV prevention and treatment. Given the overlapping impact of METH use and HIV on neuronal damage in the CNS, it becomes urgent to understand the role of interplays between METH and HIV in the pathogenesis of HIV-associated neurocognitive disorders (HAND). The goal of this project is to address the hypothesis that METH use and/or HIV infection inhibit host innate immunity and facilitate inflammation. There are two specific aims: 1. To examine whether METH and/or HIV inhibit the intracellular viral restriction factors in newly established brain cell models (iPSC-derived microglia and Microglia-containing Cerebral Organoids, MCOs). 2. To determine whether METH and/or HIV infection induce expression of the inflammasomes/neurotoxic factors and promote the death of neurons.

Student Qualifications:

- Prefer to have students with a biology major, who have a great interest and passion in research (with or without experience, although research experience is preferred)
- Good listener and observers who can follow instructions, pay attention to details and get along with others
- Ability to organize/present experimental data
- Excellent communication skills and can read research papers and write in English

Earliest Start Date: 6/3/2024

Housing Type Available: Off Campus Housing Only

Principal Investigator: Lee-Yuan Liu-Chen

Institution: Temple University Lewis Katz School of Medicine, Philadelphia, PA

Research Keywords: kappa opioid receptor, paraventricular nucleus of thalamus, antipruitic effect, analgesia, dysphoria, sedation, anxiety, depression, opioid withdrawal

Project Title: Kappa Opioid Receptor in Paraventricular Nucleus of Thalamus

Project Description: There are two main projects:

> 1. characterization of in vivo pharmacology of novel kappa opioid receptor (KOR) agonists in mice. We will investigate pharmacological activities of novel KOR agonists in tests to evaluate their activities in the analgesia, anti-itch, aversion, sedative and motor coordination tests.

> 2. To explore the roles of KOR in the paraventricular nucleus of thalamus (PVT) in KOR-mediated behaviors by conditional deletion of KOR in the PVT. The behavior tests mentioned in 1. will be performed in mice that have conditional KOR deletion in the PVT. In addition, anxiety-like and depression-like behaviors will be examined. Moreover, naloxone-precipitated opioid withdrawal signs following repeated morphine treatment will be investigated.

Student Qualifications:

- sophomore or junior undergraduate students majoring in biology, chemistry, or neuroscience or related areas.
- some research lab experience preferred
- should be able to work with mice and rats, no allergy to animals preferred
- science course grades should be B and above
- should be organized and be curious and eager to learn

Earliest Start Date: 5/12/2025

Housing Type Available: Off Campus Housing Only

Site # 127

Principal Investigator: kampman, Kyle M

Institution: University of Pennsylvania, Philadelphia, PA

Research Keywords: opioid use, extended-release naltrexone, detox

Project Title: Title: Combining Pregabalin with Lofexidine: Can it Increase the Success of Transition to Naltrexone?

Project Description: Summer Research with NIDA introduces undergraduate students from underrepresented groups to drug abuse research through research placements with NIDA grantees. Students work with the grantees for 8 weeks. The experience includes didactic lectures on behaviors of addiction, addiction treatments and research practices- may incluse gene expression work; participation in clinical meetings; data analysis; laboratory experiments if requested, and manuscript preparation. The program exposes students to drug abuse research and encourages them to pursue careers in biomedical and behavioral research. Since 1997, over 60 students have gained research experience in drug abuse research at PENN. Applicants must be at least 18 years old, citizens of the United States or a permanent resident, currently enrolled in college and in good academic standing.

The program at The University of Pennsylvania has been designed to facilitate placements for undergraduate students who are not in close proximity to a participating NIDA grantee. Daily supervision through monitored activities, secured dormitory housing accommodations, and secured placement positions supervised by professional and responsible investigators, junior investigators, and staff are available.

As a current NIDA grantee, the University provides research placements for participating students. The Program is an 8 week, 40 hours a week placement, supervised by a Principal investigator, and a designated program Director.

Student Qualifications:

- This is not pre-clinical research, however, if preclinical is requested, PENN may be able to facilitate laboratory placements
- Show interest in behavioral or addiction medicine research

Earliest Start Date: 6/2/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Paul Regier

Institution: University of Pennsylvania, Philadelphia, PA

Research Keywords: Opioid use disorder, neurocognition, neuroimaging, co-morbid disorders, clinical outcomes

Project Title: Integrating brain, neurocognitive, and computational tools in Opioid Use Disorder (OUD) to characterize executive function and to predict clinical outcomes

Project Description: Dr. Regier's project (NeuroCog) examines neurocognitive deficits in those with opioid-use disorder (OUD) and how deficits may be a vulnerability to relapse and lack of adherence to life-saving medications for OUD. The project also examines other factors associated with executive function (EF) problems, such as comorbid disorders (e.g., depression, anxiety), prior adversity, and social function. The project primarily utilizes 2 methods to capture differences in neurocognition: 1) the Penn Computerized Neurocognitive Battery (CNB) to measure EF (planning/decision-making, working memory, attention, cognitive flexibility, inhibition, and regulation); and 2) functional near-infrared spectroscopy (fNIRS) to capture neural correlates of EF. Multiple surveys captures mental health symptoms, prior adversity, social function, and behavioral traits (e.g., impulsivity), among others. In summer 2025, the project will be approximately half-way through data collection with anticiapted datasets including ~75 individuals with OUD and ~25 non-substance-using controls. At this stage, conventional analyses to test contributions of OUD and co-occurring variables on EF are planned. Eventually, Dr. Regier and his mentorship team (e.g., Dr. Ayaz) plan to develop a machine learning pipeline to enhance classification (e.g., identification of heterogenous subgroups) and allow for better characterization of treatment vulnerabilities.

Though Dr. Regier's NeuroCog project is ongoing, it will offer interns the opportunity to get involved with data collection (including participant interaction), preliminary data analysis, and scientific abstract writing/submission, using available data.

Dr. Regier's NeuroCog project is also connected to other projects at the Center for Studies on Addiction at Penn (e.g., PIs: Childress, Kampman, and Hager), including two studies using medications (e.g., psilocybin, cariprazine) as adjunct treatment for OUD and another study that is evaluating autobiographic memory in people with OUD.

Student Qualifications:

- Data analysis and basic programming skills (R, MATLAB, SPSS, etc.) would be helpful.
- Interns may also have the opportunity to work with our technician on processing fNIRS datasets, which may require more extensive programming skills (but is optional and not necessary).
- Interns may have the opportunity to work directly with participants, and having human subjects training can speed that process.
- Courses on neuroscience, cognition, psychology, and addiction would be helpful as background information.

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing OnlyPennsylvania

<u>Site # 129</u>

Principal Investigator: Elizabeth Krans

Institution: University of Pittsburgh, Pittsburgh, PA

Research Keywords: pregnancy, opioid use disorder, substance use disorders, health services reserach

Project Title: Impact of collaborative care for pregnant persons with opioid use disorder in low-resource obstetric settings

Project Description: This is a multi-site observational study designed to evaluate the effects of implementing a collaborate care approach (i.e., wrap around services, social and peer support) to caring for pregnant persons with opioid use disorder in rural settings on outcomes during pregnancy (i.e., MOUD utilization, overdose, retention in care).

Student Qualifications: Prior experience with data collection from clinical reserach participants would be a strength. Strong people skills, previous reserach experience, and organizational skills is preferred.

6/2/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Renee Cloutier

Institution: University of Pittsburgh, Pittsburgh, PA

Research Keywords: Implementation science, community-engaged research, measurement-based care, hybrid effectiveness-implementation study, psychosocial interventions, substance use treatment, opioid use disorder, opioid overdose, opioid treatment programs,

Project Title: HEALing Measurement Center: Enhancing Opioid Use Disorder Recovery through Measurement Based Care

Project Description: Summer interns will have the opportunity to participate in the first two of a three-phase research project to enhance the measurement, quality, and equity of care delivered into 20 Pennsylvania community opioid treatment programs (OTPs) through sustained implementation of measurement-based care (MBC). Measurement-based care is an evidence-supported intervention that involves a counselor administering a self-report symptom measure to clients, reviewing measure scores, and discussing the clients' responses in a counseling session. To foster partnership and engagement at the state, site, provider, and patient level, in Project 1 the Pitt team is collecting mixed methods data (observational, qualitative interviews, quantitative surveys) from leaders, counselors, and clients to understand: a) barriers to measurement-based care use; and b) potential ways that measurement-based care should be adapted to fit the needs of counselors providing treatment for opioid use disorder. This data will be analyzed and used to generate a MBC Implementation Blueprint that will be implemented and tested in opioid treatment programs in Research Project 2 in a stepped wedge design across years 2-5. Interns will have the opportunity to be support data collection and analyses, technical assistance with sites, and dissemination. This project will require students to work with human participants.

Student Qualifications:

- Educational background in psychology, public health, data science, or statistics/quantitative methods is preferred, however no prior research experience is needed for this internship
- Interested in graduate training and/or a career in clinical psychology, sociology, social work, public health, implementation science, data science, user experience testing, or digital mental health
- Familiarity with Microsoft Word and Excel is needed, along with strong organizational and communication skills

Earliest Start Date: 5/13/2024

Housing Type Available: On Campus Housing Available

Principal Investigator: Senthilkumar Sadhasivam

Institution: University of Pittsburgh Medical Center - Magee and Children's hospitals, Pittsburgh, PA

Research Keywords: Opioid use disorder; Neonatal opioid withdrawal syndrome; Biomarkers; Neuroimaging and placental imaging

Project Title: Multimodal Fetal and Placental Imaging and Biomarkers of Clinical Outcomes in Opioid Use Disorder

Project Description: Maternal Opioid Use Disorder (OUD) and Neonatal Opioid Withdrawal Syndrome (NOWS) have dramatically increased, with an American child born suffering from NOWS every 15 minutes. The exponentially increasing prenatal opioid exposure (POE) and ongoing opioid epidemic are further worsened by the COVID-19 pandemic. Mothers with OUD are at risk of adverse pregnancy outcomes, and infants with POE are at risk for NOWS and poor long-term neurobehavioral outcomes; there are currently no objective tools for early prediction or mitigation of these risks. Our previous studies have shown MR imaging alterations in brain structural and resting state functional network connectivity in infants with POE compared to non-opioid exposed healthy infants. Specifically, we showed that, in infants with POE, thalamo-frontal functional connectivity correlated with severity of NOWS and was modulated by maternal comorbidities. Infant brain structural and functional development is dependent on placenta-fetal health. We identified smaller cerebellar dimensions in fetuses with prenatal opioid exposure and showed alterations in placental size in pregnant women on OUD who had concomitant smoking or polysubstance use. We also showed that opioid related poor childhood clinical outcomes are related to opioid pharmacogenetic variations, and that placental epigenetics is correlated with neonatal opioid withdrawal syndrome in POE. Our pilot data show that toddlers treated for NOWS score poorly on the cognitive domain of the Bayley Scales of Infant Development-III. Based on our pilot work, we hypothesize that opioids affect longitudinal fetal brain development resulting in adverse long-term childhood neurobehavioral outcomes and that these fetal brain effects are moderated by placental dysfunction and maternal comorbidities. There is a critical and urgent unmet need for proactive identification of novel comprehensive multimodal markers of placental and fetal brain growth and function to predict adverse maternal and infant outcomes in maternal OUD. Our long-term goal is to improve safety and efficacy of OUD treatment during pregnancy, and significantly reduce the risks of NOWS, poor childhood neurodevelopment and maternal relapse. The Specific Aims are to 1) determine the effects of opioids on the developing fetal brain through longitudinal structural and functional fetal brain MRI, 2) assess the impact of opioids on placental morphology and function through placental imaging, epigenetics, proteomics and opioid pharmacogenetics, and 3) correlate impaired fetal brain development and placental function with NOWS and infant neurodevelopmental outcomes. The expected outcomes are to identify 1) critical longitudinal imaging markers of placental dysfunction and altered fetal brain development in maternal OUD; 2) novel opioid pharmacogenetic, epigenetic and proteomic biomarkers of placental dysfunction in OUD and NOWS, and 3) comprehensive and advanced placental-fetal imaging, and circulating proteomic and placental epigenetic biomarkers of severity of NOWS and poor infant neurodevelopmental outcome.

Student Qualifications:

- CITI certification
- Passsion
- Research interest
- Commitment

Earliest Start Date: 5/1/2025

Housing Type Available: On Campus Housing Available

Site # 132

Principal Investigator: Justin Berk

Institution: Alpert Medical School at Brown University, Providence, RI

Research Keywords: opioid use disorder, addiction, buprenorphine, carceral healthcare, criminal legal system

Project Title: Injectable Extended-Release Buprenorphine (XR-B) in a Correctional Setting: A Pilot Randomized Controlled Trial

Project Description: The research project will have multiple options for an intern that will include conducting qualitative analysis from interviews with incarcerated individuals and carceral stakeholders, working to design and implement a clinical trial in a carceral setting, and/or working on related projects to improve healthcare delivery in a jail and prison setting. Other projects may relate to hepatitis C treatment in jails settings, nursing home availability projects for incarcerated individuals, an environmental scan of facility research projects, or other high-impact work in healthcare delivery in carceral settings. The research goals will be to ensure the intern has broad experiences, gains exposure criminal legal system issues, and presents a poster at an academic conference. The project will include opportunities to collaborate with the Center for Health and Transformative Justice, the COBRE for Opioids and Overdose, and other possible opportunities through the Brown School of Public Health.

Student Qualifications:

- Pro-active and willing to troubleshoot and problem-solve independently with supports when needed
- Compassion for all individuals including those that are the focus of our research: individuals with addiction and individuals who are incarcerated
- Interest in supporting communities and people that are often marginalized by society
- Writing skills a major plus If they have previous research experience, that is a plus but so long as they are willing to invest the effort to work on developing skills with mentorship, we can support a range of student education levels. Specific skill sets in R or statistics can be utilized
- People with lived experience, family incarcerated experiences, and/or addiction are encouraged to apply

Earliest Start Date: 5/27/2024

Housing Type Available: On Campus Housing Available

Principal Investigator: Rosemarie A. Martin

Institution: Brown University, Providence, RI

Research Keywords: Public health; behavioral sciences; addiction; substance use disorder; opioid use; opioid use disorder; medications to treat opioid use disorder; criminal legal system; community supervision; qualitative data analysis; randomized contro

Project Title: Using Implementation Interventions and Peer Recovery Support to Improve Opioid Treatment Outcomes in Community Supervision

Project Description: The summer intern will assist with data collection and analysis in a major NIH-funded study examining the implementation of medications for opioid use disorder (MOUD) for criminal legal-involved populations. There is a critical need to support individuals on community supervision (i.e., parole/probation) to decrease the rate of illicit substance use and recidivism, and increase retention in treatment. The overall objective of this research is to improve linkage to the continuum of evidence-based care (e.g., MOUD) for criminal legal-involved individuals in Rhode Island; Philadelphia, PA; and Brunswick County, NC. In the trial phase of the study, individuals under community supervision will be randomly assigned to receive assistance from peer support specialists vs. no peer support. There are several data collection components in this study, including but not limited to: baseline and follow-up interviews with participants on community supervision, and interviews with community-based treatment providers and community supervision staff. This internship will be supported by a well-established research team with content expertise in addiction science and criminal-legal health, and methodological expertise in qualitative and quantitative data analysis. This research requires the intern to work with human subjects.

Student Qualifications:

- Skill sets: Aptitude for listening with intention, ability to establish rapport, and scientific writing skills. Experience/comfort working independently/remotely. Prior qualitative data analysis training or experience with literature reviews will be highly valued.
- Education/major: Social Sciences preferred, including but not limited to: Psychology, Sociology, Public Health, Anthropology, and Population Sciences.
- Career interests: Students interested in pursuing careers in public health and policy, or higher education in public health, psychology, and/or medicine will benefit significantly from this experience.
- This internship will be most relevant to students with specific content interests in addiction science, addiction medicine, substance use disorder treatment, or criminal legal health.

Earliest Start Date: 6/2/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Mariel Bello

Institution: Brown University School of Public Health, Providence, RI

Research Keywords: addiction, tobacco, smoking, health disparities, health equity, stressors, social context, psychopharmacology, cessation, relapse, young adults, socioeconomic status, social disadvantage

Project Title: The Impact of Social-Contextual Stressors on Psychopharmacological Mechanisms of Smoking Cessation and Relapse among Socioeconomically Disadvantaged Young Adults Who Smoke Cigarettes

Project Description: In line with NIDA's priorities to understand how social determinants of health increase or decrease risk for addiction over the lifespan, this qualitative study is designed to explore how social-contextual stressors (e.g., financial stress) impact smoking cessation and lapse risk among socioeconomically disadvantaged young adults (SDYA) who smoke cigarettes daily and attempt to quit smoking in their environment. This study will focus on the perspectives and lived experiences of SDYA who smoke and previously tried to quit smoking to better understand how specific social-contextual stressors are experienced in their day-to-day life. Prospective summer research interns who are interested in the fields of health equity, addiction science, mental health, public health, and behavioral and social sciences, and/or interested in a career in clinical psychology are strongly encouraged to apply.

During participation in the 2025 NIDA Summer Research Internship Program, summer interns will be expected to work closely with the PI Dr. Mariel Bello—a licensed clinical psychologist whose research focuses on minority health disparities—and her research staff to assist in a significant number of research tasks involved in completing this qualitative study. These tasks may include the following based on the summer interns' interests: assisting research staff with qualitative data collection, data management, and other day-to-day activities of this study, such as recruiting and scheduling virtual qualitative interviews, and cleaning and coding of qualitative interview transcripts under direct supervision of PI Dr. Bello (summer interns will be expected to meet with Dr. Bello and research staff a minimum of 3 times per week throughout the summer internship program). Summer interns who are also interested in community-engaged research may also have opportunities to participate and interact with members of a Community Advisory Board during virtual meetings. In addition to gaining hands-on research experiences, interns may be provided with other professional development opportunities, such as developing collaborations with other researchers, scientific manuscript writing, scientific presentation skills, and trainings related to the conduct of scientific research focused on diverse populations.

Student Qualifications:

- Interests in health disparities and addiction-related research
- Prior research experiences related to data collection with human participants and data management,interpersonal and interviewing skills
- Prior research experiences working with participants from diverse backgrounds

Earliest Start Date: 7/1/2025

Housing Type Available: Off Campus Housing Only

Site # 135

Principal Investigator: Mary A. Carskadon, PhD

Institution: Warren Alpert Medical School of Brown University & EP Bradley Hospital, Providence, RI

Research Keywords: OUD, sleep, circadian, MOUD

Project Title: Investigating mechanisms underpinning outcomes in people on opioid agonist treatment for OUD: Disentangling sleep and circadian rhythm influences on craving and emotional regulation.

Project Description: he primary research project in the summer of 2025 is: underpinning sleep mechanisms for people on medication treatment for opioid use disorder (MOUD, details below) The project includes assessments that may necessitate apprentice involvement at times that circle the clock.

The MOUD study in which the interns will be involved aims to study 100 adult individuals on MOUD (either Methadone or Buprenorphine) across 3 phases. Phase 1 measures naturally occurring sleep patterns using activity monitoring for one week. Phase 2 assesses sleep physiology with polysomnographic recordings in the sleep lab. Phase 3 examines sleep and circadian phenotypes with a protocol consisting of a "120-minute day" lasting 36 hours, during which time participants are in the sleep laboratory under dim light conditions. Participants sleep 40 minutes and are awake 80 minutes each "day." Measures include polysomnography (physiologic sleep recordings), saliva collection to measure melatonin levels, cravings with an eye-reactivity task each day, and emotion regulation.

Research interns carry out multiple facets of in-lab data collection including electrode application, administering forms and tests, and working one-to-one with research participants to ensure their comfort and safety. Data reduction, data entry, and error checking are also included in the tasks.

During the research phases of the program, interns are assigned to teams and work about 4 or 5 days/nights each week—not always Monday through Friday, often Saturday and Sunday—in the research protocols. Applicants must be able and willing to work on various types of schedules for all or part of the program. When possible, we attempt to assign interns to scheduled hours that correspond to their circadian phase preferences.

Student Qualifications:

- Strong interest in behavioral sciences research and who demonstrate enthusiasm for, commitment to, and availability for the full program are encouraged to apply
- Previous courses or lab work in sleep or circadian rhythms are helpful but not required.
- Local RI interns are offered the opportunity to participate in sleep lab activities beyond the summer by working on the lab's sleep studies during the school year.
- Interns must reside in or very near Providence for the summer (we assist interns to locate housing).
- Members of underrepresented minorities and individuals from disadvantaged backgrounds are encouraged to apply.
- Interns are required to complete onboarding tasks for Bradley Hospital including background checks and orientation training before working with research participants in the Lab.

Earliest Start Date: 5/19/2025

Housing Type Available: Off Campus Housing Only

Site # 136

Principal Investigator: Tanya Saraiya, PhD

Institution: Medical University of South Carolina, Charleston, SC

Research Keywords: posttraumatic stress disorder; opioid use disorder; treatment; clinical trial

Project Title: Integrated Treatment for Opioid Use Disorder and Posttraumatic Stress Disorder

Project Description: Interns would learn about the Helping Opioid Use and PTSD with Exposure (HOPE) therapy clinical trial. The HOPE trial is a randomized clinical trial testing the HOPE therapy among people with opioid use disorder and posttrauamtic stress disorder. Interns would be able to learn about the clinical trial, team meetings, and depending on speed of training, may be able to complete surveys with participants in the study. Interns may also learn about self-report measures used in RedCap databases, the therapy itself, and meet other members of the research team, including post-baccalaureate students and research assistants, doctoral students, and volunteeers. Further, the intern may be able to look at pilot data from this larger study if of interest of doing data analyses. The project will require that the student is on the IRB for the study which can take 1-3 weeks depending on how quickly the student can complete CITI trainings. The project will involved working with other study team members, and if approved by the IRB, the possibility to work with human participants with opioid use diosrder and posttraumatic stress disorder

Student Qualifications:

- Experience working with adults in mental health settings or with individuals with mental health conditions
- Be compassionate, highly communicative, responsible, and able to work with other team members
- Be interested in pursuing a doctorate in clinical psychology or medicine in their academic future

Earliest Start Date: 6/23/2025

Housing Type Available: Off Campus Housing Only

Site # 137

Principal Investigator: Xingbao Li

Institution: Medical University of South Carolina, Charleston, SC

Research Keywords: Transcranial magnetic stimulation, functional MRI, tobacco use disorder, smoking cessation

Project Title: RTMS manipulates imbalanced drive-reward and executive control circuitry for smoking cessation

Project Description: Specific Aims: Worldwide, nearly one billion adults still smoke tobacco despite educational and cessation efforts.1 Cigarette smoking is the leading cause of preventable mortality with about 5 million deaths per year and is expected to cause >10 million annual deaths by the middle of the 21st century.2, 3,4 Smoking cessation is difficult, despite the demonstrated efficacy of a number of pharmacotherapeutic agents and cognitive behavioral therapies.5,6 Recently, non-invasive brain stimulation such as repetitive Transcranial Magnetic Stimulation (rTMS) is a new treatment for smokers. Previous studies completed by our group demonstrate that 10 Hz rTMS over the left dorsal lateral prefrontal cortex (DLPFC) reduced craving and decreased nicotine consumption.7,8 In addition, U.S. Food and drug Administration (FDA) has approved that deep TMS treatment can be used for smoking cessation.9 However, the efficacy of rTMS for smoking cessation needs improvement and each session takes 20 minutes. Therefore, it imperative to identify promising new efficacious treatment protocol.

A new form of rTMS called theta burst stimulation (TBS) has been developed.10 Unlike 10 Hz stimulation, TBS mimics endogenous theta rhythms, which can improve induction of synaptic long-term potentiation. One form of TMS, intermittent TBS (iTBS), delivers 1800 pulses in just 10 min, yet shows similar or more potent excitatory effects than conventional 10 Hz stimulation.11 One study reported that iTBS as add-on to psychotherapy improve nicotine abstinence.12 However, no comparison of iTBS verus10 Hz rTMS has been done in addiction population yet.

We, therefore will conduct a pilot randomized, single-blind cross-over trial to compare iTBS with conventional 10 Hz rTMS (3000 pulses) over the left dorsal lateral prefrontal cortex (DLPFC) in non-treatment seeking smokers. We hypothesize that iTBS would produce a different effect of cue craving compared with 10 Hz rTMS session. We also aim to compare safety and tolerability outcomes in terms of self-reported adverse events, treatment-associated pain.

Aim 1: Determine whether iTBS produces more reduction of cue-craving compared with 10 Hz rTMS over the left DLPFC in smokers.

Aim 2: Compare iTBS to conventional rTMS in safety and tolerability in terms of self-reported adverse events.

Student Qualifications:

- Pre med or psychology or/and computer science major
- Have experience in Mablab with Python
- Have experience in human research

Earliest Start Date: 5/19/2025

Housing Type Available: Off Campus Housing Only

Site # 138

Principal Investigator: Glenn Toney

Institution: Texas A&M University College of Medicine, College Station, TX

Research Keywords: Fentanyl; opioid epidemic; opioid-induced respiratory depression; oxytocin neurotransmission; respiratory pattern genertator network

Project Title: Oxytocin Neurotransmission Overcomes Sleep Apnea-Related OIRD Hypersensitivity

Project Description: Interns will be instructed in the methodologies required to perform proof of concept studies testing the hypothesis that selective optogenetic activtion (channelrhodopsin) of oxytocinergic neurons in the hypothalamus is sufficient to prevent and reverse respiratory depression (OIRD) by systemic fentanyl. Interns will also be instructed to perform mechanistic studies testing the extent to which selective optogenetic inhibition (halorhodopsin) of oxytocinergic neurons acutely increases sensitivity to fentanyl-induced OIRD. Experiments will use transgenic mice expressing Cre recombinase driven by endogenous oxytocin promoter/enhancer elements. Adeno-associated viral vectors will be used to site-specifically and retrogradely target oxytocin neurons with axonal projections to specific nodal points in the central respiratory network whose activity is inhibited by systemic fentanyl to cause OIRD. The Intern will be expected to learn necessary laboratory procedures and surgical skills to perform experiments along with necessary data analysis procedures. Opportnuities will be provided to learn whole cell patch clamp electrophysiology combined with optogenetics to define synaptic and cell signaling mechanisms of oxytocin interference with neuronal inhibition by fentanyl.

Student Qualifications:

- Strong academic background in neuroscience and physiology, ideally involving, but not requiring, formal college-level coursework
- Keen interest in opioid abuse research
- Familiarity with stereotaxic surgery for brain nanoinjections and placement of optical fiber cannulae preferred, but not required
- Some familiarity with transgenic animals, viral optogenetics and biostatistics also preferred

Earliest Start Date: 6/1/2025

Housing Type Available: On Campus Housing Available

Site # 139

Principal Investigator: Sven Kroener

Institution: The University of Texas at Dallas, Richardson, TX

Research Keywords: Neuroscience, cocaine, vagus nerve stimulation, extinction learning, immunohistochemistry,

Project Title: Vagus Nerve Stimulation Modulates Synaptic Plasticity in the Rat Prefrontal Cortex during the Extinction of Drug-seeking

Project Description: Our experiments will determine how drug seeking and extinction alter synaptic processing in the medial prefrontal cortex, and how vagus nerve stimulation (VNS) strengthens synaptic plasticity to consolidate extinction memory. An overarching hypothesis of this proposal is that VNS is effective because the transient release of neuromodulators preferentially affects "active networks" (i.e., circuits activated during the behavior that is paired with VNS). One way to test this hypothesis is to perform high-resolution morphological analyses of mPFC neurons and to compare changes in morphology and the distribution of synaptic AMPA receptors between cells that were activated by reinstatement (labeled by the activity marker cFos) and those that were not. This project requires cocaine self-administration, modulation of extinction and reinstatement behavior by VNS, and high-resolution confocal analyses of specific cell types labeled by an intersectional viral approach.

Student Qualifications:

- No previous qualifications are required
- Motivation to do preclinical drug-addiction neuroscience
- Demonstrable interest in synaptic plasticity and/or the role of the prerfontal cortex in drug-seeking

Earliest Start Date: 5/6/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Laura O'Dell

Institution: The University of Texas at El Paso, El Paso, TX

Research Keywords: Substance use, behavioral models in rodents, anxiety-like behavior, stress-like behavior, nicotine use, female rats, nicotine withdrawal, neurotransmitter systems, neuroscience, diabetic rats, adolescent period, sex differences

Project Title: Sex Differences and The Influence of Ovarian Hormones on the Mechanisms that Promote Nicotine Withdrawal

Project Description: In the O'Dell laboratory, the intern will study the neuroscience of substance use. The laboratory focuses on understanding how brain neurotransmitter systems play a role in driving drug dependence across different populations that display greater vulnerability to substance use. The intern will work in a basic laboratory setting, collecting and analyzing data from different groups of rats, including adolescents, diabetic rats, females, and adult animals that were exposed to nicotine during adolescence. The interns will attend workshops, seminars, presentations, and lab meetings. They will be integrated into our NIH-funded summer training program that also provides students with professional development workshops. The intern will prepare a poster presentation for a final end-of summer symposium.

Student Qualifications: The summer intern will be integrated into our NIH-funded R25 summer training program called, SMART: MINDS (https://www.utep.edu/couri/smartmind/). There will be 12 other students from UTEP and other universities that will participate in a series of activities and reserach projects with different faculty PIs. The studies will learn an array of skills including laboratory maintenance, communication with peers and mentors, and how to perform in a laboratory culture. The workshops offer training in responsible conduct of research, scientific writing, developing a professional path, preparing a resume, and writing a personal statement for graduate school. The seminars will help them gain knowledge about neuronal circuits, behavioral plasticity in animal models of addiction, neuropsychological assessments, neuronal communication, electric brain stimulation, and neurotransmitter release. Our project will require students to work with rats and/or tissue samples.

Earliest Start Date: 5/26/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Louis Brown

Institution: University of Texas, Austin, TX

Research Keywords: community coalitions; technical assistance; risk reduction behavior; substance-related disorders; prevention; adolescent behavior; implementation support; sustainability;

Project Title: Randomized trial of a data-driven technical assistance system for drug prevention coalitions

Project Description: Over 5,000 community anti-drug coalitions operating in the United States serve as a cornerstone of federal drug prevention. These coalitions, however, have demonstrated effectiveness in preventing substance use only when they use technical assistance (TA) and implement evidence-based programs (EBPs). The absence of TA and EBP implementation by coalitions is a key research-to-practice gap. The Coalition Check-Up TA system is designed to fill this gap by supporting community coalition implementation of EBPs. This trial will test the overall effectiveness of the Coalition Check-Up, including how it contributes to EBP implementation and prevention of youth substance use. Findings will clarify how the Coalition Check-Up, a scalable approach to TA due to its low cost, affects coalition capacity to support EBP implementation. Results will build the evidence-base for how to support community coalitions' sustainable implementation of evidence-based prevention programs and policies.

Student Qualifications:

- Interests in public health, community organizing, human development, or psychology are appropriate
- Expected to work with data that has already been collected from humans

Earliest Start Date: 5/20/2024

Housing Type Available: On Campus Housing Available

<u>**Site # 142**</u>

Principal Investigator: Amol Kulkarni

Institution: University of Texas at El Paso, El Paso, TX

Research Keywords: medicinal chemistry, rational drug design, asymmetric synthesis, in vitro screening

Project Title: Development of NLRP3 inhibitors for HIV-associated neuroinflammation in cocaine use.

Project Description: The research project will involve synthesis of computationally-designed NLRP3 inflammasome inhibitors. The NLRP3 inflammasome has emerged as a druggable target for the treatment of uncontrolled neuroinflammation in the central nervous system. Disruption of NLRP3 signaling was reported to display beneficial effects in the transgenic mouse models of neuroinflammation. Our recent studies identified a small molecule, AMS-17, that thwarted the NLRP3activation in N9 microglia both in vitro and in vivo. With the encouraging preliminry data derived from AMS-17, we are now poised to develop computationally generated analogues of AMS-17. The novel analogues will be screened for their beneficial effects in reducing neuroinflammation. Interns will be responsible for the synthesis, purification, and characterization of the novel NLRP3 inflammasome inhibitors. The project will not require students to work with animal, humans and/or tissue samples.

Student Qualifications:

- Basic knowlege of Organic Chemitry, Courses Organic Chemistry 1 and 2
- Basic concepts in spectroscopy: Organic Chemistry 2, introductory analytical chemistry
- Basic concepts in Biochemistry: introductory course in biochemistry

Earliest Start Date: 6/2/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Jonathan Hommel

Institution: University of Texas Medical Branch, Galveston, TX

Research Keywords: Cocaine use disorder; Therapeutics; Neural circuit mapping

Project Title: Novel Addiction Neurocircuits in Cocaine Taking

Project Description: The goals of the project are to define functional and structural links between three brains regions involved with cocaine intake. To examine the structural link between brain regions, viral vectors will be surgically injected into rat brains. The intern will have an opportunity to attempt a surgery for hands on experience, if desired. Otherwise, the intern will function as a surgical assistant and have the opportunity to observe survival craniotomy surgeries on rats. These viral vectors trace the neurons that connect one brain region to another, providing information on structural connections. The neurons highlighted by this approach will then be characterized by immunofluorescent staining and microscopy. This will be the primary function of the intern – immunostaining and imaging using a super resolution microscope.

The functional assessment will be through calcium dynamics, an indirect measure of neural activity. A surgically implanted lense will enable a mini camera to image and record when a neuron is active. This technique includes uniquely applied computational approaches that will provide functional information of a brain region in response to cocaine intake. The intern will have the opportunity to surgically assist with chronic implantations, observe live neural activity via calcium dynamics, and participate in the computational assessment of the neural network. These computational analyses of big data are the cutting edge of neuroscience research and will provide an outstanding foundation for an intern to embark on a lifelong scientific journey. Depending on the comfort level and skill level, the intern will have the opportunity to handle rats and rat brain tissue.

Student Qualifications:

- Can follow instructions (written or verbal) and complete a task
- Must have good communication skills and be comfortable asking for help
- Be considerate and respectful
- Open mind and enthusiasm to learn and gain experience in the exciting field o neuropsychopharmacology will be an ideal candidate.

Earliest Start Date: 5/5/2025

Housing Type Available: Off Campus Housing Only

Site # 144

Principal Investigator: Kathryn Cunningham

Institution: University of Texas Medical Branch, Galveston, TX

Research Keywords: Neuroscience; translational research; cocaine use disorder; animal models; cellular screening; novel therapeutics

Project Title: 5-HT2 Receptor Allosterism in Cocaine Use Disorder

Project Description: This project involves evaluating novel small molecules for use as therapeutics for cocaine use disorder to help lengthen life and reduce disease burden. We employ the following strategies: in vivo behavioral models (e.g., drug discrimination, self-administration, cue-seeking, etc.), radioligand binding assays, ex vivo protein RNA quantification, and single cell transcriptomics. The intern will be expected to participate in lab meetings and community outreach events and conduct, analyze, write-up, and present a quality experiment that is relevant to the lab and informed by scientific literature. This project will require work with rodents and/or cell cultures.

Student Qualifications:

- Highly motivated intern who is passionate about evaluating novel therapeutics for substance use disorders
- Thinks critically, possesses analytical skills, and works well with a team

Earliest Start Date: 5/1/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Thomas Green

Institution: University of Texas Medical Branch, Galveston, TX

Research Keywords: Motivation, frustration, frustrative nonreward, circuit engagement, fiber photometry, rat behavior, in vivo neuronal activity.

Project Title: Frustration effects on drug taking

Project Description: We are working on our novel hypothesis that in many people with SUDs, frustration fails to appropriately blunt motivation for drug, contributing to compulsive drug use. We have developed a way to measure frustration (duration of barpresses) simultaneously with motivation (number of barpresses) in standard rat operant motivation tasks. We are identifying the interface of motivation circuitry with frustration circuitry to find a way to re-couple frustration with motivation, with the final therapeutic strategy of normalizing the ability of frustration to appropriately decrease motivation for drug.

Student Qualifications:

- Comfortable handling rats and working with large and complicated data sets

Earliest Start Date: 3/1/2025

Housing Type Available: Off Campus Housing Only

Site # 146

Principal Investigator: Tara Chaplin

Institution: George Mason University, Fairfax, VA

Research Keywords: Parenting, emotion regulation, adolescent development, parenting-focused interventions, adolescent substance use

Project Title: Efficacy and Neurobiological Mechanisms of a Parenting-Focused Mindfulness Intervention to Prevent Adolescent Substance Use

Project Description: I have two research projects that interns could be involved in:

1. A study of parenting, adolescent emotional arousal, and adolescent risk for substance use.

2. A study of a mindfulness intervention for highly stressed parents to prevent substance use in adolescents

Student Qualifications:

- Prefer interns that have worked in jobs where they showed strong reliability and abilty to interact well with parents and youth
- Prefer interns that have worked in a research lab before and are familiar with research procedures
- Prefer interns with human subjects research experience

Earliest Start Date: 5/26/2025

Housing Type Available: Off Campus Housing Only

Principal Investigator: Peter Hamilton

Institution: Virginia Commonwealth University, Richmond, VA

Research Keywords: Cocaine, opioid, self-administration, neuroepigenetics, transcription factor, synthetic biology, gene expression

Project Title: Reprogramming KZFP function to understand drug-specific transcription and behavior

Project Description: The Hamilton Lab is interested in how stress or drug-use experience changes the brain. We particularly study how stress or drug-use experience is encoded within the brain on the epigenetic, transcriptional, and physiological levels. To identify the exact, causal molecular mechanisms that drive these brain adaptations, we engineer novel synthetic biology molecular tools to reprogram the epigenome/transcriptome within discrete brain regions of awake and behaving laboratory rodents. This insight into the causal molecular drivers of drug and stress response may guide the development of more targeted and effective pharmacotherapies to treat drug-use or stress related brain disorders, like drug addiction.

Research interns would participate in intravenous drug self-administration behavioral procedues, immunohistochemical analyses, viral mediated gene transfer, and/or other molecular neuroscience approaches under the guidance of senior research scientists and graduate students.

Student Qualifications:

- Biological coursework and some exposure and aptitude to molecular neuroscience techniques is preferred
- Willingness to work with others is key

Earliest Start Date: 6/2/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Wenhui Hu

Institution: Virginia Commonwealth University School of Medicine, Richmond, VA

Research Keywords: CRISPR/Cas, AAV, Exosome, HIV, NeuroHIV, microglia, neuropathogenesis, drug abuse

Project Title: Long-term microglia-targeted endogenous retrovirus-like particle (ERVLP) delivery of Cas12f editor to cure HIV

Project Description: Although the anti-retroviral therapy (ART) has greatly improved survival rates of HIV patients, >50% HIV-infected patients will still develop various degrees of HIV-associated neurocognitive disorders (HAND). Brain myeloid cells (BMC) including microglia (MG) and perivascular macrophages have been extensively investigated for their contribution to NeuroHIV persistence, chronic neuroinflammation and HAND. Thus, eradication of HIV provirus in MG is a critical step towards cure of NeuroHIV. Since AAV gene therapy is most promising with thousands of ongoing clinical trials, significant efforts to minimize the CRISPR/Cas editors for fitting into AAV size limit have identified several miniature Cas editors such as Cas12f, Cas12j and Cas13x. A scientific gap in this field is lack of ideal AAV serotypes (AAV-BM) with high efficiency of both crossing the BBB (AAV-B) and targeting MG (AAV-M) in vivo. The current AAV-B serotypes have high efficiency to transduce neurons, astrocytes, and oligodendrocytes, but have limited ability of transducing MG. In contrast, several AAV-M serotypes have been identified for their efficient tropism to MG in the literature and our preliminary studies. None of these AAV-M can cross BBB efficiently. Therefore, three strategies are employed to fill in this critical gap: 1) Developing novel exosom-decorated endognous retrovirus-like particle (Exo-ERVLP) technologies for endogenous scissor gene delivery to MG via AAV-B sustained gene therapy; 2) Screening AAV-BM serotypes in non-human primate (NHP) and human BBB models; and 3) Screening AAV-BM serotypes in humanized MG mouse model and vascularized MG-containing cerebral organoids (vMCO) for HIV eradication.

Student Qualifications:

- Highly motivated hard-work students with critical thinking and quick learning skills
- Basic knowledge in molecular biology, neurobiology and/or biotechnologies

Earliest Start Date: 5/1/2024

Housing Type Available: Off Campus Housing Only

Site # 149

Principal Investigator: Wynn Legon

Institution: Virginia Tech, Blacksburg, VA

Research Keywords: Neuromodulation, Low-Intensity Focused Ultrasound, Opioid Use Disorder

Project Title: Towards treatment for the complex patient: investigations of low-intensity focused ultrasound.

Project Description: This research project will focus on nueromodulation in a complex patient population. Complex patients within this study are required to have a diagnosis of Opioid Use Disorder (OUD), experience chronic back pain, and have at least 1 DSM-5 diagnosis. Patients will undergo a series of pain testing and opioid craving tasks before and after low-intensity focused ultrasound (LIFU). Subjects will receive both real and sham versions of LIFU but will be unaware of which condidtion they are receiving in a given study visit. MRI and CT scans will be done prior to LIFU application so that specific regions of the brain can be targeted accurately with ultrasound. A full neurological evaluation will be done pre and post LIFU by a trained physician. Questionnaires will be given to participants at both the beginning and end of study sessions. These questionnaires conatin questions about participant's mental and physical health, cravings, as well as any effects they feel after undergoing LIFU. This study aims to investigate LIFU and its neuromodulatory effects on both pain perception and opiate cravings.

Student Qualifications:

- Be detail oriented and willing to engage in frequent problem solving
- Be comfortable working and speaking with people, as interns in this program will work with human research subjects
- Relevant courses to the lab include psychology, neuroscience, biology, computer sciences and/or coding courses
- Experience with data analytics is highly applicable to lab tasks. However, students are not required to have a background in all/any of these subject areas.
- Previous experience in research settings is also helpful but not required.
- Competencies important for this role include communication, ability to work successfully in a team setting, and personal motivation.

Earliest Start Date: 5/19/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Natalia Kleinhans

Institution: University of Washington, Seattle, WA

Research Keywords: THC, cannabis, pregnancy, psychosis, MRI, white matter development, fMRI, birth outcomes, cognitive development, temperament, gestational exposure

Project Title: Brain and behavior correlates of prenatal cannabis exposure

Project Description: Cannabis use during pregnancy as increased substantially in recent years, in conjunction with widespread legalization and changes in public perceptions about harm. Both pregnancy and high-potency cannabis consumption have been linked to onset of psychosis-like symptoms in individuals without a prior history of psychosis. The Cannabis Use and Brain development Study (CUBS) aims to understand the relationship between prenatal cannabis exposure and infant development. As a subset of this study, participants provide information about psychiatric diagnoses and psychosis-like symptoms both pre- and post-natally. Undergraduate summer interns will assist in research visits, data entry, drug screening, and recruitment, and will compile and analyze data on psychiatric diagnoses and psychosis-like symptoms among cannabis users and non-users pre- and post-natally. This project involves interacting with human subjects and may require students to handle human urine samples. Proper PPE will be provided.

Student Qualifications:

- Required: Competency in Microsoft Excel, strong interpersonal skills, attention to detail.
- Preferred: familiarity with REDCap, introductory coursework in statistics, introductory coursework in psychopathology.

Earliest Start Date: 6/23/2025

Housing Type Available: On Campus Housing Available

Principal Investigator: Priscilla Lui

Institution: University of Washington, Seattle, WA

Research Keywords: etiology; mechanism; prevention; alcohol; cannabis; social science; clinical psychology; experimental; basic behavioral science; human subjects; observational; quantitative; stress; resilience; coping; racism; discrimination; african am

Project Title: Effects of Direct and Vicarious Discrimination on Alcohol and Cannabis Cravings: Virtual Reality Experiment

Project Description: The research examines how daily and racialized stressful experiences may lead to alcohol and cannabis use among Black/African American young adults. The research is also designed to identify possible general and culture-centered targets for prevention and treatment efforts to help reduce drug use and cope against these stressors. The study involves in-person data collection, use of innovative and under-used methods such as virtual reality, daily diary assessments, and interviews.

Student Qualifications:

- Basic coursework on research methods in psychology and related fields
- Interests in substance use, health disparities, and racism are desired
- Experience working with African American/Black populations and communities of color encouraged and prefered
- Demonstrate excellent organizational, writing, and verbal communication skills, self-motivated, takes initiative, and ability to work independently and collaboratively with other team members.
- Best fit for interns interested in psychology or related fields, and intend to pursue advanced training in these aeras and research careers

Earliest Start Date: 6/17/2024

Housing Type Available: On Campus Housing Available