

WINTER 2019

# THE DART NEWSLETTER

Updates from the Drug Abuse Research Training Program at  
the Medical University of South Carolina (DA020537)



RESIDENT  
RESEARCH  
TRACK

SUMMER  
FELLOWSHIP

ALUMNI

For more information, visit  
[medicine.musc.edu/DART](http://medicine.musc.edu/DART)

## 15 Years of Education & Training

**Shaping future researchers & clinicians**

The Drug Abuse Research Training Program at the Medical University of South Carolina (MUSC) is sponsored by the National Institute on Drug Abuse (R25 DA020537).

The mission of this program is to increase the number of physician-scientists with the necessary skills to conduct patient-oriented research and to promote research training. The program accomplishes its goals through a 2-year resident research track, a 10-week summer research fellowship for undergraduate, graduate, and medical students, pilot project funding, didactic seminars, and individual mentorship.

The DART Program was founded in 2006 by Kathleen Brady, M.D., Ph.D. and is directed by Sudie Back, Ph.D., Sarah Book, M.D., and Kelly Barth, D.O.

# Resident Research Track

## FIRST YEAR TRAINEES

The DART Program welcomed 4 outstanding residents in the 2019-2021 cohort. These trainees will have both seasoned and early career mentors to support their diverse research interests.



**Sean Christensen, M.D.**, is a resident in General Psychiatry. He completed his medical school education at the University of South Carolina School of Medicine and undergraduate degrees in Neurobiology and Mass Communications at the University of California Berkeley. His interest in the digital health space fuels his passion for developing patient-centered technologies, with a focus on usability and device integration. His research will focus on voice analysis as a digital biomarker of recovery in depressive disorders as patients undergo series of electroconvulsive therapy. Mark George, M.D., is his primary mentor and Gregory Sahlem, M.D. is his secondary mentor.



**Lauren Das, M.D.**, received her B.A. in Biological Sciences from Clemson University in 2011. She went on to finish both her medical degree and masters in clinical research at the Medical University of South Carolina. She joined the general psychiatry residency program at MUSC in 2017. Her masters research was focused on the association between maternal anxiety in pregnancy and its effects on birth outcomes. Her clinical and research interests are primarily centered on physician wellness and addiction psychiatry. Karen Hartwell, M.D. is her DART mentor.



**Michael Norred, M.D.**, is a Florida native and attended the University of Central Florida for both undergraduate education and medical school. He majored in psychology and gained research experience working with a psychiatrist on pharmaceutical research. Not only did this experience further his interest in research, it also inspired him to pursue medical school. While in medical school, he carried out a study looking at the relationship of perceptions of exercise and meeting CDC guidelines for exercise. Towards the end of medical school and early in residency, he became interested in neuromodulation. For his DART research project, Dr. Norred is interested in contributing to optimization of these treatment modalities with his mentors Mark George, M.D., Lisa McTeague, Ph.D., Gregory Sahlem, M.D., and Baron Short, M.D.



**Patrick Robbins, M.D.**, is interested in evaluating the emerging increase in benzodiazepine use, alongside clinical interests of consultation-liaison and forensic psychiatry. His research will focus on benzodiazepines, their connection to delirium, and patient knowledge of associated risks. He and his primary mentor, Benjamin Kalivas, M.D., recently presented their poster *Delirium Incidence at a Large Academic Hospital* at the American Delirium Society annual meeting in Boston, MA in June 2019. They have collaborated on several projects, including *Benzodiazepines and Non-ICU Delirium Screen Results at a Large Academic Medical Center*, which was accepted for oral paper presentation at the upcoming Academy of Consultation-Liaison Psychiatry annual meeting in San Diego, CA in November 2019.



## THE DART PROGRAM Early Review

Congratulations, **Corey Hassell, M.D.**, who submitted his application for early review and has been accepted to the 2020-2022 Resident Research Track. He will be working with mentors Jacob Mintzer, M.D., Tara Wright, M.D., and Jessica Broadway, M.D.

# Resident Research Track

## SECOND YEAR TRAINEES



**Joshua C. Brown, M.D., Ph.D.**, is primarily mentored by Mark George, M.D. and secondarily mentored by Gregory Sahlem, M.D., Baron Short, M.D., and Leonardo Bonhila, M.D., Ph.D. He is investigating the role of NMDA receptor-dependent synaptic plasticity in repetitive transcranial magnetic stimulation (rTMS) after-effects using pharmacologic augmentation and antagonism. He is currently recruiting and enrolling patients for his study. This year, Dr. Brown attended the 3rd Annual International Brain Stimulation Conference, the Clinical TMS Society 2019 annual meeting, and the 2nd annual Carolina Neurostimulation Conference. He applied for the DP5 Early Independence Award through the NIH and is awaiting a final response from the NIH Loan Repayment Program (LRP).



**Michael Capata, M.D.**, has continued to work with mentor Karen Hartwell, M.D., to survey physician attitudes toward opioid use disorder, suboxone, naloxone, and barriers to adequate treatment. He has also been working with Dr. Hartwell to understand fentanyl exposure among patients in the veterans' clinic. Dr. Capata attended this year's APA conference in San Francisco and is working with his mentor to submit an abstract for the next College on Problems of Drug Dependence.



**Matthew Fadus, M.D.**, has been working with Lindsay Squeglia, Ph.D. on the national Adolescent Brain Cognitive Development Study (ABCD) and plans to evaluate racial disparities among mental health. He is also interested in the relationship between screen time and mental health. Dr. Fadus submitted several publications to Academic Psychiatry and has been featured in the APA Residents' Forum this year. He was awarded the Group for Advancement of Psychiatry Fellowship. He is a Deputy Editor of the *American Journal of Psychiatry Residents' Journal* (2019-2020).

## KUDOS



Dr. Christensen received the APA's 2019 Innovation Lab Alumni Award for his app, Cognova

Dr. Capata was accepted for the Addiction Fellowship at MUSC

Dr. Fadus was nominated for the Lift as You Climb Diversity Mentorship Award at the College of Medicine at MUSC

Dr. Brown submitted his grant application for the NIH Director's Early Independence Award (DP5)

Drs. Fadus & Capata selected for Chief Resident

# Summer Fellowship

2019 students presented the culmination of their work at the DART Summer Research Day, Friday, July 26th, 2019.



## **Familia Kwanza: Experiences with Hypertension and Diabetes among Tanzanian Individuals Living with HIV and their Families**

Presented by Deborah Adeyemi, B.S.  
Mentored by Virginia Fonner, Ph.D.

## **The Effects of Introducing an Alternative Reward on Alcohol Self-Administration in Alcohol Dependent Mice and Alcohol Non-Dependent Mice**

Presented by Chris Baltimore  
Mentored by Howard Becker, Ph.D. & Marcel Lopez, Ph.D.

## **The Effect of Daily Stressors on Neuroendocrine and Subjective Reactivity Following a Psychosocial Stress Paradigm in Cocaine-Dependent Individuals**

Presented by Raquelle Bourgeois  
Mentored by Brian Sherman, Ph.D.

## **Rats will Aid a Distressed Conspecific Independent of Social Reward**

Presented by Stewart S. Cox, M.S.  
Mentored by Carmela Reichel, Ph.D.

## **Gendered Experiences? Examining Race-Related Events and Depressive Symptoms in African American Children and Adolescents**

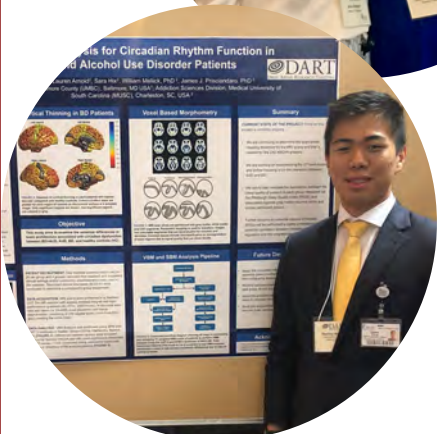
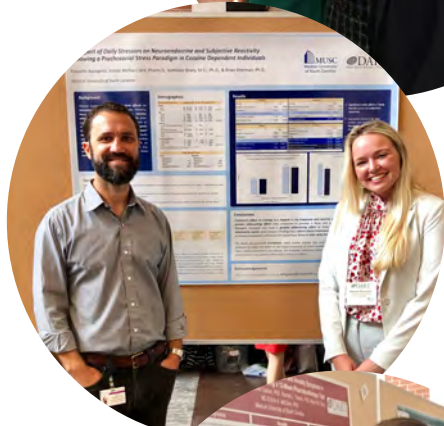
Presented by Cindy Dike, M.Ed.  
Mentored by Colleen Halliday-Boykins, Ph.D.

## **Correlates of Hedonic Hunger Among Participants in an Obesity Treatment Program**

Presented by Jenna Frawley, B.S.  
Mentored by Patrick O'Neil, Ph.D.

## **A Data-driven Approach for Determining Statistical Power of TMS-evoked Potentials**

Presented by Kyla Gibney, B.A.  
Mentored by Lisa McTeague, Ph.D.

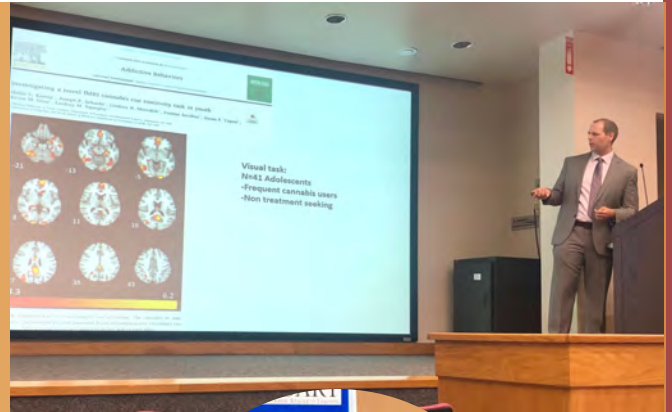


# Summer Fellowship

2019 KEYNOTE SPEECH

## Gregory Sahlem, M.D.

“Translating Transcranial  
Magnetic Stimulation:  
From Neuroimaging in Depression to a  
Potential Treatment for  
Cannabis Use Disorder”



### **Alterations in Posterior Cingulate Cortex Resting-State Connectivity Specific to PTSD Patients with Comorbid Substance Use Disorder**

Presented by Madeline Hohmeister, B.A.  
Mentored by Jane Joseph, Ph.D.

### **The Dorsolateral Prefrontal Cortex's Role in Error Processing and Impulse Control for AUD and non-AUD Individuals: Evidence from Neuroimaging and Behavioral Tasks**

Presented by Andrew Rowley, B.S.  
Mentored by Joseph Schacht, Ph.D.

### **Sleep Quality During Substance Use Treatment is Related to the Association Between Employment Status and Type of Substance**

Presented by Anna Russell  
Mentored by Allison Wilkerson, Ph.D.

### **Examining Changes in Depression and Anxiety Symptoms in Adolescent Smokers During a 12-Week Pharmacotherapy Trial**

Presented by Iris M. Sakamoto  
Mentored by Erin McClure, Ph.D. & Jennifer Dahne, Ph.D.

### **Recruitment Strategies for Two Youth Substance Use Treatment Studies: A Cost-Benefit Analysis**

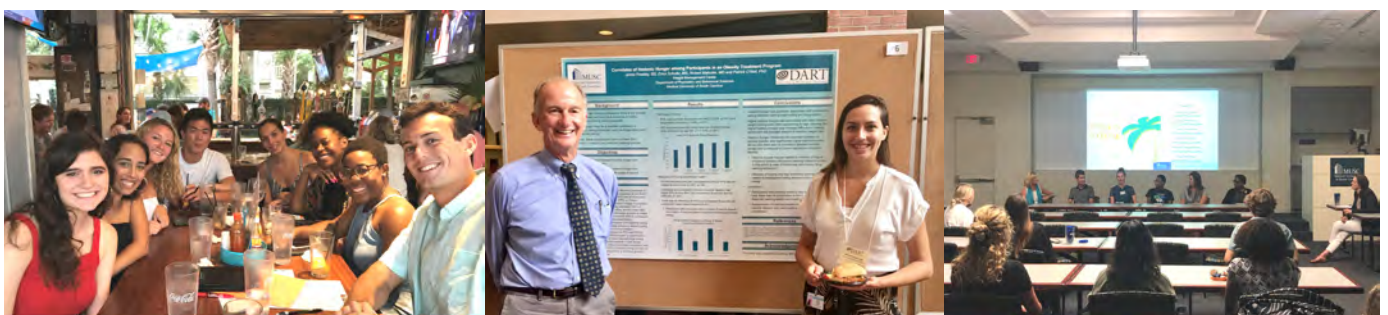
Presented by Kayla R. Shine & Sonia Hopkins  
Mentored by Lindsay Squeglia, Ph.D. & Matthew Fadus, M.D.

### **Cognitive Behavioral Therapy for Chronic Pain and Shared Decision Making to Reduce Prescription Opioid Use and Misuse in Pregnant Women**

Presented by Marinna Smith  
Mentored by Constance Guille, M.D.

### **Morphometric Analysis for Circadian Rhythm's Role in Bipolar and Alcohol Use Disorder Patients**

Presented by Stanley Wang, B.S.  
Mentored by James J. Prisciandaro, Ph.D.



# Alumni Updates



## **JESSICA NORTON, M.S.**

Summer Fellowship, 2018

Mentored by Colleen Halliday-Boykins, Ph.D.

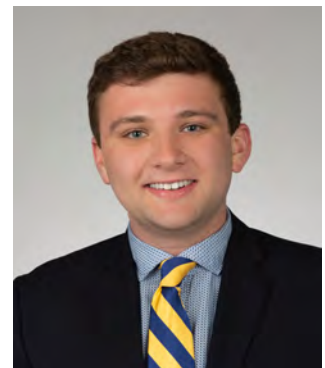
Since the DART Summer Fellowship, Ms. Norton has continued working with Colleen Halliday-Boykins, Ph.D., on several research projects while pursuing her doctorate in Human Development and Family Studies at Auburn University. In March, she presented at the Society for Research on Child Development Biennial Meeting, collaborating with Dr. Halliday-Boykins to understand educational aspiration-expectation gaps across racial groups. Ms. Norton has recently started a research assistantship with the National Institute of Justice in Washington, D.C. where she'll assist top researchers in fields including juvenile justice, school crime and safety, and victimization.

## **GEORGE BOOK**

Summer Fellowship, 2017

Mentored by Lindsay Squeglia, Ph.D.

Mr. Book is a 4th year medical student interested in a combined Internal Medicine and Psychiatry residency and later an addictions fellowship. He will lead a case presentation at the 2019 annual Association of Medicine and Psychiatry meeting in Atlanta, GA. Following his summer fellowship, he collaborated with DART alumni Dr. Ben Kalivas to investigate the frequency of physician use of Medication Assisted Therapy for treatment of opiate use disorder in patients with infective endocarditis. He will be presenting their data at the Association of Consult Liasons Psychiatry in San Diego.



## **BENJAMIN KALIVAS, M.D.**

Resident Research Track, 2016

Mentored by Robert Malcolm, M.D.



Dr. Kalivas (pictured 3rd from left) is an Assistant Professor in the Departments of Medicine and Psychiatry at MUSC. His current work focuses on the implementation of delirium screening and understanding the impact at a health system level. Using big-data, he is working to better understand the impact of delirium and the steps taken to manage it. Dr. Kalivas led a workshop for "Sustaining Organization-Wide Delirium Recognition & Intervention Programs" at this year's American Delirium Society Annual Meeting.

## **GREGORY L. SAHLEM, M.D.**

Resident Research Track, 2014

Mentored by Mark George, M.D.

Dr. Sahlem has continued the work he began with the support of DART and his mentorship team, including Mark George, M.D., Baron Short, M.D., Aimee McRae-Clark, PharmD, Robert Malcolm, M.D., and others, transitioning from residency to a faculty position at MUSC. He is currently involved in several studies that explore the potential efficacy of rTMS as a treatment for substance use disorders.



# Select Trainee Publications

**Bold denotes DART Trainee, Resident Research Track or Summer Fellowship**

**Brown, J.C.** (2019). An interventional Psychiatry Track. *American Journal of Psychiatry Residents' Journal*, 15(1), 11-14.

Ekhtiari, H., Tavakoli, H., Addolorato, G., Baeken, C., Bonci, A., Campanella, S., . . . Hanlon, C. A.\* (2019). Transcranial electrical and magnetic stimulation (tES and TMS) for addiction medicine: A consensus paper on the present state of the science and the road ahead. *Neuroscience & Behavioral Reviews*, 104, 118-140.

\*Authors include **Gregory Sahlem, M.D.**

**Fadus, M. C.**, Smith, T. T., & Squeglia, L. M. (2019). The rise of e-cigarettes, pod mod devices, and JUUL among youth: Factors influencing use, health implications, and downstream effects. *Drug Alcohol Dependence*, 201, 85-93.

**Friedrich, D.**, Li, X., Hartwell, K. J., Short, E. B., Sahlem, G. L., & George, M. S. (2019). Tolerability and feasibility of accelerated repetitive transcranial stimulation for reduction of nicotine craving. *Brain Stimulation*. 12(5). 1315-1316.

**Fryml, L. D.**, Pelic, C. G., Acierno, R., Tuerk, P., Yoder, M., Borckardt, J. J., . . . George, M. S. (2019). Exposure Therapy and Simultaneous Repetitive Transcranial Magnetic Stimulation: A Controlled Pilot Trial for the Treatment of Posttraumatic Stress Disorder. *The Journal of ECT*, 35(1), 53-60.

**Hartwell, E. E.**, & Kranzler, H. R. (2019). Pharmacogenetics of alcohol use disorder treatments: an update. *Expert Opinion on Drug Metabolism & Toxicology*, 15(7), 553-564.

Heckman, B. W., Cummings, K. M., **Stoltman, J. J. K.**, Dahne, J., Borland, R., Fong, G. T., & Carpenter, M. J. (2019). Longer duration of smoking abstinence is associated with waning cessation fatigue. *Behaviour Research and Therapy*, 115, 12-18.

Heifets, B. D., **Williams, N. R.**, **Bentzley, B. S.**, & Schatzberg, A. F. (2019). Rigorous Trial Design Is Essential to Understand the Role of Opioid Receptors in Ketamine's Antidepressant Effect. *JAMA Psychiatry*, 76(6), 657-658.

Squeglia, L. M., **Fadus, M. C.**, McClure, E. A., Tomko, R. L., & Gray, K. M. (2019). Pharmacological Treatment of Youth Substance Use Disorders. *Journal of Child and Adolescent Psychopharmacology*, 29(7), 559-572.

**Walker, J.R.**, Korte, J., McRae-Clar, A.L., Hartwell, K.J. (2019). Adherence Across FDA-approved Medications for Alcohol Use Disorder in a Veterans Administration Population. *Journal on Studies of Alcohol and Drugs*. 80(5), 572-577.

Wilkerson, A. K., **Sahlem, G. L.**, **Bentzley, B. S.**, Lord, J., Smith, J. P., Simmons, R. O., . . . Book, S. W. (2019). Insomnia severity during early abstinence is related to substance use treatment completion in adults enrolled in an intensive outpatient program. *Journal of Substance Abuse Treatment*, 104, 97-103.

**Zuschlag, Z. D.**, Korte, J. E., & Hamner, M. (2018). Predictors of Lifetime Suicide Attempts in Individuals with Attenuated Psychosis Syndrome. *Journal of Psychiatric Practice*, 24(3), 169-178.



**From left:** 2019-2021 Resident Trainee Sean Christensen, M.D., 2014 DART alumni Greg Sahlem, M.D., DART Biostatistician Jeffrey Korte, Ph.D., 2008 DART alumna Kelly Barth, D.O., and DART mentor Mark George, M.D. sport new DART swag.

# Upcoming Conferences

## **The 54th Perry V. Halushka Research Day**

November 1, 2019  
Medical University of South Carolina  
Charleston, South Carolina

## **American Academy of Addiction Psychiatry 30th Annual AAAP Meeting**

December 5-8, 2019  
San Diego, California

## **American College of Neuropsychopharmacology 58th Annual Meeting**

December 8-11, 2019  
Orlando, Florida

## **American Association for the Advancement of Science**

2019 Annual Meeting  
February 13-16, 2020  
Austin, Texas

## **Society for Research on Nicotine & Tobacco 25th Annual Meeting**

March 11-14, 2020  
New Orleans, Louisiana

## **American Society of Addiction Medicine Annual Conference-Innovations in Addiction Medicine and Science**

April 2-5, 2020  
Denver, Colorado

## **Society of Biological Psychiatry 75th Annual Meeting**

April 30-May 2, 2020  
New York, New York

## **American Psychiatric Association 173rd Annual Meeting**

April 25, 2020  
Philadelphia, Pennsylvania

## **The College on Problems of Drug Dependence 82nd Annual Meeting**

June 20-24th, 2020  
Hollywood, Florida

## **Research Society on Alcoholism 43rd Scientific Meeting/ISBRA Congress**

June 20-24, 2020  
New Orleans, Louisiana

## **Loan Repayment Program (LRP)**



The Clinical Research Loan Repayment Program is a vital component of our nation's efforts to attract health professionals to careers in clinical research. In exchange for a two-year commitment to clinical research, NIH will repay up to \$35,000 per year of qualified educational debt, pay an additional 39% of the repayments to cover Federal taxes, and may reimburse state taxes that result from these payments. To participate, you must conduct clinical research for 50% or more of your total effort (average at least 20 hours per week) during each quarterly service period. Examples of DART alumni who completed the LRP are Drs. Kelly Barth, Bryan Tolliver, & Jennifer Jones.

**For more information, please visit <http://www.lrp.nih.gov>**

# DART DRUG ABUSE RESEARCH TRAINING

The DART Program at the Medical University of South Carolina is directed by Drs. Sudie Back, Sarah Book, Kelly Barth, & Kathleen Brady. For more information, please contact DART Program Coordinator, Emily Bristol ([DART@musc.edu](mailto:DART@musc.edu)).

**For additional information or to apply, please visit our website:  
[medicine.musc.edu/DART](http://medicine.musc.edu/DART)**