



CAPPI Catch-Up

Center for Addiction and Pain
Prevention and Intervention

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM



A Message from the Directors

Welcome to our summer edition of the CAPPI Catch-Up Newsletter! While things like the CAPPI journal club and CAPPI Chat have been on break over the summer, CAPPI has still been busy with other important activities. CAPPI has supported and funded four undergraduate students in the Honors Neuroscience Summer Research Academy. This program provides funding for students to conduct an independent research program under the mentorship of a CAPPI investigator to be more competitive in applying for graduate or medical school after undergraduate training. [Please read about these exciting projects and talented undergraduate students.](#)



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A Message from the Directors (cont'd)

Several new articles were published highlighting the important work of CAPPI scientists. Dr. Peter Hendricks and his team have been conducting research examining psilocybin for cocaine treatment, and his lab is one of only a handful of sites in the United States where work with psilocybin is ongoing. Importantly, psilocybin may represent a potential novel therapeutic for stimulants and other drugs of abuse, chronic pain, as well as help with symptoms of depression/anxiety that do not respond to existing medication or therapeutic approaches. See the full article at [AL.com](#).

Dr. Edwin Aroke was recognized by the [American Association of Nurse Anesthetists \(AANA\) Foundation](#) as the 2021 John F. Garde Researcher of the Year. Congratulations Dr. Aroke!

Dr. Karen Cropsey was also named the [2021 Dean's Excellence Award in Mentoring](#). For these and other recent stories about the CAPPI investigators, please visit the [CAPPI homepage](#).

Finally, two CAPPI investigators received new grants from NIH. Dr. Jeremy Day received a new five year R01 to investigate [how brain circuits are implicated in addiction at the behavioral and cellular level which could lead to novel medications for stimulants](#).

Dr. Caitlin Clevenger was awarded a K23 grant to examine how alcohol use leads to increased suicidal behavior. [Please read about this exciting work here](#).

Check back in September for the latest CAPPI Chats and journal club activities. We hope the summer has been a time of rejuvenation and relaxing with family!



CAPPI in the News

Cropsey Named 2021 Dean's Excellence Award Winner in Mentoring

Karen Cropsey, Psy.D., professor in the Department of Psychiatry and Behavioral Neurobiology, has been awarded the 2021 Dean's Excellence Award in senior mentoring. She is a strong advocate, researcher, and clinician and the area of addiction and substance abuse and has served the department in both research and clinical efforts.



[Read more...](#)

Magic mushrooms: UAB studying benefits for addiction and pain

Psychedelic drugs creating hopes for breakthroughs in depression, anxiety, pain and addiction are being tested at UAB. The university is one of a handful in the nation conducting trials with psilocybin, the active ingredient in hallucinogenic mushrooms.

Researchers at the University of Alabama in Birmingham do not know exactly what effect the isolated drug molecules from mushrooms have on the brains of people suffering from such maladies, but studies have shown promising results.



[Read more...](#)

AANA recognizes Aroke as Researcher of the Year

University of Alabama at Birmingham School of Nursing Assistant Professor Edwin Aroke, PhD, CRNA, has been named the 2021 John F. Garde Researcher of the Year by the American Association of Nurse Anesthetists (AANA) Foundation.

This annual award recognizes individuals who have made significant contributions to the practice of anesthesia through research. Award recipients are nominated by their peers in AANA and selected by the AANA Foundation Professional Development Committee and the AANA Foundation Board of Trustees.



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Member Spotlight

Caitlin Clevenger, Ph.D.

Assistant Professor, Psychiatry and Behavioral Neurobiology



About a third of people who die by suicide consumed alcohol immediately prior to their death. "However, not everyone who drinks alcohol becomes suicidal," said Caitlin Clevenger, Ph.D., assistant professor in the Department of Psychiatry and Behavioral Neurobiology. With a new five-year, \$750,000 grant from the National Institute on Alcohol Abuse and Alcoholism, part of the National Institutes of Health, Clevenger is exploring "what factors may increase suicide risk when a person drinks alcohol."

Clevenger is a member of the School of Medicine's Center for Addiction and Pain Prevention and Intervention (CAPPI), which is focused on cutting-edge research that can lead to improved treatments for addiction and pain..

[Read more...](#)

Reelin Signaling and Function in Cocaine Response (PI: Dr. Jeremy Day; R01DA053743)

Drugs of abuse activate specific cell populations within brain reward circuits, but it is not clear what molecular mechanisms regulate this process or how drug experience can result in long-lasting changes within these cells. This proposal will examine the role of Reelin, a large extracellular protein, in regulation of the molecular and genetic mechanisms that contribute to cellular and behavioral responses to cocaine. This research will contribute fundamental knowledge to our understanding of how brain circuits drive motivated behaviors in the context of substance abuse disorders, and has the potential to identify novel cellular targets for addiction therapeutics.



[Read more...](#)



[**Click here for more ongoing studies**](#)

Honors Neuroscience Summer Research Academy

The Honors Neuroscience Summer Research Academy is a competitive program that allows students to make significant advances in their independent research projects while receiving individualized preparation for a competitive graduate or medical scientist training program application.



Support is generously funded by the UAB Honors College Enrichment Fund, the Comprehensive Neuroscience Center, the Civitan International Research Center, the Center for Addiction and Pain Prevention and Intervention (CAPPI) and the Departments of Psychology, Neurobiology, Psychiatry, Biology and Neurology.



The program starts on June 7th and runs through July 30th, during which the students conduct research, attend and participate in all program-sponsored activities, and present their work at the end of the summer.

CAPPI Award Winners



Macy Banks

(Cortes Lab)



My summer research project is focusing on the differences between our Alzheimer's disease mouse model (5XFAD) and our TFEB overexpressed mice. TFEB is a transcriptional factor that is important in regulating proteostasis and autophagy. Our lab has generated a new line of transgenic mice that overexpress TFEB specifically in their skeletal muscle (cTFEB;HSACre mice), and we have observed marked improvements in brain function through aging. We hypothesize that a secreted factor originating in skeletal muscle can elicit neuroprotective responses in the central nervous system in response to Alzheimer's disease pathogenesis. We will directly test this hypothesis using a

cohort of single transgenic 5XFAD and 5XFAD;cTFEB;HSACre triple transgenic mice. We will measure a battery of established AD biomarkers in pre-symptomatic (3 months) and symptomatic mice (6 months), including intraneuronal amyloid-beta plaques, through tissue staining and ELISAs, as well as markers for neuroinflammation via immunostaining for reactive astrocytes (GFAP) and microglia (Iba1).

Jenna Gathright

(Goodin Lab)

The current project I am working on is my undergraduate thesis in partial fulfillment of the requirements for Honors in Psychology. My thesis will focus on examining the impact of chronic pain stigma and HIV stigma on pain interference and depression.



CAPPI Award Winners



Anish Myneni

(King Lab)



With evidence suggesting that the inhibition of HuR may limit functional damage in neurodegenerative diseases, there is vast potential for application of this drug. Our lab is mainly focused on neuroinflammation in amyotrophic lateral sclerosis (ALS), so I am excited to be able to use this inhibitor this summer on an ALS mouse model and investigate if the results we have seen in the LPS model will translate into the ALS model. In addition to testing this inhibitor on potential anti-inflammatory effects in ALS, I will also be working on a project with Dr. King and Dr. Sorge to determine if this drug may also have an effect on acute and chronic pain. This summer I want to be able to progress my research and understanding on the potential avenues of application for this inhibitor while also expanding my knowledge of these fatal neurodegenerative diseases.

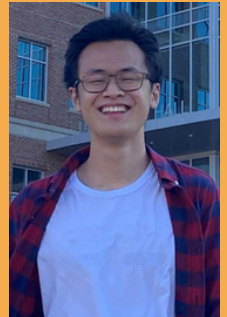


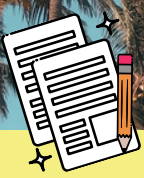
Ethan Wan

(Day Lab)

I have two primary goals for my summer research experience. First, I will use single nucleus RNA sequencing datasets of rat NAc, from both repeated and acute exposures to cocaine, to build a single cell atlas. I will use this atlas to test the enrichment of cell type specific genes for genome wide association study (GWAS) phenotypes for neuropsychiatric, neurodevelopmental, and neurodegenerative diseases. As previously mentioned, the Science Advances paper, published by the Day Lab, identified that specific cell types are changed in response to acute cocaine. Thus, my second goal would be to build upon this information and extend findings in a

repeated cocaine model, identifying cell type specific transcriptional programs altered by recurrent cocaine exposure. Exploring the brain on a cell-specific level was previously difficult due to its heterogeneous cell type composition. With single nucleus RNA sequencing technology and the platform established by the Day Lab, I believe my work will further develop our understanding of how these cell types contribute to addiction.





CAPPI Manuscripts

- [Abnormal Pap Follow-Up among Criminal-Legal Involved Women in Three U.S. Cities](#). Salyer, C., Lipnicky A., Bagwell-Gray M., Lorvick, J., **Cropsey, K.L.**, Ramaswamy, M.
- [Health and Health Service Needs: Comparison of Older and Younger Women with Criminal-Legal Involvement in Three Cities](#). Emerson, A., Lipnicky, A., Comfort M., Lorvick, J., **Cropsey, K.L.**, Smith, S., Ramaswamy, M.
- [Sleep and neighborhood socioeconomic status: a micro longitudinal study of chronic low-back pain and pain-free individuals](#). **Rumble D.D.**, O'Neal, K., **Overstreet, D.S.**, **Penn, T.M.**, Jackson, P., **Aroke, E.N.**, Sims, A.M., King, A.L., Hasan, F.N., **Quinn, T.L.**, Long, D.L., **Sorge, R.E.**, **Goodin, B.R.**
- [It Takes Two to Tango: Patients' and Providers' Perspectives in Tobacco Cessation and Head/Neck Cancer](#). Khodadadi, A.B., Carroll, W., Lee, E.L., Hansen, B., **Scarinci, I.C.**
- [Exemptions to state laws regulating opioid prescribing for patient with cancer with related pain: A summary](#). Bulls, H.W., Bell, L.F., Orris, S.R., **Goodin, B.R.**, Liebschutz, J.M., Wozniak, A., Merlin, J.S., Schenker, Y.
- [A Mediation Appraisal of Catastrophizing, Pain-Related Outcomes, and Race in Adults with Knee Osteoarthritis](#). Fullwood, D., Gomez, R.N., Huo, Z., Cardoso, J.S., Bartley, E.J., Booker, S.Q., Powell-Roach, K.L., Johnson, A.J., Sibille, K.T., Addison, A.S., **Goodin, B.R.**, Staud, R., Redden, D.T., Fillingim, R.B., Terry, E.L.

- [A Pilot Randomized Clinical Trial of Remote Varenicline Sampling to Promote Treatment Engagement and Smoking Cessation](#). Carpenter, M.J., Gray, K.M., Wahlquist, A.E., **Cropsey, K.L.**, Saladin, M.E., Froeliger, B., Smith, T.T., Toll, B.A., Dahne, J.
- [Decreased Alcohol Consumption in an Implementation Study of Computerized Brief Intervention among HIV Patients in Clinical Care](#). McCaul, M.E., Hutton, H.E., **Cropsey, K.L.**, Crane, H.M., Lesko, C.R., Chander G., Mugavero, M.J., Kirahata, M.M., Lau, B., Saag, M.S.
- [Self-reported reductions in tobacco and nicotine use following medical cannabis initiation: Results from a cross-sectional survey of authorized medical cannabis patients in Canada](#). Lucas, P., Walsh, Z., **Hendricks, P.S.**, Boyd, S., Milloy, M.J.
- [Framework for opioid stigma in cancer pain](#). Bulls, H.W., Chu, E., **Goodin, B.R.**, Liebschutz, J.M., Wozniak, A., Schenker, Y., Merlin, J.S.
- [Temporal summation of mechanical pain prospectively predicts movement-evoked pain severity in adults with chronic low back pain](#). **Overstreet, D.S.**, Michl, A.N., **Penn, T.M.**, Rumble, D.D., **Aroke, E.N.**, Sims, A.M., King, A.L., Hasan, F.N., **Quinn, T.L.**, Long, D.L., **Sorge, R.E.**, **Goodin, B.R.**

[Click here for access to more manuscripts authored by CAPPI members.](#)

