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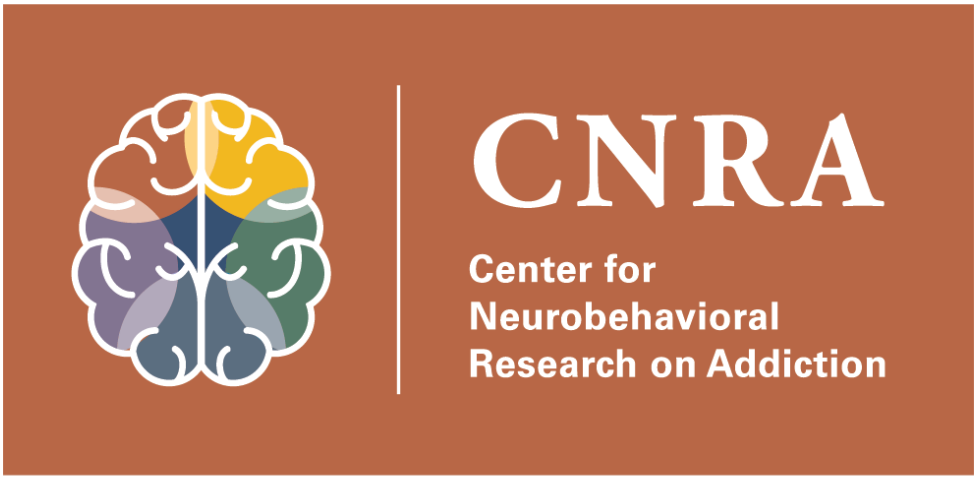
UTHealth McGovern Medical School
Center for Neurobehavioral Research on Addiction
The University of Texas Health Science Center at Houston

CNRA CONNECTIONS

Center for Neurobehavioral Research on Addiction
Faillace Department of Psychiatry and Behavioral Science

CNRA Has a New Look!

This summer we updated the brand identity for the CNRA, which includes a new logo and colors. Thanks to Jin Yoon, PhD, and Adrienne Thomas, PhD, who worked closely with Tiereni Celestine, Lauren Mathews, and a team of graphic designers of the Branding & Creative Services of the UTHealth Office of Public Affairs.



This new look conforms to the branding guidelines of the university and better matches our focus on understanding how addictive substances affect the brain and behavior. The various colors of the brain represent its complexity.

CNRA aims to advance the treatment of substance use disorders through innovative neurobehavioral science research. Our mission is "to develop evidence-based treatment for substance use disorders using decisions informed by behavioral neurosciences." We are excited to post our new look on social media outlets, including the CNRA website, Facebook, and InstaGram pages.

Yellow represents the innovative nature of the researchers at the CNRA.

Purple represents the CNRA's fidelity to the scientific method.

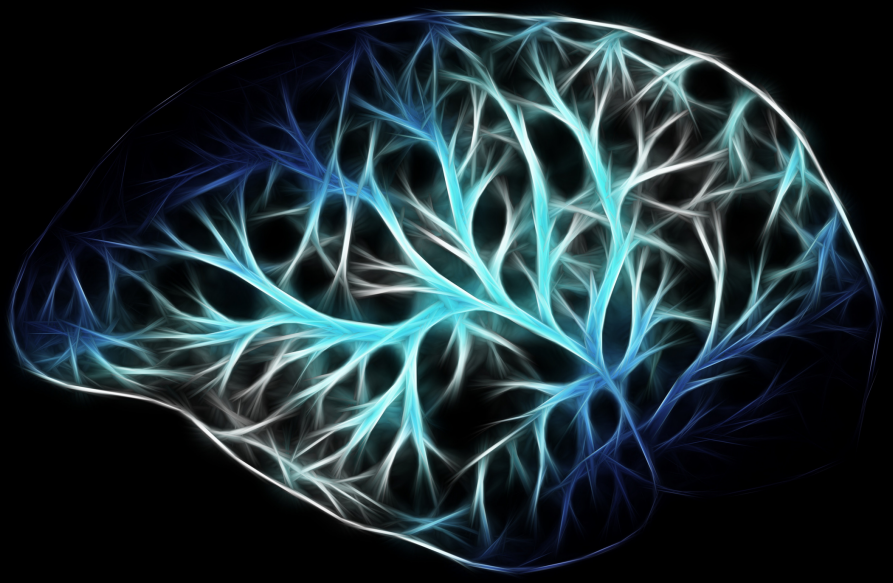
Green represents the growth of participants as they engage in the research process.

Blue represents trust and confidence of the community in the CNRA.

Orange represents our commitment to upholding the mission of the UTHealth Science Center at Houston.

WHAT'S INSIDE THIS ISSUE:

New Study on Brain Recovery to Assist in Treatment for Cocaine Addiction



A new grant from the NIH National Institute on Drug Abuse (NIDA) will give **Joy Schmitz, PhD,** and **Scott Lane, PhD,** the funding support they need to pursue a line of research evaluating neuroprotective medications in combination with cognitive-behavioral therapy (CBT) for the treatment of cocaine use disorder (CUD).

The Co-PIs along with a team of Co-Investigators including **Charles Green, PhD, Khader Hassan, PhD,** and **Ponnada Narayana, PhD,** will conduct a double-blind, placebo controlled randomized clinical trial of a medication called pioglitazone.

Pioglitazone is a PPAR-gamma agonist that is FDA-approved for the treatment of Type 2 diabetes. Its mechanism of action is complex, but includes anti-neuroinflammatory effects, making pioglitazone an intriguing and promising medication for neurological conditions such as Parkinson's disease, Alzheimer's disease, brain trauma and stroke.

Similar to these brain afflictions, studies of CUD conducted at the CNRA and elsewhere have shown that chronic cocaine use can have widespread neurotoxic effects, including in areas of the brain associated with cognitive function. Clinically, it has been shown that the degree of cocaine-induced brain structure and function negatively predicts successful outcome following treatment for CUD, i.e., more impairment results in worse outcomes.

Leading up to this grant, Lane and Schmitz conducted the first human neuroimaging study to demonstrate how pioglitazone treatment can change brain white matter (WM) integrity in patients with CUD. Their published findings showed that pioglitazone produced significant improvement in WM integrity compared to placebo. Additionally, patients who received pioglitazone showed reduced craving for cocaine. Armed with encouraging findings, Schmitz and Lane are now ready to test pioglitazone as a potential "relapse prevention" medication in recently detoxified patients with CUD.

"A healthier brain benefits more from therapy efforts than one that is substantially disrupted."

"Our thinking," says Schmitz, "is that adjunctive treatment with pioglitazone will facilitate the recovery process in these individuals by improving neural and cognitive functioning, so that patients might benefit more from evidence-based cognitive-behavioral therapies for CUD. We know that a healthier brain benefits more from therapy efforts than one that is substantially disrupted."

The trial expects to start enrolling participants by the end of the year.

About CNRA

MISSION

To develop evidence-based treatment for substance use disorders (SUDs) using decisions informed by behavioral neurosciences.

AIMS

In pursuit of this mission the CNRA aims to:

- Map out the neurological, behavioral, and clinical mechanisms that contribute to drug addiction
- Target key mechanistic processes in the development of SUD treatment
- Evaluate treatment efficacy using innovative clinical trial designs and statistical methods

Core and affiliated members

Constanza de Dios, PhD
Adrienne Gilmore-Thomas, PhD
Charles Green, PhD
Angela Heads, PhD
Judy Hong, PhD
Scott Lane, PhD
Joy Schmitz, PhD
Heather Soder, PhD
Angela Stotts, PhD
Robert Suchting, PhD
Anka Vujanovic, PhD
Michael Weaver, MD
Luba Yammine, PhD
Jin Yoon, PhD

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CNRA: IN THE MEDIA

- **Michael Weaver, MD,** was interviewed on ABC Channel 13 KTRK TV news program in Houston, TX as local expert on cannabidiol (CBD oil) and marijuana (Nov 2019)
- **Michael Weaver, MD,** was interviewed for Healthline as an expert on electronic cigarettes (Dec 2019)
- **Michael Weaver, MD,** was interviewed and quoted in an article in the Houston Chronicle regional newspaper titled, “Here’s why Harris County allowed liquor stores to remain open” as a local expert on alcohol use and withdrawal (Mar 2020)
- **Michael Weaver, MD,** was interviewed and quoted in an article in the Houston Chronicle regional newspaper as a local expert on alcohol use during social distancing for COVID-19 (Apr 2020)
- **Michael Weaver, MD,** was interviewed and quoted in an article on UT Physicians website as a local expert on addiction during social distancing for COVID-19 (Apr 2020)

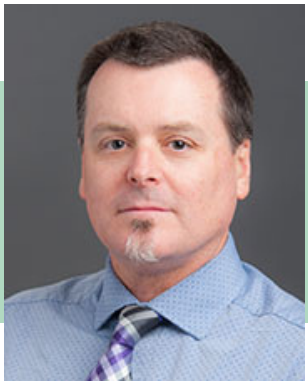
This year, CNRA faculty attended the annual national scientific meeting of the College on Problems of Drug Dependence (CPDD). The meeting was scheduled to be held in Hollywood, Florida, June 20th-24th, but when the coronavirus pandemic emerged, the in-person meeting was cancelled and CPDD rapidly shifted to a full virtual meeting platform. From their offices via Zoom, the following CNRA members gave their talks!

- **Luba Yammine, PhD**: Pilot Randomized Controlled Trial of Exenatide Combined with Nicotine Patch to Promote Smoking Cessation and Prevent Weight Gain
- **Joy Schmitz, PhD**: Combining Dopamine Agents to Enhance Cognition and Reduce Cocaine Use: A Randomized Clinical Trial of Levodopa and Ropinirole
- **Angela Heads, PhD**: Correlates of Pre-Exposure Prophylaxis (PrEP) Stigma in Substance Using Women
- **Jin Yoon, PhD**: Development of a Brief Assessment for Opioid Demand
- **Danielle Kessler**, The Opioid Risk Tool Predicts Post-Traumatic Stress

AWARDS · RECOGNITION · HONORS

Angela Heads, PhD, received a new grant from SAMHSA, Center for Substance Abuse Prevention (CSAP), entitled “HIV Education Awareness Referral and Treatment for Substance Use Disorders (HEARTS) at Open Gate.” Heads also was promoted to an Associate Professor in the Faillace Department of Psychiatry and Behavioral Sciences.

Joy Schmitz, PhD, was named the first holder of the Louis A. Faillace, MD, Chair in the Department of Psychiatry and Behavioral Sciences, January 2020. Schmitz also was appointed as a standing Study Section Member, NIH Center for Scientific Review, Interventions to Prevent and Treat Addictions (IPTA).



Scott Lane, PhD, and Joy Schmitz, PhD, received a new grant from NIDA, entitled “Pioglitazone as an Adjunct to Cognitive-Behavioral Therapy for Cocaine Relapse Prevention.”

Heather Soder, PhD, was announced winner of the 2020 Dean’s Excellence in Postdoctoral Research Award, June 2020. Soder also received a new grant from NIDA titled, "Using event-related potentials to predict treatment outcomes in cocaine use disorder."

Adrienne Gilmore-Thomas, PhD, was promoted to Program Manager. She will oversee HEARTS@UTHealth and HEARTS at Open Gate, two SAMHSA-funded projects providing HIV prevention and substance use disorders prevention and treatment.

Telehealth Addiction Treatment: The New Norm?

Access to effective treatment for substance use disorders (SUD) is a longstanding concern in the United States with estimates that only about 10% of adults who need treatment for SUD receive specialty treatment. The COVID-19 pandemic made matters much worse, with social distancing guidelines, self-quarantine requirements, decreased access to healthcare providers, and increased risks of infection from face-to-face clinical encounters. To address these new and significant barriers to treatment, programs are finding it necessary to introduce alternative approaches to care including telehealth services delivered via telephone, video teleconferencing, and mobile phone apps.

The good news is that telehealth, or technology-based treatment interventions, have been developed and evaluated. There is growing evidence showing that when treatment is delivered remotely, for example, by phone or computer, the outcomes are comparable to standard, face-to-face clinic-based delivery of treatment. Moreover, remotely delivered treatment has the clear advantage for reaching populations for whom access to treatment is limited.

The CNRA has responded to COVID-19 challenges by transitioning to tele-based treatment as an option for our patients who cannot or prefer not to attend clinic visits. The SAMHSA-funded HEARTS@UTHealth program has paved the way in this regard, with good results to date.

Trained drug counselors have switched to conducting therapy sessions via telephone or videoconferencing with Zoom. This affords patients the flexibility and convenience of participating in therapy from a location and time of their choice. Transportation-related costs are eliminated, which is significant in a big city like Houston.

With any new approach, there are pros and cons to consider. We explored these issues in a recent Q&A with the leadership of HEARTS@UTHealth, **Angela Heads, PhD**, (Project Director) and **Adrienne Thomas, PhD**, (Program Coordinator):

What have you observed to be the biggest benefit of offering therapy through telehealth to participants?

COVID-19 has resulted in many participants and therapists having very valid concerns about risk associated with face to face visits. Telephone and videoconferencing methods allow the HEARTS program to continue providing valuable services while reducing risk of spreading COVID-19. That reduction in risk to our clients, clinic staff, and therapists is one of the greatest benefits.

Beyond that, many clients enjoy the benefits of therapy without the challenge of navigating traffic or public transportation. There is also more flexibility in scheduling when the travel time is removed from the equation and cost savings due to the elimination of fuel and parking fees.

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On the other hand, what have you observed to be the biggest challenge in making this transition?

The lack of reliable internet or cellular service is a big challenge to some of our clients. This is the biggest drawback to telehealth. Those who do not have access to a smartphone, tablet, computer, or other device with internet access will not be able to engage in video-conferencing. They can, however, call in if they have access to a telephone. Another challenge is that some clients are just not comfortable with having therapy delivered this way. Most who are skeptical at first grow to like it if they try it. There are, however, a few "hold-outs."

CNRA Therapist Nina Moak, MA LPC uses telehealth to meet with her clients

How do the therapists go about developing therapeutic alliance without the face-to-face contact?

We began our telehealth visits with existing clients who had already developed a relationship with our therapists. This allowed us to provide continuity of care for these clients while also allowing therapists to become more comfortable with delivering services in this way. We then resumed intakes also using remote-delivery methods. At this time some of our newer clients have had all of their interactions with us via telehealth.

"HEARTS@UTHealth's graceful and quick shift, as well as their clear communication, consistency and support, have come to meet the challenges presented by switching to virtual therapy while providing unwavering care and stability that I'm not sure where I'd be without in these very uncertain times."

Feedback from a HEARTS@UTHealth patient receiving telehealth sessions

All therapists received training in telehealth which provided excellent strategies for engaging a client through these remote delivery methods. It takes more effort and a different type of effort to show interest, attentiveness, empathy and concern in this situation. We rely so much on body language in face to face interactions. Through remote delivered therapy, we have to rely more on the actual words we say, tone of voice and facial expressions. The HEARTS therapists have done an incredible job with this.

What feedback have you received from clients so far regarding their satisfaction with the alternative treatment method?

We had the opportunity to survey a few of our existing clients when we initially started providing telehealth services. The majority of those who were engaged in remotely delivered services reported that they were comfortable using the telephone or videoconferencing platform for therapy. All respondents reported their interaction with their therapist in terms of thoroughness, carefulness, skills, courtesy and respect as excellent or good.

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Telehealth Addiction Treatment cont. from page 6

With COVID-19 cases still high and no way to know when the cases will decrease to a level where most people feel safe with face to face services, new clients have opted for remotely-delivered therapy options. We are working to update our data. However, therapists report hearing from their once reluctant clients surprise about the effectiveness of remotely delivered counseling and their appreciation for the availability of this service.

Do you expect to continue offering telehealth services beyond the current COVID-19 pandemic?

Yes. Many clients can benefit from telephone-based and videoconferencing-based services even beyond COVID-19. The convenience along with the time and cost-savings makes it an attractive option for clients who have had difficulties consistently engaging in office-based service delivery options.

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HIV Education, Awareness, Referral and Treatment for Substance Use Disorders

The University of Texas Health Science Center at Houston

NEW NAMES AT THE CNRA

Emeka Okafor, PhD, is an Assistant Professor of epidemiology in public health at Baylor University in Waco, TX. Recently, Okafor received a career development (K01) award from the NIH National Institute on Drug Abuse (NIDA) to study the effects of cannabis on treatment outcomes of patients with HIV. Okafor will conduct his study at the CNRA, under the mentorship of Joy Schmitz, PhD. We are thrilled to welcome Emeka as a research collaborator.

Judy Hong, PhD, is a new postdoctoral research fellow at the CNRA. Hong received her doctorate degree in clinical psychology from the University of Houston and completed internship at Baylor College of Medicine. She is trained in the delivery of evidence-based interventions, with a focus on understanding culturally relevant factors in clinical practice and reaching underserved populations.

Emma Lathan-Powell, MS, is a psychology intern from University of South Alabama, where she is completing her PhD in clinical/counseling psychology. Emma began her four-month rotation at the CNRA in July 2020 and is conducting screening and intake assessments for the Developing Adaptive Interventions for Cocaine Cessation and Relapse Prevention study. She is also conducting intake assessments and providing individual therapy via the HEARTS@UTHealth program. Emma's clinical and research interests center on interpersonal trauma exposure, specifically among women, and how system interaction post-trauma impedes or fosters recovery.

Welcome!

RESEARCH UPDATE

Recent faculty publications

- Bolivar HA, Elliot RJ, Middleton W, **Yoon JH**, Okoli CTC, Haliwa I, Miller CC III, Ades PA, Gaalema DE. (In press). Social smoking environmental associations with cardiac rehabilitation attendance. Journal of Cardiopulmonary Rehabilitation and Prevention, 218, 35-41.
- Burnett J, **Suchting R, Green CE,** Cannell MB, Dyer CB. Sociological indicators of senior financial exploitation: An application of data science to 8,800 substantiated mistreatment cases. J Elder Abuse Negl. 32(2): 105-120. 2020.
- Currie TT, Hamilton JE, **Weaver MF,** Findley JC, Soares JC, Selek S. Cannabis use: a co-existing condition in admitted first episode bipolar patients. Journal of Affective Disorders 263:289-291, 2020.
- Duran K, O'Halloran H, **Soder HE,** Yasin S, Kramer R. Rosen S, Brenya J, Chavarria K, Savitska L, Keenan JP. The medial prefrontal cortex: A potential link between self-deception and affect. International Journal of Neuroscience. DOI: 10.1080/00207454.2020.1753729, 2020.·
- Hampson AJ, Schroeder JR, Ellefsen KN, **Yammine L,** Epstein DH, Preston KL, Huestis MA, Verrico CD. Subtherapeutic Acetazolamide Doses as a Noninvasive Method for Assessing Medication Adherence. Clinical Pharmacology and Therapeutics. DOI 10.1002/cpt.1929, 2020.
- **Heads AM**, Glover AM, Castillo LG, Blozis S, Kim SY, Ali S. Perceived discrimination and risk behaviors in African American students: The potential moderating roles of emotion regulation and ethnic socialization. Journal of Racial and Ethnic Health Disparities, 2020. Advance online publication. https://doi.org/10.1007/s40615-020-00807-6
- Hill M, Flash C, **Heads AM,** Cardenas-Turanzas M, Grimes R. PrEP education and awareness building through an intervention for African-Americans reporting both condomless sex and substance use during an emergency department visit. Journal of AIDS Clinical Research and Sexually Transmitted Diseases, 7, 028, 2020. DOI: 10.24966/ACRS-7370/100028
- Kramer R, Duran K, **Soder HE,** Applegate L, Youssef A, Criscione M, Keenan JP. (In press). The special brain: subclinical grandiose narcissism and self-face recognition in the right prefrontal cortex. American Journal of Psychology.
- **Lane SD.** (2020). Comment on "At-risk drinking and current cannabis use among medical students: a multivariable analysis of the role of personality traits". Brazilian Journal of Psychiatry 42, 122–123.
- Meisch RA, Gomez TH, **Lane SD.** (2020). Equal response rates maintained by concurrent drug and nondrug reinforcers: A design for treatment evaluation. Behavioural Pharmacology 31, 458–464.
- Northrup TF, **Suchting R,** Klawans MR, Khan AM, Villarreal YR, **Green CE, Stotts AL.** Proactive delivery of nicotine replacement therapy to families of hospitalized infants in a NICU: A randomized controlled pilot trial. J Neonatal Nurs. 26(4): 201-206, 2020.
- Patrounova V, **Yoon JH, Schmitz JM,** Nguyen K, Alaniz J, **Yammine L.** Smoking and Vaping. Combustible and electronic cigarette use at a large academic dental school clinic. Journal of the American Dental Association, 151, 510-518, 2020.
- Snyder AD, Zuniga E, Ma L, Steinberg JL, Woisard K, Narayana PA, **Lane S, Schmitz JM,** Moeller FG. Examination of preliminary behavioral and effective connectivity findings from treatment response to citalopram in cocaine use disorder: A dynamic causal modeling study. Psychiatry Research: Neuroimaging, 303, 111-127, 2020.
- **Soder HE**, Berumen AM, Gomez KE, **Green CE, Suchting R,** Wardle MC, **Vincent JN,** Teixeira AL, **Schmitz JM, Lane SD.** Elevated neutrophil to lymphocyte ratio in older adults with cocaine use disorder as a marker of chronic inflammation. Clinical Psychopharmacology and Neuroscience 18, 32–40, 2020.
- **Soder HE**, Cooper JA, Lopez-Gamundi P, Hoots JK, Nunez C, Lawlor VM, **Lane SD,** Treadway MT, Wardle MC. Dose-response effects of d-amphetamine on effort-based decision-making and reinforcement learning. Neuropsychopharmacology. doi: 10.1038/s41386-020-0779-8, 2020.
- **Suchting R,** Beard CL, **Schmitz JM, Soder HE, Yoon JH,** Hasan KM, Narayana PA, **Lane SD.** A meta-analysis of tract-based spatial statistics studies examining white matter integrity in cocaine use disorder. Addiction Biology e12902. doi: 10.1111/adb.12902, 2020.
- **Suchting R**, Kapoor S, Mathis KB, Ahn H. (In press). Changes in experimental pain sensitivity from using home-based self-administered transcranial direct current stimulation in older adults with knee osteoarthritis. Pain Med.
- Thomas TE, **Lane SD,** Elkhatib R, Hamilton JE, Pigott TA. Race, history of abuse, and homelessness are associated with forced medication administration during psychiatric inpatient care. Journal of Psychiatric Practice 26, 294–304, 2020.
- Tirumalaraju V, **Suchting R,** Evans J, Goetzl L, Refuerzo J, Neumann A, Anand D, Ravikumar R, Green CE, Cowen PJ, Selvaraj S. Risk of depression in the adolescent and adult offspring of mothers with perinatal depression: A systematic review and meta-analysis. JAMA Netw Open. 3(6): e208783. 2020.
- **Vujanovic AA,** Smith LJ, **Green CE, Lane SD, Schmitz JM.** Mindfulness as predictor of cognitive-behavioral therapy outcomes in inner-city adults with posttraumatic stress and substance dependence. Addictive Behaviors, 104: 106283, 2020.
- **Weaver MF.** Muscle relaxants: Sedatives often under the radar. The Carlat Addiction Treatment Report 8(3): 5,9, 2020.
- **Yoon JH, Suchting R,** Cassidy RN, Bolin PK, Omar Y, Brown GS, De La Garza R, II. Assessment of demand for methamphetamine and cigarettes among individuals with methamphetamine use disorder. Experimental and Clinical Psychopharmacology. doi: 10.1037/pha0000367, 2020.
- **Yoon JH, Suchting R,** Kessler D, Soder HE, Kapoor S, **Stotts AL, Heads AM,** Harvin JA, **Green CE, Lane SD, Schmitz JM.** Utility of a brief assessment of opioid demand among post-discharge trauma care patients. Experimental and Clinical Psychopharmacology. doi: 10.1037/pha0000412, 2020.

Explore the CNRA

The CNRA currently has one ongoing study of treatment for stimulant use disorders.

- Developing adaptive interventions for cocaine cessation and relapse prevention

Other currently enrolling studies at the CNRA:

- Medication to reduce symptoms of nicotine withdrawal
- Brain responding during and after cocaine use
- Medication to reduce stress and alcohol use

CNRA Program Features

- No-cost treatment
- 100% confidential
- Medical and behavioral treatments
- Experienced and professional staff
- Safe and clean atmosphere
- Free parking and metro tickets
- Financial compensation for research participation
- Funded by the National Institute on Drug Abuse (NIDA)

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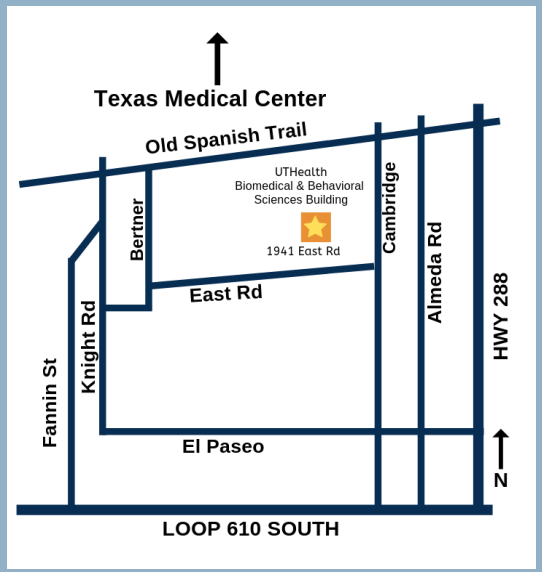

Appointments

713-500-DRUG [3784]

Clinic Hours:
Monday – Friday 7:30-4:30

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https://med.uth.edu/psychiatry/research/centers/addiction/