

Brett Froeliger, Ph.D.

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EDUCATION

- Ph.D. Southern Illinois University-Carbondale, May, 2008.
Department of Psychology: Experimental: Brain and Cognitive Sciences
Advisor: Dr. David Gilbert
Dissertation Title: "The Effects of Nicotine on Novelty Detection and Memory for Emotional, Semantic, and Perceptual Oddballs in Smokers and Non-Smokers"
- M.A. Southern Illinois University-Carbondale, August, 2006.
Department of Psychology: Experimental: Brain and Cognitive Sciences
Advisor: Dr. Reza Habib
Thesis Title: "The Influence of Emotional Valence on Contextual Novelty: An fMRI Study"
- B.A. Psychology, Southern Illinois University Carbondale, May 2000.
Advisor: Dr. David Gilbert
Honors Thesis Title: "Hemispheric Laterality in Processing Emotionally Valenced Verbal and Nonverbal Stimuli".

PROFESSIONAL EXPERIENCE

2020	University of Missouri Columbia	Professor, Departments of: Psychiatry, Psychology
2017-May, 20'	MUSC	Associate Professor, Dept. of Neurosciences
2013-2017	MUSC	Assistant Professor, Dept. of Neurosciences
2017-Present	University of South Carolina	Adjunct Faculty, College of Pharmacy
2013-Present	Duke University Medical Center	Adjunct Faculty, Dept. of Psychiatry
2007-2012	Duke University Medical Center	Research Scientist, Dept. of Psychiatry
2003-2007	Southern Illinois University	Graduate Student, Dept. of Psychology
2000-2003	Frantz Manufacturing	Safety & Employment Manager

PEER REVIEWED MANUSCRIPTS (underlined denotes mentee).

2020

1. Halbert CH, Jefferson MS, Danielson C, **Froeliger, B**, Giordano A, Thaxton J. (in press). An observational study and randomized trial of stress reactivity in cancer disparities. *Health Psychology*.
2. Hudak, J., Prince, K., Marchand, W., Nakamura, Y., Hanley, A., Bryan, C., **Froeliger, B.**, Garland, E.L. (in press). The Temporal Dynamics of Emotion Dysregulation in Prescription Opioid Misuse. *Progress in Neuropsychopharmacology & Biological Psychiatry*.
3. McConnell, P. A., E. L. Garland, J. K. Zubieta, R. Newman-Norlund, S. Powers and **Froeliger, B.** (2020). "Impaired frontostriatal functional connectivity among chronic opioid using pain patients is associated with dysregulated affect." *Addict Biol*. PMID: 30945801
4. Newman-Norlund, R., Gibson, M., McConnell, P., **Froeliger, B.** (2020). Dissociable effects of theta-burst repeated transcranial magnetic stimulation to the inferior frontal gyrus on inhibitory control in nicotine addiction. *Frontiers in Psychiatry*. Apr 15;11:260. PMID: 32351412

2019 and earlier

5. Garland, E.L., Atchley, R., Howard, M., Zubieta, J-K., **Froeliger, B.** (2019). Mindfulness-Oriented Recovery Enhancement Restructures Reward Processing Among Chronic Opioid Users: Neurophysiological and Affective Evidence. *Science Advances* 5(10). PMID 31663023
6. Garland, E. L., M. A. Bryan, S. E. Priddy, M. R. Riquino, **Froeliger, B.**, and M. O. Howard (2019). "Effects of Mindfulness-Oriented Recovery Enhancement Versus Social Support on Negative Affective Interference During Inhibitory Control Among Opioid-Treated Chronic Pain Patients: A Pilot Mechanistic Study." *Ann Behav Med* 53(10): 865-876. PMID: 30668631

7. Garland, E. L., A. W. Hanley, M. R. Riquino, S. E. Reese, A. K. Baker, K. Salas, B. P. Yack, C. E. Bedford, M. A. Bryan, R. Atchley, Y. Nakamura, **Froeliger, B.**, and M. O. Howard (2019). "Mindfulness-oriented recovery enhancement reduces opioid misuse risk via analgesic and positive psychological mechanisms: A randomized controlled trial." *J Consult Clin Psychol* 87(10): 927-940. PMID: 31556669
8. Mathew, A. R., B. W. Heckman, **B. Froeliger**, M. E. Saladin, R. A. Brown, B. Hitsman and M. J. Carpenter (2019). "Multi-method assessment of distress tolerance and smoking-related factors among adult daily smokers." *Exp Clin Psychopharmacol* 27(2): 136-145. PMID: 30589279
9. Tomko, R. L., **Froeliger, B.**, McClure, E. A., Saladin, M.E., and Gray, K.M. (2019). Gender Differences in Smoking Latency Following Exposure to Stressful Images Administered in Naturalistic Settings. *Journal of Womens Health*. 28 (11): 1593-1593.
10. Tomko, R. L., E. A. McClure, P. A. Cato, J. B. Wang, M. J. Carpenter, J. L. Karelitz, **Froeliger, B.**, M. E. Saladin and K. M. Gray (2019). "An electronic, smart lighter to measure cigarette smoking: A pilot study to assess feasibility and initial validity." *Addict Behav* 98: 106052. PMID: 31415971
11. Fridriksson, J.F., Rorden, C., Newman-Norlund, R., **Froeliger, B.**, Thrasher, J. (2018). Smokers' Neurological Responses to Novel and Repeated Health Warning Labels (HWLs) from Cigarette Packages. *Frontiers in Psychology*.
12. Garland EL, Bryan CJ, Kreighbaum L, Nakamura Y, Howard MO & **Froeliger B.** (2018). Prescription opioid misusing chronic pain patients exhibit dysregulated context-dependent associations: Investigating associative learning in addiction with the Cue-Primed Reactivity Task. *Drug and Alcohol Dependence*. Mar 27;187:13-21.PMID: 29626741
13. Garland, E.L., Hanley, A.W., Bedford, C., Zubieta, J.-K., Howard, M.O., Nakamura, Y., Donaldson, G., & **Froeliger, B.** (2018). Reappraisal deficits promote craving and emotional distress among chronic pain patients at risk for prescription opioid misuse. *Journal of Addictive Diseases*. Jun 4:1-9. PMID: 29863439.
14. Serfaty, S., Gale, G., Beadman, M., **Froeliger, B.**, & Kamboj, S. K. (2018). Mindfulness, Acceptance and Defusion Strategies in Smokers: a Systematic Review of Laboratory Studies. *Mindfulness (N Y)*, 9(1), 44-58. doi:10.1007/s12671-017-0767-1
15. Badran, B.W., Austelle, C.W., Smith, N.R., Glusman, C.E., **Froeliger, B.**, Garland, E.L., Borckardt, J.J., George, M.S., Short, B. (2017). A double-blind study exploring the use of transcranial direct current stimulation (tic's) to potentially enhance mindfulness meditation (E-meditation). *Brain Stimulation*. Jan-Feb; 10 (1): 152-154. PMID: 27839723.
16. Carpenter MJ, Heckman BW, Wahlquist AE, Wagener TL, Goniewicz ML, Gray KM, **Froeliger B**, Cummings KM. A naturalistic, randomized pilot trial of e-cigarettes: Uptake, exposure, and behavioral effects. *Cancer Epidemiology, Biomarkers & Prevention*. 2017;26:1795-803. PMID: 5713898.
17. **Froeliger, B.**, Mathew, A.R., McConnell, P.A., Eichberg, C., Saladin, M.E., Carpenter, M.J., Garland, E.L. (2017). Restructuring Reward Mechanisms in Nicotine Addiction: A Pilot fMRI Study of Mindfulness-Oriented Recovery Enhancement for Cigarette Smokers. *Evidence-Based Complementary and Alternative Medicine: eCAM* 2017.
18. **Froeliger, B.**, McConnell, P.A., Sweitzer, M.A., Bell, S., Kozink, R.V., Eichberg, C., Gray, K.M., McClernon, F.J. (2017). Association Between Baseline Corticothalamic-Mediated Inhibitory Control and Smoking Relapse Vulnerability. *JAMA Psychiatry*. Mar 1. doi:10.1001/jamapsychiatry.2017.0017
19. Garland, E.L., **Froeliger, B.**, Howard, M.O. (2017). Deficits in Autonomic Indices of Emotion Regulation and Reward Processing Associated with Prescription Opioid Use and Misuse. *Psychopharmacology*. Feb; 234 (4): 621-629, PMID: 27933366.
20. Garland, E.L., Howard, M.O., Zubieta, J.K., **Froeliger, B.** (2017). Restructuring Hedonic Dysregulation in Chronic Pain and Prescription Opioid Misuse: Effects of Mindfulness-Oriented Recovery Enhancement on Responsiveness to Drug Cues and Natural Rewards. *Psychotherapy and Psychosomatics*. Feb 10;86(2):111-112. PMID: 28183077
21. Germeroth, L.J., Carpenter, M.J., Baker, N.L., **Froeliger, B.**, LaRowe, S.D., Saladin, M.E. (2017). A Brief Memory Updating Intervention Significantly Attenuates Smoking Behavior. *JAMA Psychiatry*. Feb 1. PMID: 28146243.
22. Meier, E., Wahlquist, A.E., Heckman, B.W., Cummings, K.M., **Froeliger, B.**, Carpenter, M.J. (2017). A Pilot Randomized Crossover Trial of E-cigarette Sampling Among Smokers. *Nicotine and Tobacco Research*, Feb; 19 (2): 176-182. PMID: 27613880.

23. Garland, E.L., Howard, M.O., Priddy, S., McConnell, P.A., Riquino, M.R., **Froeliger, B.** (2016). Mindfulness Training Applied to Addiction Therapy: Insights into the Neural Mechanisms of Positive Behavioral Change. *Neuroscience and Neuroeconomics*.
24. McClernon, F.J., **Froeliger, B.**, Rose, J.E., Kozink, R.V., Addicott, M.A., Sweitzer, M.M., Westman, E.C., Van Wert, D.M. (2015). The effects of nicotine and non-nicotine smoking factors on working memory and associated brain function. *Addiction Biology*. Jul; 21 (4): 954-61. PMID: 25904425.
25. Osmana, A., Cayir, E., Perez, H., Thrasher, J.F., **Froeliger, B.** (2016). Depressive symptoms and responses to cigarette pack warning labels among Mexican smokers. *Health Psychology*, Feb 11. PMID: 26867043.
26. Addicott, M.A., Sweitzer, M.M., **Froeliger, B.**, McClernon, F.J. (2015). Increased functional connectivity in an insula-based network is associated with improved smoking cessation outcomes. *Neuropsychopharmacology*; Oct; 40 (11): 2648-56. PMID: 25895453.
27. Cortese, B.M., McConnell, P.A., **Froeliger, B.**, Leslie, K., Uhde, T.W. (2015). Burning odor-elicited anxiety in OEF/OIF combat veterans: inverse relationship to gray matter volume in olfactory cortex. *Journal of Psychiatric Research*. PMID: 26424424.
28. **Froeliger, B.**, McConnell, P.A., Stankeviciute, N., McClure, E.A., Kalivas, P.W., Gray, K.M. (2015). The effects of N-Acetylcysteine on frontostriatal resting-state functional connectivity, withdrawal symptoms and smoking abstinence: A double-blind, placebo-controlled fMRI pilot study. *Drug and Alcohol Dependence*. doi:10.1016/j.drugalcdep.2015.09.021. PMID: 26454838.
29. Garland, E.L., **Froeliger, B.**, Howard, M.O. (2015). Allostatic Dysregulation of Natural Reward Processing in Prescription Opioid Misuse: Autonomic and Attentional Evidence. *Biological Psychology*. Feb;105:124-9. PMID: 25603284.
30. Garland, E.L., **Froeliger, B.**, Howard, M.O. (2015). Neurophysiological Evidence for Remediation of Reward Processing Deficits in Chronic Pain and Opioid Misuse Following Treatment with Mindfulness-Oriented Recovery Enhancement: Exploratory ERP Findings from a Pilot RCT. *Journal of Behavioral Medicine*. Jun;82(3):448-59. doi: 10.1007/s10865-014-9607-0. Epub 2014 Nov 11. PMID: 25385024.
31. Garland, E., Hanley, A., Farb, N., **Froeliger, B.** (2015). State Mindfulness During Meditation Predicts Enhanced Cognitive Reappraisal. *Mindfulness*. Apr 1;6(2):234-242. PMID: 26085851.
32. Heckman, B., Carpenter, M., Correa, J., Wray, J., Saladin, M., **Froeliger, B.**, Drobles, D., Brandon, T. (2015). Acute Negative Affect Manipulations Increase Smoking Behavior: A Meta-Analysis. *Addiction*. May;110(5):751-60. PMID: 25641624.
33. Mathew, A.R., Burris, J.L., **Froeliger, B.**, LaRowe, S.D., Saladin, M.E., Carpenter, M.J. (2015). Impulsivity and Cigarette Craving among Adolescent Daily and Occasional Smokers. *Addictive Behaviors*. Jun;45:134-8. PMID: 25665916.
34. McClure, E.A., Baker, N.L., Gipson, C.D., Carpenter, M.J., Roper, A., **Froeliger, B.E.**, Kalivas, P.W., Gray, K.M (2015). An open-label pilot trial of N-acetylcysteine and varenicline in adult cigarette smokers. *The American Journal of Drug and Alcohol Abuse*. Jan;41(1):52-6. PMID: 25062287.
35. Addicott, M.A., Pearson, J.M., **Froeliger, B.**, Platt, M.L., McClernon, F.J. (2014). Smoking automaticity and tolerance moderate brain activation during explore-exploit behavior. *Psychiatry Research: Neuroimaging*. Dec 30;224(3):254-61. PMID: 25453166
36. Addicott, M.A., **Froeliger, B.**, Kozink, R.V., Van Wert, D.M., Westman, E.C., Rose, J.E., McClernon, F.J. (2014). Nicotine and non-nicotine smoking factors differentially modulate craving, withdrawal and cerebral blood flow as measured with arterial spin labeling. *Neuropsychopharmacology*. Nov;39(12):2750-9. PMID: 24820539.
37. Garland, E.L., **Froeliger, B.**, Howard, M.O. (2014). Effects of Mindfulness-Oriented Recovery Enhancement on Reward Responsiveness and Opioid Cue-Reactivity. *Psychopharmacology*. Aug;231(16):3229-38. PMID: 24595503.
38. Garland, E.L., **Froeliger, B.**, Howard, M.O. (2014). Mindfulness training targets neurocognitive mechanisms of addiction at the attention-appraisal-emotion interface. *Frontiers in Psychiatry*. Jan 10;4:173. PMID: 24454293.
39. Garland, E.L., Manusov, E., **Froeliger, B.**, Kelly, A., Williams, J., Howard, M. (2014). Mindfulness-Oriented Recovery Enhancement for Chronic Pain and Prescription Opioid Misuse: Results from an Early Stage Randomized Controlled Trial. *Journal of Consulting and Clinical Psychology*. Jun;82(3):448-59. PMID: 24491075.

40. McConnell, P., **Froeliger, B.**, Garland, E.L., Ives, J.C., Sforzo, G.A. (2014). Auditory driving of the autonomic nervous system: Listening to theta-frequency binaural beats post-exercise increases parasympathetic activation and sympathetic withdrawal. *Frontiers in Psychology*. Nov 14;5:1248. PMID: 25452734.
41. Newman-Norlund, R., Thrasher, J., Fridrikson, J., Brixius, W., **Froeliger, B.**, Hammond, D., Cummings, M. (2014). Neural biomarkers for assessing the effects of different types of imagery in pictorial health warning labels on cigarette packaging. *BMJ Open*. Dec 31;4(12). PMID: 25552613.
42. Szabo, S.T., Fowler, J.C., **Froeliger, B.**, Lee, T.H. (2014). Time-dependent changes in nicotine behavioral responsivity during early withdrawal from chronic cocaine administration and attenuation of cocaine sensitization by mecamylamine. *Behavioural Brain Research*. Apr 1;262:42-6. PMID: 24412684.
43. Diggs, G., **Froeliger, B.**, Gilbert, D.G. (2013). Smoker-nonsmoker differences in neural response to appetitive and threatening cues: An fMRI investigation. *Psychiatry Research: Neuroimaging*. Jan 30;211(1):85-7. PMID: 23146252.
44. **Froeliger, B.**, Modlin, L.A., Kozink, R.V., Wang, L., Garland, E.L., Addicott, M.A., McClernon, F.J. (2013). Frontoparietal Attentional Network Activation Differs Between Smokers and Nonsmokers During Affective Cognition. *Psychiatry Research: Neuroimaging*. Jan 30;211(1):57-63. PMID: 23154092.
45. Garland, E.L., **Froeliger, B.**, Passik, S., Howard, M.O. (2013). Attentional Bias For Prescription Opioid Cues Among Opioid-Dependent Chronic Pain Patients. *Journal of Behavioral Medicine*. Dec;36(6):611-20. PMID: 22968666.
46. Garland, E. L., **Froeliger, B.**, Zeidan, F., Suveg, K., & Howard, M. O. (2013). The downward spiral of chronic pain, prescription opioid misuse, and addiction: Cognitive, affective, and neuropsychopharmacologic pathways. *Neuroscience & Biobehavioral Reviews*. Dec;37(10 Pt 2):2597-607. PMID: 23988582.
47. Felder, J.N., Smoski, M.J., Kozink, R.V., **Froeliger, B.**, McClernon, F.J., Bizzell, L., Petty, C., Dichter, G.S. (2012). Functional Neural Correlates of Moderate Depressive Symptoms: A Pilot Study. *BMC Psychiatry*, 12, 1. PMID: 22998631
48. **Froeliger, B.** Garland, E., & McClernon, F.J. (2012). Yoga meditation practitioners exhibit greater gray matter volume and fewer reported cognitive failures: Results of a preliminary voxel-based morphometric analysis. *Evidence-Based Complementary and Alternative Medicine: eCAM* 2012: 821307. PMID: 23304217.
49. **Froeliger, B.**, Beckham, J.C., Feldman, M., Kozink, R.V., McClernon, F.J. (2012). Effects of nicotine administration on emotional reactivity in PTSD and non-PTSD smokers: Results of a preliminary fMRI study. *Advances in Pharmacological Sciences*, vol 2012, Article ID 265724, 6 pages. PMID: 22719754.
50. **Froeliger, B.**, Garland, E.L., Modlin, L.A., McClernon, F.J. (2012). Neurocognitive correlates of the effects of yoga meditation practice on emotion and cognition: a pilot study. *Frontiers in Integrative Neuroscience*, 6. PMID: 22855674
51. **Froeliger, B.**, Garland, E.L., Kozink, R.V. et al., (2012) Meditation-State Functional Connectivity (msFC): Strengthening of the Dorsal Attention Network and Beyond, *Evidence-Based Complementary and Alternative Medicine*. vol. 2012, Article ID 680407, 9 pages, 2012. PMID: 22536289.
52. **Froeliger, B.**, Modlin, L.A., Kozink, R.V., Wang, L., McClernon, F.J. (2012). Smoking Abstinence and Depressive Symptoms Modulates the Executive Control System During Emotional Information Processing. *Addiction Biology*, 17, 668-679. PMID: 22081878.
53. **Froeliger, B.**, Modlin, L.A., Wang, L., Kozink, R.V., McClernon, F.J. (2012). Nicotine Withdrawal Modulates Frontal Brain Function During an Affective Stroop Task. *Psychopharmacology*, 220, 707-18. PMID: 21989805.
54. Rose, J.E., McClernon, F.J., **Froeliger, B.**, Behm, F.M., Preud'homme, X., Krystal, A. (2011). Repetitive transcranial magnetic stimulation (rTMS) of the superior frontal gyrus modulates craving for cigarettes. *Biological Psychiatry*, 70, 794-799. PMID: 21762878.
55. **Froeliger, B.**, Kozink, R.V., Rose, J.E., Behm, F.M., Salley, A.N., and McClernon, F.J. (2010). Hippocampal and striatal grey matter volume are associated with a smoking cessation treatment outcome: Results of an exploratory voxel-based morphometric analysis. *Psychopharmacology*, 210, 577-583. PMID: 20424827.

56. Kozink, R. V., Lutz, A. M., Rose, J. E., **Froeliger, B.**, & McClernon, F. J. (2010). Smoking withdrawal shifts the spatiotemporal dynamics of neurocognition. *Addiction Biology*, 15, 480-490. PMID: 21040240.
57. Carlson, J.M., Gilbert, D.G., Rise, H., Huber, J., Rabinovich, N.E., **Froeliger, B.**, & Sugai, C. (2009). Serotonin Transporter Genotype and Trait Depression Influence the Benefit of Nicotine on Spatial Working Memory. *Experimental and Clinical Psychopharmacology*, 17, 173-180. PMID: 19586232.
58. **Froeliger, B.**, Gilbert, D.G., & McClernon, F.J. (2009). Effects of Nicotine on Novelty Detection and Memory Recognition Performance: Double-Blind, Placebo-Controlled Studies of Smokers and Nonsmokers. *Psychopharmacology*, 205, 625-633. PMID: 19488741.
59. Gilbert, D.G., Carlson, J.M., Rise, H., Huber, J., Rabinovich, N.E., Sugai, C., & **Froeliger, B.E.** (2008). Effects of nicotine and depressive traits on affective priming of lateralized emotional word identification. *Experimental and Clinical Psychopharmacology*, 16, 293-300. PMID: 18729683.
60. Gilbert, D. G., Sugai, C., Zuo, Y., Rabinovich, N. E., McClernon, F. J., & **Froeliger, B. E.** (2007). Brain indices of nicotine's effects on attentional bias to smoking and emotional pictures and to task-relevant targets. *Nicotine and Tobacco Research*, 9, 351-363. PMID: 17365767.

PUBLICATIONS UNDER REVIEW & IN PREP

61. Bell, S., **Froeliger, B.** (under review). Associations Between Smoking Abstinence, Inhibitory Control, and Lapse Vulnerability: An fMRI Study.
62. Carpenter, MJ., Cropsey, K., Toll., B., Wahlquist, A.H., **Froeliger, B.**, Saladin, M., Dahne, J., Smith, T. (under review). A Pilot Randomized Clinical Trial of Remote Varenicline Sampling to Promote Treatment Engagement and Smoking Cessation.
63. Cole, C., Powers, S., Tomko, R., **Froeliger, B.**, Valafar, H. (under review). Clinical Quantitation of Smoking Topography using Smartwatch Technology.
64. Keller, C., Penalozza, T., Belote, L., Doolittle, J., **Froeliger, B.**, Kalivas, P.W. (under review). Synergism between Varenicline and N-acetylcysteine in Reducing Nicotine Seeking.
65. Sahlem, G.L., Dowdle, L.T., Baker, N.L., Sherman, B.J., Gray, K.M., McRae-Clark, A.L., **Froeliger, B.**, Squeglia, L.M. (in prep). Exploring the Utility of a Functional Magnetic Resonance Imaging (fMRI) Cue-Reactivity Paradigm in Treatment Seeking Adults with Cannabis Use Disorder.

INVITED COMMENTARIES

1. McConnell, P.A., **Froeliger, B.** (2015). Mindfulness, Mechanisms and Meaning: Perspectives from the Cognitive Neuroscience of Addiction. *Psychological Inquiry*. PMID: 26924915.

BOOK CHAPTERS

1. Garland, E.L., & **Froeliger, B.E.** (2013). Mindfulness training targets addiction at the attention-emotion interface: A neurocognitive framework. In E. Langer, A. Le, & C. Ngoumen (eds.), *Handbook of Mindfulness*, Wiley-Blackwell.
2. Garland, E.L., Bell, S., Atchley, R., **Froeliger, B.** (2017). Emotion Dysregulation in Addiction. *Oxford Handbook on Emotion Dysregulation*, Oxford University Press.
3. Fisher, M.L., Pauly, J.R., **Froeliger, B.**, Turner, J.R. (2020). *Translational Research in Nicotine Addiction*. Cold Spring Harbor Perspectives in Medicine. Cold Spring Harbor Laboratory Press.

INVITED TALKS/PRESENTATIONS (\pm Canceled / postponed due to COVID-19)

- \pm **Froeliger, B.** (2020, December). Nicotine Dysregulates Brain Circuits that Mediate Affect, Inhibitory Control and Relapse Vulnerability. Invited talk for the Symposium "Epigenetic Regulation of Nicotine Dependence as a Major Factor in Suicide" at the 31st Annual Meeting and Scientific Symposium for the American Academy of Addiction Psychiatry, San Antonio, TX.
- \pm **Froeliger, B.** (2020, June). From circuits to cessation: Brain based treatments for tobacco use disorder. Invited talk for the Massey Cancer Center Director's Seminar Series at Virginia Commonwealth University, Richmond, VA.
- \pm **Froeliger, B.** (2020, May). Nicotine Dysregulates Brain Circuits that Mediate Affect, Inhibitory Control and Relapse Vulnerability. Invited talk for the Symposium "Epigenetic Regulation of Nicotine Dependence as a Major Factor in Suicide" at the 2020 American Society of Clinical Psychopharmacology, Miami, FL.

- Froeliger, B.** (2019, August). Restructuring neurocircuitry of Reward and the Power of Veto in Addiction. C-MIND Center at the University of Utah.
- Froeliger, B.** (2019, April). Restructuring Reward and the Power of Veto in Addictions. Psychiatry Grand Rounds at Duke University Medical Center.
- Froeliger, B.** (2019, February). Are we ready for transdiagnostic treatments for Substance Use Disorders? Psychiatry Grand Rounds at the University of Missouri.
- Froeliger, B.** (2019, February). Free Will, Free Won't and Addiction. Colloquium in the Department of Psychology at the University of Missouri.
- Froeliger, B.** (2019, February). Dissociable effects of theta-burst transcranial magnetic stimulation on inhibitory control in smokers. Invited talk for the Symposium "Translating from brain mechanisms of inhibitory control to treatment development for smoking cessation" at the 25th annual meeting for the Society for Research on Nicotine and Tobacco, San Francisco, CA.
- Froeliger, B.** (2017). Emotion Dysregulation in Addiction: A therapeutic role for mindfulness. Invited talk at the Center on Mindfulness and Integrative Health Intervention Development, University of Utah, Salt Lake City, UT.
- Froeliger, B.** (2017). On the structure of smoking. Invited talk and symposium discussant at the 23rd annual meeting of the Society for Research on Nicotine and Tobacco, Florence, Italy.
- Froeliger, B.** (2016, July). Cigarette Addiction: Down the rabbit hole of hedonic regulation. Talk presented to the Department of Behavioral Science at MD Anderson Cancer Center.
- Froeliger, B.** (2014, November). The effects of *N*-acetylsysteine on corticostriatal circuitry function may help smokers to remain smoker free. Talk presented at the 2014 HCC Research Retreat, Daniel Island, SC.
- Froeliger, B.** (2014, October). Neurocognitive processes of addiction: A therapeutic role for mindfulness. Talk presented at the International Symposium for Contemplative Studies, Boston, MA.
- Froeliger, B.** (2014). Neuroimaging of Nicotine Addiction at the Emotion Cognition Interface: A tool for translation. Invited talk to the College of Pharmacy, University of South Carolina, Columbia, SC.
- Froeliger, B.** (2014). Emotional Clues to Smoking Addiction: neural correlates of dysregulated affect and relapse. Talk presented at the 15th Annual Frontiers in Neuroscience Meeting, Charleston, SC.
- Froeliger, B.** (2013). Gender differences in state-dependent affective brain function and motivations to smoke. Invited talk presented at the 75th Annual Meeting of the College on Problems of Drug Dependence, San Diego, CA.
- Froeliger, B.** (2011). Affective Clues to Addiction: Neural Correlates of Emotion-Cognition Interactions during Smoking Withdrawal. Invited talk presented at the 17th Annual Duke Nicotine Research Conference, Durham, NC.

SELECT CONFERENCE PRESENTATIONS (underlined= Mentee)

1. Oliver, J.A., **Froeliger, B.**, Engelhard, M.M., Conklin, C.A., McClernon, F.J. (2020). Exposure to Smoking Contexts Potentiates Habitual Motor Response. Presentation at the annual meeting of the American College of Neuropsychopharmacology (ACNP).
2. Bell, S., Mathew, A., Eichberg, C., McConnell, P., Dowdle, L., Garland, E., Hanlon, C., **Froeliger, B.** (2016). A pilot fMRI and interleaved TMS-fMRI study of Mindfulness-Oriented Recovery Enhancement in Smokers. Presentation at the annual meeting of Human Brain Mapping.
3. **Froeliger, B.**, Mathew, A.R., Eichberg, C., McConnell, P.A., Bell, S., Carpenter, M.J., Saladin, M.E., Garland, E.G. (2016). Restructuring Reward in Nicotine Addiction: A Pilot fMRI Study of Mindfulness-Oriented Recovery Enhancement. Presentation at the 22nd annual meeting of the Society for Research on Nicotine and Tobacco.
4. **Froeliger, B.**, McConnell, P., Bell, S., Eichberg, C., Sweitzer, M., Gray, K.M., McClernon, J. (2016). Right inferior frontal gyrus structure and function predict smoking (re)lapse in real-world and laboratory contexts. Presentation at the 78th Annual meeting of The College on Problems of Drug Dependence.
5. Mathew, A.R., **Froeliger, B.**, Saladin, M.E., Brown, R., Hitsman, B., Carpenter, M.J. (2016). ROLE OF DISTRESS INTOLERANCE ON MOTIVATION TO QUIT AND SMOKING LAPSE BEHAVIOR IN ADULT DAILY SMOKERS. Presentation at the 22nd annual meeting of the Society for Research on Nicotine and Tobacco.
6. **Froeliger, B.**, McConnell, P.A., Kalivas, P.W.m Gray, K.M. (2015). The Effects of *N*-acetylcysteine on corticostriatal resting-state functional connectivity mediate nicotine withdrawal symptoms and may help prevent relapse. Annual Meeting of the Society for Neuroscience. Chicago, IL.

7. **Froeliger, B.**, Stankeviciute N., McConnell, P.A., McClure, E.A., Gipson, C.D., Gray, K.M., Kalivas, P.W. (2015). The Effects of *N*-acetylcysteine on corticostriatal circuitry function may help smokers to remain smoke free. Oral Presentation at the 21st annual meeting of the Society for Research on Nicotine and Tobacco.
8. Eichberg, C., Mathew, A.R., Baddeley, J., Bell, S., LeMay, R., McConnell, P., Garland, E., **Froeliger, B.** (2015, April). Mindfulness-Oriented Recovery Enhancement (MORE): A Novel Smoking-Cessation Treatment Focused on Cognitive Reappraisal and the Savoring of Naturalistic Rewards. Poster presented at Frontiers in Neuroscience, Charleston, SC.
9. Mathew, A.R., Burris, J.L., **Froeliger, B.E.**, LaRowe, S.D., Saladin, M.E., & Carpenter, M.J (2015). Impulsivity and cigarette craving among adolescent daily and occasional smokers. Poster accepted for presentation at the 21st annual meeting of the Society for Research on Nicotine and Tobacco.
10. McClernon, F. J., **Froeliger, B.**, Rose, J. E., Kozink, R. V., Addicott, M. A., Sweitzer, M. M., Westman, E. C., Van Wert, D. M. (2015). Nicotine and Non-Nicotine Smoking Factors Differentially Modulate Working Memory and Associated Brain Function. Poster accepted for presentation at the 21st annual meeting of the Society for Research on Nicotine and Tobacco
11. Addicott, M.A., Pearson, J.M., **Froeliger, B.**, Platt, M.L., McClernon, F.J. (2014). SMOKING AUTOMATICITY MODERATES BRAIN ACTIVATION DURING EXPLORE-EXPLOIT BEHAVIOR. Poster accepted for presentation at the 21st annual meeting of the Society for Research on Nicotine and Tobacco.
12. Amira Osman, A., Thrasher, J.F., Cayir, E., Perez-Hernandez, R., **Froeliger, B.** (2014). DEPRESSIVE SYMPTOMS AND RESPONSES TO HEALTH WARNING LABELS ON CIGARETTE PACKS: RESULTS FROM THE INTERNATIONAL TOBACCO CONTROL (ITC) SURVEY IN MEXICO. Poster accepted for presentation at the 21st annual meeting of the Society for Research on Nicotine and Tobacco.
13. M. DiBartolo, M., Zhu, X., Schacht, J., **Froeliger, B.**, Anton, R., Joseph, J. (2014). Different monetary incentive delay neural profiles in high and low risk social drinkers. Poster presentation at the 44th annual meeting of the Society for Neuroscience
14. Gipson, C.D., Allen, N., McClure, E., Gray, K., **Froeliger, B.**, Kalivas, P.W. (2014). USING A COMBINATION THERAPY WITH N-ACETYLCYSTEINE AND VARENICLINE TO INHIBIT CUE-INDUCED NICOTINE RELAPSE. Poster accepted for presentation at the 21st annual meeting of the Society for Research on Nicotine and Tobacco.
15. Joseph McClernon, F.J., Song, A., **Froeliger, B.**, Meade, C., Hallyburton, M., Petty, C., Gadde, S., Kozink, R. (2014). THE RESTING STATE FUNCTIONAL CONNECTIVITY AND ADDICTION DATABASE (RAD): A NEUROIMAGING REPOSITORY OF STUDIES OF NICOTINE DEPENDENCE AND OTHER ADDICTIONS. Poster accepted for presentation at the 21st annual meeting of the Society for Research on Nicotine and Tobacco.
16. Mathew, A.R., Abad-Vivero, E.N., **Froeliger, B.**, Thrasher, J.F. (2014). EMOTION REGULATION, SMOKER PERCEPTION OF HEALTH WARNING LABELS, AND QUIT ATTEMPTS. Poster accepted for presentation at the 21st annual meeting of the Society for Research on Nicotine and Tobacco.
17. Mathew, A. R., McConnell, P., McClernon, F.J., **Froeliger, B.** (2014). Associations between gray matter volume, smoker status, and smoking heaviness. Poster presented at the 76th Annual meeting of The College on Problems of Drug Dependence.
18. McConnell, P., Mathew, A. R., Garland, E.L., McClernon, F.J. **Froeliger, B.** (2014). Intending to quit smoking is associated with frontostriatal grey matter volume variation. Poster presented at the 76th Annual meeting of The College on Problems of Drug Dependence.
19. McClure, E. A., Gipson, C., **Froeliger, B.**, Kalivas, P.W., Gray, K. (2014). An open--label pilot trial of *N*-acetylcysteine and varenicline in cigarette smokers. Oral Communication presented at the 76th Annual meeting of The College on Problems of Drug Dependence.
20. Kellermann, T., Gruber, O., Goya-Maldonado, R., Müller, V., Hoffstaedter, F., Riedl, V., **Froeliger, B.**, Eickhoff, B. (2013). Resting-state functional connectivity in an affective network in major depression. Poster presented at the Human Brain Mapping Meeting, Seattle, WA.
21. Barwick, R., Fowler, C., Lee, T., Szabo, S., Patkar, A., Hall, M., Beyer, W.F., Yang, L., Chow, S., Burnett, B., **Froeliger, B.**, Mangum, B. (2012). Development and Pharmacokinetic Characterization of New Delayed Pulsatile-Release Ondansetron Formulation. Poster presented at ACCP Annual Meeting, Hollywood, FL.
22. **Froeliger, B.**, McClernon, F.J., Modlin, L.A., Wang, L. (2011). Smoking addiction moderates the effects of emotional distractors on fronto-parietal BOLD activation during the affective Stroop task. Poster presented at the Annual Meeting for The Society for Neuroscience, Washington DC.

23. McClernon, F.J., Kozink, R., Hallyburton, M., McCormick, K., Addicott, M., **Froeliger, B.** (2011). *Caudate Activation during a Behavioral Control Task is Negatively Correlated with Smoking Stereotypy*. Poster presented at the Annual Meeting of the College on Problems of Drug Dependence, Hollywood, FL.
24. Addicott, M., Kozink, R., Harshbarger, T., **Froeliger, B.**, Ban, D., Rose, J., and McClernon, F.J. (2011). *The separate and combined effects of nicotine and denicotinized cigarette smoking on cerebral blood flow*. Poster presented at the Annual Meeting of SRNT, Baltimore, MD.
25. **Froeliger, B.**, Modlin, L.A., Kozink, R.V., Wang, L., McClernon, F.J. (2011). *A smoking gun: identifying neural mechanisms underlying Smoking State x Emotional Valence interactions*. Poster presented at the Annual Meeting of the Society for Research on Nicotine and Tobacco, Baltimore, MD.
26. **Froeliger, B.**, Modlin, L.A., Kozink, R.V., Wang, L., McClernon, F.J. (2010, November). *Smoking abstinence results in dysregulated emotional information processing*. Poster presented at the Annual Meeting for The Society for Neuroscience, San Diego, CA.
27. **Froeliger, B.**, Beckham, J., Dennis, M., Kozink, R., McClernon, F. (2010, November). *Effects of nicotine on emotional reactivity in PTSD and non-PTSD smokers: Results of a pilot fMRI study*. Poster presented at the 26th Annual Meeting for the International Society for Traumatic and Stress Studies, Montreal, Quebec, Canada.
28. Modlin, L.A., Kozink, R.V., McClernon, F.J., **Froeliger, B.** (2010, October). *Experienced Yoga Practitioners Exhibit Both Increased Frontal and Decreased Limbic Activation During Emotional Information Processing*. Poster presented at the 4th Annual Meeting of the Social & Affective Neuroscience Society, Chicago, IL.
29. **Froeliger, B.**, Kozink, R. V., Rose, J. E., & McClernon, F. J. (2010, February). *Hippocampal and striatal grey matter volume are associated with a smoking cessation treatment outcome: Results of an exploratory voxel-based morphometric analysis*. Paper presented at the annual meeting of the Society for Research on Nicotine and Tobacco, Baltimore, MD.
30. **Froeliger, B.**, Kozink, R.V., Rose, J.E., & McClernon, F.J. (2009, October). *Striatal and hippocampal grey matter density predict smoking relapse: Results of an exploratory voxel-based morphometric analysis*. Poster presented at the Annual Meeting for The Society for Neuroscience, Chicago, IL.
31. McClernon, F. J., Lutz, A. M., Kozink, R. V., **Froeliger, B.**, Martin, C. K., Fuemmeler, B. F., & Westman, E. C. (2009, October). *Does Macronutrient Content Matter?: Results of a Preliminary fMRI Study of Visual Food Cue Reactivity*. Poster presented at the Annual Scientific Meeting of the Obesity Society, Washington DC.
32. **Froeliger, B.**, Kozink, R.V., Lutz, A.M., Rose, J.E., & McClernon, F.J (2009, August). *Default Network Functional Connectivity is Modulated by an Interaction Between Gender and Smoking State*. Poster presented at the APA annual convention, Toronto, Ontario, Canada.
33. **Froeliger, B.**, Kozink, R.V., Lutz, A.M., & McClernon, F.J (2009, June). *Sex Differences in Brain Responses to Smoking Cues Vary as a Function of Smoking Satiety/Abstinence*. Poster presented at the meeting of The College on Problems of Drug Dependence, Reno, NV.
34. **Froeliger, B.**, Kozink, R.V., Lutz, A.M., Rose, J.E., & McClernon, F.J (2009, April). *Default Network Functional Connectivity is Modulated By Smoking*. Poster presented at the meeting of the Cognitive Neuroscience Society, San Francisco, CA.
35. **Froeliger, B.**, Kozink, R.V., Lutz, A.M., Rose, J.E., & McClernon, F.J (2008, Feb). *Functional Connectivity Between Insula and The Default Network is Decreased by Smoking Abstinence*. Poster presented at the meeting of Society for Research on Nicotine and Tobacco, Portland, OR.
36. **Froeliger, B.**, Gilbert, D.G. (2008, Feb). *Acute Nicotine Improves Novelty Detection and Long-Term Recognition Memory in Non-Smokers and Habitual Smokers*. Poster presented at the meeting of Society for Research on Nicotine and Tobacco, Portland, OR.
37. Gilbert, D.G., Carlson, J., Rise, H., Huber, J., Rabinovich, N.E., Sugai, C., **Froeliger, B.** (2008, Feb). *Nicotine's Effects on Affective Priming of Lateralized Emotional Word Identification*. Poster presented at the meeting of Society for Research on Nicotine and Tobacco, Portland, OR.
38. Diggs, H.A., Gilbert, D.G., Rise, H., Dillon, A., Huber, J., Rabinovich, N.E., **Froeliger, B.**, Sugai, C. (2008, Feb). *Effects of Nicotine Patch on Distraction by Emotional and Smoking-Related Stimuli During a Flanker-Task*. Poster presented at the meeting of Society for Research on Nicotine and Tobacco, Portland, OR.
39. **Froeliger, B.**, Gilbert, D., Dillon, A., Vanderpool, C., & Asgaard, G. (2007, April). *Patching of Cognitive Deficits: Nicotine Patch Enhances Novelty Detection and Long-Term Memory in Abstinent Habitual Smokers*. Poster presented at the meeting of The Cognitive Neuroscience Society, New York, NY.

40. Gilbert, D.G., Parker, A., Sugai, C., Stevens, J., Wright, J., **Froeliger, B.**, Kanak, J., & Kreke, E. (2007, February). *Does Nicotine Enhance Brain Processing of Pleasant and Neutral Stimuli and Thereby Reduce Negative Affect? An EEG Study. Further evidence supporting the attentional and associative bias model.* Poster presented at the meeting of The Society for Research on Nicotine and Tobacco, Austin, TX.
41. Gilbert, D.G., Parker, A., Sugai, C., Stevens, J., **Froeliger, B.**, & Wright, J. (2007, February). *Effects of Nicotine on Brain Activation in Anticipation of Emotionally Positive Versus Negative Pictures: Evidence supporting the attentional and associative bias hypothesis of negative-affect reduction.* Poster presented at the meeting of The Society for Research on Nicotine and Tobacco, Austin, TX.
42. **Froeliger, B.** & Habib, R. (2006, October). *Neural correlates of habituation and dishabituation to emotional valence as a function of contextual novelty.* Slide Presentation at the meeting for the Society for Neuroscience.
43. **Froeliger, B.**, Vanderpool, C., & Habib, R. (2006, April). *The Influence of Emotional Valence on Contextual Novelty: An fMRI Study.* Poster presented at the meeting of The Cognitive Neuroscience Society, San Francisco, CA.
44. Sugai, C., Zuo, Y., **Froeliger, B.**, Rabinovich, N.E., & Gilbert, D.G. (2005). *Nicotine enhances CNV amplitude during the rapid visual information-processing (RVIP) task.* Poster presented at the meeting of The Society for Neuroscience, Washington, DC.

PROFESSIONAL MEMBERSHIPS

New York Academy of Science
 Society for Neuroscience
 Society for Research on Nicotine and Tobacco

OTHER PROFESSIONAL ACTIVITIES

Journal Review

Associate Editor Evidence-Based Complementary and Alternative Medicine (eCAM)
 Nicotine & Tobacco Research

Review Editor Frontiers in Psychiatry

Ad hoc Reviewer Addictive Behaviors, Addiction, Addiction Biology, American Journal of Neuroradiology, Biological Psychiatry, Brain Imaging and Behavior, Brain Research, Brain Structure and Function, Cognitive, Affective, and Behavioral Neuroscience, CNS Drugs, CNS Neurological Disorders Drug Targets, Drug and Alcohol Dependence, Frontiers in Neuroscience, Frontiers in Pharmacology, Frontiers in Psychiatry, Journal of Psychiatric Research, Neuroimage, Neuropsychopharmacology, Neuroscience, Nicotine and Tobacco Research, PLOS ONE, Progress in Neuro-Psychopharmacology & Biological Psychiatry, Psychological Medicine, Psychopharmacology.

Grant Review

2009-2011 Ad hoc reviewer, Department of Veterans Affairs Merit Review Subcommittee for Neurobiology A

2011 Invited Reviewer: University of Ottawa Medical Research Fund

2013 Invited Reviewer: National Research Foundation of Korea (NRF)

2013-2014 Reviewer: SCOR Pilot Proposals

2015- Present Reviewer. Special Emphasis Panel ZCA1 SRB-J (M1): Fundamental Mechanisms of Affective and Decisional Processing in Cancer Control U01. NIH/NCI.

2016 Reviewer: Adult Psychopathology and Disorders of Aging (APDA).

2017 Reviewer: ZRG1 ETTN-L (51) R: Imaging-Science Track Award for Research Transition (I/START).

2018 Reviewer: Special Emphasis Panel/Scientific Review Group ZRG1 BBBP-Z (02) M

MENTORSHIP

Date	Starting Position	Name	Current Position
2013-2015	Post-Doctoral Fellow	Amanda Mathew	Faculty: Northwestern
2014-2018	Ph.D Student	Spencer Bell	Postdoc: Wake Forrest
2013-Present	Data Analyst	Patrick McConnell	Ph.D. Student: MUSC
2013-2014	Research Specialist	Michelle DiBartolo	Ph.D. Student: Johns Hopkins

2009-2011	Research Coordinator	Leslie Modlin	M.D. Student: Stanford
2014-2015	High School Student	Danielle Grosse	B.S. Student: Univ. Florida

SERVICE**Teaching**

Course Director: Fundamentals of Neuroscience (Core Curriculum)	Spring 2019- Present
Course Director Cognitive Neuroscience: NSCS775	Fall 2015 - Present
Course Director: Neuroscience Journal Club: NSCS-780	Spring 2015 - 2017
Lecturer on Emotion: NSCS-735	Fall 2015 - Present
Lecturer on Nicotine Addiction: NSCS-735	Fall 2016 - Present
Lecturer on Cognitive Testing in Humans: NSCS-735	Spring 2019 - Present
Lecturer on functional neuroimaging: COM 1 st year curriculum	Spring 2016 - Present

Leadership**University Leadership**

MU – Director, Cognitive Neuroscience Systems (CNS) Core Facility	June, 2020 - Present
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College Leadership

MU: School of Medicine Research Council	June, 2020 - Present
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Department Leadership**Community Participation**

Member of the Board of Directors for Frantz Manufacturing Company	April, 2016 - Present
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FUNDING SUPPORT**ACTIVE**

NIH/NIDA R01DA038700. (MPI: Froeliger [contact- 1.8 CM]; Kalivas, Gray)	9/15/2015 - 7/31/2020
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Translational Neuropsychopharmacology Research of Nicotine Addiction. The overarching goal of this application is to utilize clinical and preclinical neuroscience methodologies to investigate plasticity in corticostriatal and amygdala-striatal circuitry involved in nicotine addiction and determine the value of combined N-acetylcysteine and Varenicline for normalizing circuitry changes and treating nicotine addiction.

NIH/NIDA 1UG3DA048510-01 (Froeliger : 2.4 CM)	5/15/2019 - 4/30/2021
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Examination of theta burst stimulation on corticothalamic mediated inhibitory control and smoking relapse vulnerability. Response to PAR-18-494 – Device-Based Treatments for Substance Use Disorders. The goal of this phased proposal is to characterize TBS parameters and effects on inhibitory control neural circuitry (UG3 Phase), and evaluate the potential therapeutic benefit of TBS on restoring corticothalamic connectivity that mediates successful inhibitory control and maintaining abstinent.

NIH/NIDA 1R01DA048094-01 (Froeliger : 2.4 CM)	6/01/2019 - 3/31/2024
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Neural mechanisms mediating appetitive regulation and cognitive restructuring of reward in nicotine addiction. Response to PAR-18-055 – Behavioral and Integrative Treatment Development Program. The goal of this proposal is to examine the role of dual-frontal systems (frontostriatal, dorsal cortical stream) in regulating appetitive responding, and whether the effects of cognitive control training over reward processing via MORE restructures reward processes and facilitates smoking cessation.

NIH/NIDA 1P50DA046373-01 (Froeliger - Project 4: 1.8 CM)	9/15/2019 - 4/30/2024
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Center for Opioid and Cocaine Addiction (COCA). Project 4. The Center for Opioid and Cocaine Addiction (COCA) will establish a bidirectional translation strategy whereby basic discoveries on the molecular and cellular mechanisms of drug relapse are integrated into human imaging and treatment protocols. Similarly, successful clinical protocols will inform the design of preclinical experimentation. In the process, the COCA will establish National Resource Databases and explore unique hypotheses on the cell and circuit vulnerabilities that predispose drug users to relapsing. Role: **PI** Project 4

NIH/NIDA R01DA042033 (Garland)	10/1/2016 - 8/31/2021
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Targeting Hedonic Dysregulation to Address Chronic Pain and Opioid Misuse in Primary Care.

Response to PA-13-077. The primary aim of this project is to conduct a full scale RCT to establish the clinical impact of MORE for chronic pain patients receiving long-term opioid therapy.

Role: **Co-I** (1.2 Cal. Months)

NIH/NIDA 1P01CA217806-01 (Hatsukami)

9/01/2017 – 8/30/2022

Consortium on Methods Evaluating Tobacco (COMET): Filter Ventilation and Product Standards.

Project 4. The overall goal of this P01 application is to examine the toxicity, appeal and abuse liability of unventilated cigarette filters as compared to ventilated filters in the context of a marketplace with and without alternative nicotine delivery systems (ANDS). The results could provide critical information on whether or not a ban could lead to improved public health. The goal of Project 4 is to assess whether removing ventilation from cigarette filters lowers cigarette product appeal among smokers, and determine whether a regulatory requirement to reduce ventilation will lower demand for cigarettes without unintended consequences.

Role: **Co-I** (.54 Cal. Months)

NIH/NIDA 1R01DA043587 (Saladin)

7/15/2018 - 4/30/2023

Targeting Foundational Memory Processes in Nicotine Addiction: A Translational Clinical Neuroscience Study of a Retrieval-Extinction Intervention to Reduce Craving & Smoking Behavior. We recently completed a NIDA-funded R21 that examined the effects of a brief behavioral intervention (2 sessions) that targets the motivational properties of smoking-related memories in smokers. The results of the study indicated that, relative to control participants, smokers receiving the experimental intervention evinced significantly decreased both craving to smoke and amount of smoking (cigarettes per day) over a 1-month follow-up period. The proposed study will replicate and extend these impressive initial findings and use fMRI to examine the neural correlates of treatment. Role: **Co-I** (.96 Cal. Months)

NIH/NCI 1R21CA235852 (Hughes-Halbert)

9/14/2018 – 9/31/2020

SCIENCE OF BEHAVIOR CHANGE IN AFRICAN AMERICAN BREAST CANCER SURVIVORS. The proposed exploratory study will examine key mechanisms that are central to the Science of Behavior Change Network in a novel population and will identify intervention targets that can be used to improve behavioral compliance in a population that is at risk for poor outcomes after being diagnosed with breast cancer.

Role: **Co-I** (.6 Cal. Months)

MUSC/HCC Internal Pilot Program

6/01/2018 - 5/31/2020

Translational Science to Innovate Smoking Cessation Interventions through Enhancement of Self – Regulation. Project 1 (PI: Froeliger-no effort): This project will examine the neurobiological underpinnings of a novel, off-target application of an essential medication to treat the pathophysiology of dysregulated appetitive processes (i.e. reward) that undergirds smoking relapse vulnerability. The scientific premise is grounded in preclinical models of addiction demonstrating dysregulated glutamatergic neurotransmission in corticostriatal circuitry is a consequence of nicotine addiction and that medications that normalize glutamatergic corticostriatal circuitry function blocks reinstated drug seeking. **\$100,000**

DOD (Garland)

2016 – 2021

Targeting Chronic Pain and Co-Occurring Disorders in the Community with Mindfulness-Oriented Recovery Enhancement. Department of Defense, Congressionally Directed Medical Research Program - Peer Reviewed Medical Research Program – Clinical Trial Award (PR151790).

Role: Consultant

PENDING

NIH/NIDA 1R01 (MPI: Froeliger, Garland)

6/1/2021 – 5/31/2026

Restructuring Reward Processing Mechanisms in Opioid Misuse and Chronic Pain. This project will use fMRI and ERP's to evaluate spatial and temporal characteristics of the neural circuits that mediate prescription opioid misuse and dysregulated reward function above and beyond the effects of chronic pain alone. In addition, we will conduct a rigorous, mechanistic trial to determine whether remediating neural mechanisms of reward dysregulation with MORE is associated with reductions in prescription opioid misuse and craving.

Pending SRG.

NIH/NIDA UG3 (PI Sahlem)

4/1/2021 – 3/31/2023

The Development and Validation of Neural Targets in Opioid Use Disorder. In the UG3 portion of this investigation we will first examine dissociable neural circuitry by utilizing functional magnetic resonance imaging (fMRI) to measure function in the four neural circuits most commonly implicated in the addictive process—the cortico-striatal, fronto-parietal, cortico-limbic, and cortico-thalamic pathways—in N=40 participants with OUD before and after stabilization on buprenorphine (Aim-1). We will then utilize fMRI guided repetitive transcranial magnetic stimulation (rTMS) to selectively probe the fronto-parietal network by applying a single session of both inhibitory and excitatory rTMS to the left dorsolateral prefrontal cortex (DLPFC) on separate visits (Aim-2). Buprenorphine will serve as a positive control and will determine if circuits can be differentially affected by a medication with well-known behavioral effects. Applying rTMS to the DLPFC, will serve to determine whether rTMS can focally and specifically alter circuit-function when applied adjunctively to buprenorphine. Role: Co-I (1.2 CM)

NIH/NCI 1R21CA245941-01(Graboyes)

12/01/2019-11/30/2021

A Novel Treatment Strategy for Body Image Disturbance in Head and Neck Cancer Survivors

The aims of this proposal are to evaluate the preliminary clinical impact and mechanism of action of BRIGHT (Building a Renewed Image after Head & neck cancer Treatment), a novel, 5-session, manualized tablet-based tele-cognitive behavioral therapy intervention to treat body image disturbance in head and neck cancer survivors. Role: **Co-I** (1.2 CM)

NIH/NCI 1R01CA252747-01 (Valafar)

7/1/2020-6/30/2025

Personalized and Automated Detection of Smoking to Inform Targeted Intervention. The overarching goal of this application is to develop an automated smoking gesture detection system and evaluate the usability of such system in differentiating cigarette from e-cigarette smoking and detecting cigarette craving. Role: Co-I. Impact Score: 45; Percentile: 37.

COMPLETED IN PAST 3 YEARS

NIH/NIDA R01 DA033459 (Froeliger)

9/15/2012 - 7/31/2019

Neuroimaging Nicotine Dependence, Depression and Emotion Regulation

The overarching goal of this research is to investigate the neurobiological basis of Smoking-Depression comorbidity and the interactive effects on Emotion Regulation. This research also seeks to identify relations between emotion regulation brain function and smoking behavior.

NIH/NIDA UG3DA043231 (MPI: Mcrae-Clark, Gray)

9/15/2016 - 12/1/2018

Advancing Varenicline as a Treatment for Cannabis Use Disorder. The goal of this study is to initially evaluate the efficacy of varenicline for cannabis use disorder in a proof-of-concept clinical trial, paired with pre- and post-evaluations of cognitive functioning and neural circuitry involved in cannabis cue reactivity and inhibitory control. Role: **Co-I**

NIH/NCCIH R61AT009296 (MPI: Garland, Zubieta)

9/15/2016 - 8/31/2018

Effects of Mindfulness-Oriented Intervention on Endogenous Opioid Mechanisms of Hedonic

Regulation in Chronic Pain. NIH-National Center for Complementary and Integrative Health (R61/R33), Phased Innovation Award for Mechanistic Studies to Optimize Mind and Body Interventions in NCCIH High Priority Research Topics. Role: **Co-I**

NIH/NIDA 1R21DA037407 (PI: Carpenter)

8/1/2014 - 7/31/2016

A Randomized Trial of E-cigarettes: Natural Uptake, Patterns and Impact of Use. Electronic (e-)cigarettes are the fastest growing non-cigarette product available to smokers. This pilot randomized clinical trial aims to capture the naturalistic patterns of e-cigarette uptake, as well the short term behavioral impact of their use. Role: **Co-I**



Brett Froeliger, Ph.D.