Eric D. Claus
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Education:

2008	Ph.D. (Psychology and Neuroscience) University of Colorado at Boulder Advisors: Marie Banich, Ph.D. and Kent Hutchison, Ph.D.
2005	M.A. Psychology University of Colorado at Boulder
2000	B.S. Psychology University of Illinois at Urbana-Champaign

Professional Positions:

2021-present	Associate Professor, Department of Biobehavioral Health, The Pennsylvania State University
2017-2020	Director, Lovelace Clinical Tobacco and Alternative Tobacco Program
2017-2020	Associate Professor, The Mind Research Network, Albuquerque, NM.
2012-2017	Assistant Professor, The Mind Research Network, Albuquerque, NM.
2009-2012	Research Scientist, The Mind Research Network, Albuquerque, NM.
2008-2009	Postdoctoral Fellow, The Mind Research Network, Albuquerque, NM.

Ongoing Research Support:

R01DA056137(MPI: Ansell & Claus) 9/30/23-6/30/28
NIDA
Neurobehavioral Effects of Frequent Co-use of Alcohol and Cannabis
This project will investigate mechanisms of stress from multiple levels of analysis in individuals who report concurrent use of cannabis and alcohol compared to those reporting use of a single drug and controls.
Role: PI

R01AA025762-01 (MPI: Claus & McCrady) 4/5/18 - 3/31/25
NIAAA
Neurocognitive and Neurobehavioral Mechanisms of Change Following Psychological Treatment for Alcohol Use Disorder
This project investigates the neural mechanisms of behavior change in mindfulness-based treatment and cognitive behavioral therapy for individuals with alcohol use disorders (AUDs). The proposed research will utilize functional MRI and comprehensive behavioral assessments in the context of a longitudinal design. Findings from this work will be important for identifying critical mechanisms that underlie change in drinking that results from treatment offering insight into those mechanisms that could be targeted in subsequent intervention approaches.
Role: PI

5R01DC018282 (PI: Richardson) 5/1/21 – 4/30/26
NIDCD
Optimizing Targeted Interventions for Aphasia
This project is investigating the use of high-definition transcranial direct current stimulation as a treatment for individuals with chronic aphasia that resulted from a stroke. To improve outcomes, a pipeline will be developed that incorporates structural MRI for modeling electrical fields on the cortical surface in order to identify the ideal electrode montage for individual patients.
Role: Co-I

2 P50HD089922 (PI: Noll) 6/1/23– 5/31/28
NICHD
Penn State University's Translational Center for Child Maltreatment Studies (TCCMS).
Role: Co-I

Completed Research Support:

R21DA048422-01A1 (PI: Claus)

NIDA
Longitudinal Examination of Abstinence Maintenance and Relapse in Cigarette Smokers
This longitudinal fMRI study will follow individuals who have recently quit smoking to identify neural mechanisms that support prolonged abstinence from smoking.
Role: PI

HHSF223201310033I/HHSF22301002T Task Order 3 10/1/17-3/31/22
FDA
Investigating Subjective Effects and Nicotine Pharmacokinetics of Mentholated Smokeless Tobacco Products in Current Users
This IDIQ contract will investigate the effect of varying levels of menthol on craving, withdrawal, and pharmacokinetics in smokeless tobacco users to provide scientific findings to the FDA's Center for Tobacco Products for potential further regulation of smokeless tobacco by the FDA.
Role: Co-Investigator

R01AA026290-01 (MPI: Kiehl & Koenigs) 7/1/18-5/2/22
NIAAA
Mindfulness for Alcohol Abusing Offenders: Mechanisms and Outcomes
This project aims to examine neural mechanisms and behavioral outcomes of mindfulness-based treatment in female inmates with an alcohol use disorder. Participants were randomized to a mindfulness-based treatment, relapse prevention, or a no treatment condition and were scanned multiple times using fMRI
Role: Co-Investigator

R21DA047663-01 (MPI: Claus & Hendershot) 5/15/19-4/30/22
NIDA
Behavioral Mechanisms of Lorcaserin Treatment for Smoking Cessation
This project aims to examine whether a 5-HT2C receptor agonist reduces cigarette intake and craving in non-treatment-seeking participants who regularly smoke cigarettes.
Role: PI
Note: The original project using lorcaserin was terminated because lorcaserin was taken off the market due after an FDA warning about increased cancer risk.

R21AA026931-01A1 (MPI: Claus & Hendershot) 4/10/19-3/31/22
NIDA
Human Laboratory Screening of Lorcaserin in Smokers with Alcohol Use Disorder
This project aims to examine whether a 5-HT2C receptor agonist reduces alcohol intake and alcohol craving in non-treatment-seeking participants with a diagnosed alcohol use disorder.
Role: PI
Note: The original project using lorcaserin was terminated because lorcaserin was taken off the market due after an FDA warning about increased cancer risk.

R01AA023665 (MPI: Claus & Witkiewitz) 9/25/15-6/30/21
NIAAA
Neural Mechanisms of Behavior Change in a Community Sample of Drinkers
The overwhelming majority of individuals with alcohol use disorders (AUDs) never seek treatment for their alcohol problem, but nonetheless a large proportion of these individuals attain abstinence or non-risky levels of drinking on their own. To understand the mechanisms of behavior change in these self-changers, this project will utilize multi-modal neuroimaging and comprehensive behavioral assessments in the context of a longitudinal design. Findings from this work will be important for identifying critical mechanisms that underlie self-change, mechanisms that could be targeted in new intervention approaches.
Role: PI

HHSF223201310033I/HHSF22301002T Task Order 2 9/1/16-8/31/20
FDA
The Effects of Flavors on Nicotine PK/PD and Use Topography in E-Cigarette Users
This IDIQ contract will investigate the effect of flavor on craving, withdrawal, and pharmacokinetics in e-cigarette users to provide scientific findings to the FDA's Center for Tobacco Products for potential further regulation of e-cigarettes by the FDA.
Role: Co-Investigator

NIH-NIAAA-DTRR-2015-04 (PI: Claus) 9/26/15-9/25/20
NIAAA

Neurocognitive and Neurobehavioral Mechanisms of Change Following Psychological Treatment for Alcohol Use Disorder
As a contractor for the Human Laboratory Paradigms IDIQ, MRN and its subcontractors will provide all the necessary expertise, clinical resources, staff, supplies, equipment and experience to conduct studies on a contractual basis for NIAAA to investigate the efficacy of novel compounds in affecting target systems such as alcohol-induced cue reactivity, self-administration of ethanol, cognitive/executive functioning, and compulsivity of drinking.
Role: PI

R21AA024926 (PI: Witkiewitz) 7/15/16-6/30/19
NIAAA
Mindfulness-Based Intervention and Transcranial Direct Current Brain Stimulation to Reduce Heavy Drinking: Efficacy And Mechanisms Of Change
This application is examining the efficacy of combining mindfulness-based relapse prevention and active transcranial direct current stimulation (vs MBRP + sham TDCS) in reducing heavy drinking among individuals who express a desire to cut down on their drinking.
Role: Co-Investigator

R21AA022367 (MPI: Fink & Claus) 9/25/15-8/31/18
NIAAA
Over-Arousal as a Mechanism between Alcohol and Intimate Partner Violence
This project will investigate the degree to which alcohol is associated with intimate partner violence through a mechanism of over-arousal due to the arousing effects of alcohol during the ascending limb of intoxication and at peak Blood Alcohol Concentration (BAC) compounded by the arousal created by distressed violent couples' unique dyadic and affective patterns.
Role: PI

1R21AA023346 (PI: Sanjuan) 9/1/15-8/31/18
NIAAA
Psychophysiological and Neural Mechanisms of Emotion Dysregulation in Alcohol Disorders Comorbid with PTSD
The purpose of this project is to examine psychophysiological indicators of emotion regulation in trauma-exposed individuals with and without alcohol use disorder and comorbid PTSD.
Role: Co-Investigator

1R21AA023661 (PI: Pearson) 7/15/15-8/31/18
NIAAA
Psychological And Neural Mechanisms Of Mindfulness And Cognitive Retraining
This project will use ecological momentary assessment (EMA) data and functional magnetic resonance imaging (fMRI) techniques to uncover the psychological and neurobiological mechanisms of behavior change (MOBC) following two novel, promising interventions targeted alcohol use disorders (AUD), mindfulness based intervention and attentional bias modification.
Role: Co-Investigator

1R21DA037546 (PI: Claus) 3/1/15-2/28/17
NIDA
TDCS and Cognitive Retraining to Augment Pharmacotherapy for the Treatment of Nicotine Dependence
This project is examining the ability of adding cognitive retraining and brain stimulation to nicotine replacement therapy as a potential treatment for nicotine dependence.
Role: PI

HHSF223201310033I/HHSF22301002T Task Order 1 9/26/13-9/25/15
FDA
Assessment of Tobacco Pharmacology and Behavior in Humans: Small Cigars, Cigarillos, and Large Cigars
This IDIQ contract will investigate behavioral pharmacology and pharmacokinetics of cigars (large and small cigars/cigarillos) to provide scientific findings to the FDA's Center for Tobacco Products for potential regulation of cigars by the FDA.
Role: Co-Investigator

R21AA020594 (PI: Claus) 9/1/13-8/31/16
NIAAA
Behavioral Regulation and Real-Time Reinforcement in Alcohol Dependence

This project is investigating the neural networks that contribute to behavioral dysregulation in alcohol dependent individuals. Specifically, this project will examine how behavioral control networks are engaged differentially in alcohol dependent versus social drinkers when real-time alcohol rewards are used as outcomes of decisions.
Role: PI

R01 AA012238-07 (PI: Hutchison) 4/1/11 - 7/31/16
NIAAA
Alcohol Dependence: Integrating Genetic & fMRI Methods
The objective of the research is to understand the neurobiological mechanisms that underlie alcohol dependence using both genetic and neuroimaging approaches.
Role: Co-Investigator

R21AA021201 (PI: Claus) 1/1/13-12/31/16
NIAAA
Modifying Alcohol Approach Motivations with tDCS and Cognitive Retraining
This project is examining the potential influence of using transcranial direct current stimulation and cognitive retraining to reduce drinking in individuals with a history of risky, heavy drinking.
Role: PI

R21AA020304 (MPI: Claus & Hendershot) 6/1/11 – 5/31/14
NIAAA
Sensitivity to Intravenous Ethanol: Neuroimaging and Behavioral Phenotypes
This project seeks to initiate a program of research to study neural correlates of alcohol sensitivity by integrating intravenous administration of ethanol to participants while being scanned in fMRI.
Role: PI

Participation in Trainee Grants

F31DA056066 (PI: Bedillion) 7/1/22-6/30/24
NIDA
Effects of Alcohol and Tobacco Co-use on Momentary Subjective Cannabis Effects: Risks for Increasingly Hazardous Cannabis Use
Role: Co-Sponsor

F31AA028971 (PI: Stein) 9/14/20-9/13/22
NIAAA
Validation of the Addictions Neuroclinical Assessment Among Diverse Individuals with Alcohol Use Disorder
Role: Co-Sponsor

F31DA047048-01A1 (PI: Edwards) 8/20/19-8/19/21
NIDA
Predicting Substance Use and Related Antisocial Behavior with Psychiatric, Socioeconomic, and Brain Measures in Women Offenders
Role: Co-Sponsor

K23AA025094 (PI: Sanjuan) 6/1/17-5/31/22
NIDA
Neural Underpinnings of Emotion Regulation and Drinking to Cope among Problem Alcohol Drinkers
Role: Primary Mentor

K01AA023233 (PI: Pearson) 7/15/14-6/30/19
NIAAA
Efficacy and neurobiological mechanisms of mobile-delivered cognitive retraining
Role: Co-Sponsor

F31DA043328-01A1 (PI: Maurer) 9/1/17-6/30/19
NIDA
Predicting Stimulant Use Relapse using Neuroimaging Techniques
Role: Co-Sponsor

Peer reviewed publications (Google Scholar h-factor = 39, i-index=63)

1. Pham, H. T., Lanza, S. T., Claus, E. D., Heim, C. M., Noll, J. G., Shenk, C. E., & Schreier, H. M. C. (2024). Sex differences in the roles of nicotine use and puberty on youth C-reactive protein levels: Effects above and beyond adversity. *Brain, Behavior, & Immunity - Health*, 100841. https://doi.org/10.1016/j.bbih.2024.100841
2. Yan, X., Bedillion, M. F., Claus, E. D., Huang-Pollock, C., & Ansell, E. B. (2024). Sex differences in the prospective association of excessively long reaction times and hazardous cannabis use at six months. *Addictive behaviors reports*, *20*, 100558. https://doi.org/10.1016/j.abrep.2024.100558

3. McCrady, B.S., Claus, E., Witkiewitz, K., Shiver, A., Swartz, M., Chavez, R. (2024). Neurocognitive and neurobehavioral mechanisms of change following psychological treatment for alcohol use disorder. *Contemporary Clinical Trials, 142*, 107538*. doi: 10.1016/j.cct.2024.107538.*

4. Dolan, S., McDonald, J., **Claus, E.**, Gahl, R.F., Sun, Y., Farrar, J., Meredith, S. (2024). A method for amending loose smokeless tobacco with menthol for administration in clinical studies. *Nicotine and Tobacco Research. 10.1093/ntr/ntae070. Online ahead of print.*

5. Bedillion, M.F., **Claus, E.D.**, Wemm, S.E., Fox, H.C., Ansell, E.B. (*in press*). The Effects of Simultaneous Alcohol and Cannabis Use on Subjective Drug Effects: A Narrative Review Across Methodologies. *Alcohol: Clinical and Experimental Research.*

6. Pagni, B.A., Petridis, P.D., Podrebarac, S.K., Grinband, J., **Claus, E.D.**, Bogenschutz, M.P. (2024). Psilocybin-induced changes in neural reactivity to alcohol and emotional cues in patients with alcohol use disorder: an fMRI pilot study. *Scientific Reports, 14*(1), 3159. doi: 10.1038/s41598-024-52967-8

7. Addiction Cue-Reactivity Initiative (ACRI) Network, Sangchooli, A., Zare-Bidoky, M., Fathi Jouzdani, A., Schacht, J., Bjork, J. M., **Claus, E. D.**, Prisciandaro, J. J., Wilson, S. J., Wustenberg, T., Potvin, S., Ahmadi, P., Bach, P., Baldacchino, A., Beck, A., Brady, K. T., Brewer, J. A., Childress, A. R., Courtney, K. E., Ebrahimi, M., Ekhtiari, H. (2024). Parameter Space and Potential for Biomarker Development in 25 Years of fMRI Drug Cue Reactivity: A Systematic Review. *JAMA Psychiatry*, 10.1001/jamapsychiatry.2023.5483. Advance online publication. https://doi.org/10.1001/jamapsychiatry.2023.5483

8. Hebdon, H.M., Swan, J.E., **Claus, E.D.**, Pentkowski, N.S., Witkiewitz, K. (2024). Longitudinal stability of reward and relief drinking phenotypes in community and treatment-seeking individuals who engage in heavy drinking. *Alcohol: Clinical and Experimental Research.*

9. Blaine, S. K., Ridner, C., Campbell, B., Crone, L., Macatee, R., Ansell, E. B., Robinson, J. L., & **Claus, E.D.** (2023) People who binge drink show neuroendocrine tolerance to alcohol cues that is associated with immediate and future drinking- results from a randomized clinical experiment. *Neuropsychopharmacology*. DOI: 10.1038/s41386-023-01735-9.

10. Campbell, E. M., Singh, G., **Claus, E. D.**, Witkiewitz, K., Costa, V.D., Hogeveen, J., Cavanagh, J. F. (2023). Electrophysiological Markers of Aberrant Cue-Specific Exploration in Hazardous Drinkers. *Computational Psychiatry, 7,* 47-59.

11. Singh, G., Campbell, E. M., **Claus, E. D.**, Cavanagh, J. F. (2023). Affective imagery boosts the reward related delta power in hazardous drinkers. *Psychiatry Research. Neuroimaging*, 334, 111685. Advance online publication. https://doi.org/10.1016/j.pscychresns.2023.111685

12. Blaine, S.K., Ridner, C.M., Campbell, B.R., Crone, L., **Claus, E.D.**, Wilson, J.R., West, S.N., McClanahan, A.J., Siddiq, A.S., Layman, I.M.P., Macatee, R., Ansell, E.B., Robinson, J.L., Beck, D.T. (2023). IL-6, but not TNF-α, Response to Alcohol Cues and Acute Consumption Associated with Neural Cue Reactivity, Craving, and Future Drinking in Binge Drinkers*. Brain, Behavior, & Immunity-Health, 31:*100645. doi: 10.1016/j.bbih.2023.100645..

13. Fink, B.C., **Claus, E.D.,** Cavanagh, J.F., Hamilton, D.A., Biesen, J.N. (2023). Heart rate variability may index emotion dysregulation in alcohol-related intimate partner violence. *Frontiers in Psychiatry,* 14, 1017306. doi: 10.3389/fpsyt.2023.1017306.

14. **Claus, E.D.,** Blaine, S. K., Witkiewitz, K., & Ansell, E. B. (2022). Sex moderates effects of alcohol and cannabis co-use on alcohol and stress reactivity. *Alcoholism, clinical and experimental research*. DOI: 10.1111/acer.14797

15. Gibson, B.C., **Claus, E.D.**, Sanguinetti, J., Witkiewitz, K., & Clark, V. P. (2022). A review of functional brain differences predicting relapse in substance use disorder: Actionable targets for new methods of noninvasive brain stimulation. *Neuroscience and biobehavioral reviews 141*, 104821. DOI: 10.1016/j.neubiorev.2022.104821

16. Robinson CSH, **Claus E.D.**, Calhoun V, Swartz M, Fokas K, Witkiewitz K. (2022). Association between empathy and drinking among a community sample of heavy drinkers: Sex differences and neural correlates. *Addict Behav*. 2022 Sep;132:107346. doi: 10.1016/j.addbeh.2022.107346. Epub 2022 Apr 29. PMID: 35533589.

17. Baurley, J.W., **Claus, E.D.**, Witkiewitz, K., McMahan, C.S. (2022). Bayesian mixed effects support vector machine for learning and predicting daily substance use disorder patterns. *The American journal of drug and alcohol abuse 48*(4), 413-421. DOI: 10.1080/00952990.2021.2024839

18. Swartz, M., Burton, F., Vakamudi, K., Al-Khalil, K., Witkiewitz, K., **Claus, E.D.** (2021). Age Dependent Neural Correlates of Inhibition and Control Mechanisms in Moderate to Heavy Drinkers. *Neuroimage: Clinical 32*, 102875. DOI: 10.1016/j.nicl.2021.102875

19. Gibson,B.C., Votaw, V.R., Stein, E.R., **Claus, E.D**., Clark, V.P., Witkiewitz, K. (*in press*). Transcranial Direct Current Stimulation Provides no Additional Benefit to Improvements in Self-Reported Craving Following Mindfulness-Based Relapse Prevention. *Mindfulness 13*(1), 92-103. DOI: 10.1007/s12671-021-01768-5.

20. Ekhtiari H, Zare-Bidoky M, Sangchooli A, Janes AC, Kaufman MJ, Oliver J, Prisciandaro JJ, Wüstenberg T, Anton RF, Bach P, Baldacchino A, Beck A, Bjork J, Brewer J, Childress AR, **Claus E**, Courtney KE, Ebrahimi M, Filbey FM, Ghahremani D, Azbari PG, Goldstein RZ, Goudrian A, Grodin E, Hamilton P, Hanlon CA, Abharian PH, Heinz A, Joseph JE, Kiefer F, Zonoozi AK, Kober H, Kuplicki R, Li Q, London ED, McClernon J, Noori HR, Owens MM, Paulus M, Perini I, Potenza M, Potvin S, Ray L, Schacht JP, Seo D, Sinha R, Smolka MN, Spanagel R, Steele VR, Stein E, Loeber SS, Tapert SF, Verdejo-Garcia A, Vollstädt-Klein S, Wetherill R, Wilson SJ, Witkiewitz K, Yuan K, Zhang X, Zilverstand A (2021) A Methodological Checklist for fMRI Drug Cue Reactivity Studies: Development and Expert Consensus. *Nature protocols 17*(3), 567-595. DOI: 10.1038/s41596-021-00649-4

21. Bedillion, M.F., Blaine, S.K., **Claus, E.D**., Ansell, E.B. (2021). The Effects of Alcohol and Cannabis Co-use on Neurocognitive Function, Brain Structure, and Brain Function. *Current Behavioral Neuroscience Reports 8*(4), 134-149. DOI: 10.1007/s40473-021-00243-8.

22. Al-Khalil, K., Vakamudi, K., Witkiewitz, K., **Claus, E.D.** (2021). Neural correlates of alcohol use disorder severity among nontreatment-seeking heavy drinkers: An examination of the incentive salience and negative emotionality domains of the alcohol and addiction research domain criteria. *Alcoholism: Clinical and Experimental Research 45*(6), 1200-1214. DOI: 10.1111/acer.14614

23. Bryan, A.D., Magnan, R.E., **Claus, E.D.**, Hutchison, K.E., Ewing, S.W.F., Schmiege, S.J. (2021). Randomized Controlled Trial of an Alcohol-related Sexual Risk Reduction Intervention with Adolescents: The Role of Neurocognitive Activation During Risky Decision-Making. *AIDS and Behavior.* doi: 10.1007/s10461-021-03190-3

24. Houck, J.M., **Claus, E.D.** (2020). A comparison of automated and manual co-registration for magnetoencephalography. *PLoS One,* 15(4), e0232100.

25. Brown, D. R., Jackson, C. J. T., **Claus, E. D**., Votaw, V. R., Stein, E. R., Robinson, C. S. H., Wilson, A. D., Brandt, E., Fratzke, V., Clark, V. P., & Witkiewitz, K. (2020). Decreases in the late positive potential to alcohol images among alcohol treatment seekers following mindfulness-based relapse prevention. *Alcohol and Alcoholism,* 55, 78-85.

26. Mayer, A.R., Dodd, A.B., Wilcox, C.E., Klimaj, S.D., **Claus, E.D.**, Bryan, A.D. (2020). Effects of attentional bias modification therapy on the cue reactivity and cognitive control networks in participants with cocaine use disorders. *American Journal of Drug and Alcohol Abuse,* 46, 357-367.

27. Fink, B.C., Howell, B.C., Salway, S. Cavanagh, J.F., Hamilton, D.A., **Claus, E.D.** & Frost, M.E. (2019) Frontal alpha asymmetry in alcohol-related intimate partner violence. *Social, Cognitive, and Affective Neuroscience,* 14, 1209-1217.

28. Liu Y, van den Wildenberg WPM, de Graaf Y, Ames SL, Baldacchino A, Ragnhild B, Cadaveira F, Campanella S, Christiansen P, **Claus ED**, Colzato LS, Filbey FM, Foxe JJ, Garavan H, Hendershot CS, Hester R, Jester JM, Karoly HC, Kräplin A, Kreusch F, Landrø NI, Littel M, Steins-Loeber S, London ED, López-Caneda E, Lubman DI, Luijten M, Marczinski CA, Metrik J, Montgomery C, Papachristou H, Mi Park S, Paz AL, Petit G, Prisciandaro JJ, Quednow BB, Ray LA, Roberts CA, Roberts GMP, de Ruiter MB, Rupp CI, Steele VR, Sun D, Takagi M, Tapert SF, Holst RJV, Verdejo-Garcia A, Vonmoos M, Wojnar M, Yao Y, Yücel M, Zack M, Zucker RA, Huizenga HM, Wiers RW. (2019) Is (poly-) substance use associated with impaired inhibitory control? A mega-analysis controlling for confounders. *Neuroscience and Biobehavioral Reviews*, 105, 288-304. doi: 10.1016/j.neubiorev.2019.07.006

29. Ekhtiari H, Tavakoli H, Addolorato G, Baeken C, Bonci A, Campanella S, Castelo-Branco L, Challet-Bouju G, Clark VP, **Claus E**, Dannon PN, Del Felice A, den Uyl T, Diana M, di Giannantonio M, Fedota JR, Fitzgerald P, Gallimberti L, Grall-Bronnec M, Herremans SC, Herrmann MJ, Jamil A, Khedr E, Kouimtsidis C, Kozak K, Krupitsky E, Lamm C, Lechner WV, Madeo G, Malmir N, Martinotti G, McDonald WM, Montemitro C, Nakamura-Palacios EM, Nasehi M, Noël X, Nosratabadi M, Paulus M, Pettorruso M, Pradhan B, Praharaj SK, Rafferty H, Sahlem G, Salmeron BJ, Sauvaget A, Schluter RS, Sergiou C, Shahbabaie A, Sheffer C, Spagnolo PA, Steele VR, Yuan TF, van Dongen JDM, Van Waes V, Venkatasubramanian G, Verdejo-García A, Verveer I, Welsh JW, Wesley MJ, Witkiewitz K, Yavari F, Zarrindast MR, Zawertailo L, Zhang X, Cha YH, George TP, Frohlich F, Goudriaan AE, Fecteau S, Daughters SB, Stein EA, Fregni F, Nitsche MA, Zangen A, Bikson M, Hanlon CA. *(*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 and Biobehavioral Reviews,* 104, 118-140. doi: 10.1016/j.neubiorev.2019.06.007

30. **Claus, E.D.**, Klimaj, S.D., Chavez, R., Martinez, A.D., Clark, V.P. (2019). A randomized trial of combined tDCS over right inferior frontal cortex and cognitive bias modification: Null effects on drinking and alcohol approach bias. *Alcoholism: Clinical and Experimental Research,* 43(7), 1591-1599. http://doi.org/10.1111/acer.14111.

31. Witkiewitz, K., Stein, E.R., Votaw, V.R., Wilson, A.D., Roos, C.R., Gallegos, S.J., Clark, V.P., **Claus, E.D.** (2019) Mindfulness-Based Relapse Prevention and Transcranial Direct Current Stimulation to Reduce Heavy Drinking: A Double-Blind Sham-Controlled Randomized Trial. *Alcoholism: Clinical and Experimental Research,* 43(6),1296-1307. http://doi.org/10.1111/acer.14053

32. Chen, J., Hutchison, K. E., Bryan, A. D., Filbey, F. M., Calhoun, V. D., **Claus, E. D.**, Lin, D., Sui, J., Du, Y., Liu, J. (2018). Opposite Epigenetic Associations with Alcohol Use and Exercise Intervention. *Frontiers in Psychiatry*, *9*, 594. http://doi.org/10.3389/fpsyt.2018.00594

33. **Claus, E.D.** & Weywadt, C.R. (2020). Resting-State Connectivity in Former, Current and Never Smokers. *Nicotine & Tobacco Research*, 22:180-187. doi: 10.1093/ntr/nty266

34. McPhee, M.D., **Claus, E.D.**, Boileau, I., Lee, A.C.H., Graff-Guerrero, A., Hendershot, C.S. (2018). Does family history of alcohol use disorder relate to differences in regional brain volumes? A descriptive review with new data. *Alcoholism: Clinical and Experimental Research, 42:*2369-2384. doi: 10.1111/acer.13882

35. Sanjuan, P.M., Andrews, C., **Claus, E.D.** (2018). Abnormal target detection and novelty processing neural response in posttraumatic stress disorder. *Progress in Neuro-Psychopharmacology and Biological Psychiatry, 85:*54-61.

36. **Claus, E.D.**, Shane, M.S. (2018). dACC response to presentation of negative feedback identifies stimulant dependence diagnoses and stimulant use severity. *Neuroimage: Clinical, 20:* 16-23. https://doi.org/10.1016/j.nicl.2018.05.007

37. Kiehl, K.A., Anderson, N.E., Aharoni, E., Maurer, J.M., Harenski, K.A., Rao, V., **Claus, E.D.**, Harenski, C., Koenigs, M., Decety, J., Kosson, D., Wager, T.D., Calhoun, V.D., Steele, V.R. (2018). Age of gray matters: Neuroprediction of recidivism. *Neuroimage: Clinical, 19:*813-812. https://doi.org/10.1016/j.nicl.2018.05.036

38. Mayer, A.R., Hanlon, F.M., **Claus, E.D.**, Dodd, A.B., Miller, B., Mickey, J., Quinn, D.K., Hagerty, S.L., Seaman, B., Hutchison, K.E. (2018). An examination of behavioral and neuronal effects of comorbid traumatic brain injury and alcohol use. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging, 3*:294-302.

39. Bidwell, L.C., Karoly, H.C., Thayer, R.E., **Claus, E.D.,** Bryan, A.D, Weiland, B.J., York Williams, S., Hutchison, K.E. (2018). DRD2 promoter methylation and measures of alcohol reward: functional activation of reward circuits and clinical severity. *Addiction Biology.* https://doi.org/10.1111/adb.12614

40. Abrol, A., Damaraju, E., Miller, R.L., Stephen, J.M., **Claus, E.D.,** Mayer, A.R., Calhoun, V.D. (2017). Replicability of time-varying connectivity patterns in large resting state fMRI samples. *Neuroimage, 163,* 160-176. **PMID: 28916181**

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Presentations

1. Claus, E.D. (2022). Effects of Long-Term Heavy Drinking on Brain Structure & Function: Evidence from Cross- Sectional and Longitudinal Neuroimaging Studies. Invited talk at the Center for Brain, Behavior, and Cognition at Penn State. 12/9/22

2. Claus, E.D. (2021). Neural Substrates Associated with Long- term Abstinence from Cigarettes. Invited talk at the Center for Research on Tobacco and Health, Penn State University. 9/18/21

3. Claus, E.D. (2019). Neural Mechanisms of Behavior Change in Alcohol Use Disorders. Invited talk at the Penn State University.

4. Claus, E.D. (2019). Neural Mechanisms of Behavior Change in Alcohol Use Disorders. Invited talk at the University of Texas El Paso.

5. Claus, E.D. (2019). Neural Mechanisms of Behavior Change in Alcohol Use Disorders. Invited talk at the University of New Mexico Health Science Center, Department of Psychiatry Grand Rounds.

6. Claus, E.D. (2019). Neural and Behavioral Mechanisms of Alcohol and Tobacco Addiction. Invited talk at the University of New Mexico Cancer Center.

7. Claus, E.D. (2019). Neural Mechanisms of Behavior Change During Natural Recovery in a Community Sample of Heavy Drinkers. Presented at the Annual Conference of the Research Society on Alcoholism.

8. Claus, E.D. (2019). A randomized controlled trial of combined cognitive bias modification and transcranial direct current stimulation to augment nicotine replacement therapy. Presented at the International Conference on Psychological Science, Paris, France.

9. Claus, E.D., Klimaj, S.D., Weywadt, C.R. (2017). Enhanced ventral striatal reactivity in AUD vs. Non-AUD during alcohol reward anticipation. Alcoholism: Clinical and Experimental Research, 41 S1, 140A

10. Claus, E.D., Witkiewitz, K. (2017). Neural responses to alcohol and negative cues in heavy drinkers and relationships with AUD severity. Alcohol, 60, 226.

11. Claus, E.D., Klimaj, S.D., Clark, V.P. (2016). Combining brain stimulation and motivational bias retraining to influence implicit biases and drinking: Null results from a preliminary trial. Alcoholism: Clinical And Experimental Research, 40 S1, 189A

12. Claus, E.D. (2015) Modifying Alcohol Approach Motivations with tDCS and Cognitive Retraining. Presented at the annual meeting of the American Psychological Association, Toronto, ON.

13. Claus, E.D., Hendershot, C.S., Ramchandani, V.A. (2015). Vascular Reactivity as a Significant Confound in BOLD Studies of Alcohol Use Disorders and Alcohol Administration. Presented at the annual meeting of the European Society for Biomedical Research on Alcoholism, Valencia, Spain.

14. Claus, E.D., Hendershot, C.S., Ramchandani, V.A. (2014). Sensitivity to the sedative and stimulant effects of alcohol moderate neural changes resulting from intoxication. Alcoholism: Clinical And Experimental Research, 38 S1, 235A

15. Claus, E.D. (2013). Targeting binge drinking with cognitive retraining and transcranial direct current stimulation. Presented as part of the Contributions of Neuroscience to the Treatment of Alcohol Use Disorders symposium at the Annual Conference of the American Psychological Association, Hawaii.

16. Claus, E.D., Ramchandani, V.A., Hendershot, C.S. (2013). Effects of alcohol on canonical and customized hemodynamic response functions. Alcoholism: Clinical And Experimental Research, 37 S1, 53A.

17. Hendershot, C.S., Ramchandani, V.A., Claus, E.D. (2013). Relation of impulsivity facets to subjective, neurocognitive, and neural responses to intravenous alcohol. Alcoholism: Clinical And Experimental Research, 37, 40A.

18. Monnig, MA, Caprihan, A., Thayer, R.E., Claus, E.D., Hutchison, K.E. (2013). Association of white matter integrity with alcohol cue reactivity in alcohol use disorders. Alcoholism: Clinical And Experimental Research, 37, 55A.

19. Sanjuan, P.M, Witkiewitz, K., Thoma, R.J., Claus, E.D., Mays, N., Caprihan, A. (2013). Reduced white matter integrity in cingulum and anterior corona radiata associated with PTSD in combat veterans with alcohol use disorders. Alcoholism: Clinical And Experimental Research, 37, 270A.

20. Claus, E.D. & Hutchison, K.E. (2012). Neural Responses to Real Time Rewards and Punishments in Binge Drinkers. Alcoholism: Clinical And Experimental Research, 36 (S1), 270A.

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22. Magnan, R.E., Thayer, R.E., Hutchison, K.E., Claus, E.D, Bryan, A.D. (2012). Neurocognitive Activation Moderates Six Month Alcohol Use Outcomes of a Group MET Among Juvenile Justice Youth. Alcoholism: Clinical And Experimental Research, 36 (S1), 270A.

23. Monnig, M.A., Caprihan, A., Yeo, R.A., Claus, E.D., Calhoun, V.D., Hutchison, K.E. (2012). Drinking History Predicts White Matter Integrity in a Large Community Sample of Heavy Drinkers. Alcoholism: Clinical And Experimental Research, 36 (S1), 272A.

24. Roche, D.J.O., Claus, E.D., Palmeri, M.D., Hutchison, K.E., King, A.C. (2012). A Polymorphism Of the Ferrochelatase Gene is Related to Neurobiological Response to Alcohol Cues, Subjective Response to Alcohol, & Drinking Behavior. Alcoholism: Clinical And Experimental Research, 36 (S1), 174A.

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26. Hutchison, K.E , Claus, E, Harlaar, N., Bryan, A. (2011). Alcohol Dependence: Linking Genes With Intermediate Neurobiological Phenotypes. Alcohol and Alcoholism, 46 Supp 1, 35.

27. Claus E.D, Feldstein Ewing S.W., Hutchison K.E. (2011). Neural Correlates Of Response Inhibition And Error Monitoring In Alcohol Use Disorders. Alcoholism: Clinical And Experimental Research, 35(6) 25A.

28. Claus, E.D., C.S. Hendershot, and K.E. Hutchison. (2010) The relationship between low level of response to alcohol and neural responses to alcohol cues: A reinforcement perspective. *Alcoholism: Clinical and Experimental Research,* S34 (8): 131A.

29. Claus, E.D. (2010). Functional Neuroimaging of Risk Taking in Heavy Drinkers. Presented at the annual meeting of the Research Society on Alcoholism, San Antonio, TX.

30. Claus, E.D. (2010). Uncovering SNPs Associated with Neurocognitive Phenotypes Related to Risk and Reward. Presented at Topics in Psychiatric Genetics and Neurobiology Conference. Breckenridge, CO.

31. Chatham, C. H., Claus, E. D., Curran, T., Banich, M. T., Kim, A., Munakata, Y. (2010, March). The Prefrontal Mechanism Underlying Inhibitory Control: Monitoring or Stopping? Poster presented at the 20th Annual Rotman Research Institute Conference on The Frontal Lobes,Toronto, Canada. Awarded "Outstanding Trainee Poster"

32. Myers, U.S., Hutchison, K.E., Mayer, A.R,. Claus, E.D., Vermont, L.N., Soto-Endicott, F.N., Filbey, F.M. (2010). Effects of subjective craving report on neural response to smoking cues. Annals of Behavioral Medicine, *39* (Supp 1), 36.

33. Claus, E.D., Feldstein-Ewing, S.W. & Hutchison, K.E. (2009). Altered feedback learning mechanisms in treatment seeking alcohol dependent individuals. (Abstract). *Alcoholism: Clinical and Experimental Research,* S33 (1): 231A

34. Vermont, L., Claus, E.D, & Hutchison, K.E. (2009). Gray matter volume and thickness differences between smokers and non-smokers in heavy drinkers. (Abstract). *Alcoholism: Clinical and Experimental Research,* S33 (1): 232A

35. Smith, S.M., Feldstein Ewing, S. W., Claus, E., Bryan, A., La Chance, H., Hutchison, K. (2009) COMT genotypes are associated with differential brain activation after exposure to alcohol cues. *Alcoholism: Clinical and Experimental Research,* S33 (1):11A

36. Feldstein Ewing, S. W., Filbey, F., Claus, E, Chandler, L.D., Hutchison, K.E.. (2009) The role of depressive and anxiety symptoms in cue-elicited brain activation. *Alcoholism: Clinical and Experimental Research,* S33 (1):233A

37. Feldstein Ewing, S.W., Filbey, F., Claus, E., Nyalakanti, P., K. A. Kiehl, K. A., Hutchison, K.E., Bryan, A. (2009). Neurological correlates of alcohol abuse behavior with high risk, juvenile justice-involved youth. *Alcoholism: Clinical and Experimental Research,* S33 (1):296A

38. Vermont, L., Feldstein Ewing, S, Claus, E., Taborsky-Barba, S. and Hutchison, K. (2008). Impulsivity as a risk factor for the initiation and escalation of alcohol abuse in late adolescents (Abstract). *Alcoholism: Clinical and Experimental Research,* S32 (6): 113A

39. Claus, E., Filbey, F., Hutchison, K. (2008). Cues Response Inhibition In Heavy Drinkers: Relationships Between Inhibition-Related Brain Activation And Hazardous Drinking (Abstract). *Alcoholism: Clinical and Experimental Research,* **S32** (6): 51A

40. Vermont, L. Filbey, F., Claus, E., Taborsky-Barba, S., & Hutchison, K. (2008). Early Stress As An Indicator Of Neurobiological Response To Alcohol Cues (Abstract). *Alcoholism: Clinical and Experimental Research* S32**,** (6): 51A

41. Hutchison K.E, Filbey F, Claus E. (2008) Identifying genetic variation that influences cue-elicited activation of mesocorticolimbic structures. *Alcoholism: Clinical and Experimental Research* S32**,** (6): 300A

42. Filbey, F.M., Claus, E.D., and Hutchison, K.E (2008). Implications Of The CHRNA4 In Modulating Inhibitory Mechanisms In Alcohol Abuse. (Abstract). *Alcoholism: Clinical and Experimental Research,* S32 (6): 52A.

43. Claus, E., Filbey, F., Hutchison, K. (2008). Functional Connectivity Of Cue Reactivity: An Independent Component Analysis Approach To Neuroimaging Of Craving. (Abstract). *Alcoholism: Clinical and Experimental Research,* S32 (6): 52A.

44. Tanabe, J., Thompson, L., Banich, M., Claus, E., & Dalwani, M. (2006). Ventral medial, dorsolateral, and orbitofrontal lobe activity is reduced in gambling and non-gambling substance abusers during decision-making. Presented at the annual meeting of Human Brain Mapping, Florence, Italy

45. Ames, B. J., Claus, E.D., Depue, B. E., Burgess, G. C., Willcutt, E. G., Banich, M. T. (2006). Gray matter differences in young adults with ADHD: A pilot study using voxel-based morphometry. Presented at the annual meeting of Human Brain Mapping, Florence, Italy.

46. Claus, E.D., Milham, M.P, Banich, M.T., Thompson, L.L., Jacobson, B.L., Raymond, K.M. & Crowley, T.J. (2004). Structural Abnormalities in Reward and Motivational Neural Circuitry in Adolescents with Serious Conduct and Substance Problems. Presented at the annual meeting of the College on Problems of Drug Dependence, San Juan, Puerto Rico.

47. Claus, E.D. & Banich, M.T. (2004). The effects of individual differences in personality on decision-making. Presented at the 11th Annual Cognitive Neuroscience Society Meeting, San Francisco.

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49. Kareken, D. A., Sabri, M., Radnovich, A. J., Claus, E., Foresman, B., Hector, D., & Hutchins, G. D. (2003). Olfactory system activation from sniffing: effects in piriform and orbitofrontal cortex. *Society for Neuroscience.*

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52. Sabri, M., Kareken, D.A., Hector, D., Claus, E., & Hutchins, G.D. (2002). Temporal lobe olfactory cortex activation during sniffing and velopharyngeal closure. Presented at the Annual Meeting of the American Chemosensory Society, Miami, FL.

Awards:

NIH Loan Repayment Program (NIAAA). Funded August 2011-August 2014.
Research Society on Alcoholism Young Investigator Travel Award, 2011
Research Society on Alcoholism Young Investigator Travel Award, 2010
NIH Loan Repayment Program (NIAAA). Funded August 2009-August 2011.
Research Society on Alcoholism Student Merit Award, 2009
Young Scientist Travel Award (World Congress on Psychiatric Genetics), 2008
Research Society on Alcoholism Student Merit Award, 2008
UC Davis Center for Mind and Brain Conference Fellowship 2004
Institute of Cognitive Science, University of Colorado student travel award. 2004
Research Society on Alcoholism Student Merit Award. 2002.
IUPUI Graduate Student Organization. Travel Award, 2002.
IUPUI Graduate Student Organization. Educational Enhancement Grant, 2001.

Teaching:

Instructor	Spring 2024	Neurological Bases of Human Behavior BBH 203 *The Pennsylvania State University*
Instructor	Fall 2023	Drugs & Behavior BBH 143 – World Campus *The Pennsylvania State University*
Instructor	Spring 2023	Neurological Bases of Human Behavior BBH 203/PSYCH 260 *The Pennsylvania State University*
Instructor	Spring 2022	Independent Study Effects of Alcohol and Tobacco on Subjective Ratings and Cognitive Performance – Margaret Bedillion *The Pennsylvania State University*
Instructor	Spring 2022	Drugs & Behavior BBH 143 *The Pennsylvania State University*
Lab Instructor	Summer 2005	General Statistics *University of Colorado*
Lab Instructor	Aug 2004-Dec 2004	Computational Cognitive Neuroscience *University of Colorado*
Lab Instructor	Summer 2003	Cognitive Psychology *University of Colorado*
Lab Instructor	Jan 2003-May 2003	Cognitive Neuroscience *University of Colorado*
Lab Instructor	Aug 2002-Dec 2002	Cognitive Psychology *University of Colorado*

Professional Service:
Research Committee (Chair), The Pennsylvania State University, 2022-2024
Developmental Adversity Search Committee, The Pennsylvania State University, 2023-2024
Care and Compassion Search Committee, The Pennsylvania State University, 2021-2022
Graduate Program Committee, The Pennsylvania State University, 2021-2022

Grant Reviews
Standing Member: Interventions to Prevent and Treat Addictions: 2020-2024

Ad hoc member: Special Emphasis Panels – June 2020 (ZMH1-ERB-M-07), October 2019 (ZAA1-DD-03), Apr 2019 (ZAA1-DD-03), Feb 2019 (ZMH1-ERB-D-03), Nov 2018, Oct 2018, Jul 2018, Jul 2017, Mar 2015, Jun 2014, Oct 2013; IPTA (Jan 2018); APDA (June 2016/Feb 2017); RPIA (June 2015)

Canadian Institute of Health Research reviewer (June 2016)

Journal Reviewing
Ad hoc reviewer: *Archives of General Psychiatry, Biological Psychiatry, Neuropsychologia, Cognitive Systems Research, Alcoholism: Clinical and Experimental Research, Psychology of Addictive Behaviors, Drug and Alcohol Dependence, Psychological Bulletin, Brain and Cognition, Neuropsychological Review, Journal of Substance Abuse Treatment, Psychiatry Research: Neuroimaging, Neuropharmacology, Psychopharmacology, Neuropsychopharmacology, American Journal of Drug and Alcohol Abuse, Neuroimaging: Clinical, Scientific Reports, Nicotine and Tobacco Research, Addiction Biology, Addiction, Journal of Neuroscience Research, Alcohol, Science.*

Assistant Field Editor: *Journal of Studies on Alcohol and Drugs (2015-2024)*
Editorial Board: *Journal of Studies on Alcohol and Drugs (2024-present)*