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February 15, 2023

#### **EDUCATIONAL HISTORY**

Ph.D. (Dr. Rer. Nat.) *summa cum laude*

05. 29. 2000

Ruhr–Universität Bochum, Universitätsstraße 150, 44801 Bochum, Germany

Psychology

Dissertation title: *The caudolateral neostriatum of the avian forebrain and its modulation by dopaminergic afferents*

Thesis advisor: Prof. Dr. Onur Güntürkün

M.A. (Dipl. Psych.)

07. 15. 1996

Ruhr–Universität Bochum, Universitätsstraße 150, 44801 Bochum, Germany

Psychology

Thesis title: *Der "präfrontale Cortex" von Tauben– Modell für die Chemoarchitektur kognitiver Prozesse*

High School (Abitur)

May 1990

Heinrich–von–Kleist Gymnasium, Heinrichstraße 2, 44805 Bochum, Germany

#### **EMPLOYMENT HISTORY**

Associate Professor

2017 – present

The University of Texas at Dallas, 800 W. Campbell Rd., Richardson, TX 75080

Assistant Professor

2010 – 2017

The University of Texas at Dallas, 800 W. Campbell Rd., Richardson, TX 75080

Adjunct Professor

2008 – 2010

College of Charleston, 66 George St, Charleston, SC 29424

Research Assistant Professor

2005 – 2010

Medical University of South Carolina, 96 Jonathan Lucas St, Charleston, SC 29425

Postdoctoral fellow

2004 – 2005

Medical University of South Carolina, 96 Jonathan Lucas St, Charleston, SC 29425

Postdoctoral fellow

2000 – 2003

University of Pittsburgh, 4200 Fifth Ave, Pittsburgh, PA 15260

Graduate Research Assistant

1996 – 2000

Ruhr-Universität Bochum, Universitätsstraße 150, 44801 Bochum, Germany

#### **PROFESSIONAL RECOGNITIONS AND HONORS**

1996 – Fellowship of the G.A. Lienert Foundation

2013 – UTD's Provost's Award for Faculty Excellence in Undergraduate Research Mentoring

2016 – Member editorial board *Brain Sciences*

#### **PROFESSIONAL MEMBERSHIPS**

Society for Neuroscience	01/01/2001 – present
International Society for Biomedical Research on Alcoholism	04/08/2016 – present
Molecular and Cellular Cognition Society (MCCS)	08/05/2016 – present
Pavlov Society	08/29/2016 – present

#### **ACHIEVEMENTS IN ORIGINAL INVESTIGATION**

##### **JOURNAL SPECIAL ISSUES EDITED**

Guest editor *Brain Sciences* (ISSN 2076–3425), Special Issue "*Interaction Between the Prefrontal Cortex and Hippocampus in Memory Storage and Retrieval*" 10 2016.

##### **ORIGINAL, PEER-REVIEWED ARTICLES**

1. Driskill CM\*, Childs JE\*, Itmer B<sup>§</sup>, Rajput JS<sup>§</sup>, **Kroener S** (2022) Acute vagus nerve stimulation facilitates short term memory and cognitive flexibility in rats. *Brain Sciences*. doi.org/10.3390/brainsci12091137 (\* these authors contributed equally). (Impact Factor 3.706).
2. Melugin PR, Wu F, Munoz C<sup>§</sup>, Phensy A, Pradhan G, Luo Y, Nofal A, Manepalli R, **Kroener S** (2022) The effects of acamprosate on prefrontal cortical function are mimicked by CaCl<sub>2</sub> and they are

influenced by the history of alcohol exposure. *Neuropharmacology*. 212:109062. doi: 10.1016/j.neuropharm.2022.109062. (Impact Factor 5.250).

3. Becker JE, Price JL, Leonard D, Suris A, Kandil E, Shaw M, **Kroener S**, Brown ES, Adinoff B. (2020) The efficacy of lidocaine in disrupting cocaine cue-induced memory reconsolidation. *Drug Alcohol Depend.* 212:108062. doi: 10.1016/j.drugalcdep.2020.108062. Epub 2020 May 12. PMID: 32480252. (Impact Factor 4.492).
4. Gauba E, Sui S, Tian J, Driskill C, Yu C, Jia K, Rughwani T, Wang Q, **Kroener S**, Guo L, Du H. (2020) Modulation of OSCP mitigates mitochondrial and synaptic deficits in a mouse model of Alzheimer's Disease. *Neurobiology of Aging*. 98:63-77. doi: 10.1016/j.neurobiolaging.2020.09.018. (Impact Factor 4.398).
5. Phensy A, Lindquist KL<sup>§</sup>, Lindquist KA<sup>§</sup>, Bairuty D<sup>§</sup>, Gauba E, Guo L, Tian J, Du H, **Kroener S** (2020) Deletion of the mitochondrial matrix protein cyclophilin-D prevents parvalbumin interneuron dysfunction and cognitive deficits in a mouse model of NMDA hypofunction. *J Neurosci* 5;40(32):6121-6132. doi: 10.1523/JNEUROSCI.0880-20.2020. (Impact Factor 5.95).
6. Becker JE, Price JL, Leonard D, Suris A, Kandil E, Shaw M, **Kroener S**, Brown ES, Adinoff B (2020) The efficacy of lidocaine in disrupting cocaine cue-induced memory reconsolidation. *Drug Alcohol Depend.* 2020; 212:108062. doi:10.1016/j.drugalcdep.2020.108062. (Impact Factor 3.59).
7. Xiong H, Li X, Kang P, Perish J, Neuhaus F, Ploski J, **Kroener S**, Ogunyankin MO, Shin JE, Zasadzinski JA, Wang H, Slesinger P, Zumbuehl A, Qin Z (2020). Near-infrared light triggered-release in deep brain regions using ultra-photosensitive nanovesicles. *Angewandte Chemie*. DOI: 10.1002/anie.201915296 and 10.1002/ange.201915296. (Impact Factor 11.69).
8. Shiers S, Mwirigi J, Pradhan G, Kume M, Black B, Barragan-Iglesias P, Moy JK, Dussor G, Pancrazio JJ, **Kroener S**, Price TJ (2019) Reversal of peripheral nerve injury-induced neuropathic pain and cognitive dysfunction via genetic and tomivosertib targeting of MNK. *Neuropsychopharmacology* (doi: 10.1038/s41386-019-0537-y (Impact Factor 7.160).
9. Childs JE, Kim S<sup>§</sup>, Driskill CM<sup>§</sup>, Hsiu E<sup>§</sup>, **Kroener S** (2019) Vagus nerve stimulation during extinction learning reduces conditioned place preference and context-induced reinstatement of cocaine-seeking. *Brain Stimulation* pii: S1935-861X(19)30283-9. doi: 10.1016/j.brs.2019.07.001 (Impact Factor 6.120).
10. Tian J, Guo L, Sui S, Driskill C, Phensy A, Wang Q, Gauba E, Zigman JM, Swerdlow R, **Kroener S**, Du H (2019) GHSR1a and DRD1 co-activation prevents early hippocampal synaptic deficits in Alzheimer's disease. *Science Transl. Med.* 11(505). pii: eaav6278. doi: 10.1126/scitranslmed.aav6278 (Impact Factor 16.796).
11. Shiers S, Pradhan G<sup>§</sup>, Mwirigi J, Mejia G, Ahmad A, **Kroener S**, Price T (2018) Neuropathic pain creates an enduring prefrontal cortex dysfunction corrected by the type II diabetic drug metformin but not by gabapentin. *J Neurosci.* 38(33):7337-7350. doi: 10.1523/JNEUROSCI.0713-18.2018. Epub 2018 Jul 20. PMID: 30030404 (Impact Factor 5.924).
12. Pradhan G<sup>§</sup>, Melugin P<sup>§</sup>, Wu F<sup>§</sup>, Fang HM<sup>§</sup>, Weber R<sup>§</sup>, **Kroener S** (2018) Calcium chloride mimics the effects of acamprosate on cognitive deficits in chronic-alcohol exposed mice. *Psychopharmacol.* 235(7), 2027-2040. doi.org10.1007/s00213-018-4900-1. (Impact Factor 3.22).
13. Phensy A, Driskill C<sup>§</sup>, Lindquist K<sup>§</sup>, Guo L, Jeevakumar V, Fowler B<sup>§</sup>, Du H, **Kroener S** (2017) Antioxidant treatment in male mice prevents mitochondrial and synaptic changes in an NMDA receptor dysfunction model of schizophrenia. *eNeuro*. 4(4). pii: ENEURO.0081-17.2017. doi:

10.1523/ENEURO.0081-17.2017. eCollection 2017 Jul-Aug. PMCID: PMC5559903.

14. Phensy A, Duzdabanian HE<sup>§</sup>, Brewer S<sup>§</sup>, Panjabi A<sup>§</sup>, Driskill C<sup>§</sup>, Berz A<sup>§</sup>, Peng G<sup>§</sup>, **Kroener S** (2017) Antioxidant treatment with N-acetyl cysteine prevents the development of cognitive and social behavioral deficits that result from perinatal ketamine treatment. *Front Behav Neurosci.* 11:106. doi: 10.3389/fnbeh.2017.00106. eCollection 2017. (Impact Factor 3.89).
15. Childs JE, DeLeon J<sup>§</sup>, Nickel E<sup>§</sup>, **Kroener S** (2016) Vagus nerve stimulation reduces cocaine-seeking and alters plasticity in the extinction network. *Learning Mem.* 24(1):35-42. doi: 10.1101/lm.043539.116. (Impact Factor 4.375).
16. Holehonnur R, Phensy A, Kim L, Milivojevic M, Vuong D, Daison D, Alex S, Tiner M, Jones L, **Kroener S**, Ploski J (2016) Increasing the GluN2A/GluN2B ratio in neurons of the mouse basal and lateral amygdala inhibits the modification of an existing fear memory trace. *J Neurosci* 36(36): 9490-9504; doi: 10.1523/JNEUROSCI.1743-16.2016. (Impact Factor 6.344).
17. Beck SJ, Guo L, Phensy A, Tian J, Wang L, Tandon N, Gauba E, Lu L, Pascual J, **Kroener S**, Du H (2016) Deregulation of mitochondrial F1FO-ATP synthase via OSCP in Alzheimer's disease. *Nature Communications* 7:11483. doi:10.1038/ncomms11483 (Impact Factor 11.329).
18. Childs JE, Alvarez AC, McIntyre CK, **Kroener S** (2015) Vagus nerve stimulation as a tool to induce plasticity in pathways relevant for extinction learning. *JoVE – Journal of Visualized Experiments.* 102. doi: 10.3791/53032. PMID: 26325100. (Impact Factor 1.325).
19. Hu W, Morris B<sup>§</sup>, Carrasco A<sup>§</sup>, **Kroener S** (2015) Effects of acamprosate on attentional set-shifting and cellular function in the prefrontal cortex of chronic alcohol-exposed mice. *Alcohol Clin Exp Res.* 39(6):953–61. doi: 10.1111/acer.12722. PMID: 25903298. (Impact Factor 3.205).
20. Jeevakumar V, Driskill C<sup>§</sup>, Paine A<sup>§</sup>, Sobhanian M<sup>§</sup>, Vakil H<sup>§</sup>, Morris B<sup>§</sup>, Ramos J<sup>§</sup>, **Kroener S** (2015) Ketamine administration during the second postnatal week induces enduring schizophrenia-like behavioral symptoms and reduces parvalbumin expression in the medial prefrontal cortex of adult mice. *Behav Brain Res* 282C:165–175. doi: 10.1016/j.bbr.2015.01.010. (Impact Factor 3.629).
21. Jeevakumar V, **Kroener S** (2014) Ketamine administration during the second postnatal week alters synaptic properties of fast-spiking interneurons in the medial prefrontal cortex of adult mice. *Cereb Cortex* 26(3):1117-29. doi: 10.1093/cercor/bhu293. Epub 2014 Dec 4. PMID: 25477370. (Impact Factor 8.305).
22. Mulholland P, Spencer K, Hu W, **Kroener S**, Chandler J (2014) Neuroplasticity of A-type potassium channel complexes induced by chronic alcohol exposure enhances dendritic calcium transients in hippocampus. *Psychopharmacol.* 232(11):1995–2006. doi: 10.1007/s00213-014-3835-4. Epub 2014 Dec 17. (Impact Factor 3.988).
23. Peña DF, Childs JE<sup>§</sup>, Willett S, Vital A, McIntyre CK, **Kroener S** (2014) Vagus nerve stimulation enhances extinction of conditioned fear and modulates plasticity in the pathway from the ventromedial prefrontal cortex to the amygdala. *Front Behav Neurosci.* 8:327. doi: 10.3389/fnbeh.2014.00327. eCollection 2014. (Impact Factor 4.8).
24. **Kroener S**, Mulholland PJ, New NN, Gass JT, Becker HC, Chandler LJ (2012) Chronic alcohol exposure alters behavioral and synaptic plasticity of the rodent prefrontal cortex. *PLoS One.* 7(5):e37541. doi: 10.1371/journal.pone.0037541. (Impact Factor 4.41).
25. Herold C, Palomero-Gallagher N, Hellmann B, **Kröner S**, Theiss C, Güntürkün O, Zilles K (2011) The receptor architecture of the pigeons' nidopallium caudolaterale: an avian analogue to the

- mammalian prefrontal cortex. *Brain Struct Funct* 216(3): 239–254. DOI: 10.1007/s00429–011–0301–5. (Impact Factor 4.42).
26. **Kroener S**, Lavin A (2010) Altered dopamine modulation of inhibition in the prefrontal cortex of cocaine-sensitized rats. *Neuropsychopharmacol* 35(11): 2292–304. DOI: 10.1038/npp.2010.107 (Impact Factor 8.93).
  27. **Kroener S**, Phillips PEM, Chandler LJ, Seamans JK (2009) Dopamine modulates recurrent synaptic activity and enhances the signal-to-noise ratio in the prefrontal cortex. *PLoS One* 4(8): e6507. DOI: 10.1371/journal.pone.0006507. (Impact Factor 4.41).
  28. Trantham-Davidson H\*, **Kröner S\***, Seamans JK (2008) Dopamine modulation of prefrontal cortex interneurons occurs independently of DARPP-32. *Cereb Cortex* 18(4):951–8 (\* these authors contributed equally). DOI: 10.1093/cercor/bhm133. (Impact Factor 8.305).
  29. González-Burgos G, **Kroener S**, Zaitsev AV, Povysheva NV, Krimer LS, Barrionuevo G, Lewis DA (2008) Functional maturation of excitatory synapses in layer 3 pyramidal neurons during postnatal development of the primate prefrontal cortex. *Cereb Cortex* 18(3):626–37. DOI: 10.1093/cercor/bhm095. (Impact Factor 8.305).
  30. Tu Y, **Kroener S**, Abernathy K, Lapish C, Seamans J, Chandler LJ, Woodward JJ (2007) Ethanol disrupts patterns of persistent activity in prefrontal cortical neurons. *J Neurosci* 27(17):4765–4775. DOI: 10.1523/JNEUROSCI.5378–06.2007. (Impact Factor 7.18).
  31. **Kroener S**, Krimer LS, Lewis DA, Barrionuevo G (2007) Dopamine increases inhibition in the monkey dorsolateral prefrontal cortex through cell type-specific modulation of interneurons. *Cereb Cortex* 17(5): 1020–32. DOI: 10.1093/cercor/bhl012. (Impact Factor 8.305).
  32. Povysheva NV, Zaitsev AV, **Kröner S**, Krimer OA, Rotaru DC, González-Burgos G, Lewis DA, Krimer LS (2007) Electrophysiological differences between neurogliaform cells from monkey and rat prefrontal cortex. *J Neurophysiol* 97(2):1030–9. DOI: 10.1152/jn.00794.2006. (Impact Factor 3.48).
  33. Povysheva NV, González-Burgos G, Zaitsev AV, **Kröner S**, Barrionuevo G, Lewis DA, Krimer LS (2006) Properties of excitatory synaptic responses in fast-spiking interneurons and pyramidal cells from rat and monkey prefrontal cortex: Potential role in feed-forward inhibition. *Cereb Cortex* 16(4): 541–52. DOI: 10.1093/cercor/bhj002. (Impact Factor 8.305).
  34. González-Burgos G, **Kröner S**, Seamans JK, Lewis DA, Barrionuevo G (2005) Dopaminergic modulation of synaptic depression in fast spiking interneurons of the monkey dorsolateral prefrontal cortex. *J Neurophysiol* 94(6): 4168–77. DOI: 10.1152/jn.00698.2005. (Impact Factor 3.48).
  35. **Kröner S\***, Rosenkranz JA\*, Grace AA, Barrionuevo G (2005) Dopamine modulates excitability of basolateral amygdala neurons in vitro. *J Neurophysiol* 93(3): 1598–1610. DOI: 10.1152/jn.00843.2004 (\* these authors contributed equally) (Impact Factor 3.48).
  36. Zaitsev AV, González-Burgos G, Povysheva NV, **Kröner S**, Lewis DA, Krimer LS (2005) Localization of calcium-binding proteins in interneurons of different physiological and morphological classes in monkey dorsolateral prefrontal cortex. *Cereb Cortex* 15(8): 1178–86. DOI: 10.1093/cercor/bhh218. (Impact Factor 8.305).
  37. Krimer LS, Zaitsev AV, Czanner G, **Kröner S**, González-Burgos G, Povysheva NV, Iyengar S, Barrionuevo G, Lewis DA (2005) Cluster analysis-based physiological classification and morphological properties of inhibitory neurons in layers 2–3 of monkey dorsolateral prefrontal cortex. *J Neurophysiol* 94(5): 3009–22. DOI: 10.1152/jn.00156.2005. (Impact Factor 3.48).

38. **Kröner S**, Gottmann K, Hatt H, Güntürkün O (2002) Electrophysiological and morphological properties of cell types in the chick neostriatum caudolaterale. *Neuroscience* 110(3): 459–473. DOI: 10.1016/S0306-4522(01)00506-1. (Impact Factor 3.29).
39. **Kröner S**, Güntürkün O (1999) Afferent and efferent connections of the caudolateral neostriatum in the pigeon (*Columba livia*): A retro- and anterograde pathway tracing study. *J Comp Neurol* 407:228–260. DOI: 10.1002/(SICI)1096-9861(19990503)407:2<228::AID-CNE6>3.0.CO;2-2. (Impact Factor 3.72).
40. **Kröner S**, Schall U, Ward PB, Sticht G, Banger M, Haffner HT, Catts SV (1999) Effects of prepulses and d-amphetamine on performance and event-related potential measures on an auditory discrimination task. *Psychopharmacol* 145(2): 123–132. DOI: 10.1007/s002130051040. (Impact Factor 4.10).
41. Güntürkün O, **Kröner S** (1999) A polysensory pathway to the forebrain of the pigeon: the ascending projections of the n. dorsolateralis posterior thalami (DLP). *Eur J Morphol* 37(2–3): 124–128. DOI: 10.1076/ejom.37.2.185.4750.
42. Durstewitz D, **Kröner S**, Hemmings HC Jr, Güntürkün O (1998) The dopaminergic innervation of the pigeon telencephalon: distribution of DARPP-32 and cooccurrence with glutamate decarboxylase and tyrosine hydroxylase. *Neuroscience* 83: 763–779. DOI: 10.1016/S0306-4522(97)00450-8. (Impact Factor 3.29).
43. **Kröner S**, Schall U, Catts SV, Ward PB (1998) Prepulse inhibition (PPI) of event-related potentials (ERPs) in an auditory discrimination is impaired in normal subjects after amphetamine: Support for a model of schizophrenia. *Schizophrenia Research* 29(1–2): 120–121. DOI: 10.1016/S0920-9964(97)88605-7. (Impact Factor 4.46).

§ Denotes an undergraduate or post-bacc mentee.

#### REVIEWS (PEER-REVIEWED)

1. Lapish CC, **Kroener S**, Durstewitz D, Lavin A, Seamans JK (2007) The ability of the mesocortical dopamine system to operate in distinct temporal modes. *Neuropsychopharmacol* 191(3): 609–25. DOI: 10.1007/s00213-006-0527-8. (Impact Factor 4.10).
2. González-Burgos G, **Kröner S**, Krimer LS, Seamans JK, Urban NN, Henze DA, Lewis DA, Barrionuevo G (2002) Dopamine modulation of neuronal function in the monkey prefrontal cortex. *Physiol and Behav* 77(4–5): 537–543. DOI: 10.1016/S0031-9384(02)00940-X. (Impact Factor 3.30).
3. Durstewitz D, **Kröner S**, Güntürkün O (1999) The dopaminergic innervation of the avian telencephalon. *Prog Neurobiol* 59: 161–195. DOI: 10.1016/S0301-0082(98)00100-2. (Impact Factor 9.14).

#### EDITORIAL

1. Phensy A, Kroener S. Delay-Period Activity and Executive Functions of the Prefrontal Cortex. *Brain Sci.* 2019 Dec 19;10(1). pii: E3. doi: 10.3390/brainsci10010003.

## BOOKCHAPTERS

1. Gonzalez–Burgos G, **Kröner S**, Seamans JK (2007) Cellular mechanisms of working memory and its modulation by dopamine in the prefrontal cortex of primates and rats. In: *Monoaminergic Modulation of Cortical Excitability*. Tseng KY and Atzori M (Eds.) Springer, Berlin, pp 125–152.
2. DeWitt, S, **Kroener S**, Filbey FM (2013) Cue–elicited craving for marijuana activates the reward neurocircuitry associated with the neuropathology of addiction. In: *Endocannabinoid Regulation of Monoamines in Psychiatric and Neurological Disorders*. Van Bockstaele E (Ed.) New York, pp–55–71.

## ABSTRACTS AND CONFERENCE PROCEEDINGS

1. Driskill C, Childs JE, Phensy AJ, Rodriguez S, Lindquist KL, Rodriguez SR, O’Brien J, McGinty J, Kroener S (2022) Vagus nerve stimulation (VNS) modulates synaptic plasticity in the infralimbic cortex via TrkB receptor activation to reduce drug-seeking. *Gordon Research Conference on Neurobiology of Addiction*.
2. O’Brien J, Phensy A, **Kroener S** (2021) Upregulation of cyclophilin D contributes to mitochondrial dysfunction and oxidative stress in parvalbumin expressing interneurons in schizophrenia. *Society for Neuroscience Abstracts* P715.06.
3. Driskill CM, Phensy AJ, Rodriguez SR, Lindquist KL, McGinty JF, **Kroener S** (2021) Pairing extinction of cocaine-seeking with vagus nerve stimulation (VNS) reduces reinstatement via TrkB activation. *Society for Neuroscience Abstracts* P748.05.
4. Phensy AJ, Bairuty D, Gauba E, Lindquist KA, Lindquist K, Guo L, Srinivasan S, Du H, **Kroener S**. (2019) Oxidative stress and mitochondrial dysfunction in parvalbumin interneurons following perinatal NMDAR blockade in mice. *Society for Neuroscience Abstracts – Nanosymposium Session 535 - Neurodevelopmental Disorders: New Molecular Mechanisms* 535.08.
5. Phensy AJ, Gauba E, Bairuty D, Lindquist K, Lindquist KL, Guo L, John N, Cao J, Du H, **Kroener S**. (2019) The mitochondria-regulating protein cyclophilin D is involved in parvalbumin interneuron deficits following perinatal NMDAR blockade in mice. *Gordon Research Conference on Cognitive Dysfunction in Brain Diseases*.
6. Melugin P, Wu F, Phensy A, Pradhan G, **Kroener S** (2018) The effects of acamprosate and CaCl<sub>2</sub> on prefrontal cortical function depend on the history of alcohol exposure. *Annual meeting of the American College of Neuropsychopharmacology*.
7. Phensy A, Lindquist K, Bairuty D, Rapolu K, Du H, **Kroener S** (2018) The mPTP-regulating protein cyclophilin D contributes to oxidative stress in a developmental rodent model of schizophrenia *Society for Neuroscience Abstracts* 517.17.
8. Childs JE, Kim S, Driskill C, Hsiu E, Kroener S (2018) Pairing extinction of cocaine-seeking with vagus nerve stimulation reduces contextual reinstatement and modulates plasticity in extinction networks. *Society for Neuroscience Abstracts* 603.17.
9. Phensy A, Lindquist K, Bairuty D, Duzdabanian J, Guo L, Driskill C, Du H, **Kroener S** (2017) The role of oxidative stress and the mPTP-regulating protein cyclophilin D in behavioral and synaptic dysfunction following perinatal ketamine treatment. *16th Annual Molecular and cellular cognition society symposium*.

10. Childs J, Driskill C, Kroener S (2017) Vagus nerve stimulation modulates plasticity in the extinction circuit and enhances extinction of drug-seeking behavior *Society for Neuroscience Abstracts* 796.13
11. Melugin P, Wu F, Phensy A, Chilumula SC, Fang H, Singhal A, Weber R, **Kroener S** (2017). Calcium mimics the effects of acamprosate on cognitive deficits and synaptic function in chronic alcohol-exposed mice. *UT Austin Conference on Learning & Memory*, #11.
12. Childs JE, DeLeon J, Hsiu E, **Kroener S** (2016) Vagus nerve stimulation reduces reinstatement to cocaine-seeking in a self-administration model of drug use. *Pavlovian Society Annual Meeting*.
13. Driskill C, Duzdabanian H, Phensy A, **Kroener S** (2016) N-acetyl cysteine treatment prevents behavioral deficits in an NMDA receptor dysfunction model of schizophrenia. *Pavlovian Society Annual Meeting*.
14. Childs JE, DeLeon J, **Kroener S** (2016) Vagus nerve stimulation enhances extinction from cocaine-seeking and modulates plasticity in the infralimbic prefrontal cortex to basolateral amygdala projection. *Annual meeting of the American College of Neuropsychopharmacology*.
15. Phensy A, Pradhan G, Kandunuri R, Razzaque M, Parker M, Carrasco A, **Kroener S** (2016) Effects of Acamprosate, Naltrexone and CaCl<sub>2</sub> on cognitive flexibility and synaptic function in mice following chronic-intermittent ethanol (CIE) exposure or operant alcohol self-administration. *Society for Neuroscience Abstracts*. 548.21.
16. Phensy A, Driskill C, Jeevakumar V, Brewer, S, Fowler B, de la Hoz C, **Kroener S** (2015) Effects of the antioxidant N-acetyl cysteine on behavioral and neurophysiological deficits induced by developmental NMDA-R antagonism. *Society for Neuroscience Abstracts* 49.03.
17. Phensy A, Tian J, Driskill C, Jeevakumar V, Oborny S, Du H, **Kroener S** (2015) Effects of the antioxidant N-acetyl cysteine on behavioral and neurophysiological deficits induced by developmental NMDA-R antagonism and their relationship to mitochondrial dysfunction. *Annual meeting of the American College of Neuropsychopharmacology*. T177.
18. Childs JE, DeLeon J, Nickel E, **Kroener S** (2015) Vagus nerve stimulation modulates plasticity in the prefrontal cortex-amygdala pathway and enhances extinction of drug-seeking behavior. *UT Austin Conference on Learning & Memory*. Abstract #18.
19. Jeevakumar V, Driskill C, Phensy A, Brewer, S, de la Hoz C, Vakil H, Panjabi A, **Kroener S** (2015) Effects of the antioxidant N-acetyl cysteine on behavioral and neurophysiological deficits induced by developmental NMDA-R antagonism (2015) *UT Austin Conference on Learning & Memory*. Abstract #30
20. Childs JE, Nickel E, DeLeon J, **Kroener S** (2015) Vagus nerve stimulation modulates plasticity in the prefrontal cortex-amygdala pathway and enhances extinction of drug-seeking behavior. *Society for Neuroscience Abstracts*. 51.12.
21. Jeevakumar V, **Kroener S** (2014) Characterization of the alterations in the physiological properties of FS cells following developmental ketamine administration in mice. *Society for Neuroscience Abstracts*. 613.10.
22. Pruett J.E., Ramos J., Hu W., Jeevakumar V., **Kroener S** (2014). Vagus nerve stimulation modulates plasticity in the prefrontal cortex-amygdala pathway and enhances extinction of drug-seeking behavior. *18th Annual UT Austin Neuroscience Symposium*.
23. Alvarez-Dieppa A, Childs JE, Willett S, **Kroener S**, McIntyre C (2014) Molecular mechanisms of VNS-enhanced extinction of fear. *Society for Neuroscience Abstracts*. 468.17/VV12.



24. Jeevakumar V, Ramos J, Sobhanian M, Paine A, **Kroener S** (2013) Alterations in the physiological properties of fast-spiking interneurons and prefrontal cortex-dependent behaviors following developmental ketamine treatment. *Society for Neuroscience Abstracts*. 346.17.
25. Pruett J, Ramos J, Jeevakumar V, Hu W, **Kroener S** (2013) Vagus nerve stimulation modulates plasticity in the prefrontal cortex-amygdala pathway and enhances extinction of drug-seeking behavior. *Society for Neuroscience Abstracts*. 816.01.
26. New NN, **Kroener S**, Gass JT, Mulholland PJ, Becker HC, Chandler LJ (2012) Chronic intermittent alcohol alters dendritic spine morphology and and plasticity-related proteins in the mouse prefrontal cortex. *Society for Neuroscience Abstracts*. 870.19.
27. Spencer KB, Mulholland PJ, **Kroener S**, Chandler LJ (2012) Chronic ethanol exposure decreases KV4.2 channel and KCHIP3 expression in the hippocampus. *Alcoholism–Clinical and Experimental Research* 36: 15A–15A.
28. **Kroener S**, Mulholland PJ, Becker HC, Chandler LJ (2010) Chronic alcohol exposure alters NMDA receptor function and synaptic plasticity in the prefrontal cortex. *Society for Neuroscience Abstracts*. 365.20.
29. Mulholland PJ, **Kroener S**, Chandler LJ (2010) Chronic ethanol exposure enhances backpropagating action potential-induced calcium transients in distal apical dendrites of CA1 pyramidal neurons. *Alcoholism–Clinical and Experimental Research* 34(6): 140A–140A.
30. Chandler L J, Woodward J J, Abernathy K, **Kroener S** (2009) Alcohol alters the network activity and information flow within the prefrontal cortex. *Alcoholism–Clinical and Experimental Research* 33(6): 308A.
31. **Kroener S**, Andrews G, Lavin A (2009) Altered dopamine modulation of inhibition in the prefrontal cortex of cocaine-sensitized rats. *Gordon Research Conference on Catecholamines*.
32. **Kroener S**, Phillips PEM, Chandler LJ, Seamans JK (2008) Dopamine modulates recurrent synaptic activity and enhances the signal-to-noise ratio in the prefrontal cortex. *12th Internatl. Conference on In-vivo Methods*. 176–179.
33. **Kröner S**, Phillips PEM, Chandler LJ, Seamans JK (2008) Concentration-dependent dopamine modulation of recurrent synaptic activity and enhancement of signal-to-noise ratio in the prefrontal cortex. *Society for Neuroscience Abstracts*. 237.10.
34. **Kröner S**, Andrews GD, Noguiera L, Lavin A (2007) Altered dopamine modulation of inhibition in the prefrontal cortex (PFC) of cocaine-sensitized rats. *Society for Neuroscience Abstracts*. 272.22.
35. **Kröner S**, Chandler LJ, Seamans JK (2005) Encoding of network activity in layer 5 neurons of the prefrontal cortex (PFC). *Soc. Neurosci. Abstr.* 735.15.
36. **Kroener S**, Chandler LJ, Seamans JK (2005) VTA and dopamine modulation of network activity in organotypic co-cultures. *Gordon Research Conference on Catecholamines*.
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42. **Kröner S**, Krimer LS, Lewis DA, Barrionuevo G (2002) Dopaminergic modulation of local circuit neurons in monkey dorsolateral prefrontal cortex in vitro. *Dopamine 2002*.
43. **Kröner S**, Rosenkranz JA, Grace AA, Barrionuevo G (2002) Dopaminergic modulation of firing properties of projection neurons and interneurons in the rat basolateral amygdala. *Society for Neuroscience Abstracts*. 336.20.
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45. **Kroener S**, Krimer LS, Gonzalez–Burgos G, Lewis DA, Barrionuevo G (2001) Dopaminergic modulation of local circuit neurons in monkey dorsolateral prefrontal cortex in vitro. *Society for Neuroscience Abstracts*. 373.12.
46. Gunturkun O, Gottmann K, Hatt H, **Kroener S** (2001) Dopaminergic modulation of firing properties of neurons in the caudal forebrain of the chick. *Society for Neuroscience Abstracts*. 143.8.
47. Barrionuevo G, Gonzalez–Burgos G, **Kroener S**, Lewis DA (2001) Dynamics of excitatory synaptic input in subclasses of non–pyramidal neurons in monkey dorsolateral prefrontal cortex. *Society for Neuroscience Abstracts*. 729.15.
48. **Kröner S**, Gottmann K, Hatt H, Güntürkün O (1999) Cell types within the neostriatum caudolaterale of the chick: Intrinsic electrophysiological and anatomical properties. *Society for Neuroscience Abstracts*. 57.6.
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50. **Kröner S**, Güntürkün O, Borlongan CV, Shimizu T (1995) Chemoarchitecture of the neostriatum caudolaterale in the pigeon. *Society for Neuroscience Abstracts*. 439.8.

#### INVITED PRESENTATIONS:

10/2017 – The Center for Vital Longevity, Dallas, TX.

09/2017 – IUPUI, Department of Psychology, Indianapolis, IN

11/2013 – The Center for Brain Health, Dallas, TX.

04/2011 – The University of Texas at San Antonio, Department of Biology, San Antonio, TX.

09/2009 – Mount Sinai School of Medicine, Brain Research Institute, New York, NY.  
09/2009 – The University of Texas at Dallas, School of Behavioral and Brain Research, Richardson, TX.  
02/2009 – The University of Toledo, Department of Psychology and Neuroscience Program, Toledo, OH.  
02/2008 – University of Tennessee, Department of Psychology, Memphis, TN.  
12/2004 – MUSC, Department of Physiology and Neuroscience, Charleston, SC.  
03/2003 – Conte Center for the Neuroscience of Mental Disorders, Pittsburgh, PA.  
11/2002 – University of Pittsburgh, Department of Neuroscience, Pittsburgh, PA.

REFEREED TALKS:

09/2016 – ISBRA & ESBRA World Congress, Berlin, Germany

EXTERNAL FUNDING FOR ORIGINAL INVESTIGATIONS:

Project title: *Long-lived Enzymes for Organophosphorus Degradation*

PI: Gassensmith 08/01/2023 – 7/31/2026

DoD, CDMRP; Total cost: \$698,309.00

Current status: pending

# GRANT13769746 *Diversity Supplement* to grant: Vagus nerve stimulation modulates synaptic plasticity in the rat prefrontal cortex during the extinction of drug-seeking. Candidate: Sierra Rodriguez

# GRANT 1316687 *Diversity Supplement* to grant: Synaptic changes in the medial prefrontal cortex in the development of compulsive alcohol drinking. Candidate: Skylar Mendez

1R01 AA028861-01A1 (PI: Kroener) 02/15/22-1/31/27 2 summer months

NIH, NIAAA; Total costs: \$1,764,500.00

Project title: *Synaptic changes in the medial prefrontal cortex in the development of compulsive alcohol drinking.*

Current status: funded

R01DA055008-01 (PI Kroener) 04/1/22 - 01/31/27 3 summer months

NIH, NIDA; Total cost: \$1,966,165.00

Project title: *Vagus nerve stimulation modulates synaptic plasticity in the rat prefrontal cortex during the extinction of drug-seeking*

Current status: funded

1R21DA055882-01 (PI: Filbey, Co-I: Kroener) 04/01/202 – 03/31/2024

NIH, NIDA; Total cost: \$429,000.00

Project title: *Testing executive function-mediated improvements in cannabis use disorder via taVNS*

Current status: not funded

1R21NS127337-01 (PI: Gassensmith) 03/01/2022 – 2/28/2025

NIH; Total cost: \$635,508.00

Project title: *Long-lived Enzymes for Organophosphorus Degradation*

Current status: not funded

2R44MH119734-02 (PI: D. Sloan) 06/24/2020 - 05/31/2022 1 summer month

NIH; NIMH (Phase II); Total cost: \$1,730,367

Cost of subaward to S. Kroener: \$185,734.67

Project title: SBIR: *HabiTrak: Low-cost, wireless home cage health and activity monitoring.*

Current status: funded

1R01 AA028861-01 (PI: Kroener) 07/01/2020 - 06/30/2025 2 summer months

NIH, NIAAA; Total costs: \$1,923,441.00

Project title: *Synaptic changes in the medial prefrontal cortex in the development of compulsive alcohol drinking.*

Current status: pending

1R01 NS115961-01A1 (PI: Kroener) 07/01/2020 - 06/30/2025 2 summer months

NIH, NINDS; Total costs: \$1,917,495.00

Project title: *Sex-differences in prefrontal cortex dysfunction in neuropathic pain.*

Current status: not funded

R01DA051590 (PI Kroener) 07/01/2020 - 06/30/2025 2 summer months

NIH, NIDA; Total cost: \$1,918,820.0

Project title: *Cocaine-induced synaptic changes in the prefrontal cortex and their modulation by vagus nerve stimulation during extinction*

Current status: not funded

BBS Research Stimulus Grant 2019 (PIs: Sven Kroener, Francesca Filbey)

UTD BBS internal; Total costs: \$8,491.85

Project title: *Executive functioning-mediated improvements in self-regulation: A translational taVNS approach.*

Current status: funded

R01MH120302 (PI: J. Ploski, Co-I: Kroener) 07/01/2019 – 04/30/2023

NIH/NIMH; Total costs: Budget: \$1,530,00

Project Title: *Pharmacologically Enhancing the Modification of Strong Modification Resistant Memories*

Current status: funded

NIH R56MH118469 (PI: J. Ploski, Co-I: Kroener) 03/01/2019 – 02/29/2021 NCE

NIH/NIMH Budget: \$382,500

Project Title: *The Molecular Basis of Reconsolidation Updating*

Current status: funded

R01AG067188 (PI: Lan Guo, Co-Is: Sven Kroener, Heng Du) 7/1/2019-6/30/2024

NIH/NIA; Total cost: \$1,912,500

Project title: *"Mitochondrial calcium uniporter deregulation and synaptic stress in Alzheimer's disease"*

Current status: not funded

1R21AG067203 (PI: Kroener) 04/01/2020 - 03/31/2022

NIH, NIA; Total cost: \$382,500.00

Project title: *Cyclophilin-D and synaptic dysfunction in parvalbumin-positive interneurons in Alzheimer's disease.*

Current status: not funded

1R01NS115961 (PI: Kroener) 04/01/2020 - 03/31/2025

NIH, NINDS; Total costs: \$1,949,540.00

Project title: *Sex-differences in prefrontal cortex dysfunction in neuropathic pain.*

Current status: not funded

1R01MH121541-01 (PI: Kroener) 09/01/2019 – 08/31/2024

NIH, NIMH; Total costs: \$2,520,118.00

Project title: *Oxidative stress and mitochondrial dysfunction in a developmental model of schizophrenia and their regulation by cyclophilin-D.*

Current status: not funded

1R01 NS106994-01A1 (PIs: Kroener, Price) 07/01/2019 – 06/31/2024

NIH, NINDS; Total costs: \$3,259,692.00

Project title: *Prefrontal Cortex Dysfunction in Neuropathic Pain.*

Current status: not funded

1R01 GRANT12560050 (PI: Kroener) 09/01/2018 – 08/31/2023

NIH, NIMH; Total costs: \$2,181,483.00

Project title: *Oxidative stress and mitochondrial dysfunction in a developmental model of schizophrenia and their regulation by cyclophilin-D.*

Current status: not funded

R01AG059753 (PI: Heng Du. Co-I: Sven Kroener) 07/01/2018 – 06/30/2023

NIH, NIA; Total costs: \$2,314,600

Project title: *GHSR1a and hippocampal pathology in Alzheimer's Disease.*

Current status: funded

1R01NS106994 (PIs: Kroener, Price) 07/01/2018 – 06/31/2023

NIH, NINDS; Total costs: \$2,424,299.00

Project title: *Prefrontal cortex dysfunction in neuropathic pain and the impact of novel therapeutics.*

Current status: not funded

1R03DA043632-01 (PI: Kroener) 11/01/2016 – 10/31/2018

NIH, NIDA; Total costs: \$142,394.14

Project title: *Parameters that influence how vagus nerve stimulation facilitates the extinction of drug seeking.*

Current status: not funded

1R21 DA043150-01 (PI: Kroener) 07/01/2017 – 06/30/2019

NIH, NIDA Total costs: \$420,750.00

Project title: *Vagus nerve stimulation as a tool to modulate synaptic plasticity during extinction from drug seeking.*

Current status: funded

1R01AG053588-01 (PI: Heng Du, Co-Is: Sven Kroener, Lan Guo) 08/01/2016 – 05/31/2021  
NIH, NIA; Total costs: \$1,912,500

Project title: *Mitochondrial ATP synthase dysfunction and synaptic stress in Alzheimer's disease.*

Current status: funded

1631910 NSF (PI: Zhenpeng Qin. Co-Is: Sven Kroener, Jonathan Ploski) 04/01/2016 – 03/31/2021  
National Science Foundation; Total costs: \$800,000.00

Project title: *NCS-FO: Sub-millisecond optically-triggered compound release to study real-time brain activity and behavior.*

Current status: funded

1R01MH110722-01 (PI: Kroener) 04/01/2016 – 03/31/2021

NIH, NIMH Total costs: \$1,893,950.00

Project title: *Antioxidant treatment of NMDAR dysfunction in a developmental schizophrenia model.*

Current status: not funded

1R03DA040790-01 (PI: Kroener) 04/01/2016 – 03/31/2018

NIH, NIDA; Total costs: \$145,124.00

Project title: *The role of context and drug dependence in VNS' facilitation of extinction memory.*

Current status: not funded

1R01MH110484 (PI: Jonathan Ploski, Co-I: Sven Kroener) 04/01/2016 – 03/31/2021

NIH, NIMH; Total costs: \$1,843,599

Project title: *The molecular basis of memory modification.*

Current status: under review

1R21MH109945-01 (PI: Jonathan Ploski, Co-I: Sven Kroener) 04/01/2016 – 03/31/2021

Project title: *Generation of viral based inducible and Cre-dependent genome editing tools for neuroscience.*

NIH, NIMH; Total costs: \$420,750.00

Current status: not funded

1R03AA023268-01 (PI: Kroener) 08/10/2015 – 07/31/2017

NIH, NIAAA; Total costs: \$153,000.

Project title: *Effects of acamprosate on alcohol-induced aberrant synaptic plasticity in the PFC.*

Current status: funded

1R21DA040453-01 (PI: Kroener) 07/01/2015 – 06/30/2017

NIH, NIDA Total costs: \$375,593.00

Project title: *Vagus nerve stimulation as a tool to facilitate drug extinction learning.*

Current status: not funded

WM Keck Foundation Phase I application (PI: Zhenpeng Qin, Co-Is: Sven Kroener, Gregory Dussor).

Duration: 2016 – 20206

UT System; Total costs: \$1,500,000

Project title: *Novel compound burst release technology to study millisecond neurotransmission.*

Current status: not funded

UT BRAIN seed grant – Neuroscience and Neurotechnology Research Institute (UTS–NNRI) Duration  
(PI: Zhenpeng Qin, Co-I: Sven Kroener) 09/01/2015 – 08/31/2016

UT System; Total costs: \$100,000

Project title: *Studying brain activity by liposome-based neurotransmitter burst release.*

Current status: funded

UT BRAIN seed grant – Neuroscience and Neurotechnology Research Institute (UTS–NNRI)

(PI: Heng Du, Co-I: Sven Kroener) 06/01/2015 – 05/31/2026

UT System Total costs: \$100,000

Project title: *Ghrelin receptor in hippocampal development and spatial memory formation.*

Current status: not funded

009741–0002–2013 – NHARP full proposal (PI: Kroener) 06/01/2014 – 05/31/2015

Norman Hackerman Advanced Research Program; Total costs: \$100,000.

Project title: *Directing neural plasticity via vagus nerve stimulation to aid extinction of drug seeking behavior.*

Current status: not funded

School of Behavioral and Brain Sciences Research Initiative (PI: Kroener) 09/01/2013 – 08/15/2014

School of Behavioral and Brain Sciences, UTD Total cost: \$5,000

Project title: *Aiding extinction of drug seeking behavior by vagus nerve stimulation.*

Current status: funded

R15 MH099655–01A1 (PI: Christa McIntyre, Co-I: Sven Kroener) 07/01/2013 – 06/30/2016

NIH, NIMH Total costs: \$429,933

Project title: *Mechanisms of extinction of conditioned fear by vagus nerve stimulation.*

Current status: funded

1R15DA035515–01 (PI: Kroener) 10/01/2012 – 09/30/2015

NIH, NIDA Direct costs: \$459,000.

Project title: *Aiding extinction of drug seeking behavior by vagus nerve stimulation.*

Current status: not funded

1R01MH096864–01 (PI: Kroener) 01/01/2012 – 12/31/2016

NIH, NIMH; Direct costs: \$1,513,940.00.

Project title: *Effects of NMDAR–hypofunction in cortical interneurons on prefrontal networks.*

Current status: not funded

1146454 NSF (PI: Kroener) 01/01/2012 – 12/31/2014

National Science Foundation; Total costs: \$986,797.00.

Project title: *Effects of NMDA receptor hypofunction on signal-to-noise processing in interneurons.*

Current status: not funded

1221309 NSF IOS Preliminary Proposal (PI: Kroener) 11/01/2012 – 10/31/2015

National Science Foundation

Project title: *Effects of NMDA receptor hypofunction on signal-to-noise processing in interneurons.*

Current status: not funded

1R21AA017527–01A2 (PI: Kroener, Co-I: L. Judson Chandler) 09/01/2009 – 06/30/2011 (no-cost extension to 06/30/2012)

NIH, NIAAA Total costs: \$405,625.00

Project title: *Effects of chronic alcohol exposure on synaptic plasticity in the prefrontal cortex.*

Current status: funded

1R21NS056124–01A1 (PI: Kroener, Co-Is: Jeremy Seamans, L. Judson Chandler) 04/01/2007 – 03/31/2009

NIH, NINDS Direct costs: \$188,073

Project title: *Dopamine modulation of network activity in the prefrontal cortex.*

Current status: funded

1R01 NS058656–01 (PI: Kroener. Co-I: Jeremy Seamans) 04/01/2007 – 03/31/2012

NIH, NIMH Total Direct costs: 1,145,520.

Project title: *Dopamine modulation of signal-to-noise properties in active cortical networks.*

Current status: not funded

5R01DA014698–08 (PI: Antonieta Lavin, Co-I: Sven Kroener, until 05/2010) 07/01/2008 – 06/30/2012

Funding Organization: NIH, NIMH; Direct costs: \$289,080.

Project title: *Effects of repetitive cocaine administration in activity of cortical interneurons.*

Current status: funded

NARC 84875 (PI: Kroener) (Parent grant P50DA015369–04; PIs Jackie McGinty, Peter Kalivas) 11/2005 – 11/2006

NIH, NIDA; Total costs: \$50,000

Project title: *Effects of acute and repeated cocaine administration on GABAergic interneurons and activity states in the prefrontal cortex (PFC).*

Current status: funded

#### **GRANTS AWARDED**

1R01 AA028861-01A1 (PI: Kroener) 02/15/22-1/31/27 2 summer months

NIH, NIAAA; Total costs: \$1,764,500.00

Project title: *Synaptic changes in the medial prefrontal cortex in the development of compulsive alcohol drinking.*

Current status: funded

R01DA055008-01 (PI Kroener) 04/1/22 - 01/31/27 3 summer months

NIH, NIDA; Total cost: \$1,966,165.00

Project title: *Vagus nerve stimulation modulates synaptic plasticity in the rat prefrontal cortex during the extinction of drug-seeking*

Current status: funded

R44 MH119734 (PI: Andrew M Sloan) 03/01/20-02/28/22



NIMH (Phase II); Total cost: \$1,730,367

Project title: *HabiTrak: low-cost, wireless home cage health and activity monitoring.*

BBS Research Stimulus Grant (PIs: Sven Kroener, Francesca Filbey)

UTD BBS internal; Total costs: \$8,491.85

Project title: *Executive functioning-mediated improvements in self-regulation: A translational taVNS approach.*

R01MH120302 (PI: J. Ploski, Co-I: Kroener) 07/01/2019 – 04/30/2023

NIH/NIMH; Total costs: Budget: \$1,530,00

Project Title: *Pharmacologically Enhancing the Modification of Strong Modification Resistant Memories*

Current status: funded

NIH R56MH118469 (PI: J. Ploski, Co-I: Kroener) 03/01/2019 – 02/29/2021 NCE

NIH/NIMH Budget: \$382,500

Project Title: *The Molecular Basis of Reconsolidation Updating*

Current status: funded

R01AG059753 (PI: Heng Du, Co-I: Sven Kroener) 07/01/2018 – 06/30/2023

NIH, NIA; Total costs: \$2,314,600

Project title: *GHSR1a and hippocampal pathology in Alzheimer's Disease.*

1R21 DA043150-01 (PI: Kroener) 07/01/2017 – 06/30/2019

NIH, NIDA; Total costs: \$420,750.00

Project title: *Vagus nerve stimulation as a tool to modulate synaptic plasticity during extinction from drug seeking.*

1R01AG053588-01 (PI: Heng Du, Co-Is: Sven Kroener, Lan Guo) 08/01/2016 – 05/31/2021

NIH, NIA; Total costs: \$1,912,500

Project title: *Mitochondrial ATP synthase dysfunction and synaptic stress in Alzheimer's disease.*

1631910 NSF (PI: Zhenpeng Qin, Co-Is: Sven Kroener, Jonathan Ploski) 04/01/2016 – 03/31/2021

National Science Foundation; Total costs: \$800,000.00

Project title: *NCS-FO: Sub-millisecond optically-triggered compound release to study real-time brain activity and behavior.*

1R03AA023268-01 (PI: Kroener) 08/10/2015 – 07/31/2017

NIH, NIAAA; Total costs: \$153,000.

Project title: *Effects of acamprosate on alcohol-induced aberrant synaptic plasticity in the PFC.*

UT BRAIN seed grant – Neuroscience and Neurotechnology Research Institute (UTS–NNRI) Duration

(PI: Zhenpeng Qin, Co-I: Sven Kroener) 09/01/2015 – 08/31/2016

UT System; Total costs: \$100,000

Project title: *Studying brain activity by liposome-based neurotransmitter burst release.*

School of Behavioral and Brain Sciences Research Initiative (PI: Kroener) 09/01/2013 – 08/15/2014

School of Behavioral and Brain Sciences, UTD Total cost: \$5,000

Project title: *Aiding extinction of drug seeking behavior by vagus nerve stimulation.*

R15 MH099655–01A1 (PI: Christa McIntyre, Co-I: Sven Kroener) 07/01/2013 – 06/30/2016

NIH, NIMH Total costs: \$429,933

Project title: *Mechanisms of extinction of conditioned fear by vagus nerve stimulation.*

1R21AA017527–01A2 (PI: Kroener, Co-I: L. Judson Chandler) 09/01/2009 – 06/30/2011 (no-cost extension to 06/30/2012)

NIH, NIAAA Total costs: \$405,625.00

Project title: *Effects of chronic alcohol exposure on synaptic plasticity in the prefrontal cortex.*

1R21NS056124–01A1 (PI: Kroener, Co-Is: Jeremy Seamans, L. Judson Chandler) 04/01/2007 – 03/31/2009

NIH, NINDS; Total Direct costs: \$188,073

Project title: *Dopamine modulation of network activity in the prefrontal cortex.*

5R01DA014698–08 (PI: Antonieta Lavin, Co-I: Sven Kroener, until 05/2010) 07/01/2008 – 06/30/2012

Funding Organization: NIH, NIMH; Total Direct costs: \$289,080.

Project title: *Effects of repetitive cocaine administration in activity of cortical interneurons.*

NARC 84875 (PI: Kroener) (Parent grant P50DA015369–04; PIs J McGinty, P Kalivas) 11/2005 – 11/2006

NIH, NIDA; Total costs: \$50,000

Project title: *Effects of acute and repeated cocaine administration on GABAergic interneurons and activity states in the prefrontal cortex (PFC).*

#### **DOCTORAL CANDIDATE ADVISEMENT**

Wei Hu (01/2011 – 05/2015). Thesis title: *The neural basis for dysfunction of the prefrontal cortex in mice following alcohol exposure and its role in alcohol addiction.*

Vivek Jeevakumar (01/2011 – 05/2015). Thesis title: *Changes in synaptic transmission at GABAergic interneurons in an NMDAR-hypofunction model of schizophrenia.*

Jessica E. Childs (08/2013 – 08/2018). Thesis title: *Extinction learning paired with vagus nerve stimulation enhances behavioral outcomes and drives plasticity in extinction networks.*

Aarron Phensy (08/2015 – 03/2020). Thesis title: *Oxidative stress, mitochondria, and schizophrenia; Redox systems mediate cognitive and cellular deficits in an animal model of NMDAR-hypofunction.*

Christopher Driskill (08/2018 – present). Thesis topic: *Modulation of prefrontal cortical networks by vagus nerve stimulation in the context of drug-seeking.* Expected graduation date: Summer 2023.

Sierra Rodriguez (08/2020 – present). Thesis topic: *Effects of vagus nerve stimulation on synaptic changes in drug-seeking.* Expected graduation date: Summer 2025.

#### **I served on the dissertation committees of the following students:**

Eric David (2022 - )

Jackson Brougher (graduated 12/2021)

Dhananjay Naik (2022 - )

Camilo Sanchez (graduated 4/2021)

Hao Chen (graduated 11/2020)  
 Jing Tiang (graduated 11/2020)  
 John Perish (left program in 2020)  
 Stephanie Shiers (graduated 11/2019)  
 Christopher DeSolis (graduated 07/2018)

Roopashri Holehonnur (graduated 07/2016)  
 Erika L. Underwood (graduated 03/2016)  
 Anwesha Banerjee (graduated 04/2015)  
 Amanda Alvarez–Dieppa (11/2013 – 11/2015)  
 Swagata Roychowdhury (graduated 08/2012)

#### **MASTER’S STUDENT ADVISEMENT**

Elise Riggle	UTD	2022 –
Dylanna Davis	UTD	2022 – 2023
Skylar Mendez	UTD	2021 – until joining BBS PhD program 08/2022
Abraham Nofal	UTD	2021 – until graduation in 05/2022
Frank Salazar	UTD	2021 –
John “Tyler” O’Brien	UTD	2020 – until graduation in 05/2022
Vivek Ananthanarayanan	UTD	01/2020 – 2021
Yi Luo	UTD	12/2019 – 2021
Jacqueline Newel	UTD	08/2018 – until joining BBS PhD program 2019
Kathy Lindquist	UTD	05/2018 – until graduation in 05/2020
Crystal Munoz	UTD	09/2017 – until graduation in 12/2019
Martha (Alejandra) Gallo	UTD	08/2017 – until graduation in 05/2019
Suhyeong Kim	UTD	08/2017 – until graduation in 05/2019
Dania Bairuty	UTD	01/2017 – until graduation in 05/2018
Patrick Melugin	UTD	08/2016 – until graduation in 05/2018
Christopher Driskill	UTD	08/2016 – until joining BBS PhD program 08/2018
Hasmik E Duzdabanian	UTD	08/2015 – until graduation in 05/2017
Karen Lindquist	UTD	01/2016 – 12/2017
Grishma Pradhan	UTD	05/2015 – until graduation in 05/2016 (collaborated until 2018)
Aarron Phensy	UTD	11/2014 – until joining BBS PhD program 08/2015
Bryan Fowler	UTD	11/2014 – until graduation in 05/2016
Dominic Lakhotia	UTD	08/2015 – 03/2016
Samantha Brewer	UTD	11/2014 – until graduation in 12/2015
Hans Klein	UTD	10/2014 – until graduation in 12/2015
Vishak Iyer	UTD	01/2013 – until graduation in 05/2014
Unnati Madhavi	UTD	01/2013 – 12/2013
Jessica Pruett (Childs)	UTD	05/2012 – until joining BBS PhD program 08/2013
Nyadoar Kueck	UTD	01/2012 – until graduation in 05/2013
Jeremiah Ramos	UTD	08/2011 – until graduation in 05/2013
Erin Sullivan	UTD	05/2011 – until graduation in 05/2012

Fatemeh Jabbarpour	UTD	09/2010 – until graduation in 05/2011
Yonathan Essaw	UTD	10/2010 – until graduation in 05/2011
Esther J. Escobedo	UTD	06/2010 – until graduation in 05/2011
Lourdes Nogueira	MUSC	2007 – 2009

#### **ORGANIZED COURSES**

<u>Semester</u>		<u>Course name</u>	<u>Enrollment</u>
Spring 2023	NSC 4352.001	Cellular Neuroscience	120
	HCS 8V89.020	Research in Neuroscience	5
	NSC 4v98.020	Directed Research	5
	BIOL 3V91.047	Undergraduate Research in Biology	1
Fall 2022	HCS/ACN 634.001	Cellular Neuroscience	41
	HCS 8V89.020	Research in Neuroscience	5
	NSC 4v98.020	Directed Research	2
	HCS 8V89.020	Research in Neuroscience	3
Summer 2022	NSC 4352.001	Cellular Neuroscience	145
Spring 2022	NSC 4v98.020	Directed Research	4
	BIOL 3V91.047	Undergraduate Research in Biology	1
	HCS 8V89.020	Research in Neuroscience	3
	NSC 4354.001	Integrative Neuroscience	96
Fall 2021	HCS/ACN 634.001	Cellular Neuroscience	35
	NSC 4v98.020	Directed Research	1
	BIOL 3V91.047	Undergraduate Research in Biology	1
	HCS 8V89.020	Research in Neuroscience	3
Summer 2021	HCS 8V89.020	Research in Neuroscience	3
	HCS/ACN 634.001	Cellular Neuroscience	24
	NSC 4352.001	Cellular Neuroscience	158
	HCS 8V89.020	Research in Neuroscience	4
Spring 2021	NSC 4v98.020	Directed Research	1
	NSC 4352.001	Integrative Neuroscience	152
	HCS/ACN 634.001	Cellular Neuroscience	40
	NSC 4v98.020	Directed Research	2
Fall 2020	BIOL 3V91.047	Undergraduate Research in Biology	1
	HCS 8V89.020	Research in Neuroscience	3
	HCS 8V89.020	Research in Neuroscience	1
	NSC 4352.001	Cellular Neuroscience	143
Summer 2020	NSC 4352.001	Cellular Neuroscience	29
	HCS 7121.001	Graduate Seminar in Systems Neuroscience	1
	HCS 8v99	Dissertation	1
	HCS 8V89.020	Research in Neuroscience	4
Spring 2020	NSC 4v98.020	Directed Research	6
	NSC 4352.001	Integrative Neuroscience	148
	HCS 7121.001	Graduate Seminar in Systems Neuroscience	18
	HCS 8V89.020	Research in Neuroscience	1
Fall 2019	HCS 8v99	Dissertation	1
	NSC 4v98.020	Directed Research	3

Summer 2019	BIOL 3V91.047	Undergraduate Research in Biology	1
	NSC 4v98.020	Directed Research	3
	HSC 8v89.020	Res. in Neuroscience	1
Spring 2019	HCS 8v99	Dissertation	1
	NSC 4352.001	Cellular Neuroscience	173
	HCS 7121.001	Graduate Seminar in Systems Neuroscience	17
	HCS 8v99	Dissertation	1
	HCS 8V89.020	Research in Neuroscience	3
Fall 2018	NSC 4v98.020	Directed Research	7
	BIOL 6V98.047	Masters Thesis	1
	NSC 4354.001	Integrative Neuroscience	228
	HCS 7121.001	Graduate Seminar in Systems Neuroscience	13
	HCS 8v99	Dissertation	1
Summer 2018	HCS 8V89.020	Research in Neuroscience	2
	NSC 4v98.020	Directed Research	5
	HCS 8v99	Dissertation	1
	HCS 8V89.020	Research in Neuroscience	1
	NSC 4v98.020	Directed Research	2
Spring 2018	NSC 4352.001	Cellular Neuroscience	178
	HCS 7121.001	Graduate Seminar in Systems Neuroscience	17
	HCS 8v99	Dissertation	1
	HCS 8V89.020	Research in Neuroscience	3
	NSC 4v98.020	Directed Research	3
Fall 2017	BIOL 6V98.047	Masters Thesis	1
	NSC 4354.001	Integrative Neuroscience	157
	HCS 7121.001	Graduate Seminar in Systems Neuroscience	17
	HCS 8v99	Dissertation	1
	HCS 8V89.020	Research in Neuroscience	2
Summer 2017	BIOL 6V03.047	Research in Molecular and Cell Biology	1
	NSC 4v98.020	Directed Research	5
	BIOL 3V91.047	Undergraduate Research in Biology	1
	BIOL 4391.047	Senior Research in Molecular and Cell Biology	1
	BIOL 6V03.047	Research in Molecular and Cell Biology	1
Spring 2017	NSC 4352.001	Cellular Neuroscience I	133
	HCS 8v99	Dissertation	1
	NSC 4v98.020	Directed Research	3
	HCS 8v80.020	Res. in Behav. and Brain Sci	4
	BIOL 3V91.847	Undergrad. Res. in Biology	1
Fall 2016	BIOL 6V03.047	Research in Molecular and Cell Biology	1
	NSC 4354.001	Integrative Neuroscience	123
	ACN/HCS/PSY 6340.501	Cellular Neuroscience	29
	HCS 8v99	Dissertation	1
	NSC 4v98.020	Directed Research	2
Summer 2016	HCS 8v80.020	Res. in Behav. and Brain Sci	4
	HCS 8v99	Res. in Behav. and Brain Sci.	1
	NSC 4v98.020	Dissertation	1
		Directed Research	2

Spring 2016	NSC 4354.001	Integrative Neuroscience	123
	NSC 4352.001	Cellular Neuroscience	110
	HCS 8v99	Dissertation	1
	NSC 4v98.020	Directed Research	6
	HCS 8v80.020	Res. in Behav. and Brain Sci	4
	BIOL 3V91.847	Undergrad. Res. in Biology	1
2015 Fall	ACN/HCS/PSY 6340.501	Cellular Neuroscience	36
	HCS 8v80.020	Research in Behavioral and Brain Science	4
	NSC 4v98.020	Directed Research	9
	BIOL 3v91.047	Undergrad. Research in Biology	1
	HCS 6v50.047	Internship in Biotechnology/Biomedicine	1
2015 Summer	HCS 8v80.020	Research in Behavioral and Brain Science	1
	HCS 6v50.047	Internship in Biotechnology/Biomedicine	1
	NSC 4v98.020	Directed Research	2
2015 Spring	NSC 4352.001	Cellular Neuroscience	128
	HCS 8v99	Dissertation	2
	HCS 8v80.020	Research in Behavioral and Brain Science	4
	NSC 4v98.020	Directed Research	8
	BIOL 4399.047	Seniors Honors Research in Molecular and Cell Biology	2
2014 Fall	BIOL 3v91.047	Undergrad. Research in Mol and Cell Biol.	1
	NSC4397.020	Thesis research	1
	ACN/HCS/PSY 6340.501	Cellular Neuroscience	
	NSC 4354.001	Integrative Neuroscience	
	HCS 8v99	Dissertation	
2014 Summer	HCS 8v80.020	Research in Behavioral and Brain Science	
	NSC 4v98.020	Directed Research	
	BIOL 3V91.847	Undergrad. Research in Biology	
	HCS 8v80.020	Research in Behavioral and Brain Science	
	HCS 8v99	Dissertation	
2014 Spring	NSC 4v98.020	Directed Research	
	NSC 4352.001	Cellular Neuroscience	
	HCS 8v99	Dissertation	
Spring 2013	HCS 8v80.020	Research in Behavioral and Brain Science	
	NSC 4v98.020	Directed Research	
	ACN/HCS 6340.001	Cellular Neuroscience	
	NSC 4354.501	Integrative Neuroscience	
	HCS 8v80.020	Research in Behavioral and Brain Science	
Summer 2013	NSC 4v98.020	Directed Research	
	BIOL 3V91.047	Undergrad. Research in Mol and Cell Biol.	
	HCS 8v80.020	Research in Behavioral and Brain Science	
Fall 2013	NSC 4v98.020	Directed Research	
	ACN/HCS/PSY 6340.501	Cellular Neuroscience	
	NSC 4352.001	Cellular Neuroscience	
Fall 2012	HCS 8v80.020	Research in Behavioral and Brain Science	
	BIOL 3V91.047	Undergrad. Research in Biology	
	ACN/HCS/PSY 6346.501	Systems Neuroscience	
	HCS 8v80	Research in Behavioral and Brain Science	

	NSC 4v98.020	Directed Research
	BIOL 3V91.047	Undergrad. Research in Biology
Summer 2012	HCS 8v80	Research in Behavioral and Brain Science
	NSC 4v98	Directed Research
Spring 2012	ACN 6340.001	Cellular Neuroscience
	HCS 7372.001	Seminar in Cognition and Neuroscience: Neuroscience of Addiction
	HCS 8v80	Research in Behavioral and Brain Science
	NSC 4v98	Directed Research
	BIOL 3V91.047	Undergraduate Research in Biology
	NSC 4V99.020	Independent Study
Fall 2011	NSC 4352	Cellular Neuroscience
	HCS 8v80	Research in Behavioral and Brain Science
	NSC 4v98	Directed Research
Summer 2011	HCS 8v80	Research in Behavioral and Brain Science
Spring 2011	ACN 6340.001	Cellular Neuroscience
	HCS 8v80	Research in Behavioral and Brain Science
	NSC 4v98	Directed Research
Fall 2010	HCS 8v80	Research in Behavioral and Brain Science
	NSC 4v98	Directed Research
Spring 2010		Electrophysiology Journal Club (MUSC)
Fall 2009		Electrophysiology Journal Club (MUSC)
Spring 2009	PHYSO 775 01	Adv Topics in Physio/Neuroscie (MUSC)
Fall 2008	BIOL/PSYCY 351	Neuroscience I (College of Charleston)

#### GUEST LECTURES

Fall 2014/2015	Guest lecture in C. Lanham's " <i>Drugs, alcohol, and society</i> " class (SOC 4357.001) – UTD
Fall 2008	PHYSO 731 NEUROSCIENCE I Prefrontal Cortical Processing – MUSC
Fall 2007	PHYSO 731 NEUROSCIENCE I Prefrontal Cortical Processing – MUSC
Fall 2006	PHYSO 731 NEUROSCIENCE I Prefrontal Cortical Processing – MUSC
1998 – 2000	Biopsychology, Teaching Assistant, Ruhr–Universität Bochum.

#### UNDERGRADUATE ADVISEMENT / OTHER

Since May 2011, I have given research opportunities to more than 190 undergraduate students in my lab at UTD. In 2013, I was awarded UTD's "Provost's Award for Faculty Excellence in Undergraduate Research Mentoring" out of 75 nominees. I was also a nominee for the award in 2014 (out of 21 nominees), 2016 (out of 8 nominees), 2017(out of 38 nominees), 2018 (out of 18 nominees), and 2019 (out of 17 nominees).

Senior Honors Research Theses supervised:

Shreya Balamurali – Capstone project (Spring 2022)

Neha Srinivasan – *Using TRAP2 mice to identify the neuronal circuits involved in alcohol withdrawal* (Spring 2020).

Grishma Pradhan – *Effects of calcium on attentional set-shifting in the prefrontal cortex of chronic alcohol-exposed mice* (Spring 2015).

Christof Zaayman – *Effects of acamprosate on alcohol drinking behavior of mice in a self-administered operant paradigm* (Spring 2015).

Undergraduates who received Research Awards for work done in my laboratory:

Aama Khan – Undergraduate Research Scholar Award 2022

Neha Sujii – Undergraduate Research Scholar Award 2022

Rohan Manepalli – Undergraduate Research Scholar Award 2021

Sophia Jallivand – Undergraduate Research Scholar Award 2021

Rohan Jupelly – Undergraduate Research Scholar Award 2020

John „Tyler“ O’Brien – Undergraduate Research Scholar Award 2019

Shivangi Gandhi – Undergraduate Research Scholar Award 2018

Jai Rajput – Undergraduate Research Scholar Award 2018

Kathy Lindquist – Undergraduate Research Scholar Award 2017

Emily Hsiu – Undergraduate Research Scholar Award 2017

Christopher Driskill – Undergraduate Research Scholar Award 2013, 2015

Rohith Kandunuri, Maisha Razzaque – Undergraduate Research Scholar Award 2015

Ali Mansoor – Duane and Linda Buhrmester Undergraduate Research Award 2015

Carlos de la Hoz – Undergraduate Research Scholar Award 2014

Haris Vakil – Undergraduate Research Scholar Award 2013

Jessica Pruett – Undergraduate Research Scholar Award 2011

Anson L Clark scholars (UTD’s Clark Summer Research Program):

Yash Sharma – 2019

Mashiur Fahim – 2016

Rohan Jupelly – 2019

Amogh Singhal – 2016

Jai Raiput – 2018

Maisha Razzaque – 2015

Anuj Gupta – 2018

Maireigh Nicholas – 2014

University of Texas System Louis Stokes Alliance for Minority Participation (LSAMP) scholar:

Bemisal Itmer – 2017

Ariel O’Brien – 2015



National Merit Scholars Program in the Hobson Wildenthal Honors College LEADER Program:

Benjamin Lin – 2017

MUSC Summer Research for Medical students:

Matt MacDermott – 2007

**PROFESSIONAL AND UNIVERSITY CITIZENSHIP**

SERVICE TO THE SCHOOL OF BEHAVIORAL AND BRAIN SCIENCES (BBS)

Fall 2017 – Spring 2018: Organized and hosted the NSC Brown Bag series.

2012: Organized and hosted the 2012 UT Dallas Neuroscience Conference *Corticostriatal circuits in Neuropsychiatric Disorders*.

Fall 2011 – Spring 2013: Organized and hosted the NSC Brown Bag series.

BBS COMMITTEES

2021 – present: Graduate steering committee

2020 – present: Undergraduate Research Match Portal

2020 – present: Scholarship committee

2020 – present: Teaching Effectiveness Committee (TEC)

2020 – 2021: BBS Committee on Equity, Justice, and Inclusion

2011, 2012, 2014, 2017, 2018, 2019, 2021: Member of the BBS graduate admissions committee

2010 – 2011: Member of the Neuroscience graduate curriculum committee

2012, 2022 – Neuroscience Faculty Search Committee

UNIVERSITY SERVICE

Outside Chair for the Final Oral Defenses of Charles Ekene, Mathematics (2019); Danielle Marie Georgiou, Arts and Humanities (2018); Terri Howard-Hughes, Arts and Humanities (2017); Amir Hossein Najian, EPPS (2016); Sara Keeth, Arts and Humanities (2015).

2021 – present: Member of ASPIRE<sup>2</sup> work group (Adapting Successful Practices to foster an Inclusive, Respectful, and Equitable Environment) funded by NSF (S. Adams, PI)

2021 – Tenure review committee for Dr. Sheel Dondani Meloni

2021 – present: Committee on Research Involving Human Subjects (“IRB”)

2020 – Tenure review committee for Dr. Gabriele Meloni

2019 – Speaker at the Eugene McDermott Graduate Fellowship Recruitment Weekend

2019 – 2021: University Committee on the Core Curriculum

2016 – present: UT Dallas Hobson Wildenthal Honors College Activities; Responsibilities: Participate in Night-out Events and other social activities with Honors College Students.

2013 – 2017: University Committee on Academic Integrity.

2011 – present: Host to incoming Clark and McDermott fellows.

2010 – present: Health Professions Evaluations. I interview and write evaluation letters for students preparing to enter medical school.

#### **EDUCATIONAL OUTREACH**

2021 – Expert adviser and judge for Highland Park High School’s “Advanced Placement Research”

2011: Speaker at the Scholar’s Day for incoming freshmen at The University of Texas at Dallas (*Schizophrenia, Working Memory & the Prefrontal Cortex: What we can Learn from Basic Science*).

2011 – present: Conduct tours of my lab to represent BBS and the Neuroscience program to potential National Merit Scholars.

#### **EXTERNAL SERVICE**

Editor for *Brain Sciences*

Study Sections

*National:*

Reviewer for the National Institutes of Health (NIH)

BPNS - Special Emphasis Panel/Scientific Review Group 2019/07 MDCN-B(04) (temporary member)

NMB - Study Section 2018 (temporary member)

NIBIB - Special Emphasis Panel/Scientific Review Group 2018/05 ZEB1 OSR-C (M1) S (temporary member)

DNDA - Scientific Review Group 2020/05 NAL (temporary member)

DNDA - ZRG1-IFCN-B-02M 2020/03 (temporary member)

NIDA Training SEP - ZDA1 SKM-D (01) S 2022/06 (temporary member)

DNDA - Scientific Review Group 2022/10 NAL (temporary member)

Behavioral Neuroscience Study Section - ZRG1 F02A-W (20) L 2023 (temporary member)

*International:*

Swiss Nationalfonds’ “Ambizione” Research Development Program (2012) – *Ad hoc Reviewer*

Czech Science Foundation (2019) – *Ad hoc Reviewer*

Ad-hoc reviewer for:

*Addictive Behaviors*  
*Addiction Biology*  
*Behavioural Brain Research*  
*Biological Psychiatry*  
*Brain Research Bulletin*  
*Brain Research*  
*Brain Sciences*  
*Cerebral Cortex*  
*Canadian Journal of Physiology and Pharmacology*  
*European Journal of Neuroscience*  
*Frontiers in Neuroscience*  
*Frontiers in Psychology*  
*Hippocampus*  
*Journal of Neurophysiology*

*Learning and Memory*  
*Metabolic Brain Disease*  
*Nature Communications*  
*Neurobiology of Learning and Memory*  
*Neuropharmacology*  
*Neuropsychopharmacology*  
*Neuroscience*  
*Neuroscience Letters*  
*Neurotoxicity Research*  
*Pain*  
*PLoS One*  
*Science Advances*  
*Scientific Reports*  
*Translational Psychiatry*