Stephen Maren, PhD

University Distinguished Professor and Charles H. Gregory Chair of Liberal Arts
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Research Interests

My research focuses on the neural mechanisms underlying emotional learning and memory in animals and the relevance of these mechanisms to clinical disorders of fear and anxiety, including post-traumatic stress disorder.

Education

1993 **PhD,** Biological Sciences (Neurobiology), University of Southern California
1991 **MS,** Biological Sciences (Neurobiology), University of Southern California
1989 **BS,** Psychology (*cum laude* with Honors), University of Illinois at Urbana-Champaign

Employment History

2018-pres **University Distinguished Professor,** Department of Psychological and Brain Sciences and Institute for Neuroscience, Texas A&M University
2019-pres **Charles H. Gregory Chair of Liberal Arts,** Department of Psychological and Brain Sciences and Institute for Neuroscience, Texas A&M University
2015-pres **Presidential Impact Fellow,** Department of Psychological and Brain Sciences and Institute for Neuroscience, Texas A&M University
2015-2019 **Claude H. Everett, Jr. '47 Chair of Liberal Arts,** Department of Psychological and Brain Sciences and Institute for Neuroscience, Texas A&M University
2012-2018 **Professor,** Department of Psychological and Brain Sciences and Institute for Neuroscience, Texas A&M University
2006-2012 **Professor,** Department of Psychology and Neuroscience Program, University of Michigan
2002-2006 **Associate Professor,** Department of Psychology and Neuroscience Program, University of Michigan
1996-2002 **Assistant Professor,** Department of Psychology and Neuroscience Program, University of Michigan
1993-1996 **Postdoctoral Fellow,** Department of Psychology, University of California, Los Angeles

Administrative Appointments

2012-pres **Area Coordinator** (Behavioral & Cellular Neuroscience), Department of Psychological and Brain Sciences, Texas A&M University
2007-2012 **Director,** Neuroscience Graduate Program, University of Michigan
2004-2007 **Associate Director,** Neuroscience Graduate Program, University of Michigan

Editorial Positions

2010-pres **Editor-in-Chief,** *Behavioural Brain Research*
2003-pres **Editorial Board,** *Neuroscience & Biobehavioral Reviews* (2003-pres), *Learning & Memory* (2017-pres), *Hippocampus* (2018-pres)

Honors and Awards

2019 **W. Horsley Gantt Medal**, Pavlovian Society
2019 **Member**, American College of Neuropsychopharmacology
2018 **F1000 Faculty**, Neuroscience/Behavioral Neuroscience, Faculty of 1000
2018 **Distinguished Investigator Award**, Brain & Behavior Research Foundation
2017 **Member**, Scientific Council, Brain & Behavior Research Foundation
2017 **Presidential Impact Fellow** (lifetime title), Awarded by President Michael K. Young, Texas A&M University
2017 **D. O. Hebb Distinguished Scientific Contributions Award**, American Psychological Association
2015 **Memory and Cognitive Disorders Award**, McKnight Endowment for Neuroscience, McKnight Foundation
2013 **President**, Pavlovian Society
2009 **Fellow**, Association for Psychological Science
2005 **Faculty Recognition Award**, Horace H. Rackham School of Graduate Studies, University of Michigan
2004 **Fellow**, American Psychological Association
2001 **Distinguished Scientific Award for Early Career Contribution to Psychology** (Behavioral and Cognitive Neuroscience), American Psychological Association
2001 **LS&A Excellence in Education Award,** College of Literature, Science & Arts, University of Michigan
1990 **Honorable Mention**, Graduate Research Fellowship, National Science Foundation
1989 **Dean's Fellowship,** University of Southern California
1989 **Inductee**, Phi Beta Kappa Honor Society
1987 **Edmund J. James Scholarship**, University of Illinois

Grants

[Continuously funded by NIH since 1995; >$11.7M in Total]

Active:

2018-2023 **Neural Circuits for Stress-Impaired Extinction Learning** (R01MH117852-01), *National Institute of Mental Health*, $2,478,064. Role: PI. *6/11/18-3/30/23.*
2015-2020 **Neural Substrates of Contextual Memory in Fear Extinction** (R01MH065961-12A1), *National Institute of Mental Health*, $1,803,535. Role: PI. *2/1/15-1/31/21 (no cost-ext)*

Completed:

2018-2019 **Covert Capture and Erasure of Fear Memory.** *2017 NARSAD Distinguished Investigator Grant, Brain & Behavior Research Foundation*. $100,000. Role: PI. *3/15/18-3/14/20 (no cost-ext).*
2015-2019 **Prefrontal-Hippocampal Interplay in Contextual Memory Retrieval.** *McKnight Memory and Cognitive Disorders Program*, McKnight Foundation, $300,000. *2/1/15-1/31/20 (no cost-ext)*
2017-2019 **Noradrenergic Modulation of Stress-Induced Deficits in Fear Extinction.** (F31MH112208-01), *National Institute of Mental Health*, $73,307. Role: Sponsor (PI: Thomas F. Giustino, TAMIN). *9/1/17-8/31/19*
2016-2019 **Brain-Behavior Markers of Negative Affectivity, Comorbidity in Anxiety Disorders.** (K23MH105553-01A1). *National Institutes of Mental Health, $528,324. Role: Co-Investigator, Primary Mentor (PI: Annmarie MacNamara). 8/1/16-8/31/19*
2016-2018 **Neural Circuits for Stress-Induced Fear Relapse.** (F31MH107113-01A1), *National Institute of Mental Health*, $64,185. Role: Sponsor (PI: Travis D. Goode, TAMIN) *8/1/16-7/31/18*
2008-2014 **Neural Substrates of Contextual Memory in Fear Extinction** (R01MH065961-06A1), *National Institute of Mental Health*, $1,868,995. Role: PI

2010-2012 **Interactions Between the Ventral Hippocampus and Amygdala During Renewal of Fear** (F31MH019822-02), *National Institute of Mental Health*, $64,185. Role: Sponsor (PI: Caitlin A. Orsini, Department of Psychology, University of Michigan)

2001-2016 **Early Stage Training in Neuroscience** (T32EY017878-07), National Eye Institute (and 6 others), $1,491,060 Role: PI (ongoing at University of Michigan).

2006-2010 **Amygdaloid Function in Fear Conditioning** (R01MH073655-05), *National Institute of Mental Health*, $760,963. Role: PI

2002-2008 **Neural Substrates of Contextual Memory** (R01MH065961-1A1), *National Institute of Mental Health*, $1,532,450. Role: PI

2005-2008 **Cholinergic Plasticity in Auditory Input Processing** (R03MH73600), *National Institute of Mental Health*, $152,708. Role: Co-I (Martin Sarter, PI)

1998-2003 **Amygdaloid Function in Fear Conditioning** (R29MH57865), *First Independent Research Support and Transition Award, National Institute of Mental Health*, $452,000. Role: PI

2000-2003 **Learning and Memory in a Transgenic Mouse Model of Alzheimer's Disease**, *Michigan Alzheimer's Disease Research Center Pilot Grant, National Institute of Aging*, $20,000. Role: PI

1999-1999 **Summer Research Grant**, *Rackham Graduate School, University of Michigan*, $3,000. Role: PI

1997-1998 **Neural Basis of Contextual Fear Conditioning** (R03MH57260), *Behavioral Science Track Award for Rapid Transition, National Institute of Mental Health*, $35,824. Role: PI

1997-2001 **Brain Mechanisms of Contextual Fear Conditioning**, *Preliminary Project Grant, Office of the Vice President for Research*, University of Michigan, $12,000. Role: PI

1995-1996 **Synaptic Mechanisms of Pavlovian Fear Conditioning** (F32MH11061), *Individual National Research Service Award, National Institute of Mental Health*, Department of Psychology, University of California. Role: PI

1993-1995 **Training in Physiological Psychology** (F32MH15795), *Institutional National Research Service Award, National Institute of Mental Health*, Department of Psychology, University of California. Role: Trainee

Refereed Publications

[Google Scholar: h=77, cites=22,275; ISI Highly Cited Scientist (Top 1%) in Neuroscience & Behavior]

(1) Giustino, T. F., Ramanathan, K. R., Totty, M. S., Miles, O. W., **Maren, S**. (2020). Locus coeruleus norepinephrine drives stress-induced increases in basolateral amygdala firing and impairs extinction learning. *Journal of Neuroscience*, Dec 4. pii: 1092-19. doi: 10.1523/JNEUROSCI.1092-19.2019 (Epub ahead of print).

(2) Goode, T. D., Acca, G. M., and **Maren, S.** (2020). Threat imminence dictates the role of the bed nucleus of the stria terminals in contextual fear. *Neurobiology of Learning and Memory*, 167:107116. doi: 10.1016/j.nlm.2019.107116.

(3) Haaker, J., **Maren, S.**, Andreatta, M., Merz, C. J., Richter, J., Richter, H. S., Drexler, S. M., Lange, M, Jüngling, K, Nees, F., Seidenbecher, T., Fullana., M. A., Wotjak, C. and Lonsdorf, T. B. (2019). Making translation work: Harmonizing cross-species methodology in the behavioural neuroscience of Pavlovian fear conditioning. *Neuroscience & Biobehavioral Reviews*, 107:329-345. doi: 10.1016/j.neubiorev.2019.09.020.

(4) Ramanathan, K. R. and **Maren, S**. (2019). Nucleus reuniens mediates the extinction of contextual fear conditioning. *Behavioural Brain Research*, 374:112114. doi: 10.1016/j.bbr.2019.112114

(5) Totty, M. S., Payne, M. R., **Maren, S.** (2019). Event boundaries do not cause the immediate extinction deficit after Pavlovian fear conditioning in rats. *Scientific Reports*, 9:9459. doi: 10.1038/s41598-019-46010-4

(6) Miles, O. W. and **Maren, S.** (2019). Role of the bed nucleus of the stria terminals in PTSD: Insights from preclinical models. *Frontiers in Behavioral Neuroscience*, 13:68. doi: 10.3389/fnbeh.2019.00068.

(7) Giustino, T. F., Fitzgerald, P. J., and **Maren, S.** (2019). Locus coeruleus toggles reciprocal prefrontal firing to drive fear relapse. *Proceedings of the National Academy of Sciences*, 116(17):8570-8575. doi: 10.1073/pnas.1814278116.

(8) Goode, T. D., Ressler, R. L., Acca, G. M., and **Maren, S.** (2019). Bed nucleus of the stria terminals regulates fear to unpredictable threat signals. *eLife, 8*. pii: e46525. doi: 10.7554/eLife.46525.

(9) Ressler, R. L. and **Maren, S.** (2019). Synaptic encoding of fear memories in the amygdala. *Current Opinion in Neurobiology,* 54:54-59.

(10) Ramanathan, K. R., Jin, J., Giustino, T. F., Payne, M. R., and **Maren, S.** (2018). Prefrontal projections to the thalamic nucleus reuniens mediate fear extinction. *Nature Communications,* 9:4527.

(11) Goode, T. D. and **Maren, S.** (2018). Common neurocircuitry mediating drug and fear relapse in preclinical models. *Psychopharmacology (Berl),* doi: 10.1007/s00213-018-5024-3. (epub ahead of print)

(12) Ramanathan, K. R., Ressler, R. L., Jin, J., and **Maren, S.** (2018). Nucleus reuniens mediates the encoding and retrieval of precise, hippocampal-dependent contextual fear memories. *Journal of Neuroscience,* 38:9925-9933.

(13) Giustino, T. F. and **Maren, S.** (2018), Noradrenergic modulation of fear conditioning and extinction. *Frontiers in Behavioral Neuroscience,* 12:1-12. [10th anniversary invitation]

(14) Marek, R.*, Jin, J.*, Goode, T. D.* , Giustino, T. J., Wang, Q. , Acca, G. M., Holehonnur, R., Ploski, J. E., Fitzgerald, P. J., Lynagh, T. P., Lynch, J. W., **Maren, S**.¥, & Sah, P.¥ (2018). Hippocampus-driven feed-forward inhibition of the prefrontal cortex mediates fear relapse. *Nature Neuroscience*, 21:384-392. *(*authors contributed equally;¥co-corresponding authors)*

(15) Moscarello, J. M. and **Maren, S.** (2018). Flexibility in the face of fear: Hippocampal-prefrontal regulation of fear and avoidance. *Current Opinion in Behavioral Sciences*, 19:44-49.

(16) Giustino, T. F., Seeman, J. R., Acca, G. M., Goode, T. D., Fitzgerald, P. J., and **Maren, S.** (2017). ß-adrenoceptor blockade in the basolateral amygdala but not the medial prefrontal cortex rescues the immediate extinction deficit in rats. *Neuropsychopharmacology,* 42:2537-2544.

(17) Goode, T. D. and **Maren, S.** (2017). The role of the bed nucleus of the stria terminals in aversive learning and memory. *Learning & Memory,* 24:480-91.

(18) Goode, T. D., Holloway-Erickson, C. M., and **Maren, S.** (2017). Extinction after fear memory reactivation fails to eliminate renewal in rats. *Neurobiology of Learning and Memory,* 142:41-47.

(19) Prater, K. E., Aurbach, E. L., Larcinese, H. K., Turner, C. A., Blandino, P., Jr., Watson, S. J., **Maren, S.**, Akil, H. (2017). Selectively bred rats provide a unique model of vulnerability to PTSD-like behavior and respond differentially to FGF2 augmentation early in life. *Neuropsychopharmacology*, 42:1706-14.

(20) Acca, G. M., Mathew, A. S., Jin, J., **Maren, S.**, Nagaya, N. (2017). Allopregnanolone induces state-dependent fear via the bed nucleus of the stria terminalis. *Hormones and Behavior,* 89:137-44.

(21) Giustino, T. F., Fitzgerald, P. J., and **Maren, S.** (2016). Fear expression suppresses medial prefrontal cortical firing in rats. *PLoS ONE*, 11:e0165256.

(22) Wang, Q., Jin, J., and **Maren, S.** (2016). Renewal of extinguished fear activates ventral hippocampal neurons projecting to the prelimbic and infralimbic cortices in rats. *Neurobiology of Learning and Memory*, 134:38-43.

(23) Goode, T. D., Leong, K. C., Goodman, J., **Maren, S.**, and Packard, M. G. (2016). Enhancement of striatum-dependent memory by conditioned fear is mediated by beta-adrenergic receptors in the basolateral amygdala. *Neurobiology of Stress,* 3:74-82.

(24) Giustino, T. J., Fitzgerald, P. J., and **Maren, S.** (2016). Revisiting propranolol and PTSD: Memory erasure or extinction enhancement? *Neurobiology of Learning and Memory,* 130:26-33. **Inaugural mini-review*

(25) **Maren, S.** and Holmes, A. (2016). Stress and fear extinction. *Neuropsychopharmacology*, 4:58-79. *****Identified as a "Highly Cited Paper" *by Essential Science Indicators* (top 1%).

(26) Jin, J. and **Maren, S.** (2015). Prefrontal-hippocampal interactions in memory and emotion. *Frontiers in Systems Neuroscience,* 9:170.

(27) Giustino, T. F. and **Maren, S.** (2015). The role of the medial prefrontal cortex in the conditioning and extinction of fear. *Frontiers in Behavioral Neuroscience*, 9:298. *****Identified as a "Hot Paper" (top 0.1% in last two years) and a "Highly Cited Paper" *by Essential Science Indicators* (top 1%).

(28) **Maren, S**. (2015). Out with the old and in with the new: Synaptic mechanisms of extinction in the amygdala. *Brain Research,* 1621:231-238.

(29) Nagaya, N., Acca, G. M., **Maren, S**. (2015). Allopregnanolone in the bed nucleus of the stria terminalis modulates contextual fear in rats. *Frontiers in Behavioral Neuroscience,* 9:205.

(30) Goode, T. D., Kim, J. J., and **Maren, S.** (2015). Reversible inactivation of the bed nucleus of the stria terminalis prevents the reinstatement but not renewal of extinguished fear. *eNeuro,* 2(3) e0037-15.2015 1–12.

(31) Fitzgerald, P. J., Giustino, T. F., Seemann, J. R., **Maren, S**. (2015). Noradrenergic blockade stabilizes prefrontal activity and enables fear extinction under stress. *Proceedings of the National Academy of Science USA,* 112:E3729–E3737.

(32) Jin, J. and **Maren, S**. (2015). Fear renewal preferentially activates ventral hippocampal neurons projecting to both amygdala and prefrontal cortex in rats. *Scientific Reports,* 5:8388.

(33) Goode, T. D., Kim, J. J., and **Maren, S**. (2015). Relapse of extinguished fear after exposure to a dangerous context is mitigated by testing in a safe context. *Learning & Memory,* 22:170-178.

(34) Morrow, J., D., Saunders, B. T., **Maren, S.**, and Robinson, T. E. (2015). Sign-tracking to an appetitive cue predicts incubation of conditioned fear in rats. *Behavioural Brain Research,* 276:59-66.

(35) Goode, T. D. and **Maren, S**. (2014). Animal models of fear relapse. *ILAR Journal*, 55:246-58.

(36) **Maren, S.** (2014). Nature and causes of the immediate extinction deficit: a brief review. *Neurobiology of Learning and Memory*, 113:19-24.

(37) **Maren, S.** (2014). Fear of the unexpected: Hippocampus mediates novelty-induced return of extinguished fear in rats. *Neurobiology of Learning and Memory,* 108:88-95.

(38) Fitzgerald, P. J., Seemann, J. R., and **Maren, S.** (2014). Can fear extinction be enhanced? A review of pharmacological and behavioral findings. *Brain Research Bulletin*, 105:46-60.

(39) Orsini, C. A., Yan, C., and **Maren, S**. (2013). Ensemble coding of context-dependent fear memory in the amygdala. *Frontiers in Behavioral Neuroscience*, 7(199):1-8.

(40) **Maren, S.,** Phan, K. L., and Liberzon, I. (2013). The contextual brain: Implications for fear conditioning, extinction and psychopathology. *Nature Reviews Neuroscience,* 14:417-428. *****Identified as a "Hot Paper" (top 0.1% in last two years) and a "Highly Cited Paper" *by Essential Science Indicators* (top 1%).

(41) Badrinarayan, A., Wescott, S. A., Vander Weele, C. M., Saunders, B. T. Couturier, B. E., **Maren, S.,** and Aragona, B. J. (2012). Aversive stimuli differentially modulate real-time dopamine transmission dynamics within the nucleus accumbens core and shell. *Journal of Neuroscience*, 32:15779-15790.

(42) Orsini, C. A. and **Maren, S.** (2012). Neural and cellular mechanisms of fear and extinction memory formation. *Neuroscience and Biobehavioral Reviews,* 36:1773-802. *****Identified as a "Highly Cited Paper" *by Essential Science Indicators* (top 1%).

(43) Knapska, E., Macias, M., Mikosz, M., Nowak, A., Owczarek, D., Wawrzyniak, M., Pieprzyk, M., Cymerman, I. A., Werka, T., Sheng, M., **Maren, S.**, Jaworski, J., and Kaczmarek, L. (2012). Functional anatomy of neural circuits regulating fear and extinction. *Proceedings of the National Academy of Sciences*, 109:17093-17098.

(44) Knox, D., George, S. A., Fitzpatrick, C. J., Rabinak, C. A., **Maren, S.,** and Liberzon, I. (2012). Single prolonged stress disrupts retention of extinguished fear in rats. *Learning & Memory,* 19:43-49.

(45) Orsini, C. A., Kim, J. H., Knapska, E. and **Maren, S.** (2011). Hippocampal and prefrontal projections to the basal amygdala mediate contextual regulation of fear after extinction. *Journal of Neuroscience,* 31:17269-77.

(46) **Maren, S**. (2011). Seeking a spotless mind: Extinction, deconsolidation, and erasure of fear memory. *Neuron*, 70:830-45.

(47) Chang, C. H. and **Maren, S.** (2011). Medial prefrontal cortical activation facilitates re-extinction of fear in rats. *Learning & Memory*, 18:221-225.

(48) Morrow, J. D., **Maren, S.**, and Robinson, T. E. (2011). Individual variation in the propensity to attribute incentive salience to an appetitive cue predicts the propensity to attribute motivational salience to an aversive cue**.** *Behavioural Brain Research,* 220:238-243.

(49) Zimmerman, J. M. and **Maren, S.** (2011). The bed nucleus of the stria terminalis is required for contextual but not auditory freezing in rats with basolateral amygdala lesions. *Neurobiology of Learning and Memory,* 95:199-205.

(50) Chang, C. H., Berke, J. D., and **Maren, S.** (2010). Single-unit activity in the medial prefrontal cortex during immediate and delayed extinction of fear in rats. *PLoS ONE,* 5(8). pii: e11971.

(51) Chang, C. H. and **Maren, S.** (2010). Strain difference in the effect of infralimbic cortical lesions on fear extinction in rats. *Behavioral Neuroscience*, 124:391-397.

(52) Zimmerman, J. M. and **Maren, S.** (2010). NMDA receptor antagonism in the basolateral but not central amygdala blocks the extinction of Pavlovian fear conditioning in rats. *European Journal of Neuroscience*, 31:1664-1670.

(53) Knapska, E., Mikosz, M., Werka, T. F. and **Maren, S**. (2010). Social modulation of learning in rats. *Learning & Memory,* 17:35-42.

(54) Jimenez, S. A. and **Maren, S.** (2009). Nuclear disconnection within the amygdala reveals a direct pathway to fear. *Learning & Memory*, 16:766-768.

(55) Rabinak, C. A., Orsini C. A., Zimmerman, J. M. and **Maren, S.** (2009). The amygdala is not necessary for US inflation after Pavlovian fear conditioning in rats. *Learning & Memory*, 16:645-654.

(56) Orsini, C. A. and **Maren, S.** (2009). Glutamate receptors in the medial geniculate nucleus are necessary for expression and extinction of conditioned fear in rats. *Neurobiology of Learning and Memory,* 92:581-589.

(57) Knapska, E. and **Maren, S.** (2009). Reciprocal patterns of c-fos expression in the medial prefrontal cortex and amygdala after extinction and renewal of conditioned fear. *Learning & Memory,* 16:486-493.
*****Featured as an 'Editor's Select' paper at Cold Spring Harbor Laboratory press.

(58) Chang, C. H., Knapska, E., Orsini, C. A., Rabinak, C. A., Zimmerman, J. M., and **Maren, S.** (2009). Fear extinction in rodents. *Current Protocols in Neuroscience,* 8.23.

(59) Chang, C. H. and **Maren, S.** (2009). Early extinction after fear conditioning yields a context-independent and short-term suppression of conditional freezing in rats. *Learning & Memory*, 16:62-68.

(60) Serrano, P. Friedman, E. L., Kenney, J., Taubenfeld, S. M., Zimmerman, J. M., Alberini, C., Kelley, A. E., **Maren, S.,** Rudy, J. W., Yin, J. C. P., Sacktor, T. C., and Fenton, A. A. (2008). PKMζ maintains spatial, instrumental, and classically-conditioned long-term memories. *PLOS Biology,* 6:2698-2706.

(61) Rabinak, C. A. and **Maren, S.** (2008). Associative structure of fear memory after basolateral amygdala lesions in rats. *Behavioral Neuroscience,* 122:1284-94.

(62) **Maren, S.** (2008). Pavlovian fear conditioning as a behavioral assay for hippocampus and amygdala function: cautions and caveats. *European Journal of Neuroscience,* 28:1661-6.

(63) Ji, J. and **Maren, S**. (2008). Lesions of the entorhinal cortex or fornix disrupt the context-dependence of fear extinction in rats. *Behavioural Brain Research,* 194:201-206.

(64) Ji, J. and **Maren, S.** (2008). Differential roles for hippocampal areas CA1 and CA3 in the contextual encoding and retrieval of extinguished fear. *Learning & Memory*, 15:244-251.

(65) Ji, J. and **Maren, S.** (2007). Hippocampal involvement in contextual modulation of fear extinction. *Hippocampus*, 17:749-758.

(66) **Maren, S.** (2007). The threatened brain. *Science*, 317:1043-1044.

(67) Zimmerman, J. M., Rabinak, C. A., McLachlan, I. G. and **Maren, S.** (2007). The central nucleus of the amygdala is essential for acquiring and expressing conditional fear after overtraining. *Learning & Memory*, 14:634-644.

(68) **Maren, S.** and Hobin, J. A. (2007). Hippocampal regulation of context-dependent neuronal activity in the lateral amygdala. *Learning & Memory,* 14:318-324.

(69) **Maren, S.** and Chang, C. H. (2006). Recent fear is resistant to extinction. *Proceedings of the National Academy of Sciences USA,* 103:18020-18025. *Featured in "In this issue." *Proceedings of the National Academy of Sciences USA*, 103:17581-17582, "Research Highlights" *Nature Reviews Neuroscience, 8:4,* and *Journal Watch Psychiatry, 1/8/07*.

(70) Venton, J. B., Robinson, T. E., and Kennedy, R. T., **Maren, S.** (2006). Dynamic increases in glutamate and GABA in the basolateral amygdala during acquisition and expression of conditioned fear. *European Journal of Neuroscience*, 23:3391-3398.

(71) Bouton, M. E., Westbrook, R. F., Corcoran, K. A., and **Maren, S.** (2006). Contextual and temporal modulation of extinction: Behavioral and biological mechanisms. *Biological Psychiatry,* 60**:**352-360. *****Identified as a "Highly Cited Paper" *by Essential Science Indicators* (top 1%).

(72) Merino, S. M. and **Maren, S.** (2006). Hitting Ras where it counts: Ras antagonism in the basolateral amygdala inhibits long-term fear memory. *European Journal of Neuroscience,* 23: 196-204.

(73) Hobin, J. A., Ji, J. and **Maren, S.** (2006). Ventral hippocampal inactivation with muscimol disrupts context-specific fear memory retrieval. *Hippocampus,* 16:174-182.

(74) Garcia, R., Chang, C. H., and **Maren, S.** (2006). Electrolytic lesions of the medial prefrontal cortex do not interfere with long-term memory of extinction of conditioned fear. *Learning & Memory,* 13:14-17.

(75) Nagaya, H., **Maren, S.,** Nagaya, N. (2006). Allergy immunotherapy as an early intervention in patients with child-onset atopic asthma. *International Archives of Allergy and Immunology,* 139:9-15.

(76) **Maren, S.** (2005). Synaptic mechanisms of associative memory in the amygdala. *Neuron*, 47:783-786.

(77) Briand, L. A., Robinson, T. E., and **Maren, S.** (2005). Enhancement of auditory fear conditioning by environmental complexity is attenuated by prior amphetamine sensitization. *Learning & Memory,* 12:553-556.

(78) **Maren, S.** (2005). Building and burying fear memories in the brain. *The Neuroscientist*, 11, 89-99.

(79) Corcoran, K. A., Desmond, T. J., Frey, K. A. and **Maren, S.** (2005). Hippocampal inactivation disrupts the acquisition and contextual encoding of fear extinction. *Journal of Neuroscience*, 25:8978-8987.

(80) Ji, J. and **Maren, S.** (2005). Electrolytic lesions of the dorsal hippocampus disrupt renewal of conditional fear after extinction. *Learning & Memory,* 12:270-276.

(81) Corcoran, K. A. and **Maren, S.** (2004). Factors regulating the effects of hippocampal inactivation on renewal of fear after extinction. *Learning & Memory*, 11:598-603.

(82) Goosens, K. A. and **Maren, S.** (2004). NMDA receptor blockade prevents the acquisition, but not expression, of conditional fear and associative spike firing in the lateral amygdala. *European Journal of Neuroscience,* 20:537-548. *****Featured by Jones, R. (2004). Learning to fear. *Nature Reviews Neuroscience*, 5:675.

(83) **Maren, S.** and Quirk, G. J. (2004). Neuronal signalling of fear memory. *Nature Reviews Neuroscience,* 5:844-852. *****Identified as a "Highly Cited Paper" *by Essential Science Indicators* (top 1%).

(84) Bhatnagar, S., Sun, L. M., Raber, J**., Maren, S.**, Julius, D., and Dallman, M. F. (2004). Changes in anxiety-related behaviors and hypothalamic-pituitary-adrenal activity in mice lacking the 5-HT-3A receptor. *Physiology & Behavior*, 81:545-555.

(85) **Maren, S.** and Holt, W. G. (2004). Hippocampus and Pavlovian fear conditioning in rats: Muscimol infusions into the ventral, but not dorsal, hippocampus impair the acquisition of conditional freezing to an auditory conditional stimulus. *Behavioral Neuroscience,* 118:97-110.

(86) **Maren, S.**, Ferrario, C., Corcoran, K. A., Desmond, T. J., Frey, K. (2003). Protein synthesis in the amygdala, but not the auditory thalamus, is required for Pavlovian fear conditioning in rats. *European Journal of Neuroscience,* 18:3080-3088.

(87) Hobin, J. A., Goosens, K. A., and **Maren, S.** (2003). Context-dependent neuronal activity in the lateral amygdala represents fear memories after extinction. *Journal of Neuroscience,* 23:8410-8416.

(88) **Maren, S**. (2003). The amygdala, synaptic plasticity, and fear memory. *Annals of the New York Academy of Sciences*, 985:106-113.

(89) Goosens, K. A. and **Maren, S.** (2003). Pretraining NMDA receptor blockade in the basolateral complex, but not the central nucleus, of the amygdala prevents savings of conditional fear. *Behavioral Neuroscience*, 117:738-750.

(90) Goosens, K. A., Hobin, J. A., and **Maren, S.** (2003). Auditory-evoked spike firing in the lateral amygdala and Pavlovian fear conditioning: Mnemonic code or fear bias? *Neuron,* 40:1013-1022.

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(120) Goodman, J., Leong, K.-C., Goode, T. D., **Maren, S.,** and Packard, M. (2014). Enhanced consolidation of habit memory by post-training exposure to a fear CS is blocked by propranolol administration.

Program No. 468.21. 2014 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2014. Online.

(121) Giustino, T. F., Fitzgerald, P. J., and **Maren, S.** (2014). Noradrenergic blockade stabilizes medial prefrontal single-unit activity after footshock stress and reduces fear expression in rats. Program No. 746.06. 2014 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2014. Online.

(122) Wang, Q. and **Maren, S.** (2014). Renewal of extinguished fear induces Fos in ventral hippocampal neurons projecting to the medial prefontal cortex. Program No. 746.07. 2014 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2014. Online.

(123) Seeman, J., Acca, G. M., and **Maren, S.** (2014). Does beta-adrenergic blockade in the medial prefrontal cortex or basolateral amygdala rescue the immediate extinction deficit? Program No. 746.08. 2014 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2014. Online.

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(125) Acca, G. M., **Maren, S. ,**and Nagaya, N. (2014). Allopregnanolone in the bed nucleus of the stria terminalis modulates sexually dimporphic contextual fear in rats. Program No. 748.09. 2014 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2014. Online.

(126) Jin, J. and **Maren, S.** (2014). Subicular and CA1 neurons projecting to the medial prefontal cortex and basal amygdala exhibit context-dependent Fos expression after renewal of extinguished fear. Program No. 754.03. 2014 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2014. Online.

(127) Prater, K. E., Aurbach, E. L., Larcinese, H., Blandino, P., Jr., Watson, S. J., **Maren, S.,** and Akil, H. (2015). Learning in the company of individuals with similar phenotype facilitates fear extinction in both outbred rats and rats bred for their locomotor response to novelty. *Wisconsin Symposium on Emotion,* University of Wisconsin, Madison, WI.

(128) Goode, T. D., Jin, and **Maren,** S. (2015). Combinatorial DREADD silencing of ventral hippocampal neurons projecting to infralimbic cortex prevents fear renewal. *UT Austin Conference on Learning & Memory*, Center for Learning and Memory, University of Texas, Austin, TX. ***Selected for 'Best Abstract Award' and presented as a talk*

(129) Giustino, T. F., Fitzgerald, P. J., Seemann, J. R., and **Maren, S.** (2015). Noradrenergic blockade stabilizes prefrontal activity and enables fear extinction under stress. *UT Austin Conference on Learning & Memory*, Center for Learning and Memory, University of Texas, Austin, TX.

(130) Acca, G. M., **Maren, S.,** and Nagaya, N. (2015). State-dependent effects if allopregnanolone on contextual fear learning. *UT Austin Conference on Learning & Memory*, Center for Learning and Memory, University of Texas, Austin, TX.

(131) Goode, T. D., Jin, J., Holehonnur, R., Ploski, J., and **Maren, S.** (2015). Combinatorial DREADD silencing of ventral hippocampal neurons projecting to infralimbic cortex prevents fear renewal. *Amygdala in Health & Disease Gordon Research Conference/Seminar,* Stonehill College, Easton, MA.

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(133) Fitzgerald, P. J., Giustino, T. F., and **Maren, S.** (2015). Nonassociative inhibition of conditional fear engages the medial prefrontal cortex in rats. No. 175.11. 2015 Neuroscience Meeting Planner, Chicago, IL. *Society for Neuroscience*, 2015. Online.

(134) Giustino, T. F., Fitzgerald, P. J., **Maren, S.** (2015). Propranolol modulates medial prefrontal cortical activity and enhances extinction after recent fear. No. 175.10. 2015 Neuroscience Meeting Planner, Chicago, IL. *Society for Neuroscience*, 2015. Online.

(135) Jin, J., Wang, Q., and **Maren, S.** (2015). Reversible inactivation of the nucleus reuniens of the midline thalamus disrupts fear suppression after extinction. No. 175.09. 2015 Neuroscience Meeting Planner, Chicago, IL. *Society for Neuroscience*, 2015. Online.

(136) Wang, Q., Acca, G. M., Ninan, D. J., and **Maren, S.** (2015). GABAA receptors in the infralimbic cortex regulate both the expression of extinction and renewal of fear in rats. No. 175.08. 2015 Neuroscience Meeting Planner, Chicago, IL. *Society for Neuroscience*, 2015. Online.

(137) Acca, G. M., Tsao, B., Jin, J., Fu, C., **Maren, S.**, and Nagaya, N. (2015). Differential effects of allopregnanolone in the basolateral amygdala and bed nucleus of the stria terminalis on Pavlovian fear conditioning in rats. No. 175.07. 2015 Neuroscience Meeting Planner, Chicago, IL. *Society for Neuroscience*, 2015. Online.

(138) Goode, T. D., Jin, J., Holehonnur, R., Ploski, J. E., and Maren, S. (2015). Combinatorial DREADD silencing of ventral hippocampal neurons projecting to infralimbic cortex prevents fear renewal. No. 175.12. 2015 Neuroscience Meeting Planner, Chicago, IL. *Society for Neuroscience*, 2015. Online.

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(140) Gorka, S.M., Rabinak, C.A., Milad, M.R., Liberzon, I., **Maren, S.,** Phan, K.L. (2015). Effects Δ9-tetrahydrocannabinol (THC) on brain and behavior during fear extinction learning in humans: A combined psychophysiological-fMRI study. Poster presented at the annual meeting of the American College of Neuropsychopharmacology, Hollywood, FL.

(141) Errante, E., Assudani Patel, S., Racki, A. Kuhney, F. Mehndriratta, A., Padua, M., **Maren, S.**, and Astur, R. S. (2016). Fear within virtual reality environments. Poster presented at the Eastern Psychological Association, New York, NY.

(142) Giustino T. F., Seemann, J. R., Acca, G. M., Goode, T. D., Fitzgerald, P. J., and **Maren, S.** (2016). Beta-adrenoceptor blockade in the basolateral amygdala, but not medial prefrontal cortex, rescues the immediate extinction deficit. *Annual Meeting of the Pavlovian Society,* Jersey City, NJ.

(143) Goode, T. D., Acca, G.M., and **Maren, S.** (2016). Reversible inactivation of the bed nucleus of the stria terminalis disrupts the expression of fear to unpredictable threats. *Annual Meeting of the Pavlovian Society*, Jersey City, NJ.

(144) Acca, G. M., Tsao, B., Mathew, A. S., Phan, A., **Maren, S.**, and Nagaya, N. (2016). Circulating progesteron contributes to state-dependent contextual fear in cycling female rats. No. 174.03. 2016 Neuroscience Meeting Planner, San Diego, CA. *Society for Neuroscience*, 2016. Online.

(145) Prater, K. E., Aurbach, E. L., Larcinese, H. K., Blandino, P., Jr., Watson, S. J., **Maren, S.**, Akil, H. (2016). The role of heritable phenotype and social environment on fear extinction learning in rats. No. 262.18. 2016 Neuroscience Meeting Planner, San Diego, CA. *Society for Neuroscience*, 2016. Online.

(146) Giustino, T. F., Seemann, J. R., Acca, G. M., Goode, T. D., Fitzgerald, P. J., and **Maren, S.** (2016). Beta noradrenergic blockade in the basolateral amygdala, but not the medial prefrontal cortex, rescues the immediate extinction deficit. No. 455.01. 2016 Neuroscience Meeting Planner, San Diego, CA. *Society for Neuroscience*, 2016. Online.

(147) Fitzgerald, P. J., Giustino, T. F., and **Maren, S.** (2016). Single neurons in the medial prefrontal cortex of freely moving rats signal fear renewal. No. 455.02. 2016 Neuroscience Meeting Planner, San Diego, CA. *Society for Neuroscience*, 2016. Online.

(148) Jin, J., Goode, T. D., Wang, Q., and **Maren, S.** (2016). Hippocampal-prefrontal projection mediates contextual fear memory retrieval. No. 455.04. 2016 Neuroscience Meeting Planner, San Diego, CA. *Society for Neuroscience*, 2016. Online.

(149) Goode, T. D., Acca, G. M., **Maren, S.** (2016). Reversible inactivation of the bed nucleus of the stria terminalis disrupts the expression of fear to unpredictable threats. No. 455.05. 2016 Neuroscience Meeting Planner, San Diego, CA. *Society for Neuroscience*, 2016. Online.

(150) Ramanathan, K. R., Jin, J., and **Maren, S.** (2016). Nucleus reuniens mediates the encoding of extinction memories. No. 455.06. 2016 Neuroscience Meeting Planner, San Diego, CA. *Society for Neuroscience*, 2016. Online.

(151) Goode, T. D., Acca, G. M., **Maren, S.** (2017). The bed nucleus of the stria terminalis disrupts mediates fear expression to temporally unpredictable threats. *Gordon Research Conference:* A*mygdala Function in Emotion, Cognition, and Disease*, Easton, MA.

(152) Giustino, T. F., Fitzgerald, P. J., and **Maren, S.** (2017). Locus coeruleus activation drives prelimbic cortical firing and induces relapse of extinguished fear. *Gordon Research Conference: Amygdala Function in Emotion, Cognition, and Disease*, Easton, MA.

(153) Ramanathan, K. R., Jin, J., and **Maren, S.** (2017). Prefrontal-reuniens projections contribute to the acquisition and expression of fear extinction. *Gordon Research Conference: Amygdala Function in Emotion, Cognition, and Disease*, Easton, MA.

(154) Ramanathan, K. R., Jin, J., and **Maren, S.** (2017). Prefrontal-reuniens projections contribute to the acquisition and expression of fear extinction. *Annual Meeting of the Pavlovian Society,* Philadelphia, PA.

(155) Giustino, T. F., Fitzgerald, P. J., and **Maren, S.** (2017). Locus coeruleus activation drives prelimbic cortical firing and induces relapse of extinguished fear. *Annual Meeting of the Pavlovian Society,* Philadelphia, PA.

(156) Ressler, R., Goode, T. D., and **Maren, S.** (2017). Inhibition of protein synthesis in the dorsal hippocampus prevents reconsolidation of a covertly retrieved fear memory. *Annual Meeting of the Pavlovian Society,* Philadelphia, PA.

(157) Goode, T. D., Acca, G. M., **Maren, S.** (2017). The bed nucleus of the stria terminalis disrupts mediates fear expression to temporally unpredictable threats. *Annual Meeting of the Pavlovian Society,* Philadelphia, PA.

(158) Goode, T. D., Acca, G. M., **Maren, S.** (2017). The bed nucleus of the stria terminalis disrupts mediates fear expression to temporally unpredictable threats. No. 328.04. 2017 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2017. Online.

(159) Giustino, T. F., Fitzgerald, P. J., and **Maren, S.** (2017). Locus coeruleus modulation of extinction retrieval and fear renewal. No. 328.05. 2017 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2017. Online.

(160) Jin, J., Ramanathan, K. R., and **Maren, S.** (2017). The nucleus reuniens gates prefrontal-hippocampal modulation of extinction retrieval, No. 328.06. 2017 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2017. Online.

(161) Ramanathan, K. R., Jin, J., and **Maren, S.** (2017). Nucleus reuniens mediates the acquisition of fear extinction. No. 328.07. 2017 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2017. Online.

(162) Hammoud, M., Gorka, S., Rabinak, C., Liberzon, I., **Maren, S.**, Phan, K. L., and Milad, M. (2018). Influence of Δ9-tetrahydrocannabinol (THC) on fear extinction learning and spontaneous recovery. Biological Psychiatry, 83 (9, Supp 1), S348.

(163) Ressler, R., Goode, T.D., and **Maren, S.** (2018). Inhibition of protein synthesis in the dorsal hippocampus prevents reconsolidation of a covertly retrieved fear memory. No. 414.21. 2018 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2018. Online.

(164) Goode, T. D., Ressler, R., Evemy, C., French, K., and Maren, S. (2018). NMDA receptors in the BNST are necessary for learning to fear ambiguous threats. No. 414.22. 2018 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2018. Online.

(165) Totty, M. and **Maren, S.** (2018). Does stress or event segmentation account for the immediate extinction deficit? No. 414.25. 2018 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2018. Online.

(166) Giustino, T. F., Totty, M., and **Maren, S.** (2018). Propranolol stabilizes shock-induced increases in spike firing in the basolateral amygdala: implications for the immediate shock deficit. No. 414.23. 2018 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2018. Online.

(167) Warren, N., Acca, G. M., Tsao, B., Mathew, A., Phan, A., Cayard, N., Juliette, J., **Maren, S.**, and Nagaya, N. (2018). Hormonal basis for state-dependent conditioned fear in naturally cycling female rats. No

414.26. 2018 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2018. Online.

(168) Totty, M., Warren, N., Ramanathan, K. R., Ressler, R., and **Maren, S.** (2019). The bed nucleus of the stria terminalis regulates context-dependent flight behavior in rats. No 411.14. 2019 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2019. Online.

(169) Blair, R. S., Acca, G. M., **Maren, S.**, and Nagaya, N. (2019). Overexpression of microRNA-33 in the bed nucleus of the stria terminalis blocks state-dependent learning of contextual fear in rats. No 411.15. 2019 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2019. Online.

(170) Ramanathan, K. R., Jin, J., Deisseroth, K., and **Maren, S.** (2019). Nucleus reuniens influences medial prefrontal cortex and hippocampal neuronal activity during retrieval of extinguished fear memories. No 411.16. 2019 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2019. Online.

(171) Miles, O. W., Giustino, T. F., Ramanathan, K. R., Totty, M., and **Maren, S.** (2019). Locus coeruleus norepinephrine drives stress-induced increases in basolateral amygdala firing and impairs extinction learning. No 411.17. 2019 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2019. Online.

(172) Ressler, R., Goode, T. D., Evemy, C., Martinzez, A., Kim, S., and **Maren, S.** (2019). Dorsal hippocampus mediates covert retrieval of a contextual fear memory. No 411.18. 2019 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2019. Online.

(173) Oleksiak, C. R., Moscarello, J. M., and **Maren, S.** (2019). Signaled active avoidance performance is context-dependent. No 411.19. 2019 Neuroscience Meeting Planner, Washington, DC. *Society for Neuroscience*, 2019. Online.

Invited Talks

(1) **Maren, S.** (1994). Hippocampal integration of motivation and learning: Parallel augmentation of fear conditioning, hippocampal LTP, and glutamate receptor binding in water-deprived rats. *Department of Psychobiology, University of California*. Irvine, CA.

(2) **Maren, S.** (1995). Behavioral correlates of hippocampal long-term potentiation. *Department of Psychology, University of Michigan*. Ann Arbor, MI.

(3) **Maren, S.** (1995). Behavioral correlates of hippocampal long-term potentiation. *Department of Psychology, University of California-San Diego*. La Jolla, CA.

(4) **Maren, S.** (1995). Behavioral correlates of hippocampal long-term potentiation. *Department of Psychology, Johns Hopkins University*. Baltimore, MD.

(5) **Maren, S.** (1998). Water deprivation augments hippocampal LTP and contextual fear conditioning in rats. *Spring Hippocampal Research Conference*. Grand Cayman, BWI.

(6) **Maren, S.** (1998). The hippocampus and contextual memory retrieval in Pavlovian fear conditioning. *Annual Meeting of the Pavlovian Society*. Düsseldorf, Germany.

(7) **Maren, S.** (1998). Neuronal mechanisms of emotional learning and memory. *Department of Psychology, Michigan State University*. East Lansing, MI.

(8) **Maren, S.** (1998). Is the amygdala essential for fear conditioning? Insights from overtrained rats. Winter Conference for Learning and Memory, Park City, UT.

(9) **Maren, S.** (2000). Engrams in the amygdala. *The Engram Found: A Celebration of the Scientific Contributions of Richard F. Thompson, University of Southern California*. Los Angeles, CA.

(10) **Maren, S.** (2001). Synaptic plasticity in the amygdala and emotional learning and memory. *Neurotoxicology Division, United States Environmental Protection Agency*. Research Triangle Park, NC.

(11) **Maren, S.** (2001). Neurobiology of emotional learning and memory. *Neuroscience Program, University of Utah*. Salt Lake City, UT.

(12) **Maren, S.** (2001). Amygdaloid LTP and Fear Memory. *LTP Explained: Molecular, Cellular, Behavioral, and Computational Aspects, University of Angers,* Angers, France.

(13) **Maren, S.** (2001). Neurobiology of Pavlovian fear conditioning. *Ernest Gallo Clinic and Research Center and University of California.* Emeryville, CA.

(14) **Maren, S.** (2002). Fear memory circuits in the brain. *Neuroscience Program, Indiana University.* Bloomington, IN.

(15) **Maren, S.** (2002). Synaptic plasticity in the amygdala. *The Amygdala in Brain Function: Basic and Clinical Approaches, New York Academy of Sciences.* Galveston, TX.

(16) **Maren, S.** (2002). Hippocampus and contextual memory retrieval. *Kalamazoo College Symposium on Interdisciplinary Approaches to Neuroscience: The Hippocampus, Kalamazoo College*. Kalamazoo, MI.

(17) **Maren, S.** (2002). Fear memory circuits in the brain. *Department of Psychology and Department of Cellular and Clinical Neurobiology, Wayne State University.* Detroit, MI.

(18) **Maren, S.** (2003). Fear memory circuits in the brain. *Mouse Behavioral Analysis Course*, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.

(19) **Maren, S.** (2004). Building and burying fear memories in the brain. *Center of Biomedical Research Excellence (COBRE) Neuroscience Seminar Series, University of Vermont,* Burlington, VT.

(20) **Maren, S.** (2004). Building and burying fear memories in the brain. *American Psychological Association*, Honolulu, HI.

(21) **Maren, S.** (2004). Hitting Ras where it counts: Ras antagonism in the basolateral amygdala impairs long-term fear memory. *Molecular and Cellular Cognition Society,* San Diego, CA.

(22) **Maren, S.** (2005). The central nucleus of the amygdala is essential for the expression of conditional fear in rats with basolateral complex lesions. *50th Annual Meeting of the Pavlovian Society*, Anaheim, CA.

(23) **Maren, S.** (2005). Neuronal coding of fear memory in the amygdala. *Michigan Mathematical Biology Conference, University of Michigan*, Ann Arbor, MI.

(24) **Maren, S.** (2005). Building and burying fear memories in the brain. *Center for Learning and Memory, University of Texas,* Austin, TX.

(25) **Maren, S.** (2006). Building and burying fear memories in the brain. *Program in Neuroscience, Boston University,* Boston, MA.

(26) **Maren, S.** (2006). Context and time regulate fear extinction in rats. *Mind-Brain Seminar series. Department of Physiology, Ponce School of Medicine,* Ponce, Puerto Rico.

(27) **Maren, S.** (2006). Neurobiology of fear memory: What next? *Center for Learning and Memory, University of Texas*, Austin, TX.

(28) **Maren, S.** (2006). Context and time regulate fear extinction in rats. Center for Neuroscience, *University of Pittsburgh*, Pittsburgh, PA.

(29) **Maren, S.** (2007). Neurobiology of fear memory: concepts and challenges. *Gordon Research Conference: The Amygdala in Health and Disease*, Bates College, Lewiston, ME.

(30) **Maren, S.** (2008). Fear and the brain. *Michigan Research Community,* University of Michigan, Ann Arbor, MI.

(31) **Maren, S.** (2008). Neuronal circuits for fear extinction. *28th Annual Meeting of the Anxiety Disorders Association of America*, Savannah, GA.

(32) **Maren, S.** (2008). Building and burying fear memories in the brain. *Annual Meeting of the Canadian College of Neuropsychopharmacology,* Toronto, Canada.

(33) **Maren, S.** (2008). Building and burying fear memories in the brain. *Annual Meeting of the Federation of European Neuroscience Societies (FENS),* Geneva, Switzerland.

(34) **Maren, S.** (2008). Animal models of severe stress: Relevance to PTSD. *20th Annual Advances in Psychiatry Conference: Trauma, Stress and Anxiety.* Department of Psychiatry, University of Michigan, Ann Arbor, MI.

(35) **Maren, S.** (2009). Neural circuits for fear memory and extinction. *Neuroscience Seminar,* Department of Physiology and Neuroscience Program, Northwestern University, Chicago, Illinois.

(36) **Maren, S.** (2009). Context and time regulate fear extinction. *Gordon Research Conference: The Amygdala in Health and Disease*, Colby College, Waterville, ME.

(37) **Maren, S.** (2010). Animal models of fear extinction: Relevance to clinical interventions. Department of Psychiatry, *Grand Rounds*, University of Michigan, Ann Arbor, MI.

(38) **Maren, S.** (2010). Neurobiology of learning and memory. Department of Neurology, *Basic Science Conference*, University of Michigan, Ann Arbor, MI.

(39) **Maren, S.** (2011). Freezing? It depends. Contextual regulation of fear extinction. *44th Annual Winter Conference on Brain Research*, Keystone, CO.

(40) **Maren, S.** (2011). Neurocircuitry of fear extinction. *Grand Rounds,* Department of Psychiatry, University of Texas Southwestern Medical School, Dallas, TX.

(41) **Maren, S.** (2011). Neural circuit for fear renewal. *10th International Congress of the Polish Neuroscience Society,* Lodz, Poland.

(42) **Maren, S.** (2012). Brain control of fear. *TAMIN Seminar Series*, Texas A&M University, College Station, TX.

(43) **Maren, S.** (2013). Brain control of fear. *Neuroscience Symposium*, University of Texas, Austin, TX.

(44) **Maren, S.** (2013). Brain control of fear. *Pharmacology Seminar Series,* Department of Pharmacology, University of Texas Health Science Center, San Antonio, TX.

(45) **Maren, S.** (2013). Brain control of fear. *Summer Seminar Series,* Health Science Center, Texas A&M University, College Station, TX.

(46) **Maren, S.** (2013). Nature and causes of the immediate extinction deficit. *Gordon Research Conference: The Amygdala in Health and Disease*, Stonehill College, Easton, MA.

(47) **Maren, S.** (2013). Reciprocal neural circuits for excitation and inhibition of fear. *1St Nencki Symposium on: Jerzy Konorski Contribution to Modern Neuroscience*, Warsaw, Poland.

(48) **Maren, S.** (2013). Brain control of fear. *First-Year Seminar,* Department of Psychology, Texas A&M University, College Station, TX.

(49) **Maren, S.** (2013). Brain control of fear. *Extinction Learning: Neural Mechanisms, Behavioural Manifestations, and Clinical Implications*, Young Scientists Symposium, Ruhr University, Bochum, Germany.

(50) **Maren, S.** (2014). Contextualizing fear in the amygdala. *26th Annual Winter Conference on Neural Plasticity*, Vieques Island, Puerto Rico.

(51) **Maren, S.** (2014). Brain circuits for the contextual control of fear. *Leaton Lecture*, Department of Brain and Psychological Sciences, Dartmouth University, Hanover, New Hampshire.

(52) **Maren, S.** (2014). DREADDing fear relapse. *Behavioral Neuroscience Colloquium*, Department of Psychology, University of Texas, Austin, TX.

(53) **Maren, S.** (2014). Stabilizing extinction under stress. *Pavlovian Society,* Seattle, WA.

(54) **Maren, S.** (2014). Stabilizing extinction under stress. *UNAM Learning and Memory Meeting,* Juriquilla, Queretaro, Mexico.

(55) **Maren, S.** (2015). Stabilizing fear extinction under stress. *Richard L. Solomon Distinguished Lecture,* Eastern Psychological Association, Philadelphia, PA.

(56) **Maren, S.** (2015). Stabilizing fear extinction under stress. *Neuroscience Program,* Michigan State University, East Lansing, MI.

(57) **Maren, S.** (2015). Neural circuits for extinction and renewal of conditioned fear. *School of Behavioral and Brain Sciences,* University of Texas at Dallas, Richardson, TX.

(58) **Maren, S.** (2015). Does the infralimbic cortex inhibit fear after extinction? *Gordon Research Conference: The Amygdala in Health and Disease*, Stonehill College, Easton, MA.

(59) **Maren, S.** (2015). Stabilizing fear extinction under stress. *Rutgers University, Brain Health Institute*, Plenary Seminar Series, New Brunswick, NJ.

(60) **Maren, S.** (2016). Prefrontal-hippocampal interplay in contextual memory retrieval. *28th Annual Winter Conference on Neural Plasticity*, Maui, HI.

(61) **Maren, S.** (2016). Neural circuits of fear relapse. *Purdue Symposium on Psychological Science: Emotion Dysregulation: Consequences and Mechanisms,* Purdue University, West LaFayette, IN.

(62) **Maren, S.** (2016). Stress-induced extinction impairments. *AMP-IT UP Constructs Meeting #1.* Cohen Veterans Biosciences, Cambridge, MA.

(63) **Maren, S.** (2016). Stabilizing fear extinction under stress. *Neuroscience Institute Seminar Series, University of Tennessee Health Science Center*, Memphis , TN.

(64) **Maren, S.** (2016). BNST regulation of fear-induced relapse. *Neuroscience Institute Seminar Series*, *Vanderbilt University*, Nashville , TN.

(65) **Maren, S.** (2016). Emotional Memory. *Neuroscience School of Advanced Studies.* Abbazia di Novacella, Bressanone, Italy.

(66) **Maren, S.** (2016). Brain circuits regulating fear. *University of Texas FreshAIR: Grand Challenges in Neuroscience*, Austin, TX.

(67) **Maren, S.** (2016). PTSD: Memory abnormalities. *AMP-IT UP Constructs Meeting #2.* Cohen Veterans Biosciences, Tysons Corner, VA.

(68) **Maren, S.** (2016). The emotional brain. *College of Liberal Arts: CONNECT.* Texas A&M University, College Station, TX.

(69) **Maren, S.** (2017). Neural circuits for fear renewal. *29th Annual Winter Conference on Neural Plasticity*, St. George's, Grenada.

(70) **Maren, S.** (2017). Neural circuits for fear relapse. *30th Annual Conference of the Center on the Neurobiology of Learning and Memory,* University of California, Irvine, CA.

(71) **Maren, S.** (2017). Brain circuits regulating fear. *Neuroscience Symposium,* Harvard Medical School/ McLean Hospital, Belmont, MA.

(72) **Maren, S.** (2017). Brain circuits regulating fear. Keynote Address, *European Meeting of Human Fear Conditioning (EMHFC)*, Hamburg, Germany.

(73) **Maren, S.** (2017). Brain circuits regulating fear. *D. O. Hebb Distinguished Scientific Contribution Award Address,* Annual Convention of the American Psychological Association, Washington, DC.

(74) **Maren, S.** (2017). Hippocampal-prefrontal circuit mediating relapse of extinguished fear. *Gordon Research Conference: The Amygdala in Health and Disease*, Stonehill College, Easton, MA.

(75) **Maren, S.** (2017). Brain circuits regulating fear. *Neuroscience Seminar,* Mitchell Center for Neurodegenerative Disease, University of Texas Medical Branch, Galveston, TX.

(76) **Maren, S.** (2018). Brain circuits regulating fear. *Neuroscience Seminar,* Department of Anatomy and Neurobiology, University of Texas Health Science Center, Houston, TX.

(77) **Maren, S.** (2018). Prefrontal-reuniens circuit regulates fear extinction. *Memory and Cognitive Disorders Award Address*, McKnight Conference on Neuroscience, Aspen, CO.

(78) **Maren, S.** (2018). Making and breaking fear memories. *Neuroscience Program Seminar,* University of Illinois at Urbana-Champaign, Urbana, IL.

(79) **Maren, S.** (2018). The way forward is backward: BNST mediates fear to ambiguous threats. *Invited Talk*, Annual Meeting of the Pavlovian Society, Iowa City, IA.

(80) **Maren, S.** (2018). Neuroscience of emotion and memory. *Society for Neuroscience Professional Development Workshops, Teaching Neuroscience: Emotion and Learning,* San Diego, CA.

(81) **Maren, S.** (2018). Making and breaking fear memories. *Office of the Provost Faculty Networking Seminar,* Tulane Brain Institute, Tulane University, Urbana, IL.

(82) **Maren, S.** (2019). Brain circuits for the extinction and relapse of fear. *Neuroscience Colloquium,* Medical University of South Carolina, Charleston, SC.

(83) **Maren, S.** (2019). Prefrontal-thalamic circuits regulating emotional memory. *Invited Talk*, Japan Neuroscience Society, Niigata, Japan.

(84) **Maren, S.** (2019). Covert capture and erasure of fear memory. *Invited Talk*, *Gordon Research Conference: The Amygdala in Health and Disease*, Stonehill College, Easton, MA.

(85) **Maren, S.** (2019). Prefrontal-thalamic circuits regulating emotional memory. *Invited Talk*, Annual Meeting of the Pavlovian Society, Vancouver, British Columbia, Canada.

(86) **Maren, S.** (2019). Neural circuits controlling context-dependent fear memory (Speaker and Chair). *Minisymposium: Brain Circuits for the Selection and Scaling of Defensive Behavior.* Society for Neuroscience, Chicago, IL, Charleston, SC.

(87) **Maren, S.** (2019). Contextual control of emotional memory. *Neuroscience Colloquium,* University of Texas San Antonio, San Antonio, TX.

(88) **Maren, S.** (2020). Prefrontal-thalamic circuits regulating emotional memory. *Novel Neural Circuits in Fear Conditioning*, Winter Conference on Bran Research, Big Sky, MT.

Classroom Teaching

Texas A&M University:

Fall 2019	Grantwriting in Neuroscience (Psychology/Neuroscience 649), Graduate course (14 students)
Spring 2018	*Physiological Psychology* (Psychology/Neuroscience 335), Undergraduate course (200 students)
Fall 2017	*Neuroscience of Learning and Memory* (Psychology/Neuroscience 332), Undergraduate course (38 students)
Spring 2017	*Physiological Psychology* (Psychology/Neuroscience 335), Undergraduate course (200 students)
Fall 2016	*Neuroscience of Learning and Memory* (Psychology/Neuroscience 332), Undergraduate course (38 students)
Spring 2016	*Drugs and Behavior* (Psychology/Neuroscience 336), Undergraduate course (20 students)
Fall 2015	*Drugs and Behavior* (Psychology/Neuroscience 336), Undergraduate course (20 students)
Spring 2015	*Drugs and Behavior* (Psychology/Neuroscience 336), Undergraduate course (16 students)
Spring 2015	*Behavioral and Cellular Neuroscience Seminar* (Psychology 635), Graduate research seminar (5 students)
Fall 2014	*Drugs and Behavior* (Psychology/Neuroscience 336), Undergraduate course (16 students)
Fall 2014	*Behavioral and Cellular Neuroscience Seminar* (Psychology 635), Graduate research seminar (8 students)
Spring 2013	*Behavioral and Cellular Neuroscience Seminar* (Psychology 635), Graduate research seminar (7 students)
Fall 2013	*Behavioral and Cellular Neuroscience Seminar* (Psychology 635), Graduate research seminar (8 students)
Spring 2012	*Behavioral and Cellular Neuroscience Seminar* (Psychology 635), Graduate research seminar (6 students)
Fall 2012	*Behavioral and Cellular Neuroscience Seminar* (Psychology 635), Graduate research seminar (10 students)

University of Michigan:

Fall 2009	*Biopsychology of Learning and Memory* (Psychology 434), Undergraduate lecture (100 students)
Winter 2009	*Introduction to Biopsychology* (Psychology 230), Undergraduate course with discussion (300 students)
Fall 2007	*Brain, Learning, and Memory (*University Course 261/Psychology 231), Undergraduate course with laboratory; taught with John Jonides and Joshua Berke (75 students)
Fall 2006	*Brain, Learning, and Memory (*University Course 261/Psychology 231), Undergraduate course with laboratory; taught with John Jonides and Joshua Berke (75 students)
Winter 2006	*Introduction to Biopsychology,* (Psychology 230), Undergraduate course with discussion (300 students)
Fall 2005	*Brain, Learning, and Memory (*University Course 261/Psychology 231), Undergraduate course with laboratory; taught with John Jonides (75 students)
Winter 2005	*Biopsychology of Learning and Memory* (Psychology 831), Graduate seminar (10 students)
Fall 2004	*Brain, Learning, and Memory (*University Course 261/Psychology 231), Undergraduate course with laboratory; taught with John Jonides (75 students)
Fall 2003	*Brain, Learning, and Memory (*University Course 261/Psychology 231), Undergraduate course taught with laboratory; taught with John Jonides and Hylan Moises (75 students)
Fall 2002	*Brain, Learning, and Memory (*University Course 261/Psychology 231), Undergraduate course with laboratory; taught with John Jonides and Hylan Moises (75 students)
Winter 2002	Sabbatical

Fall 2001 *Brain, Learning, and Memory* (University Course 261/Psychology 231), Undergraduate laboratory course with laboratory; taught with John Jonides and Hylan Moises (75 students)

Winter 2001 *Neurobiology of Learning and Memory* (Neuroscience 602/615), One of three lecture modules for the neuroscience graduate core course (15 students)

Winter 2000 *Neurobiology of Learning and Memory* (Neuroscience 602/615), One of three lecture modules for the neuroscience graduate core course (15 students)

Fall 2000 *Biopsychology of Learning and Memory* (Psychology 531), Undergraduate seminar (30 students)

Fall 2000 *Biopsychology of Learning and Memory* (Psychology 831), Graduate seminar (5 students)

Winter 2000 *Introduction to Biopsychology,* (Psychology 330), Undergraduate course with discussion (300 students)

Fall 1999 Pre-tenure leave

Winter 1999 *Neurobiology of Learning and Memory* (Neuroscience 602/615), One of three lecture modules for the neuroscience graduate core course (15 students)

Winter 1999 *Introduction to Biopsychology,* (Psychology 330), Undergraduate course with discussion (300 students)

Fall 1998 *Laboratories in Biopsychology* (Psychology 331), Undergraduate laboratory course: seminar (45 students)

Winter 1998 *Introduction to Biopsychology,* (Psychology 330), Undergraduate course with laboratory (300 students)

Fall 1997 *Biopsychology of Learning and Memory* (Psychology 531), Undergraduate seminar (30 students)

Winter 1997 *Introduction to Biopsychology,* (Psychology 330), Undergraduate course with discussion (300 students)

Fall 1996 *Biopsychology of Learning and Memory* (Psychology 831), Graduate seminar (10 students)

Research Mentoring

Postdoctoral Fellows

Texas A&M University:

2018-pres **Jianfeng Liu, PhD** (Peking University)

2018-pres **Olivia Miles, PhD** (University of Vermont)

2012-2017 **Paul Fitzgerald, PhD** (Johns Hopkins University). *Currently an Assistant Research Scientist at the University of Michigan.*

University of Michigan:

2012-2013 **Crystal M. Erickson, PhD** (University of Texas-Dallas). *Currently a Surgical Electrophysiologist, ProNerve, LLC.*

2011-2012 **Chrystelle Sirieix, PhD** (University of Lyon). *Currently a Postdoctoral Fellow in the Department of Physiology and Neurobiology, Dartmouth University.*

2010-2011 **Jee-hyun Kim, PhD** (University of New South Wales). *Currently a DECRA Fellow and Associate Professor in the Florey Institute of Neuroscience and Mental Health, University of Melbourne, Australia.*

2009-2010 **Chun-hui Chang, PhD** (University of Michigan). *Currently a Postdoctoral Fellow in the Department of Neuroscience, University of Pittsburgh; will be appointed (F2015) an Assistant Professor, Institute of Systems Neuroscience, National Tsing Hua University, Taiwan.*

2008-2010 **Ewelina Knapska, PhD** (Nencki Institute, Warsaw). *Currently an Assistant Professor and Head of the Emotions Neurobiology Laboratory, Nencki Institute of Experimental Biology, Warsaw, Poland.*

2005-2008 **Jinzhao Ji, MD, PhD** (Shanghai Institute of Physiology). *Currently in private medical practice.*

Graduate Students (chair)

Texas A&M University (current, chair):

2019-pres **Krithika "Kay" Vasudevan**, Texas A&M Institute for Neuroscience.

2019-pres **Annalise Binette**, Texas A&M Institute for Neuroscience.

2018-pres **Cecily Oleksiak**, Texas A&M Institute for Neuroscience.

2017-pres **Michael Totty,** Texas A&M Institute for Neuroscience.
2017-pres **Reed Ressler,** Texas A&M Institute for Neuroscience.
2015-pres **Karthik Ramanathan, MS**, Texas A&M Institute for Neuroscience.

Texas A&M University (past, chair):

2013-2019 **Thomas Giustino**, Texas A&M Institute for Neuroscience. *Awarded a predoctoral NIH NRSA (2017-19).

2012-2018 **Travis D. Goode**, Texas A&M Institute for Neuroscience. *Awarded a predoctoral NIH NRSA (2016-18).

2012-2017 **Jingji Jin**, Texas A&M Institute for Neuroscience, "Neural circuits underlying context-dependent memory retrieval."

2013-2017 **Qian (Angie) Wang**, **PhD,** Department of Biology, "Exploring the role of infralimbic cortex inhibitory circuits in the context-dependent extinction and renewal of fear." *Currently an Assistant Professor in the Department of Biology, John Brown University.*

2012-2017 **Gillian Acca, PhD,** Texas A&M Institute for Neuroscience, "The interaction of progesterone and allopregnanolone with fear memories." *Currently a Science Policy Analyst at the National Institutes of Health.*

2012-2014 **Janice J. Kim, MS,** Department of Psychology, "Reversible inactivation of the bed nucleus of the stria terminalis blocks reinstatement but not renewal of extinguished fear."

University of Michigan (past, chair):

2007-2012 **Caitlin A. Orsini, PhD,** Department of Psychology, "Neural circuitry underlying contextual regulation of fear after extinction," 2007-2012. *Awarded a predoctoral NIH NRSA (2010-12). *Currently a Postdoctoral Fellow in the Department of Psychiatry, University of Florida.*

2005-2010 **Joshua M. Zimmerman, PhD,** Neuroscience Program, "Compensatory neural circuits for fear learning without the basolateral amygdala," 2005-2010. *Currently a Data Analyst, Bloomberg NYC.*

2005-2009 **Chun-hui Chang, PhD,** Department of Psychology, "Extinction of recent fear: Behavioral and neural mechanisms," 2005-2009. *Assistant Professor, Institute of Systems Neuroscience, National Tsing Hua University, Taiwan.*

2004-2009 **Christine A. Rabinak, PhD,** Department of Psychology,"The associative representation of fear memories mediated by the amygdala,"2004-2009. *Currently an Associate Professor, Department of Pharmacy Practice, Wayne State University.*

2000-2005 **Jennifer A. Hobin, PhD,** Department of Psychology, "Neural circuits for context-specific expression of pavlovian fear memory after extinction," 2001-2006. *Awarded a predoctoral National Defense Science and Engineering graduate fellowship (2001-05). *Currently a Science Policy Director, National Institute of Drug Abuse.*

1999-2004 **Kevin A. Corcoran, PhD,** Department of Psychology, "Participation of the dorsal hippocampus in the acquisition, expression, and context-dependency of extinction of learned fear," 1999-2004. *Awarded a predoctoral NSF GRF (2001-04). *Currently a Postdoctoral Fellow in the Department of Psychiatry, Northwestern University.*

1997-2002 **Ki A. Goosens, PhD,** Department of Psychology, "Conditional plasticity in the amygdala: Substrates, molecular mechanisms, and the relationship to fear behavior," 1997-2002. *Awarded a predoctoral Howard Hughes Medical Institute Graduate Fellowship (1999-2002). *Currently an Assistant Professor in Neurology, MassGeneral Institute for Neurological Disease (MIND), Massachusetts General Hospital.*

Doctoral Students (committee member)

Texas A&M University: Sean Bates (Eitan), TAMIN; Kah-Chung Leong (Packard), Department of Psychology, Jarid Goodman (Packard), TAMIN. Lillian Laiks (R. Smith), TAMIN. University of Michigan: Katherine Prater (Akil), Neuroscience Program; Howard Gritton (Sarter), Neuroscience Program; Stephanie Jimenez (Murphy), Neuroscience Program; Adam Iliff (Sutton), Neuroscience Program; Stephen V. Mahler (Berridge), Department of Psychology; Lisa A. Briand (Robinson), Neuroscience Program; Theresa Bjorness (Poe), Neuroscience Program;

Christine Walsh (Poe), Neuroscience Program; Brandon McKinney (Murphy), Neuroscience Program and MSTP; Javier Perez (Akil), Neuroscience Program; Keith Sudheimer (Liberzon), Neuroscience Program; Timothy Marzullo (Kipke), Neuroscience Program; Chen-chung Lee (Middlebrooks), Neuroscience Program; Tyler Brown (Esteban), Neuroscience Program; Carrie Ferrario (Robinson), Neuroscience Program; Margaret Campbell (Therrien), Nursing; Pat Simen (Polk), EECS; Esther Bay (Therrien), Nursing; Kaitlin Browman (Robinson), Department of Psychology; Hans Crombag (Robinson), Department of Psychology; Esther Bay (Therrien), Nursing

Doctoral Students (outside member or reader)

Outside member: Anthony Lacagnina (Drew), Department of Neurobiology, University of Texas; Kelsey Smith (Lodge), Department of Pharmacology, University of Texas Health Science Center San Antonio; Elizabeth Fucich (Morilak), Department of Pharmacology, University of Texas Health Science Center San Antonio; Lindsey Noble (McIntyre), Department of Neuroscience, University of Texas at Dallas; Davie Bailey (Wade), Department of Psychology, Michigan State University; Deanna Buffalari (Grace), Department of Neuroscience, University of Pittsburgh. Outside reader: Anthony Good (Westbrook), Department of Psychology, University of New South Wales, Australia; Tatiana Harambolous (Westbrook), Department of Psychology, University of New South Wales, Australia; Matthew Holahan (White), McGill University, Canada; Mihaela Iordanova (McNally), Department of Psychology, University of New South Wales, Australia; Laura Bradfield (Richardson), Department of Psychology, University of New South Wales, Australia; Wan Yee Macy Chan (McNally), Department of Psychology, University of New South Wales, Australia.

Undergraduate Research Assistants

Texas A&M University: Rachel Dorn, John Spikes, II, Eboni Johnson, Tyler Vintila, Dencil Ninan, Rebecca Loshelder, Barbara Tsao, Christina Hu, Caroline Zarate, Keelen Vu, Zachary LePage, Kelsey Clements, Carolyn Evenmy, Kaitlyn French. University of Michigan: Michael Kia, Lisa Randazzo, Lisa Diepenhorst, Rishi Gupta, Ryan Swan, Monique Mandrea, Heather Tracy, Brian Song, Jennifer Talarico, Rodrigo Salazarr, Geanbry Demming, Stanley Yap, Bryan Faller, Ann Falk, Chris Kobet, Kelley Kozma, Joy Limpuangthip, Jamie Rosenman, Pavani Guntur, Erin Eaylward, Sanjeeva Wiljejesakere, Elizabeth Peterson, Omry Maoz, Payal Mittal, Patricia Welsh, Kamal Fahim, Graham Newman, Andrea Lubaway, Megan Ring, Mary Beth Harris, Michelle Sommers, Erica Hirsch, Elizabeth Dixon, April Qian, Kim Remski, Ian Maclachlan, Stephanie Jimenez, Destiny Carrillo, Natalie Mandel, Gordon Shott, Yasha Rastgar, Dev Shah, Danielle Robinett, Sierra Stringfield

Trainee Awards and Honors

Stanley A. Yap, Pillsbury Award (best undergraduate honors thesis in Psychology), University of Michigan, 1999.

Ki A. Goosens, Howard Hughes Pre-Doctoral Fellowship (1998), Barbara A. Oleshansky Award (2000), Wyvell Award (2002, best dissertation in biopsychology), Marquis Award (2002, best dissertation in psychology), Rackham Distinguished Dissertation Award (2002, best dissertation at the University of Michigan), National Cattell Award finalist (best psychology dissertation in the US).

Kevin A. Corcoran, National Science Foundation fellowship (1999), Sigma Xi Grants-in-Aid-of-Research (2002).

Jennifer A. Hobin, National Defense Science and Engineering graduate fellowship (2001).

Christine A. Rabinak, American Psychological Association Dissertation Fellowship (2008)

Caitlin A. Orsini, National Science Foundation, Honorable Mention in Graduate Research Fellowship Competition (2008). Awarded a National Research Service Award (2010-2012) and American Psychological Association Dissertation Fellowship (2010).

Travis D. Goode, National Science Foundation, Honorable Mention in Graduate Research Fellowship Competition (2013).

Professional Service

Editorial Service:

Editor-in-Chief	*Behavioural Brain Research (2010-present)*
Editorial Board	*Neuroscience & Biobehavioral Reviews (2003-present)*

Learning & Memory (2017-present)
Hippocampus (2018-present)

Past Editorial Service:

Associate Editor: *Frontiers in Behavioral Neuroscience (2008-2009)*
Cognitive, Affective, and Behavioral Neuroscience (2001-2007)

Editorial Board Member: *Behavioural Brain Research (2005-2010)*
Neural Plasticity (2006-2008)
Debates in Neuroscience (2006-2008)

Ad-hoc journal review: *Science, Cell, Neuron, Nature Neuroscience, Journal of Neuroscience, Scientific Reports, Biological Psychiatry, Behavioral Neuroscience, European Journal of Neuroscience, Learning & Memory, Neurobiology of Learning and Memory, Neuroscience, Psychopharmacology*

Grant Review Committees:

2017-2021 **Member**, *Neurobiology of Learning and Memory (LAM) IRG*, Center for Scientific Review, National Institute of Mental Health
2007-2015 **Member**, *Special Emphasis Panel IRGs*, Center for Scientific Review, National Institute of Mental Health
2003-2007 **Member**, *Neurobiology of Learning and Memory (LAM) IRG*, Center for Scientific Review, National Institute of Mental Health
2003 **Member**, *Special Emphasis Panel IRG (IFCN-4),* Center for Scientific Review, National Institute of Mental Health
2003 **Temporary Member**, *Integrative, Functional, Cognitive Neuroscience IRG (IFCN-7),* Center for Scientific Review, National Institute of Mental Health
2001 **Member**, *Special Emphasis Panel (F31s and F32s) IRG (ZRG01 F02A),* Center for Scientific Review, National Institute of Mental Health
1998 **Temporary Member**, *Integrative, Functional, Cognitive Neuroscience IRG (IFCN-7),* Center for Scientific Review, National Institute of Mental Health

Departmental and University Service:

Department:

2012-pres **Member**, *Advisory Committee,* Department of Psychology, Texas A&M University
2012-pres **Coordinator**, *Neuroscience Area*, Department of Psychology, Texas A&M University
2013-2014 **Member**, *Affective Science Search Committee*, Department of Psychology, Texas A&M University
2012-2014 **Chair**, *Behavioral and Cellular Neuoscience Search Committee,* Department of Psychology, Texas A&M University
2006-2008 **Member**, *Executive Committee*, Department of Psychology, University of Michigan
2004-2005 **Member**, *Augmented Executive Committee*, Department of Psychology, University of Michigan
2001-2002 **Member**, *Graduate Committee*, Department of Psychology, University of Michigan
2000-2001 **Member**, *Executive Committee,* Department of Psychology, University of Michigan
1999-2001 **Member**, *Admissions Committee,* Neuroscience Program, University of Michigan
1998-1999 **Member**, *Augmented Executive Committee,* Department of Psychology, University of Michigan
1997-1999 **Member**, *Graduate Committee,* Department of Psychology, University of Michigan
1996-1997 **Member**, *Undergraduate Committee,* Department of Psychology, University of Michigan

College and University:

2017-2019 **Member and Executive Committee**, Council of Principal Investigators, Vice President for Research, Texas A&M University .
2015-2017 **Member**, *Research Development Fund Advisory Committee*, Vice President for Research, Texas A&M University.

2013-2015 **Member**, *Dean's Advisory Committee*, College of Liberal Arts, Texas A&M University.
2009-2010 Joint Committee on the Future of Social Sciences, OVPR, University of Michigan.
2007-present **Director**, Neuroscience Graduate Program, University of Michigan
2004-present **Member**, *Admissions Committee*, Neuroscience Graduate Program, University of Michigan
2007-present **Member**, *Operating Committee*, Program in Biomedical Sciences, University of Michigan
2007-present **Member**, *Admission Committee*, Program in Biomedical Sciences, University of Michigan
2007. **Associate Director**, Neuroscience Graduate Program, University of Michigan
2008. **Member**, *Executive Committee*, Neuroscience Graduate Program, University of Michigan
2004. **Member**, *Advisory Committee*, Health Science Scholars Program, University of Michigan
2003 **Member**, *Rackham Divisional Board*, Horace H. Rackham School of Graduate Studies, University of Michigan
2001-2002 **Member**, *Rackham Predoctoral Grant Review Committee*, Rackham Graduate School, University of Michigan
1999-2000 **Chair**, *Learning and Memory Subcommittee*, Life Sciences Undergraduate Curriculum Committee, College of Literature, Science, & Arts, University of Michigan
1997-1998 **Member**, *Hughes Science Education Grant Committee*, College of Literature, Science, & Arts, University of Michigan

Professional Societies

Society for Neuroscience, May 1990-present
Pavlovian Society, 2004-present
Molecular and Cellular Cognition Society, 2004-present
American Association for the Advancement of Science, 2002-present
American Psychological Association, 1994-present
Association for Psychological Science, 2006-present
New York Academy of Sciences, 2002-present
Sigma Xi Scientific Research Society, 1993-present
Phi Beta Kappa Honor Society, 1989-present
Psi Chi Psychology Honor Society, 1987-present

Media Coverage

May 22, 2002 Interviewed for BBC Radio 4 for Science Frontiers program on 'Fear'. http://www.bbc.co.uk/radio4/science/frontiers_20020522.shtml
July 22, 2002 Interviewed by *New Scientist* on study by Canli et al. showing sex differences in emotional memory encoding in people. http://www.newscientist.com/article/dn2576.html
March 23, 2003 Interviewed for *Newsweek* cover story, 'Our Bodies, Our Fears'. http://www.newsweek.com/id/58568
March 31, 2003 Interview by UM News service on effect of war coverage on mental health. http://www.ur.umich.edu/0203/Mar31_03/11.shtml
December 11, 2003 Interview for article in *APA Monitor* on fear extinction. http://www.apa.org/monitor/dec03/kickstart.html
November 15, 2004 Interviewed by *Associated Press* for study by de Gelder et al. on the communication of fear by body posture in people. http://www.usatoday.com/news/science/2004-11-15-fear_x.htm
November 8, 2006 Interviewed by *Cosmos* on work from our laboratory on early interventions for fear. http://www.cosmosmagazine.com/node/830
August 23, 2007 Commentary on an opinion article in *Scientific American*. http://www.sciam.com/article.cfm?articleID=965F9C20-E7F2-99DF-3CC5BF77DAD5C7A1
October 30, 2007 Interviewed by *Associated Press* on clinical understanding of fear and anxiety disorders. http://www.msnbc.msn.com/id/21547710/

October 31, 2007	Interviewed by *Associated Press* on story about celebrations of fear. http://www.usatoday.com/tech/science/2007-10-31-4184765125_x.htm
February 21, 2008	Interviewed by *Technology Review* on paper by Mayford et al. on visualizing synapses encoding fear memory in hippocampus. http://www.technologyreview.com/Biotech/20320/
November 9, 2010	Interviewed by *The Scientist* on papers by Anderson et al. and Luthis et al. on microcircuitry of amygdala. http://www.the-scientist.com/news/display/57802/
November 11, 2010	Appeared in "Michigan in the News" in the University of Michigan Record Update regarding my comments in the *The Scientist* on papers by Anderson et al. and Luthi et al. on microcircuitry of amygdala. http://ur.umich.edu/update/archives/101111
March, 30 2012	Psychology Today highlights *Neuron* review and considers whether fear memory can be erased. http://www.psychologytoday.com/articles/201204/memory-wiping-the-slate
October 3, 2012	Work on anatomy of fear relapse featured on Futurity.org. http://www.futurity.org/top-stories/fear-relapse-why-phobias-are-hard-to-cure/
October 2013	Work featured in cover story of the APS Observer. http://www.psychologicalscience.org/index.php/publications/observer/2013/building-a-fearless-mind.html
July 17, 2014	Work on fear extinction featured in *Nautilus*. http://nautil.us/issue/15/turbulence/if-trauma-victims-forget-what-is-lost-to-society
December 15, 2014	Announcement of McKnight Foundation, McKnight Cognitive and Memory Disorder awards. https://www.neuroscience.mcknight.org/newsroom/neuroscience-news/2015-mcd
December 16, 2014	NRN review mentioned in Business Insider. http://www.businessinsider.com/how-to-improve-memory-2014-12
June 30, 2015	Work on propranolol and fear extinction featured on *Texas A&M Today*. http://today.tamu.edu/2015/06/30/researchers-find-potential-new-ptsd-treatment/
July 13, 2015	Work on propranolol and fear extinction featured on *Futurity*. http://www.futurity.org/blood-pressure-drug-ptsd-fear-957702/
July 15, 2015	Work on propranolol and fear extinction featured on *Psychiatry Advisor*. http://www.psychiatryadvisor.com/ptsd-trauma-and-stressor-related/propranolol-may-help-reduce-fear-in-ptsd/article/426218/
April 12, 2017	Quoted in Scientific American story**:** https://www.scientificamerican.com/article/where-does-the-brain-store-long-ago-memories/
May 27, 2017	Frontiers in Behavioral Neuroscience review linked on nymag.com. http://nymag.com/scienceofus/article/why-audience-participation-is-so-terrifying.html?mid=full-rss-scienceofus&utm_src=am.
Feb 5, 2018	Nature Neuroscience article picked up by various new outlets: https://www.sciencealert.com/hippocampus-inhibition-pathways-prefrontal-cortex-post-traumatic-stress-disorder-relapses; https://www.eurekalert.org/pub_releases/2018-02/tau-bsr021318.php.
Oct 30, 2018	Nature Communications article picked up by various news outlets: https://www.futurity.org/fear-brain-1900552/; https://www.medicalnewstoday.com/articles/323546.php; https://www.sciencedaily.com/releases/2018/10/181030174945.htm