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Robert M. Sears

POSITIONS HELD

7/2016 – present       Associate Research Scientist

                                   New York University

1/2015 – present Research Scientist

                                   The Nathan Kline Institute for Psychiatric Research

EDUCATION AND TRAINING

1/2012 –12/2015        Postdoctoral Research Fellow

                                    New York University

                                    Advisor: Joseph LeDoux

9/2006 – 12/2009       Ph.D., Neuroscience

                                    Yale University

                                    Advisor: Ralph DiLeone

9/1996 – 6/2001         B.A., Biology and B.A. Philosophy

                                    Hendrix College

CURRENT FUNDING

2019 – 2021 NARSAD Young Investigator Award

2018 – 2023 R01DA044445 (Co-I)

2018 – 2020    R21MH116242 (PI) NIH/NIMH

2017 – 2022 R01 MH114931-01 (Consortium PI) NIH/NIMH

2019 – 2021 Templeton World Charity Foundation

*Completed:*

2015 – 2018 The Shirley and William S. McIntyre Foundation (PI)

2015 – 2016    Ruth L. Kirschstein National Research Service Award F32MH094062 NIMH

## HONORS AND AWARDS

2018 NARSAD Young Investigator Award

2006 Qualified for Ph.D. candidacy with distinction

2001 Election to Phi Beta Kappa

2001 Graduated with distinction in Biology

2001 Graduated with distinction in Philosophy

2001 Graduated *magna cum laude*

1998 Hendrix College Achievement Award

## PUBLICATIONS (selected)

Hommel, J.D., **Sears, R.M**., Georgescu, D., Simmons, D.L., DiLeone, R.J. Local gene knockdown in the brain using viral-mediated RNA interference. *Nature Medicine*.12,1539-1544 (2003). PMID: 16982424

Georgescu, D., **Sears, R.M**., Hommel, J.D., Barrot, M., Marsh, D.J., Bednarek, M.A., Bibb, J.A., Maratos-Flier, E., Nestler, E.J., Dileone, R.J. The hypothalamic neuropeptide MCH acts in the nucleus accumbens to modulate feeding behavior and forced-swim performance. *The Journal of Neuroscience*. 25(11), 2933-2940 (2005). PMID: 15772353

Hommel, J.D., Trinko, R., **Sears, R.M.,** Georgescu, D., Liu, Z.W., Gao, X.-B., Thurmon, J.J., Marinelli M., DiLeone, R.J. Leptin receptor signaling in midbrain dopamine neurons regulates feeding*. Neuron*. 51(6), 801-810 (2006). PMID: 16982424

**Sears, R.M.,** Liu, R.J., Narayanan, N.S., Sharf, R., Yeckel, M.F., Laubach, M., Aghajanian, G.K., DiLeone, R.J. Regulation of nucleus accumbens activity by the hypothalamic neuropeptide melanin concentrating hormone. *The Journal of Neuroscience*. 30(24) 8263-8273 (2010). PMCID: PMC2907886

**Sears R.M.,** Fink A.E., Wigestrand M.B., Farb C.R., de Lecea L., Ledoux J.E. Orexin/hypocretin system modulates amygdala-dependent threat learning through the locus coeruleus. *Proceedings of the National Academy of Sciences USA*. 110(50):20260-5 (2013). PMCID: PMC3864341

**Sears, R.M.**, Schiff, H.C., LeDoux, J.E. Molecular mechanisms of threat learning in the lateral nucleus of the amygdala. *Progress in Molecular Biology and Translational Science*. 122:263-304 (2014). PMCID: n/a doi: 10.1016/B978-0-12-420170-5.00010-6

Ramirez, F., Moscarello, J.M., LeDoux, J.E. and **Sears, R.M**. Active avoidance requires a serial basal amygdala to nucleus accumbens shell circuit. *Journal of Neuroscience.* 25;35(8):3470-7 (2015). PMCID: PMC4339356

Schiff HC, Johansen J.P., Hou M., Bush D.E., Smith E.K., Klein J.E., LeDoux J.E., **Sears R.M.** β-Adrenergic receptors regulate the acquisition and consolidation phases of aversive memory formation through distinct, temporally regulated signaling pathways. *Neuropsychopharmacology*. 42(4):895-903 (2017). PMCID: PMC5312069

Wigestrand M.B., Schiff H.C., Fyhn M., LeDoux J.E., **Sears R.M.** Primary auditory cortex regulates threat memory specificity. *Learning and Memory*. 15;24(1):55-58 (2017). PMCID: PMC5159661

Campese, V.D., Soroeta, J.M., Vazey, E.M., Aston-Jones, G., LeDoux, J.E. and **Sears, R.M.** Noradrenergic regulation of central amygdala in aversive Pavlovian-to-instrumental transfer. eNeuro. 2017 Oct 24;4(5) (2017). PMCID: PMC5654237

A brainstem-central amygdala circuit underlies defensive responses to learned threats. Gu, Y., Vazey, E.M., Aston-Jones, G., Lin, L., LeDoux, J.E., **Sears, R.M.** Mol Psychiatry. 2019 Nov 22. doi: 10.1038/s41380-019-0599-6. Epub 2019 Nov 22. PubMed PMID: 31758092; PubMed Central PMCID: PMC7042728.

Axon TRAP reveals learning-associated alterations in cortical axonal mRNAs in the lateral amgydala. Ostroff LE, Santini E\*, **Sears R\*.**, Deane Z, Kanadia RN, LeDoux JE, Lhakhang T, Tsirigos A, Heguy A, Klann E. Elife. 2019 Dec 11;8. pii: e51607. doi: 10.7554/eLife.51607. PubMed PMID: 31825308; PubMed Central PMCID: PMC6924958.