

# Meghan Flanigan, PhD

Email: Meghanf@med.unc.edu

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## Education

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**PhD in Neuroscience**, Icahn School of Medicine at Mount Sinai, New York, NY (2019)

- GPA: 4.0

**BA in Neuroscience (*Cum Laude*)**, Pomona College, Claremont, CA (2011)

- GPA: 3.9
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## Positions Held

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**Postdoctoral Fellow**, Bowles Center for Alcohol Studies, University of North Carolina School of Medicine, Chapel Hill, NC (Jan 2019-present)

- Investigating serotonergic circuits controlling affective symptoms of alcohol withdrawal in mice.
- Principal Investigator: Thomas Kash, PhD

**Doctoral Candidate**, Center for Affective Neuroscience, Department of Neuroscience, Icahn School of Medicine at Mount Sinai, New York, NY (Aug 2013-Jan 2019)

- Investigated the role of the lateral habenula orexin signaling in aggression reward in mice.
- Principal Investigator: Scott Russo, PhD

**Post-baccalaureate Intramural Research Training Award (IRTA) Fellow**, National Institute of Alcohol Abuse and Alcoholism, National Institutes of Health, Bethesda, MD (Jun 2011-Aug 2013)

- Investigated the role of microRNAs in alcohol abuse and dependence in rats.
- Principal Investigator: Markus Heilig, MD, PhD

**Research Associate**, Pomona College, Claremont, CA (Jan 2009-May 2011)

- Investigated the effects of stress on hippocampal synaptic plasticity and depression-like behavior in rats
  - Principal Investigator: Jonathan King, PhD
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## Teaching Experience

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**Adjunct Professor**, Marymount Manhattan College, New York, NY (2017-2018)

- Course: Sensation and Perception (PSYCH 154)

**Teaching Assistant**, Icahn School of Medicine at Mount Sinai, New York, NY (2014, 2015)

- Course: Cellular and Molecular Neuroscience, PhD Training Program in Neuroscience

**Tutor**, Manhattan Tutors, New York, NY (2014-2019)

- Undergraduate and high school level biology, chemistry, and neuroscience

**Teaching Assistant**, Pomona College, Claremont, CA (2009-2011)

- Course: Organic Chemistry
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## Mentorship Experience

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**Postdoctoral Laboratory Mentor**, University of North Carolina School of Medicine

- Undergraduate Students (2)
- PhD Rotation Students (1)
- Laboratory Technicians (2)

**Graduate Laboratory Mentor**, Icahn School of Medicine at Mount Sinai

- High School Students (1)
- PhD Rotation Students (4)

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**Honors and Awards**

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**Future of Science Fund Scholarship**, Keystone Symposium on Neurocircuitry of Social Behavior, Daejeon, South Korea (2020) (meeting subsequently cancelled due to COVID-19 pandemic).

**PhD Class of 2019 Distinction in Research Award**, Icahn School of Medicine at Mount Sinai, New York, NY (2019)

**Winter Conference on Brain Research (WCBR) Panel Speaker Travel Award**, WCBR, Whistler, B.C., Canada (2018)

**Japan Neuroscience Society (JNS) Meeting Travel Award**, Society for Neuroscience, Washington, DC (2017)

**Federation of European Neuroscience Societies (FENS) Forum Travel Award**, Society for Neuroscience, Washington, DC (2016)

**Graduate Student Travel Award**, Mount Sinai School of Medicine, New York, NY (2016, 2017)

**Neuroscience “BRAIN” Award**, Icahn School of Medicine at Mount Sinai, New York, NY (2015)

- Awarded to the junior PhD student that displays the “Best Record of Achievement in Neuroscience.”

**First Year PhD Merit Scholarship**, Icahn School of Medicine at Mount Sinai, New York, NY (2013)

**Senior Departmental Award in Neuroscience**, Pomona College, Claremont, CA (2011)

**Summer Undergraduate Research Program Award**, Pomona College, Claremont, CA (2009, 2010)

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**Research Support**

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**T32 AA007573-21**: NIAAA Post-doctoral Training Grant, University of North Carolina School of Medicine, Chapel Hill, NC (2019-2022)

- Title: Molecular and Cellular Alcohol Research Training
- PI: Fulton Crews, PhD

**F31 MH111108-01A1**: NIMH F31 Ruth L. Kirschstein Predoctoral Individual National Research Service Award (NRSA), National Institutes of Health, Bethesda, MD (2017-2019)

- Title: Lateral habenula orexin receptor 2 modulation of aggression reward
- PI: Meghan Flanigan

**T32 MH096678-05**: NIMH Pre-doctoral Training Grant, Icahn School of Medicine at Mount Sinai, New York, NY (2016-2017)

- Training Program in Mental Health Research

- PI: Matthew Shapiro, PhD

**T32 MH087004-06:** NIMH Pre-doctoral Training Grant, Icahn School of Medicine at Mount Sinai, New York, NY (2013-2015)

- Training Program in Neuroscience
- PI: Stephen Salton, PhD

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**Publications** (36 publications; H-index: 25; citations: 2,116)

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Submitted and In Revision:

S. Neira, L. Hassanein, C. Stanhope, M.C. Buccini, S. D'Ambrosio, **M. Flanigan**, H.L. Haun, K.M. Boyt, J.S. Bains, and T.L. Kash. (2022). Chronic alcohol consumption alters home-cage behaviors and responses to ethologically-relevant predator tasks in mice. Submitted.

**M. Flanigan**, O. Hon, K.M. Boyt, S. D'Ambrosio, L. Hassanein, M. Castle, H.L. Haun, M.M. Pina, and T.L. Kash. Sex-specific regulation of binge alcohol drinking and affective behaviors by subcortical serotonin 5HT<sub>2c</sub> receptors. (2022). Submitted.

Primary Research Articles:

A Takahashi, **M. Flanigan**, Y. Cherasse, H. Aleyasin, T. Tsenematsu, T. Okada, K. Masu, M. Masu, K. Tanaka, A. Yamanaka, S. Ogawa, and S. Russo. Glutamatergic projections from the lateral habenula to the dorsal raphe nucleus induce aggressive arousal. (2022). *Nature Communications*. Accepted.

C. Morel, S. Montgomery, L. Li, S. Ku, B. Juarez, R. Durand-de Cuttoli, N. Tzavaras, **M. Flanigan**, M. Cai, J. Walsh, S. Russo, E.J. Nestler, E.S. Calipari, A.K. Friedman, and M.H. Han. Midbrain projection to basolateral amygdala encodes anxiety behavior. (2021). *Nature Communications*. Accepted.

A. Takahashi, H. Aleyasin, M. Stavarache, L. Li, F. Cathomas, L. Parise, H. Lin, C.J. Burnett, A. Aubry, **M. Flanigan**, A. Brancato, C. Menard, M. Pfau, V. Kana, J. Wang, G. Hodes, T. Sasaki, M. Kaplitt, S. Ogawa, B. McEwen, and S. Russo. Neuromodulatory effect of cytokine in the dorsal raphe nucleus on individual difference of intermale aggression in mice. (2021). *Molecular Psychiatry*. In press.

K. Norman, H. Koike, J. Bateh, S. Lopez, K. Caro, D. Kato, K. Yamamuro, **M. Flanigan**, Y. Garkun, E. Nabel, D. Brady, C. Cho, J. Riceberg, M. Sadahiro, M. Demars, M.L. Shapiro, S.J. Russo, M.G. Baxter, P.H. Rudebeck, and H. Morishita. Post-error recruitment of frontal-sensory cortical projection promotes attentional behavior. (2021). *Neuron*. 109(7): 1202-1213.

E. Unger\*, J.P. Keller\*, M. Altermatt\*, R. Liang, C. Dong, O.J. Hon, Z. Yao, J. Sun, A. Matsui, D. Jaffe, **M. Flanigan**, S. Hartano, G.O. Mizuno, P.M. Borden, A.V. Shivange, S. Sinning, S.M. Underhill, J. Carlin, S. Banala, L.P. Cameron, D.E. Olson, S.G. Amara, D.T. Lang, G. Rudnick, J.S. Marvin, L.D. Lavis, H.A. Lester, V.A. Alvarez, A.J. Fisher, J. A. Prescher, V. Yarov-Yarovoy, T.L. Kash, V. Gradinaru, L. Looger, and L. Tian. (2020). Directed evolution of a selective and sensitive serotonin biosensor via machine learning. *Cell*. 183(7):1986-2002.

K. Deonaraine, Q. Wang, H. Cheng, K. Chan, H.Y. Lin, K. Liu, L. Parise, F. Cathomas, K. LeClair, **M. Flanigan**, L. Li, H. Aleyasin, C. Guevara, K. Hao, B. Zhang, S. Russo, and J. Wang. (2020). Sex-specific peripheral and central responses to stress-induced depression and treatment in a mouse model. *Journal of Neuroscience Research*. 98(12): 2541-2553.

K. Yamamuro, L. Bicks, M. Leventhal, S. Im, D. Kato, **M. Flanigan**, Y. Garkun, K.J. Norman, K. Caro, M. Sadahiro, K. Kullanter, S. Akbarian, S. Russo, and H. Morishita. (2020). Prefrontal circuitry in control of

paraventricular thalamus requires juvenile social experience to establish adult sociability. *Nature Neuroscience*. 23(10):1240-1252.

C. Guevara\*, B. Matikainen-Ankney\*, N. Kezunovic, K. LeClair, A. Conway, C. Menard, **M. Flanigan**, M. Pfau, S. Russo, D. Benson, and G. Huntley. (2020). LRRK2 mutation alters behavioral, synaptic, and non-synaptic alterations to acute social stress. *Journal of Neurophysiology*. 123(6):2382-2389.

**M. Flanigan**, H. Aleyasin, L. Li, C.J. Burnett, K. Chan, K. LeClair, E.K. Lucas, B. Matikainen-Ankney, R. Durand-de Cuttoli, A. Takahashi, C. Menard, S. Golden, M. Pfau, S. Bouchard, E.S. Calipari, E.J. Nestler, R. DiLeone, A. Yamanaka, G. Huntley, R. Clem, and S. Russo. (2020). Orexin signaling in GABAergic lateral habenula neurons modulates aggressive behavior in male mice. *Nature Neuroscience*. 23, 638-650.

Commentary on Flanigan et al. 2020: J. Webster and C. Wozny. (2020). Local lateral habenula interneurons mediate aggression. *Current Biology*. 30(16), 954-956.

L. Bicks, K. Yamamuro, **M. Flanigan**, E.K. Lucas, H. Koike, M.S. Pent, R.L. Clem, S. Akbarian, S. Russo, and H. Morishita. (2020). Parvalbumin interneurons in the prefrontal cortex control social behavior in mice. *Nature Communications*. 11(1): 1-15.

I. Bravo, B.R. Luster, **M. Flanigan**, P.J. Perez, E.S. Cogan, K.T. Schmidt, and Z.A. McElligott (2019). Divergent behavioral responses in protracted opioid withdrawal in male and female C57BL6/J mice. *European Journal of Neuroscience*. 51(3):742-754.

V. Kana\*, F.A. Desland\*, M. Cassanova-Acebes, P. Ayata, A. Badimon, E.M. Nabel, K. Yamamuro, M. Sneeboer, I. Tan, **M. Flanigan**, S.A. Rose, C. Chang, A. Leader, H. Le Bouris, E. Sweet, N. Tung, A. Wroblewska, Y. Lavin, P. see, A. Baccarini, F. Ginhoux, V. Chitu, E.R. Stanley, S.J. Russo, Z. Yue, B. Brown, A. Joyner, L.D. de Witte, H. Morishita, A. Shaefer, and M. Merad. (2019). CSF-1 deficiency alters cerebellar microglia and leads to movement and autism-like disorder. *Journal of Experimental Medicine*. 216(10):2265-2281.

M. Pfau, C. Menard, F. Cathomas, F. Desland, V. Kana, K. Chan, Y. Shimo, K. LeClair, **M. Flanigan**, H. Aleyasin, D. Walker, S. Bouchard, M. Mack, G. Hodes, M. Merad, and S. Russo. (2019). Role of leukocyte-derived microRNA-106b~25 in resilience to social stress. *Biological Psychiatry*. 86(6): 474-482.

B. Matikainen-Ankney, N. Kezunovic, C. Menard, **M. Flanigan**, Y. Zhong, S.J. Russo, D.L. Benson, and G.W. Huntley. (2018). Parkinson's Disease-linked LRRK2-G2019S mutation alters synaptic plasticity and promotes resilience to chronic social stress in young adulthood. *Journal of Neuroscience*. 38(45):9700-9711.

H. Aleyasin, **M. Flanigan**, S. Golden, A. Takahashi, C. Menard, M. Pfau, J. Multer, J. Pena, G. Hodes, M. Heshmati, L. Bicks, A. Lepack, E. Heller, and S. Russo. (2018). Cell-type specific role of deltaFosB in the ventral striatum in modulating intermale aggressive behavior. *Journal of Neuroscience*. 38(26):5913-5924.

J. Wang, G. Hodes, H. Zhang, S. Zhang, W. Zhao, S. Golden, W. Bi, C. Menard, V. Kana, M. Leboeuf, M. Xie, D. Bregman, M. Pfau, **M. Flanigan**, A. Esteban-Fernandez, S. Yemul, A. Sharma, L. Ho, R. Dixon, M. Menard, M.H. Han, S. Russo, and G. Pasinetti. (2018). Epigenetic modulation of inflammation and synaptic plasticity promotes resilience against stress in mice. *Nature Communications*. 9(1):477.

M. Heshmati, D. Christoffel, H. Aleyasin, C. Menard, **M. Flanigan**, M. Pfau, P. Goff, G. Hodes, A. Takahashi, A. Lepack, L. Bicks, D. Christoffel, R. Chandra, A. Friedman, G. Turecki, M-H. Han, M.K. Lobo, I. Maze, S. Golden, and S. Russo. (2017). Cell-type specific role for nucleus accumbens neurotrophin-2 in depression and stress susceptibility. *PNAS*. 115(5):1111-1116.

A. Takahashi, J. Chung, S. Zhang, H. Zhang, Y. Grossman, H. Aleyasin, **M. Flanigan**, M. Pfau, C. Menard, D. Dimitriu, G. Hodes, B. McEwan, E. Nestler, M. Han, and S. Russo. (2017). Establishment of a repeated social defeat stress model in female mice. *Scientific Reports*. 7(1):12838.

- C. Menard, M. Pfau, G. Hodes, V. Kana, V.X. Wang, S. Bouchard, A. Takahashi, **M. Flanigan**, H. Aleyasin, W. Janssen, S. Golden, M. Heshmati, C. Tamminga, G. Turecki, M. Campbell, Z. Fayad, C.Y. Tang, M. Merad, and S.J. Russo. (2017). Social stress induces neurovascular pathology promoting depression-like behaviors. *Nature Neuroscience*. 20(12):1752-1760.
- M. Pfau, I. Purushothaman, J. Feng, S. Golden, H. Aleyasin, Z. Lorsch, H. Cates, **M. Flanigan**, C. Menard, M. Heshmati, Z. Wang, A. May'ayan, L. Shen, G. Hodes, and S. Russo. (2016). Integrative Analysis of sex-specific microRNA networks following stress in mouse nucleus accumbens. *Frontiers in Molecular Neuroscience*. 9:144.
- S. Golden\*, H. Aleyasin\*, R. Heins, **M. Flanigan**, M. Heshmati, S.J. Russo, and Y. Shaham (2017). Persistent conditioned place preference to aggression experience in adult male sexually-experienced mice. *Genes, Brain, and Behavior*. 16(1):44-55.
- S. Golden, M. Heshmati\*, **M. Flanigan\***, D.Christoffel, K. Guise, M. Pfau, H. Aleyasin, G. Hodes, D. Bregman, L. Khibnik, J. Tai, N. Rebusi, B. Krawitz, D. Chadhury, J. Walsh, M. Han, M. Shapiro, and S. Russo. (2016). Basal forebrain projections to the lateral habenula modulate the motivational component of aggressive behavior. *Nature*. 534(7609):688-92.
- G. Hodes, M. Pfau, I. Purushothaman, H.F. Ahn, S.A. Golden, D.J. Cristoffel, C. Menard, J. Magida, H. Aleyasin, J.W. Koo, Z.S. Lorsch, J. Feng, **M. Flanigan**, M. Heshmati, M. Wang, G. Turecki, R. Neve, B. Zhang, L. Shen, E.J. Nestler, and S.J. Russo (2015). Sex differences in nucleus accumbens transcriptome profiles associated with susceptibility versus resilience to sub-chronic variable stress. *Journal of Neuroscience*, 35(50):16362-76.
- E.Augier\*, **M. Flanigan\***, R. Dulman, A. Pincus, J. Schank, K. Rice, C. Kejun, M. Heilig, J.D. Tapocik. (2014). Wistar rats acquire self-administration of 20% ethanol without water deprivation, saccharin/sucrose fading, or extended access training. *Psychopharmacology*. 231(23):4561-8.
- J.D. Tapocik, E. Barbier, **M. Flanigan**, M. Solomon, A. Pincus, A. Pilling, H. Sun, J. Schank, C. King, and M. Heilig. (2014). microRNA-206 in rat prefrontal cortex regulates BDNF expression and alcohol drinking. *Journal of Neuroscience*. 34(13): 4581-4588.
- Z. Zhou, C. Karlsson, T. Liang, W. Xiong, M. Kimura, J.D. Tapocik, Q. Yuan, E. Barbier, A. Feng, **M. Flanigan**, E. Augier, M. Enoch, C.A. Hodgkinson, P. Shen, D. Lovinger, H. Edenberg, M. Heilig, D. Goldman. (2013). Loss of Metabotropic Glutamate Receptor 2 Escalates Alcohol Consumption. *PNAS*. 110(42): 16963–16968.
- A. Thorsell, J.D. Tapocik, K. Liu, M. Zook, L. Bell, **M. Flanigan**, S. Patnaik, J. Marugan, R. Damadzic, S.J. Dehdashti, M.L. Schwandt, N. Southall, C.P. Austin, R. Eskay, R. Ciccocioppo, W. Zheng, and M. Heilig. (2013). A novel brain penetrant NPS receptor antagonist blocks alcohol-induced ERK-phosphorylation in the central amygdala and decreases operant self-administration in rats. *Journal of Neuroscience*. 33:10132-42.
- J.R. Schank, J.D. Tapocik, E. Barbier, R. Damadzic, R.L. Eskay, H. Sun, K.E. Rowe, C.E. King, M. Yao, **M. Flanigan**, M. Solomon, C. Karlsson, K. Cheng, K.C. Rice, M. Heilig. (2013). TacR1 gene variation as a pharmacogenetic factor in an animal model of alcohol addiction. *Biological Psychiatry*. 73(8): 774-781.
- J.D. Tapocik, M. Solomon, **M. Flanigan**, M. Meinhardt, E. Barbier, J. Schank, M. Schwandt, W. Sommer, M. Heilig. (2012). Coordinated dysregulation of mRNAs and microRNAs in the rat medial prefrontal cortex following a history of alcohol dependence. *Pharmacogenomics Journal*. 13(3): 286-296.
- D.P. Flanigan, **M. Flanigan**, A.L. Dorne, T.R.S. Harward, M.K. Razavi, J.L. Ballard. (2007) Long-term results of 442 consecutive, standardized carotid endarterectomy procedures in standard-risk and high-risk patients. *Journal of Vascular Surgery*; 46:876-882.

Reviews and Commentaries:

**M. Flanigan** and T. Kash. Coordination of social behaviors by the bed nucleus of the stria terminalis. (2020) *European Journal of Neuroscience*. In press.

**M. Flanigan** and S. Russo. (2018). Recent advances in the study of aggression. *Neuropsychopharmacology*. 44(2):241-244.

**M. Flanigan**, H. Aleyasin, A. Takahashi, S. Golden, and S. Russo. (2017). An emerging role for the lateral habenula in aggressive behavior. *Pharmacology, Biochemistry, and Behavior*. 162:79-86.

**M. Flanigan** and K. LeClair. (2017). Shared motivational functions of ventral striatum D1 and D2 medium spiny neurons. *Journal of Neuroscience*. 37(26):6177-6179.

H. Aleyasin, **M. Flanigan**, and S. Russo. (2017). The neurocircuitry of aggression and aggression-seeking behavior. *Current Opinion in Neurobiology*. 49:184-191.

A. Takahashi, **M. Flanigan**, B. McEwan, and S. Russo. (2017). Aggression, social stress, and the immune system in humans and animal models. *Frontiers in Behavioral Neuroscience*. 12:56.

\* denotes equal contribution

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**Professional Collaborations Managed**

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Year(s)	Collaborator(s)	Institute(s)	Project(s)
2019-Present	Sam Golden, Ph.D. Simon Nilsson, B.S.	University of Washington	Machine learning-based analysis of social and affective behaviors during protracted alcohol withdrawal
2019-Present	Sage Aronson, Ph.D.	Neurophotometrics, Inc.	Development and testing of multi-site, multi-color <i>in-vivo</i> fiber photometry systems
2019-2021	Lin Tian, Ph.D. Elizabeth Unger, Ph.D.	University of California Davis	Development and testing of an <i>in-vivo</i> serotonin biosensor
2019	Zoe McElligott, Ph.D. Isabel Bravo, B.S.	University of North Carolina School of Medicine	Sex-specific affective symptoms of precipitated morphine withdrawal
2018-2019	Hugh Marston, Ph.D. Pavel Osten, Ph.D.	Eli Lilly Corterra, Inc.	Whole brain activity-dependent mapping of aggression circuitry in young and aged mice
2017-2021	Hirofumi Morishita, M.D., Ph.D. Lucy Bicks, Ph.D. Kazu Yamamuro, Ph.D. Kevin Norman, Ph.D.	Icahn School of Medicine at Mount Sinai	Prefrontal and thalamic circuits in experience-dependent development of prosocial behaviors  Prefrontal-sensory cortical circuits in attentional behavior

2016-2019	George Huntley, Ph.D. Bridget Matikainen- Ankney, Ph.D. Christopher Rivera, B.S.	Icahn School of Medicine at Mount Sinai	Parkinson's-associated LRRK2-G2019S mutation in synaptic and behavioral responses to stress
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### ***Patents Pending***

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**M. Flanigan** and S. Russo. Icahn School of Medicine at Mount Sinai. "Method of treating aggression with orexin receptor antagonists." Non-provisional International PCT application: 17/263,488. (2018).

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### ***Invited Talks***

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"Sex-specific regulation of binge drinking-induced negative emotional states by serotonin 5HT2c receptors." Alcohol and Drug Addiction Center for Excellence Invited Postdoctoral Seminar Series, Louisiana State University School of Medicine, New Orleans, LA. (2021)

"Sex-specific regulation of binge drinking-induced negative emotional states by serotonin 5HT2c receptors." American College of Neuropsychopharmacology (ACNP) Annual Meeting Panel, San Juan, PR (2021).

"Sex-specific regulation of binge alcohol consumption and socio-affective behaviors by subcortical serotonin 5HT2c receptors." Bowles Center for Alcohol Studies Seminar Series, University of North Carolina School of Medicine, Chapel Hill, NC (2021)

"The role of the orexin/hypocretin system in modulating intermale aggressive behavior." American College of Neuropsychopharmacology (ACNP) Annual Meeting Mini-Panel, Phoenix, AZ (2020)

"Orexin inputs to GABAergic lateral habenula neurons control aggression valence." Gordon Research Seminar (GRS): Optogenetic approaches to understanding neural circuits and behavior, Newry, ME (2018)

"A novel lateral habenula orexin circuit controls antagonistic social behavior," Winter Conference on Brain Research, Whistler, B.C., Canada (2018)

"A novel lateral habenula microcircuit mediating appetitive aggression," 9<sup>th</sup> Annual Friedman Brain Institute Neuroscience Retreat, Mount Sinai School of Medicine, New York, NY (2017)

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### ***Meetings Attended***

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**Research Society on Alcohol (RSA) Annual Meeting**, San Antonio, TX (held virtually) (2021)

**American College of Neuropsychopharmacology (ACNP) Annual Meeting**

Phoenix, AZ (held virtually) (2020)

San Juan, PR (2021)

**Virtual Dopamine Conference (ViDA)** (2020)

**Gordon Research Conference: Alcohol and the Nervous System**, Galveston, Texas (2020)

**Gordon Research Conference: Amygdala Function in Emotion, Cognition, and Disease**, Eaton, MA (2019)

**Winter Conference on Brain Research**, Whistler, B.C., Canada (2018)

**Japan Neuroscience Society (JNS) Meeting**, Makuhari, Japan (2017)

**Gordon Research Conference: Optogenetic Approaches to Understanding Neural Circuits and Behavior**, Newry, ME (2016, 2018)

**Federation of European Neuroscience Societies Biennial Forum**, Copenhagen, Denmark (2016)

**Society for Neuroscience Annual Meeting**

San Diego, CA (2010, 2013, 2016)

Washington, DC (2014, 2017)

Chicago, IL (2015)

**Research Society on Alcoholism Annual Meeting**, San Francisco, CA (2012)

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***Professional Affiliations***

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Research Society on Alcoholism (2021-Present)

Society for Neuroscience (2015-Present)

New York Academy of Sciences (2013-2019)

Sigma Xi (2011-2012)

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***Professional Poster Presentations***

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**M. Flanigan**, O. Hon, K.M. Boyt, S. D'Ambrosio, L. Hwa, M. Pina, and T. Kash (2021). Sex-specific regulation of binge-alcohol drinking and negative affect by BNST and LHb 5HT<sub>2c</sub> receptor-containing neurons. Research Society on Alcoholism (RSA), San Antonio, TX (held virtually).

**M. Flanigan**, O. Hon, K.M. Boyt, L. Hwa, M. Pina, and T. Kash (2020). Sex-specific regulation of binge-alcohol drinking and negative affect by BNST and LHb 5HT<sub>2c</sub> receptor-containing neurons. American College of Neuropsychopharmacology (ACNP) annual meeting, Phoenix, AZ (held virtually).

**M. Flanigan**, K.M. Boyt, L. Hwa, O. Hon, and T. Kash (2020). Dissecting the role of serotonin signaling in the lateral habenula and the bed nucleus of the stria terminalis in the affective symptoms of alcohol withdrawal. Gordon Research Conference: Alcohol and the Nervous System, Galveston, TX.

**M. Flanigan**, H. Aleyasin, K. LeClair, E.K. Lucas, B. Matikainen-Ankney, A. Takahashi, C. Menard, E.S. Calipari, E.J. Nestler, S. Bouchard, M. Pfau, S. Golden, R. DiLeone, A. Yamanaka, G. Huntley, R. Clem, and S. Russo. (2018). Orexin inputs to GABAergic lateral habenula neurons modulate aggression. Gordon Research Conference: Optogenetic Approaches to Understanding Neural Circuits and Behavior, Newry, ME.

**M. Flanigan**, H. Aleyasin, K. LeClair, E.K. Lucas, B. Matikainen-Ankney, A. Takahashi, C. Menard, E.S. Calipari, E.J. Nestler, S. Bouchard, M. Pfau, S. Golden, R. DiLeone, A. Yamanaka, G. Huntley, R. Clem, and S. Russo. (2018). Orexin inputs to GABAergic lateral habenula neurons modulate aggression. Society for Neuroscience Annual Meeting, San Diego, CA.

**M. Flanigan**, H. Aleyasin, K. LeClair, E.K. Lucas, B. Matikainen-Ankney, A. Takahashi, C. Menard, E.S.



Calipari, E.J. Nestler, S. Bouchard, M. Pfau, S. Golden, R. DiLeone, A. Yamanaka, G. Huntley, R. Clem, and S. Russo. (2017). Orexin inputs to GABAergic lateral habenula neurons modulate aggression. Japan Neuroscience Society Meeting, Makuhari, Japan.

**M. Flanigan**, H. Aleyasin, K. LeClair, E.K. Lucas, B. Matikainen-Ankney, A. Takahashi, C. Menard, E.S. Calipari, E.J. Nestler, S. Bouchard, M. Pfau, S. Golden, R. DiLeone, A. Yamanaka, G. Huntley, R. Clem, and S. Russo. (2017). Orexin inputs to GABAergic lateral habenula neurons modulate aggression. Society for Neuroscience Annual Meeting, Washington, DC.

**M. Flanigan**, H. Aleyasin, A. Takahashi, E.S. Calipari, A. Brancato, C. Menard, M. Pfau, S. Golden, G. Hodes, and S. Russo. (2016). Lateral habenula orexin receptor 2 controls aggression reward. Society for Neuroscience Annual Meeting, San Diego, CA.

**M. Flanigan**, H. Aleyasin, A. Takahashi, E.S. Calipari, A. Brancato, C. Menard, M. Pfau, G. Hodes, and S. Russo. (2016). Lateral habenula orexin receptor 2 controls aggression reward. Gordon Research Conference: Optogenetic Approaches to Understanding Neural Circuits and Behavior. Newry, ME.

**M. Flanigan**, H. Aleyasin, A. Takahashi, E.S. Calipari, A. Brancato, C. Menard, M. Pfau, G. Hodes, and S. Russo. (2016). Lateral habenula orexin receptor 2 controls aggression reward. Federation of European Neuroscience Societies Biennial Forum, Copenhagen, Denmark.

**M. Flanigan**, H. Aleyasin, S. Golden, M. Heshmati, M. Pfau, G. Hodes, and S. Russo (2015). The Role of Lateral Habenula Orexin Signaling in Aggressive Behavior. Society for Neuroscience Annual Meeting, Chicago, IL.

**M. Flanigan**, H. Aleyasin, S. Golden, M. Heshmati, M. Pfau, G. Hodes, and S. Russo (2014). The Role of Lateral Habenula Orexin Signaling in Aggressive Behavior. Society for Neuroscience Annual Meeting, Washington, DC.

**M. Flanigan**, E. Augier, C. King, M. Solomon, J. Schank, J. Tapocik, and M. Heilig. (2013). Wistar rats acquire self-administration of 20% ethanol without saccharin/sucrose fading or water deprivation. Research Society on Alcoholism Annual Meeting, Orlando, FL.

**M. Flanigan**, R.N. Lown-Hecht, J.L. Liao, J. King (2010). The effects of chronic mild stress on anxiety, depression, and synaptic plasticity in the hippocampus. Society for Neuroscience Annual Meeting, San Diego, CA.

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## **Recognition**

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*Abstract selected for press conference: “Lateral habenula orexin signaling modulates the valence of aggression,”* Society for Neuroscience Annual Meeting (2018)

*Invited guest: “Recent advances in the study of aggression,”* Neuropsychopharmacology (NPP) podcast (2018)

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## **Scientific and Analytical Techniques**

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Fiber photometry, optogenetics, chemogenetics, patch-clamp electrophysiology, rodent models of psychiatric disorders (addiction, anxiety/fear, depression, etc.) and social behavior, laser capture microscopy, virally-assisted anatomical tracing (AAV, Rabies, HSV), rodent stereotaxic intracranial surgery, qRT-PCR, western blot, immunohistochemistry (IHC), in-situ hybridization (ISH), iDISCO (tissue clearing), confocal microscopy, light sheet microscopy, ELISA, primary cell culture, molecular cloning, programming in MATLAB and Python,

and machine learning-based tracking and classification of mouse behaviors (DeepLabCut, B-SoiD, and SimBA).

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### ***Professional and Community Service***

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**Member**, Diversity Equity and Inclusion Committee, Bowles Center for Alcohol Studies, University of North Carolina School of Medicine (2021-present)

**Coordinator**, Departmental Journal Club, Bowles Center for Alcohol Studies, University of North Carolina School of Medicine (2020-present)

**Reviewing Editor**, *Frontiers in Neural Circuits* (2020-present)

**Ad Hoc Reviewer**: *Psychopharmacology* (2018-present), *Cell Reports* (2019-present), *Physiology and Behavior* (2020-present), *Communications Biology* (2021-present), and *Brain Research* (2021-present)

**STEM Education Fellow**, New York Academy of Sciences, New York, NY (2016-2017)

**Member**, Mentoring in Neuroscience Discovery (MiNDs) Outreach Program, Icahn School of Medicine at Mount Sinai, New York, NY (2014-2019)

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### ***Workshops and Short Courses***

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**Adult Mental Health First Aid Certification**, National Council for Mental Wellbeing, Washington, DC (2021)

**Academic Laboratory Management and Leadership Symposium**, Torrey Pines Training Consortium, San Diego, CA (2021)

**How to Learn to Code (Python)**, University of North Carolina, Chapel Hill, NC (2019)

**Mount Sinai Miniscope Workshop**, Icahn School of Medicine at Mount Sinai New York, NY (2018)

**UCLA Miniscope Workshop**, University of California San Diego, San Diego, CA (2016)

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### ***Professional References***

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