



EDUCATION

- 2015** University of North Carolina Chapel Hill
Ph.D. in Neurobiology
- 2011** University of North Carolina Wilmington
M.A. in Psychology
- 2008** James Madison University
B.S. in Psychology (major) and Statistics (minor)

PROFESSIONAL POSITIONS

- 2024 – Director, Penn State Neuroscience Institute – University Park
- 2024 – Associate Director for Neuroscience, Gerosciences and Dementia Prevention Consortium, Penn State
- 2023 – Associate Director for Postdoctoral Training and Leadership, Center for Neural Engineering, Penn State
- 2023 – Assistant Professor, Department of Pharmacology, PSU College of Medicine (by courtesy)
- 2022 – Dorothy Foehr Huck and J. Lloyd Huck Early Career Chair in Neurobiology & Neural Engineering
- 2020 – Assistant Professor, Departments of Biology and Biomedical Engineering (BME by courtesy), Penn State

PSU Affiliations: The Center for Neural Engineering; The Center for Neurotechnology in Mental Health Research; The Center for the Molecular Investigation of Neurological Disorders; The Center for Brain Behavior and Cognition; The Center for Healthy Aging; The Center for Reproductive Biology and Health; The Huck Institutes of the Life Sciences; College of Medicine

PSU Grad Programs: *Departmental:* Biology, Biomedical Engineering
Interdisciplinary: Neuroscience Graduate Program; Cellular, and Integrative Biosciences Graduate Program (MCIBs); Integrative and Biomedical Physiology Graduate Program; Medical Scientists Training Program (through PSU College of Medicine)

Previous Positions:

- 2018 – 2020 Assistant Research Professor, Department of Biobehavioral Health, Penn State
- 2016 – 2018 Postdoctoral Fellow, Department of Biology, Penn State
- 2009 – 2011 Post-baccalaureate Intramural Research Training Award Fellow, National Institute on Alcohol Abuse and Alcoholism, NIH
- 2008 Post-baccalaureate Intramural Research Training Award Fellow, National Institute on Environmental Health Science, NIH

33. Seemiller, Flores-Cuadra, Griffith, Smith, & **Crowley [corresponding author]** (2024). Alcohol and stress exposure across the lifespan are key risk factors for Alzheimer's Disease and cognitive decline. *Neurobiology of Stress* 29: 1-12
32. Brockway, Moyer, Aloimonos, Clarity, Griffith, Smith, Dao, Hossain, Drew, Gordon, Kupferschmidt & **Crowley [corresponding author]** (2023). Somatostatin peptide signaling dampens cortical circuits and Promotes exploratory behavior. *Cell Reports* 42(8): 1-21
31. Sicher, Starnes, Griffith, Dao, Smith, Brockway, & **Crowley [corresponding author]** (2023). Adolescent binge drinking leads to long-lasting changes in cortical microcircuits in mice. *Neuropharmacology* 234: 1-16
30. Fleeman, Snyder, Kuhn, Chan, Smith, **Crowley**, Arnold, & Proctor. Predictive link between systemic metabolism and cytokine signaling in the brain of Apolipoprotein ε4 mice (2022). *Neurobiology of Aging* 123: 156-169
29. Griffith & **Crowley [corresponding author]** (2022). An innovative approach to examining the role of neurotransmitters in fear circuitry. *Neuropsychopharmacology* 47(13): 2175–2176
28. **Crowley** & Medina [**corresponding author**] (2022). Targeted and transient opening of the blood brain barrier in discrete neurocircuits and brain regions. *Neuropsychopharmacology* 48(1): 253–254
27. Suresh Nair, Dao, Lopez Melean, Griffith, Duerr, Starnes, Moyer, Sicher, Brockway, & **Crowley [corresponding author]** (2022). Somatostatin neurons in the bed nucleus of the stria terminalis play a sex-dependent role in binge drinking. *Brain Research Bulletin* 186: 38-46
26. Sicher, Duerr, Starnes, & **Crowley [corresponding author]** (2022). Adolescent alcohol and stress exposure rewires key cortical neurocircuitry. *Frontiers in Neuroscience* 16: 1-18
25. **Crowley** & Joffe [**co-corresponding authors**] (2021). Developing breakthrough psychiatric treatments by modulating G protein-coupled receptors on prefrontal cortex somatostatin interneurons. *Neuropsychopharmacology* 47(1): 389–390
24. Dao, Brockway, Suresh Nair, Sicher, & **Crowley [corresponding author]** (2021). Somatostatin neurons control an alcohol binge drinking prelimbic microcircuit in mice. *Neuropsychopharmacology* 46(11): 1906-1917
 - Received the **ACNP NEECA** for best Early Career Paper of 2021
 - See also: *Neuropsychopharmacology Research Highlight on this work:*
<https://www.nature.com/articles/s41386-021-01103-5>
23. McSweeney, **Crowley**, Deng, Jian, Zou, Shi, Vitale, Liu, Luscher, & Mao (2020). An exon junction complex factor, RBM8a, is required for normal interneuron development. *Translational Psychiatry* 10(1): 1-17
22. Brockway & **Crowley [corresponding author]** (2020). Turning the 'tides on neuropsychiatric diseases: the role of peptides in the prefrontal cortex. *Frontiers in Behavioral Neuroscience* 14: 1-23
21. Dao, Nair, Magee, Moyer, Sendao, Brockway, & **Crowley [corresponding author]** (2020). Forced Abstinence from alcohol induces sex-specific depression-like behavior and neural adaptations in somatostatin neurons in cortical and amygdalar regions. *Frontiers in Behavioral Neuroscience* 14: 1-15
20. Torruella-Suarez, Vandenberg, Cogan, Tipton, Teklezghi, Dange, Patel, McHentry, Hardaway, Kantak, **Crowley**, DiBerto, Faccidomo, Hodge, Stuber, & McElligott (2020) Manipulation of central amygdala neurotensin neurons alter the consumption of rewarding fluids in mice. *Journal of Neuroscience* 40(3): 632-647
19. Dao, Brockway, & **Crowley [corresponding author]** (2019). In vitro optogenetic characterization of neuropeptide release from prefrontal cortical somatostatin neurons. *Neuroscience* 419: 1-4
18. **Crowley [corresponding author]**, Magee, Bourcier, Dao, & Lowery-Gionta (2019). Animal models of alcohol use disorders and the brain: from casual drinking to dependence. *Translational Issues in Psychological Sciences* 5(3): 222-242
17. Feng, **Crowley**, Patel, Guo, Bugni, & Luscher (2019). Reversal of a treatment-resistant, depression-related brain state with the Kv7 channel opener retigabine. *Neuroscience* 406: 109-125

16. **Crowley**, Magee, Feng, Jefferson, Morris, Dao, Brockway, & Luscher (2019). An antidepressant dosage of ketamine normalizes binge drinking-induced defects in glutamatergic synaptic transmission and ethanol drinking behavior. *Neuropharmacology* 149: 35-44
15. Lowery-Gionta*, **Crowley*** [**Co-First Authorship**], Bukalo*, Silverstein, Holmes, & Kash (2018). Chronic stress dysregulates amygdalar output to the prefrontal cortex. *Neuropharmacology* 139: 68-75
14. Caruso, **Crowley**, Reiss, Caulfield, Luscher, Cavigelli, & Kamens (2018). Adolescent social stress increases anxiety-like behavior and alters synaptic transmission, without influencing nicotine responses, in a sex-dependent manner. *Neuroscience* 373: 182-198
13. **Crowley**, Bloodgood, Hardaway, Kendra, McCall, Al-Hasani, McCall, Yu, Schools, Krashes, Lowell, Whistler, Bruchas, & Kash (2016). Dynorphin controls the gain of an amygdalar anxiety circuit. *Cell Reports* 14(12): 2772-2783
12. Al-Hasani, McCall, Shin, Gomez, Schmitz, Bernardi, Pyo, Park, Marcinkiewicz, **Crowley**, Krashes, Lowell, Kash, Rogers, & Bruchas (2015). Distinct subpopulations of nucleus accumbens dynorphin neurons drive aversion and reward. *Neuron* 87(5): 1063-1077
11. Pleil, Lowery-Gionta, **Crowley**, Li, Marcinkiewicz, McCall, Maldonado-Devincci, Morrow, & Kash (2015). Effects of chronic ethanol exposure on neuronal function in discrete regions of the prefrontal cortex and extended amygdala. *Neuropharmacology* 99: 735-749
10. Vardy, Robinson, Li, Olsen, DiBerto, Sassano, Huang, Zhu, Urban, Rittiner, **Crowley**, Pleil, Song, Kash, Malanga, Krashes, & Roth (2015). A new DREADD facilitates the multiplexed chemogenetic interrogation of behavior. *Neuron* 86(4): 936-946
9. **Crowley** & Kash (2015). Kappa opioid receptor signaling throughout the brain: Involved circuitry and implications for treatment. *Progress in Neuro-psychopharmacology and Biological Psychiatry* 62:51-60
8. Hardaway*, **Crowley*** [**Co-First Authorship**], Bulik, & Kash (2015). Integrated circuits and molecular components for stress and feeding: Implications for eating disorders. *Genes, Brains, and Behavior* 14(1): 85-97
7. Kash, Pleil, Marcinkiewicz, Lowery-Gionta, **Crowley**, Mazzone, Sugam, Hardaway, & McElligott (2014). Neuropeptide signaling in the BNST. *Molecules and Cells* 38(1): 1-13
6. Masneuf*, Lowery-Gionta*, Colacicco, Pleil, Li, **Crowley**, Stamatakis, Flynn, Holmes, & Kash (2014). Glutamatergic mechanisms associated with stress-induced amygdala excitability and anxiety related behavior. *Neuropharmacology* 85: 190-197
5. DePoy, Daut, Wright, Camp, **Crowley**, Noronha, Lovinger, & Holmes (2014). Chronic alcohol alters reward behaviors and striatal plasticity. *Addiction Biology* 20(2): 345-348
4. Parisiadou, Yu, Sgobio, Xie, Lui, Sun, Gu, Lin, **Crowley**, Lovinger, & Cai (2014). LRRK2 regulates synaptogenesis and dopamine receptor activation of striatal projection neurons through modulation of PKA activity. *Nature Neuroscience* 17(3): 367-376
3. **Crowley**, Cody, Davis, Lovinger, & Mateo (2013). Chronic methylphenidate exposure during adolescence reduces striatal synaptic responses to ethanol. *European Journal of Neuroscience* 39(4): 548-556
2. Depoy, Daunt, Brigman, MacPherson, **Crowley**, Gunduz-Cinar, Pickens, Cinar, Saksida, Kunos, Lovinger, Bussey, Camp, & Holmes (2013). Chronic alcohol produces neuroadaptations to prime striatal learning. *Proceedings of the National Academy of Sciences* 110(36): 14783-14788
1. Mathur, **Capik**, Alvarez, & Lovinger (2011). Serotonin-mediated competitive long-term depression at corticostriatal synapses. *Journal of Neuroscience* 31(20): 7402-7411 // paper published under maiden name

PREPRINTS

[3] Smith, Griffith, Sicher, Brockway, Proctor, & **Crowley** [**corresponding author**]. Moderate alcohol consumption induces lasting impacts on prefrontal cortical signaling in mice. *In revision at Neurobiology of Aging*, 5/22/2024. Available on BioRxiv.

[2] Brockway & Crowley [**corresponding author**]. Emerging pharmacological targets for alcohol use disorder. *Resubmission submitted 6/27/2024 to Alcohol (Invited submission)*.

[1] Sicher, Liss, Vozella, Springer, Starnes, Griffith, Smith, Roberto, Varodayan, & Crowley **[corresponding author]**. Adolescent alcohol exposure does not increase adulthood consumption of alcohol in multiple rat and mouse models of binge drinking. *In revision at Addiction Neuroscience, 6/9/2024. available on BioRxiv*

BOOK CHAPTERS

1. Sicher & **Crowley** (forthcoming, 2024). Alcohol dysregulation of developing cortical GABA circuits. In *Effects of alcohol on the brain across the lifespan: recent advances from preclinical studies*. Editors: Valenzuela, Linsenbardt, Weiner. Springer.

FUNDING

CURRENT FUNDING

R01 NIAAA/NIH (Award #R01AA029403-01A1) 2022-2027 *total: \$1,604,953*

Prelimbic somatostatin peptide signaling in binge ethanol consumption

Role: PI (Co-I: Dr. Patrick Drew, PSU Engineering Science and Mechanics)

R01 NIA//NIAAA/NIH administrative supplement (Award #3R01AA029403-01A1) 2023-2024 *total: \$304,741*

Prelimbic somatostatin peptide signaling in binge ethanol consumption

Alzheimer's-Focused Administrative Supplements for NIH Grants that are Not Focused on Alzheimer's Disease

Role: PI (Co-I: Dr. Patrick Drew, PSU Engineering Science and Mechanics; Dr. Marty Sliwinski, PSU Human Development and Family Studies; Dr. Elizabeth Proctor, Neurosurgery)

NIAAA/NIH 2019-2024

National Institutes of Health LRP (2nd renewal award)

Investigation of key pathways modulated by juvenile chronic variable social stress

Role: PI

CURRENT TRAINEE EXTERNAL FUNDING

For undergraduate student funding, see teaching and mentoring (Penn State total over \$50,000)

F32 NRSA NIAAA/NIH (Award #F32AA031396) 2024-2027 *total: \$220,224*

Sex differences in transcriptomics, cell dynamics, and behavior after adolescent binge drinking in mice

PI: Dr. Laurel Seemiller

Role: Sponsor. Co-Sponsor: Dr. Patrick Drew

F31 NRSA NIAAA/NIH (Award #F31AA0304550) 2022-2026 *total: \$142,452*

Investigating the effects of adolescent binge drinking on prefrontal somatostatin circuitry

PI: Avery Sicher, Neuroscience PhD Program

Role: Sponsor. Co-Sponsor: Dr. Patrick Drew

F31 NRSA NIEHS/NIH 2024-2028 (Award #F31ES036154) *total: \$108,092*

Nasal uptake of polystyrene nano plastics into the murine central nervous system

PI: Denver Greenawalt

Role: co-Sponsor. Sponsor: Dr. Patrick Drew

SUBMITTED FUNDING

R01 NIAAA/NIH 2024-2029 *requested total: \$3,918,926*

Sex dependent shifts in behavioral profiles and cortical signaling following adolescent binge drinking

Role: contact PI (MPI: Dr. Nanyin Zhang, PSU Biomedical Engineering; Co-I: Dr. Justin Silverman, PSU Statistics; Dr. Nikki Beloate, PSU Biomedical Engineering)

Status: Pending Council Review (score: 20; percentile: 2%)

U01 NINDS/NIH BRAIN Initiative 2025-2029 *requested total: \$6,727,008*

Seamless integration of ultrasound neuromodulation and multiscale recording platform for in vivo and ex vivo applications

Role: contact PI (MPI: Dr. Raj Kothapalli, PSU Biomedical Engineering; Dr. Patrick Drew, PSU Engineering Science and Mechanics; Co-I: Dr. Yongsoo Kim, PSU College of Medicine; Dr. Janine Kwapis, PSU Biology)

Status: Pending Council Review (score: 39; no percentile)

R21 NIA/NIH 2024-2026 *requested total: \$440,827*

Epigenetic and cellular mechanisms of age-related impairments in memory updating

Role: Co-Investigator (PI: Dr. Janine Kwapis, PSU Biology)

Status: A0 28%, resubmission in preparation

Center for Biodevices *total: \$80,000*

Precision Blood-Brain-Barrier Permeabilization using Acoustically Actuated Phase-Changing Nanoemulsions

Role: Co-PI (contact PI: Dr. Scott Medina, PSU Biomedical Engineering)

The Kaufman Foundation 2024-2026 *requested total: \$300,000*

Spatially and temporally resolved neuropeptide signaling in the brain

Role: PI (Co-Investigator: Dr. Janine Kwapis, PSU Biology)

Status: letter of intent selected for final application, due 7/2024

R21 NIAAA/NIH 2025-2027 *requested total: \$440,826*

Estrous stage and binge drinking influences over cortical microcircuits

Role: PI (co-I: Dr. Janine Kwapis, PSU Biology)

Status: submitted 6/2024

R01 NIA/NIH 2023-2028 *requested total: \$4,061,867*

Immunometabolic dysfunction in the APOE4 brain

Role: co-I (PI: Dr. Elizabeth Proctor, PSU College of Medicine)

Status: submitted; resubmission planned 7/2024

SUBMITTED TRAINEE EXTERNAL FUNDING

F30 NIAAA/NIH 2025-2029 *requested total: \$183,704*

Investigating Estrogen-Mediated Signaling in Binge Drinking Microcircuits of the Prefrontal Cortex

PI: Victoria Nudell

Role: Sponsor (Co-Sponsor, Dr. Leon Coleman, UNC)

F31 NIA/NIH 2024-2027

Environmental Triggers of Oxidative Stress Promote Neuronal Vulnerability in the APOE4 Brain

PI: Rachel Kang

Role: co-Sponsor (Sponsor: Dr. Elizabeth Proctor, PSU College of Medicine)

COMPLETED FUNDING

P50 NIAAA/NIH (Award #P50AA017823) 2021-2023 *subaward total: \$140,700*

Binghamton University Developmental Exposure to Alcohol Research Center

Title: Impact of Adolescent Alcohol on Prefrontal Circuits

Role: PI of PSU subaward (Binghamton on-site co-PI: Dr. David Jentsch)

R21 NIAAA/NIH (Award# AA028088-01) 2020-2022 *total: \$392,244*

Title: Investigation of a novel prelimbic cortical peptidergic population in binge drinking behavior

Role: PI

NIH Office of the Director (Administrative Supplement #AA028088-02S1) 2021-2023 *total: \$80,250*

Investigation of a novel prelimbic cortical peptidergic population in binge drinking behavior

Role: PI

Benkovic Research Initiative 2022-2023 *total year 1: \$150,000*

Novel methods for non-invasive neuropeptide administration to the brain

Role: PI (Co-PI: Scott Medina, PSU Biomedical Engineering)

The Brain and Behavior Research Foundation 2019-2022 *total: \$70,000*

NARSAD Young Investigator Award (Award #27200)

Title: Investigating the role of prelimbic somatostatin neurons in binge ethanol consumption

Role: PI

Penn State Consortium to Combat Substance Abuse 2019-2021

Investigation of key opioid pathways modulated by adolescent chronic variable social stress

Role: PI

NIAAA/NIH 2017-2019

National Institutes of Health LRP Awardee

Investigation of Key Pathways Modulated by Juvenile chronic variable social stress

Role: PI

Penn State Social Science Research Institute 2016-2019

Investigation of the role of somatostatin neurons in alcohol consumption

Role: PI

UNC School of Medicine 2015

Dissertation Completion Fellowship

Role: Fellow

Awarded at the recommendation of the Graduate School for Excellence in Research

NIAAA/NIH NRSA (Award #1F31AA022280-01) 2013-2015

Ruth L. Kirschstein NRSA

Alcohol Regulation of kappa opioid receptor systems in the extended amygdala

Role: Fellow (Mentors: Dr. Thomas Kash, Dr. David Lovinger)

National Institute on Alcohol Abuse and Alcoholism

June 2009-August 2011

Intramural Research Training Award

Role: Fellow (Mentor: Dr. David Lovinger) area: systems neuroscience

National Institute of Environmental Health Sciences

May 2008-September 2008

Intramural Research Training Award

Role: Fellow (Mentor: Dr. Lawrence Lazarus) area: chemistry

GRADUATE STUDENT INTERNAL FUNDING

T32 Award NINDS/NIH Cross-Disciplinary Neural Engineering (Award #T32NS115667) 2024-2026

PI: Victoria Nudell, MSTP with Molecular, Cellular, and Integrative Biosciences PhD Program

Role: Primary Mentor. Co-Mentor: Dr. Grayson Sipe

T32 Award NINDS/NIH Cross-Disciplinary Neural Engineering (Award #T32NS115667) 2023-2025

PI: Shubham Mirg, Biomedical Engineering

Role: Co-Mentor. Primary Mentor: Dr. Raj Kothapalli

T32 Award NIGMS/NIH Physiological Adaptations to Stress (Award #T32GM108563) 2023-2025

PI: Julio Flores Cuadra, Neuroscience PhD Program

Role: Mentor (co-advised with Dr. Patrick Drew)

T32 Award NINDS/NIH Cross-Disciplinary Neural Engineering (Award #T32NS115667) 2023-2025

PI: Michael Wenke, Neuroscience MD/PhD Program (MSTP with PSU College of Medicine)

Role: Co-Mentor. Primary Mentor: Dr. Patrick Drew

T32 Award NINDS/NIH Cross-Disciplinary Neural Engineering (Award #T32NS115667) 2022-2024

PI: Md Shakhawat Hossain, Biomedical Engineering PhD Program

Role: Co-Mentor. Primary Mentor: Dr. Patrick Drew

T32 Award NIGMS/NIH Physiological Adaptations to Stress (Award #T32GM108563) 2021-2023

PI: Avery Sicher, Neuroscience PhD Program

Role: Mentor

Second year declined to accept F31 NRSA funding

INVITED PRESENTATIONS, SEMINARS, ETC.

2024

- *(committed)* Illinois Institute of Technology Department of Biology (invited talk). August 2024
- *(committed)* Penn State Osher Lifelong Learners Institute (invited talk). Fall 2024
- *(committed)* Penn State College of Medicine Discover Seminar Series (invited by Associate Dean's Office of Interdisciplinary Research). June 2024.
- The Research Society on Alcohol, Annual Meeting (symposium, co-chair). Minneapolis MN June 2024
- Penn State Alumni Association (invited talk). May 2024
- Computational Properties of the Prefrontal Cortex. National Institute on Mental Health, NIH (symposium/invited debate). Bethesda, MD May 2024
- Penn State Neuroscience Institute Annual Retreat (invited talk). Hershey, PA May 2024
- The National Institute on Alcohol Abuse and Alcoholism, NIH (invited talk). Rockville, MD April 2024
- The Center for Healthy Aging at Penn State (invited talk). University Park, PA April 2024
- Gerosciences and Dementia Prevention Consortium annual retreat (invited talk). March 2024
- Alcohol and the Nervous System Gordon Research Conference (invited symposium). Galveston TX February 2024
- Eberly College of Science Penn State 30th Anniversary of the Ashtekar Frontiers of Science Lecture Series: Exploring Scientific Progress Over Three Decades: The Human Brain and the Human Mind (invited talk). State College PA February 2024

2023

- Penn State Addiction Center for Translation Symposium (invited talk). Hershey, PA December 2023
- Penn State Biological Sciences Society (invited talk). University Park PA October 2023
- Binghamton University Developmental Exposure to Alcohol Research Center (invited talk). Binghamton, NY September 2023
- Center for Neural Engineering Annual Retreat (invited talk). State College PA, August 2023
- The Research Society on Alcohol, Annual Meeting (symposium). Bellvue WA June 2023
- NIAAA Special Topics Meeting: Alcoholism and Stress: A Framework For Future Treatment Strategies (Young Investigator Award Symposium) Volterra, Italy, May 2023
- Society of Biological Psychiatry Annual Meeting (symposium), San Diego, CA April 2023
- Department of Neurobiology & Anatomy, Drexel University (invited talk). Philadelphia PA, March 2023

2022

- Annual Meeting of the American College of Neuropsychopharmacology (ACNP; invited symposium) Phoenix, AZ, December 2022
- Medical Scientists Training Program, PSU College of Medicine (invited talk) Hershey PA, October 2022
- Department of Nutrition seminar series, PSU (invited talk). University Park PA, October 2022
- Medical University of South Carolina Addiction Research Seminar Series (joint with Department of Neuroscience; invited talk). Charleston SC, October 2022
- Department of Kinesiology seminar series, PSU (invited talk). University Park PA, September 2022

- Center for Biodevices, PSU (invited talk). University Park PA, September 2022
- B. Brodie Lectureship in Pharmacology, PSU College of Medicine (invited talk). Hershey PA, March 2022
- National Institute on Mental Health (invited talk). Bethesda MD, March 2022
- Department of Biomedical Engineering seminar series, PSU (invited talk). University Park PA, February 2022

2021

- Uniformed Services University of the Health Sciences (US Army Medical School; invited talk), Bethesda MD, November 2021
- Molecular, Cellular, and Integrative Biosciences Annual Retreat, PSU (invited talk). University Park PA, August 2021
- Center for Neural Engineering, PSU (invited talk). University Park PA, April 2021

2020

- Developmental Exposure Alcohol Research Center (DEARC; invited talk) Binghamton University, Binghamton NY, November 2020
- University of Delaware Neuroscience Group (invited talk). September 2020
- Penn State Addiction Center for Translation, (invited talk). Hershey PA, January 2020

2019

- Integrative Neuroscience Research Center Seminar, Marquette University (invited talk). Milwaukee WI October 2019
- Department of Biology, Pennsylvania State University (invited talk). University Park, PA. November 2019.

2018

- Department of Biobehavioral Health, University Park, PA. March 2018
- Guest speaker at Westfield High School, Chantilly, VA. November 2018

2017

- Center for the Investigation of Neurological Disorders Annual Retreat, University Park, PA. June 2017

2016

- Symposium at the Second Annual Penn State Addiction Symposium, Hershey, PA. December 2016
- Center for the Investigation of Neurological Disorders Annual Retreat, University Park, PA. 2016
- Center for the Investigation of Neurological Disorders Symposia, University Park, PA. 2016

2015

- Symposium at the annual meeting on the Therapeutic Potential of Kappa Opioids in Pain and Addiction, Chapel Hill, NC. 2015

2014

- Arizona State University, Phoenix, AZ. 2014
- Nanosymposium, Annual Meeting for the Society for Neuroscience, Washington, DC. 2014

TEACHING & MENTORING ACTIVITIES

SUPERVISION OF STUDENTS AND FELLOWS

Post-Doctoral Fellows

Dr. Gwen Burgess

2024-present

Dr. Laurel Seemiller		2022-present
Dr. Dakota Brockway		2023-2024

Post-Doctoral Fellows – formal advisory committee member or consultant

Dr. Bryan Cruz	The Scripps Research Institute (advisors: Drs. Marisa Roberto and Eric Zorrilla) <i>MOSAIC K99/R00 application: mentoring committee</i> <i>Award Pending</i>	2023-present
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Current Graduate Students (Primary Mentor)

Victoria Nudell	MD/PhD MSTP with PSU College of Medicine Molecular, Cellular, and Integrative Biosciences PhD Program <i>Cross Disciplinary Neural Engineering T32 Fellow</i>	2023-present
Julio Flores Cuadra	Neuroscience PhD Program <i>Physiological Adaptations to Stress T32 Fellow</i> <i>Huck Graduate Fellow</i> <i>Jointly mentored with Dr. Patrick Drew</i>	2022-present
Grace Smith	Biomedical Engineering MS Program <i>PSU University Graduate Fellow</i>	2022-present
Avery Sicher	Neuroscience PhD Program <i>NIH NRSA Fellow</i> <i>Physiological Adaptations to Stress T32 Fellow</i> <i>Huck Graduate Fellow</i>	2020-present

Graduate Students (Primary Mentor) - Graduated

Dakota Brockway	Neuroscience PhD Program Thesis: <i>The Role of Somatostatin in the Prefrontal Cortex</i> <i>Huck Graduate Fellow</i> Next: Postdoctoral Fellow, University of Pittsburgh NIAAA DART-T32 fellow Advisor: Dr. Max Joffe	2018-2023
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Graduate Students – Dissertation Chair

Gretchen Pifer	Biology (PI: Kwapis)	2024-present
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Graduate Students (Dissertation Committee Member)

Zili Yan	Biomedical Engineering (PI: Zhang)	2024-present
Doris Olekanma	Neuroscience (PI: Skibicka)	2024-present
Gretchen Pifer	Biology (PI: Kwapis)	2024-present
Rachel Kang	Biomedical Sciences, College of Medicine (PI: Proctor) <i>co-sponsored by Crowley for NIH F31 NRSA</i>	2023-present
Jiajing (Tim) Teng	Integrative and Biomedical Physiology (PI: Rolls)	2023-present
Fatemeh Salehi Shahrababaki	Biomedical Engineering (PI: Drew)	2023-present
Michael Wenke	MD/PhD MSTP with PSU College of Medicine Neuroscience PhD Program (PI: Drew) <i>co-mentored by Crowley for CDNE T32</i>	2023-present
Shubham Mirg	Biomedical Engineering (PI: Kothapalli) <i>co-mentored by Crowley for CDNE T32</i>	2023-present
Denver Greenawalt	MCIBS (PI: Drew) <i>Co-sponsored by Crowley for NIH F31 NRSA</i>	2023-present
Chad Brunswick	Neuroscience (PI: Kwapis)	2022-present
Chad Smies	Biology (PI: Kwapis)	2022-present
Md Shakhawat Hossain	Biomedical Engineering (PI: Drew) <i>co-mentored by Crowley for CDNE T32</i>	2021- present
Lauren Bellfy	MCIBS (PI: Kwapis)	2021- present
Tong Jiang	Biology (PI: Luscher)	2021-present

Laurel Seemiller MCIBS (PI: Gould) 2020- 2022

Undergraduate Student (Primary Mentor)

Bryce Johnson Dendy Science 2024-present
Amir Siddiqui Biology and Psychology 2023-present
Kaleah Tuttle Biomedical Engineering (Clark Scholar) 2023-present
Damini Nair Biology (Schreyer Honors College) 2023-present
Erin Wolfanger Biology (Schreyer Honors College) 2023-present
Roy Wu Biochemistry and Molecular Biology 2023-2024

Undergraduate Students (Primary Mentor) - Graduated

Emily McDonald Biological Sciences & Health Professions 2023-2024
Obi Nnabugwu Biomedical Engineering (Clark Scholar) 2022-2024
Matthew Springer Biology (Schreyer Honors College) 2021-2024
Sophie Anderlind Biology (Schreyer Honors College) 2022-2023
next: Research Project Manager
Andrew Kacala Biology (Schreyer Honors College) 2021-2023
David Starnes Biology (Schreyer Honors College) 2019-2023
next: medical student, Cooper Rowan
Nicole Lookfong *summer student mentored with Dr. Yuval Silberman* 2021
Daniela Lopez Melean Biology (Millennium Scholar) 2019-2022
Corey Zimmer Biobehavioral Health 2019-2022
Brody Moyer Biochemistry and Molecular Biology 2018-2022
Veronica Sendao Biobehavioral Health 2018-2022
next: Research assistant, Boston University
Malini Suresh Nair Biology 2018-2019
next: medical student, Wake Forest
Sarah Magee Biology (Millennium Scholar) 2016-2019
next: Neuroscience PhD Program, UNC
Alexandre Bourcier Biology (Schreyer Honors College) 2016-2019
next: medical student, UCLA

Undergraduate Students (Primary Mentor) – Summer Research Opportunities Big10 Program

Sarah Shibuya Biomedical Engineering (Rose Hulman Institute of Technology) 2024
Ariana Almarez Psychology (Cal State San Marcos) 2023
Renee Laurenzana Biological Sciences (Cal State San Marcos) 2022
next: Neuroscience PhD Program, ASU

Other previous trainees

Keith Griffith Research Technician 2021-2024
next: MD/PhD MTSP, PSU College of Medicine
Grace Smith Research Technician 2021-2022
next: PSU Biomedical Engineering program
Nigel Dao Research Technician 2018-2021
next: NYU PhD program (PI: Adam Carter)
Malini Suresh Nair Research Technician 2020-2021
next: Wake Forest Medical School MD Program

High School Students (Health Professions Department, State College High School, Supervised in conjunction with Ms. Kathleen Seeland)

Lydia Fry Currently: undergraduate student 2020-2021
University of Colorado

Graduate Student and Postdoctoral Fellows – Independent Awards				
Name	Position	Current Position	Grants/Funding During Training	Selected Honors/Awards
Graduate Students				
Victoria Nudell	MD/PhD student 2023-present	Current lab member	1. T32GM149380-01 (PSCOM MSTP) 2. T32NS115667 (Cross-Disciplinary Neural Engineering T32 Fellow; Fall 2024 start)	1. NIH T32 Fellow 2. Research Society on Alcohol - 2024 Travel Award for the Yale SCORE Sex & Gender Satellite Meeting
Julio Flores Cuadra	PhD student 2022-present	Current lab member	1. T32GM108563 Physiological Adaptations to Stress T32 Fellow	1. 2023 NIH T32 Fellow 2. 2022. Huck Distinguished Graduate Fellowship, Penn State
Grace Smith	MS Student 2022-present	Current lab member	University Graduate Fellow	1. 2022 University Graduate Fellowship, Penn State
Avery Sicher	PhD student, 2020-present	Current lab member	1. T32GM108563 Physiological Adaptations to Stress T32 Fellow 2. F31AA0304550 NIH NRSA Fellow	1. 2023-2024 Huck Graduate Student Association President 2. 2024 Penn State Neuroscience Institute Outstanding Trainee Award 3. 2023 2nd Place Oral Research Presentation, Huck Life Sciences Symposium, Penn State University 4. 2023 Student Merit Travel Award, Research Society on Alcoholism 5. 2022 Student Merit Travel Award, Research Society on Alcoholism 6. 2021 NIH T32 Fellow
Dakota Brockway, PhD	PhD Student 2018-2023	NIAAA T32 Postdoctoral Fellow, University of Pittsburgh School of Medicine		1. Huck Distinguished Graduate Fellowship, Penn State
Postdoctoral Fellows				
Laurel Seemiller, PhD	2022-present	Current lab member	1. F32AA031396 NIH NRSA Fellow	1. 2024 NIH Outstanding Scholar in Neuroscience Award (OSNAP) 2. 2023 Postdoc Travel Award, Penn State Office of Postdoctoral Affairs 3. 2023 Trainee Professional Development Award, Society for Neuroscience 4. 2023 Junior Investigator Award, Research Society on Alcohol

UNDERGRADUATE STUDENT-LED FUNDING AND AWARDS

Total over \$50,000 in undergraduate student-led funding and grants. All undergraduate awards have always been used 100% to support student stipends

2024

- College of Engineering Multi-Campus Research Experience for Undergraduates (MC-REU) program, Awarded to Kaleah Tuttle (Crowley: faculty mentor) \$5,000
- Student Engagement Network Award, Awarded to Amir Siddiqui (Crowley: faculty mentor) \$1,500
- Student Engagement Network Award, Awarded to Kaleah Tuttle (Crowley: faculty mentor) \$1,000
- Summer Undergraduate Research Experience (SURE), Awarded to Bryce Johnson Dendy (supervised by Dr. Seemiller, post-doc; Crowley: faculty co-mentor), \$8,000

2023

- Norman Freed Undergraduate Research Award in the Eberly College of Science: Awarded to Andrew Kacala (\$600)
- Eberly post session: 1st place in life sciences, Awarded to Andrew Kacala
- Biology Student Research Showcase Undergraduate Poster Contest: 1st place winner of 2023, Awarded to Damini Nair
- Engineering Undergraduate Scholarship, Awarded to Obi Nnabugwu (Crowley: faculty mentor), \$5,000
- Eberly Exhibit Award, 1st place for Data Visualization, awarded to Andrew Kacala for *The Role of Binge Alcohol Consumption On Somatostatin Cell Density and Signaling*, \$175
- Summer Undergraduate Research Experience (SURE), Awarded to Emily McDonald (supervised by Dr. Seemiller, post-doc; Crowley: faculty co-mentor), \$4,800
- Erikson Award, Awarded to Matthew Starnes (Crowley: faculty mentor), \$3,500
- The Edmund and Virginia Hunsicker Collins Undergraduate Research Award Awarded to David Starnes (Crowley: faculty mentor), \$2,000

2022

- Eberly College of Science Undergraduate Research Award, Awarded to Andrew Kacala (Crowley: faculty mentor), \$1250
- Eberly College of Science Undergraduate Research Award, Awarded to David Starnes (Crowley: faculty mentor), \$1250
- Engineering Equity Scholar's Program, Awarded to Obi Nnabugwu (Crowley: faculty mentor), \$3,500
- Schreyer Honor's College Summer Research Fund, Awarded to David Starnes (Crowley: faculty mentor), \$750
- Schreyer Honor's College Summer Research Fund, Awarded to Andrew Kacala (Crowley: faculty mentor), \$750

2021

- Eberly Undergraduate Research Support (2021), Awarded to David Starnes (Crowley: faculty mentor), \$1,000
- Erickson Award, Awarded to Brody Moyer (Crowley: faculty mentor), \$3,500
- Student Engagement Network Award, Awarded to David Starnes (Crowley: faculty mentor), \$2,000
- Schreyer Honor's College Summer Research Fund, Awarded to David Starnes (Crowley: faculty mentor), \$750

2019

- Student Engagement Network Award, Awarded to Malini Suresh Nair (Crowley: faculty mentor), \$1,000
- Anita M. Collins Undergraduate Research Fund, Awarded to Malini Suresh Nair (Crowley: faculty mentor), \$478
- Rock Ethics Institute Rise Up Award, Awarded to Alexandre Bourcier (Crowley: faculty mentor), \$1,000
- Anita M. Collins Undergraduate Research Fund, Awarded to Alexandre Bourcier (Crowley: faculty mentor), \$1,800
- Schreyer Honor's College Summer Research Fund, Awarded to Alexandre Bourcier (Crowley: faculty mentor), \$1,800
- Edward C. Hammond Jr. Memorial Scholarship, Awarded to Alexandre Bourcier (Crowley: faculty mentor), \$2,000

TEACHING EXPERIENCE

COURSE INSTRUCTOR OF RECORD

2024, spring	BIOL/BBH 469 Cellular and Molecular Neuroscience - <i>Course Director and Instructor</i> <i>Undergraduate enrollment: 70</i>
2023, fall	BIOL/BBH 469 Cellular and Molecular Neuroscience - <i>Course Director and Instructor</i> <i>Undergraduate enrollment: 83</i>
2023, spring	BIOL/BBH 469 Cellular and Molecular Neuroscience - <i>Course Director and Instructor</i> <i>Undergraduate enrollment:56</i>
2024	PHSIO 510 Integrative & Cellular Physiology I - <i>Instructor</i>
2023	PHSIO 510 Integrative & Cellular Physiology I - <i>Instructor</i>
2024	PHSIO 510 Physiological Adaptations to Stress - <i>Instructor</i>
2023	PHSIO 510 Physiological Adaptations to Stress - <i>Instructor</i>
2023	NEURO 521 Systems Neuroscience - <i>Course Director</i>
2022	NEURO 521 Systems Neuroscience - <i>Course Director</i>
2021	NEURO 521 Systems Neuroscience - <i>Course Director</i>
2024	NEURO 521 Systems Neuroscience - <i>Instructor</i>
2023	NEURO 521 Systems Neuroscience - <i>Instructor</i>
2022	NEURO 521 Systems Neuroscience - <i>Instructor</i>
2021	NEURO 521 Systems Neuroscience - <i>Instructor</i>
2020	NEURO 521 Systems Neuroscience – <i>Instructor</i>

GRADUATE TRAINING GRANT PARTICIPATION

2022-current	Program Committee, Cross Disciplinary Neural Engineering T32 NINDS Award #T32NS115667
2022-current	Training Faculty, Medical Scientists Training Program T32 (MD/PhD program) NIGMS Award #T32GM118294
2021-current	Training Faculty, Cross Disciplinary Neural Engineering T32 NINDS Award #T32NS115667
2020- current	Training Faculty, Physiological Adaptations to Stress T32 NIGMS Award #T32GM108563

GUEST LECTURES

2022-present	Training Faculty, Cross Disciplinary Neural Engineering T32 (weekly meetings/ 1-2 lectures per semester)
2021-present	Training Faculty, Physiological Adaptations to Stress T32 (participate in team teaching)
2022	Neuro 590 (PSU College of Medicine) (one lecture per semester) Graduate course, Instructor of record: Dr. Yuval Silberman
2021-2022	Engineering/Neuro 526 Cellular and Molecular Neuroscience (multiple lectures each year) Graduate course, Instructor of record: Dr. Patrick Drew
2016-present	BIO/BBH 470: Functional and Integrative Neuroscience (multiple lectures each year) Undergraduate course, Instructors of record: Dr. David Vandenberg, Dr. Janine Kwapis, Dr. Nina Lauharatanahirun
2016-2021	BIO/BBH 469: Neurobiology (multiple lectures each year) Undergraduate course, Instructor of record: Dr. Beni Luscher

AWARDS & HONORS

2023	Whitaker Center “Women of Impact: Woman to Watch in STEM” Award
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Recognizes a professional woman under 40 who has significant accomplishments and success in her STEM field

NIAAA Young Investigator Award

Special NIAAA Meeting "Alcoholism and Stress: a Framework for future treatment strategies" (Volterra Meeting, May 2023)

Brain Research Bulletin

Journal cover art selection (*Special Issue – Addiction III: From Mouse to Man*)

2022 **Neuropsychopharmacology Editors Early Career Award (NEECA)**

Selected as the top paper published in NPP in the previous year by the Editors American College on Neuropsychopharmacology (ACNP)

Senior Investigator Travel Award

American College on Neuropsychopharmacology (ACNP) (*provides financial support for 2022 meeting*)

2021 **American College on Neuropsychopharmacology (ACNP)**

Senior Investigator Travel Award Recipient (*provides financial support for 2021 meeting and allows for attendance at 2022-2025 meetings*)

2019 **NIH Center for Scientific Review**

Early Career Reviewer Program (NAL – October 2019)

Neuroscience

Journal cover art selection (*Issue #419C*)

2018 **NARSAD Young Investigator Award**

Brain and Behavior Research Foundation (*funding 01/2019-01/2021*)

2017 **Nominee, 2017 Dean's Climate and Diversity Award**

Awarding Organization: Eberly College of Science, Penn State University

2014 **Best Poster Award**

Awarding Organization: *International Congress on Alcoholism and Stress*

2013 **Student Merit Award**

Awarding Organization: *Research Society on Alcoholism*

Ruth L. Kirschstein National Research Service Award

Awarding Organization: *National Institute on Alcohol Abuse and Alcoholism*

2012 **Student Merit Award**

Awarding Organization: *Research Society on Alcoholism*

2010 **Graduate Research Award**

Awarding Organization: *University of North Carolina – Wilmington*

Student Merit Award

Awarding Organization: *Research Society on Alcoholism*

2008 **Award for Outstanding Undergraduate Scholarship**

Awarding Organization: *James Madison University Department of Psychology*

Travel Award

Awarding Organization: *Association for Behavior Analysis – International*

2007 **Best Poster Award**

Awarding Organization: *Eastern Psychological Association*

Award for Outstanding Undergraduate Scholarship

Awarding Organization: *James Madison University Department of Psychology*

Travel Award

Awarding Organization: *Association for Behavior Analysis – International*

2006 **Award for Outstanding Undergraduate Scholarship**

Awarding Organization: *James Madison University Department of Psychology*

RECOGNITION AND MEDIA

INTERVIEWS

Newsweek: Neuroscientists Warn of 'Cascading' Alzheimer's Risk From These Two Habits [link](#)

Top 3 trending articles, ranked by Apple News, May 2024

INVITED EDITORIAL

The Conversation: Binge drinking is a growing public health crisis – a neurobiologist explains how research on alcohol use disorder has shifted [link](#)

Selected as headline article in 5/13/2024 newsletter; over 35,000 reads as of 5/28/2024

Also published in Discover Magazine: How Binge Drinking Shifted Research On Alcohol Use Disorders [link](#)

VIDEO

What are some of the biggest questions in neuroscience today? ([link](#) to Penn State Eberly Twitter)

PENN STATE PRINT MEDIA

Nikki Crowley named director of Neuroscience Institute at University Park [link](#)

Biology postdoc awarded National Institutes of Health fellowship [link](#)

Heard on campus: Nikki Crowley on 30 years of neuroscience advances [link](#)

Nikki Crowley honored with Women in STEAM Award by the Whitaker Center [link](#)

Uncovering the role of somatostatin signaling in the brain [link](#)

Mouse models of adolescent binge drinking reveal key long-lasting brain changes [link](#)

Crowley receives Huck Early Career Chair appointment [link](#)

New research on effects of binge drinking earns biologist early career award [link](#)

Penn State biologist receives NIH grant to help unlock biology of binge drinking [link](#)

Neuroscience grad student awarded grant to study adolescent binge drinking [link](#)

SERVICE & OUTREACH

EXTERNAL

2024, Mar NIH Reviewer – Study Section: Special Emphasis Panel, Fellowship Applications ZAA1 GG (32)
2024, Mar United Kingdom Research and Innovation Funds - Reviewer
2024, Mar Alcohol and the Central Nervous System Gordon Research Conference – poster judge
2023, Jun NIH Reviewer – Study Section: NIDA Special Emphasis Panel; ZDA1 MXS-T (O2)
2023, Feb NIH Reviewer – Study Section: Special Emphasis Panel, Fellowship Applications ZAA1 GG (32)
2022, Nov NIH Reviewer – Study Section: Special Emphasis Panel ZAA1 DD (04)
2022, Mar NIH Reviewer – Study Section: Special Emphasis Panel ZAA1 DD (04)
2022, Feb Reviewer, Swiss National Science Foundation
2021, Feb NIH Reviewer – Study Section: Special Emphasis Panel [ZAA1 DD (04)]
2019, Oct Early Career Reviewer, NIH Center for Scientific Review (Study Section: NAL)
2017 Guest speaker, Westfield High School, Chantilly Virginia
2010-2015 UNC Biological & Biomedical Science’s Student Liaison Committee
2013 UNC Perl Prize Committee
2012-2015 UNC School of Medicine Graduate Student Recruitment
2009-2010 NIH Scientific Careers Community Outreach

INTERNAL

University service

2024- Director, Penn State Neuroscience Institute – University Park
2023 Penn State Presidential Goals Task Force (*Growing Interdisciplinary Research Excellence Work Group*). Leads: Justin Schwartz, Executive Vice President and Provost; Lora Weiss, Senior Vice President for Research; Kevin Black, Dean, College of Medicine
2023-present “Launch Committee” mentoring committee for junior faculty; Department of Nutrition, College of Health and Human Development
2022-present Undergraduate neuroscience degree program development (Eberly/HHD/LA collaboration)
2022 Junior Faculty Advisory Committee to Penn State Interim Vice President & Provost Justin Schwartz *selected as Eberly College of Science representative*
2017 PSU Smoke Free Task Force (*silent observer*)

2017 PSU Communications and Onboarding Working Group (Research Computing and Cyberinfrastructure Advisory Council to the Provost)

College or Institute service

2024 Curriculum Advisory Committee, Neuroscience PhD Program
2024 Eberly College of Science Development Committee
2024 The Huck Institutes of the Life Science HITS (Huck Innovative and Transformative Seed Funds) grant reviewer and panelist
2024- Associate Director for Neuroscience, Gerosciences and Dementia Prevention Consortium
2024- Reviewer, Clinical and Translational Sciences Institute TL1 Translational Research Training Program applications (College of Medicine)
2024 Huck Life Sciences Symposium, judge, graduate and undergraduate
2023 FaculTEA Panel, College of Engineering Center for Engineering Outreach and Inclusion
2023 Search committee member, Eberly College of Science Associate Dean for Research
2023-present Associate Director for Postdoctoral Training and Leadership, Center for Neural Engineering
2023-present Program Committee, Cross Disciplinary Neural Engineering T32 Training Award (NINDS Award #T32NS115667)
2022 The Huck Institutes of the Life Science HITS (Huck Innovative and Transformative Seed Funds) grant reviewer and panelist
2020-present Molecular, Cellular, and Integrative Biosciences Qualifying Exam Committee
2020-present Neuroscience Graduate Program Qualifying Exam Committee
2019 -present Neuroscience Graduate Program Admissions Committee
2016-present PSU Program for Translation Research on Adversity and Neurodevelopment (P-TRAN)
2016-present PSU Undergraduate Neighbor-Neighbor Outreach

Department service

2021-present Marker Lecture committee member
2021-2022 Search committee member, Department of Biology (tenure-track neurobiologist)
2021-present Biomedical Engineering Graduate Program Qualifying Exam Committee member
2021-2023 Biology Department Sustainability committee member
2021 Biomedical Engineering Graduate Program Admissions Committee member
2021 Biology Department Graduate Admissions Committee member

DEI-RELATED TRAINING AND ACTIVITIES

2023 FaculTEA Panel, College of Engineering Center for Engineering Outreach and Inclusion
2022-present PSU Summer Research Opportunities Program Mentor
2022-present Founding Member, Rainbow Engineering Network
2021-present Member, Rainbow Science Network
2021 Millennium Scholars Program Faculty Advisory Network
Penn State Safer People Safer Places: Transgender and Gender Inclusion 101
Penn State Safer People Safer Places: Foundations Workshop

PROFESSIONAL ACTIVITIES

Editorial Experience

Alcohol (2023-2024 special issue on sex differences, co-edited with Dr. Erin Calipari)

Ad Hoc Journal Reviewer

Addiction Neuroscience
Alcohol
Biological Psychiatry

Journal of Neuroscience
Nature Communications
Neurobiology of Stress
Neuropharmacology
Neuropsychopharmacology
Physiology and Behavior
Psychopharmacology

Society Memberships

Society for Biological Psychiatry (2019-present)
International Congress on Alcoholism and Stress (2011-present)
Society for Neuroscience (2010-present)
Research Society on Alcoholism (2010-present)
Society for Behavior Analysis (2006-2009)
Eastern Psychological Association (2006-2009)