

Name: **Hammack, Sayamwong Emwill "Jom"** Date: **9-8-2022**

2017 – Present **Professor**
Department of Psychological Science
University of Vermont, Burlington, VT

2012 – 2017 **Associate Professor**
Department of Psychological Science
University of Vermont, Burlington, VT

2006 - 2012 **Assistant Professor**
Department of Psychological Science
University of Vermont, Burlington, VT

2002 **Postdoctoral Fellow, Center for Behavioral Neuroscience**
Emory University, Atlanta, GA

2001 **Ph.D., Psychology**
University of Colorado, Boulder, CO

1998 **M.A., Psychology**
University of Colorado, Boulder, CO

1995 **B.S., Psychology**
Florida State University, Tallahassee, FL

TEACHING EXPERIENCE

University of Vermont: **Instructor**
AS 096, Drugs, Demons and Dancing (3X)
NSCI 111, Exploring Neuroscience
NSCI 112, Exploring Neuroscience Laboratory
NSCI 270, Diseases of the Nervous System (2X)
PSYC 095, Stress and Health (writing intensive seminar for first year students, 2X)
PSYS 115 (formerly PSYC 121), Biopsychology (>5X)
PSYS 115 (formerly PSYC 121), Biopsychology Online (>5X)
PSYC 221, Physiological Psychology (2X)
PSYS 216 (formerly PSYC 223), Psychopharmacology (>5X)
PSYS 216 (formerly PSYC 223), Psychopharmacology Online
PSYC 380, Neuropsychopharmacology (4X)
PSYC 380, Neurobiology of Emotion
PSYC 295, Psychopharmacology laboratory

Oglethorpe University: **Instructor**
Survey of Physiological Psychology

University of Colorado: **Laboratory instructor and teaching assistant**
Psychology of Learning and Motivation
Biopsychology I
Psychology of Perception
Physiological Psychology (2X)

SPECIAL AWARDS AND HONORS

2021 Graduate Student Senate Outstanding Faculty Advisor Award.

2018 Dean's Lecture Award for translating excellence in scholarship into stimulating teaching
College of Arts and Sciences, University of Vermont.

2011 Kroepsch-Maurice Teaching Award for Outstanding Assistant Professor at the University
of Vermont.

2008 Young Investigator Award, National Alliance for Research on Schizophrenia and
Depression (NARSAD).

2001 Nomination for 2002 Society for Neuroscience Donald B. Lindsley Prize in Behavioral
Neuroscience.

1997 *Graduate School Fellowship Award*

- 1996 University of Colorado, Boulder, CO
Graduate School Fellowship Award
University of Colorado, Boulder, CO
- 1994 Florida State University Dean's Honor List
- 1993 Florida State University Dean's Honor List

STUDENT MENTORSHIP

Doctorate

- 2021 Katherine Beca (member), Neuroscience Graduate Program
- 2020 Matthew McCabe (member), Neuroscience Graduate Program
- 2019 Gregory Johnson (advisor), Neuroscience Graduate Program
- 2018 Ramya Srinivasan (member), Chemistry Graduate Program
- 2018 Olivia Miles (advisor), Experimental Psychology Graduate Program
- 2017 Sydney Trask (member), Experimental Psychology Graduate Program
- 2017 Scott Schepers (member), Experimental Psychology Graduate Program
- 2016 Nur Zeynep Gungor (member), Rutgers University Integrative Neuroscience Program
- 2015 Stephanie Spohn (member), Neuroscience Graduate Program
- 2015 Galen Missig (member), Neuroscience Graduate Program
- 2015 Jason Fuchs (member), Experimental Psychology Graduate Program
- 2015 Brendan Hare (member), Experimental Psychology Graduate Program
- 2014 Danra Kazenski (member), Experimental Psychology Graduate Program
- 2014 Liana Merrill (member), Neuroscience Graduate Program
- 2013 Olga Rodriguez Sierra (member), Rutgers University Integrative Neuroscience Program
- 2013 Kimberly Rhodes Lezak (advisor), Experimental Psychology Graduate Program
- 2013 Carolyn Roman (co-advisor), Neuroscience Graduate Program
- 2012 Jane Roberts (member), Neuroscience Graduate Program
- 2011 Jill Hoffman (member), Neuroscience Graduate Program
- 2011 James Fox (member), Experimental Psychology Graduate Program
- 2010 Amanda Woods (member), Experimental Psychology Graduate Program
- 2010 Alexandra Thanellou (member), Experimental Psychology Graduate Program

Masters Degree

- 2021 Amanda Senatore (member), Pharmacology Masters Program
- 2020 Lauren Lepeak (member), Pharmacology Masters Program
- 2020 Mahafuza Aktar (advisor), Neuroscience Graduate Program
- 2018 Alisha Linton (member), Neuroscience Graduate Program
- 2015 S. Bradley King (advisor), Experimental Psychology Graduate Program
- 2015 Olivia Miles (advisor), Experimental Psychology Graduate Program
- 2012 Margaret Kocho-Schellenberg (advisor), Experimental Psychology Graduate Program
- 2012 Jason Fuchs (member), Experimental Psychology Graduate Program
- 2009 Jasmine Salam (member), Experimental Psychology Graduate Program
- 2009 Joe Cheung (co-advisor), Neuroscience Graduate Program
- 2008 Kimberly Rhodes Lezak (advisor), Experimental Psychology Graduate Program

Graduate Student Preliminary Project and/or Qualifying Exam Committees

- 2021 McKenna Perry (member), Neuroscience Graduate Program
- 2020 Montana Kay Lara (member), Neuroscience Graduate Program
- 2019 Michael Steinfeld (member), Experimental Psychology Graduate Program
- 2018 Megan Perkins (member), Neuroscience Graduate Program
- 2016 Matt McCabe (member), Neuroscience Graduate Program
- 2014 Sharath Madasu (member), Cell and Molecular Biology Graduate Program
- 2014 Olga Lipatova (member), Experimental Psychology Graduate Program
- 2012 Stephanie Spohn (member), Neuroscience Graduate Program
- 2012 Carolyn Dundon (member), Clinical Psychology Graduate Program
- 2012 Liana Merrill (member), Neuroscience Graduate Program

2011 Kimberly Rhodes (advisor), Experimental Psychology Graduate Program
2011 James Fox (member), Experimental Psychology Graduate Program
2010 Alexandra Thanellou (member), Experimental Psychology Graduate Program
2008 Jill Hoffman (member), Neuroscience Graduate Program
2006 Amanda Woods (member), Experimental Psychology Graduate Program

Undergraduate Honors Thesis

2022 Elias Colberg (co-advisor)
2022 Carly Webb (advisor)
2022 Julia Pelligrino-Wood (member)
2022 Henry Schaer (member)
2022 Erin O'Donnell (member)
2022 Sarah VonDoepp (member)
2021 Ashley Mekkelson (member)
2021 Claire Deckers (advsor)
2021 Annabel Diestel (member)
2020 Reana Young (member)
2020 Corinne Atkinson (member)
2020 Azilee Curl (member)
2019 Mallory Stultz (co-advisor)
2019 Aneesh Singal (member)
2018 Caleb Winn (member)
2018 Justin Abbott (member)
2018 Matthew Segil (member)
2018 Anthony Spinella (member)
2017 Alex Jenkins (member)
2017 Mickayla Royer (member)
2017 Nick D'Alessandro (member)
2017 Anne Linden (member)
2017 Bailey Holt-Gosselin (member)
2017 Beniah Brumbaugh (advisor)
2016 Max Breidenstein (member)
2016 Naomi Koliba (member)
2016 Janet Lavrich (member)
2016 Morgan Mathews (member)
2016 Sarah Pallito (member)
2016 Hannah Woodruff (member)
2015 Julia Huessy (advisor)
2014 Brittany Bauman (member)
2013 Erin Roelke (advisor)
2012 Hannah Schoenberg (co-advisor)
2012 Christopher Stecyk (member)
2011 Meredith Sooy (co-advisor)
2011 Charlie Hackett (member)
2011 Katherine D'Onfro (member)
2010 Ariel Moser (co-advisor)
2009 Steven Babbín (advisor)
2009 Rachel Sugarman (advisor)
2009 Talaya McCright-Gill (member)
2009 Montana Burns (member)
2007 Matt Tavares (co-advisor)
2007 Susan Varga (member)

INVITED PRESENTATIONS

- Oct. 30, 2019 **“Neural circuits at the nexus of stress and emotion”**
President’s Faculty Colloquia
Englesby House, University of Vermont
Burlington, Vermont
- Aug. 30, 2019 **“The role of central pituitary adenylate cyclase activating polypeptide (PACAP) signaling in stress and emotion”**
Symposium, Emerging strategies for the treatment of stress-related psychiatric disorders
European Behavioral Pharmacology Society (EPBS) Biennial Meeting
Braga, Portugal
- March 27, 2019 **“The anxious palindrome: stories from the study of stress”**
Public Lecture; College of Arts and Sciences Dean’s Lecture Award
University of Vermont
Burlington, Vermont
- Sept. 24, 2018 **“Pituitary adenylate cyclase activating polypeptide (PACAP) in the bed nucleus of the stria terminalis (BNST): A nexus for stress, emotion and addiction”**
Panel Presentation, Neuropeptide regulation of stress and its consequences
22nd International Symposium on Regulatory Peptides
Acapulco Diamante, Guerrero, Mexico
- April 6, 2018 **“Pituitary adenylate cyclase activating polypeptide (PACAP) in the bed nucleus of the stria terminalis (BNST): A nexus for stress, emotion and addiction”**
Department of Psychology
University of Missouri
Columbia, Missouri
- Feb. 1, 2017 **“Pituitary adenylate cyclase activating polypeptide (PACAP) in the bed nucleus of the stria terminalis (BNST): A nexus for stress and emotion”**
Panel Presentation, No bed of roses: unmasking bed nuclei of the stria terminalis (BST) mechanisms underlying behavioral coordination
50th Winter Conference on Brain Research
Big Sky, Montana
- Dec. 6, 2016 **“Pituitary adenylate cyclase activating polypeptide (PACAP) in the bed nucleus of the stria terminalis (BNST) mediates stress-induced reinstatement of cocaine seeking behavior in rats”**
Mini Panel, PACAP, a new regulator of the stress response?
The 55th Annual Meeting of the American College of Neuropsychopharmacology
Hollywood, Florida
- April 27, 2016 **“Pituitary adenylate cyclase activating polypeptide (PACAP) in the bed nucleus of the stria terminalis (BNST): A nexus for stress and emotion”**
Department of Cellular and Molecular Pharmacology
Chicago Medical School, Rosalind Franklin University of Medicine and Science
North Chicago, Illinois
- March 11, 2016 **“Pituitary adenylate cyclase activating polypeptide (PACAP) in the bed nucleus of the stria terminalis (BNST): A nexus for stress and emotion”**
Bayer School of Natural & Environmental Sciences, Department of Biological Sciences
Duquesne University
Pittsburgh, Pennsylvania
- Feb. 19, 2016 **“Pituitary adenylate cyclase activating polypeptide (PACAP) in the bed nucleus of the stria terminalis (BNST): A nexus for stress and emotion”**

Department of Psychology
Middlebury College
Middlebury, Vermont

- June 13, 2015 **“Pituitary adenylate cyclase activating polypeptide (PACAP) in the bed nucleus of the stria terminalis (BNST): A nexus for stress and emotion”**
Symposium: Bed nucleus of the stria terminalis: A modulator of the stress response & social behavior in males and females
Society for Behavioral Neuroendocrinology Annual Meeting
Pacific Grove, California
- Nov. 6, 2014 **“Pituitary adenylate cyclase activating polypeptide (PACAP) in stress-related disorders and PTSD: data convergence from animal and human studies”**
Texas A&M Institute of Neuroscience
College Station, Texas
- October 2, 2014 **“Pituitary adenylate cyclase activating polypeptide (PACAP) in stress-related disorders and PTSD: data convergence from animal and human studies”**
Department of Pharmacology
University of Vermont College of Medicine
Burlington, Vermont
- March 24, 2014 **“Animal models of anxiety: convergence with human data”**
PsychTalk Webinar (Online)
Oxford University Press
- Sept. 28, 2012 **“The bed nucleus of the stria terminalis: a nexus for stress and emotion”**
Department of Biology
Kent State University
Kent, Ohio
- June 29, 2012 **“A Role for Central Pituitary Adenylate Cyclase-activating Peptide (PACAP) in Mediating the Behavioral Consequences of Stressor Exposure”**
Neural Cell Function Interest Group (NCFIG)
National Institute of Mental Health
Bethesda, Maryland
- April 3, 2012 **“The role of central pituitary adenylate cyclase-activating peptide (PACAP) signaling in stress-related anxiety”**
Vermont Lung Center Seminar
University of Vermont College of Medicine
Burlington, Vermont
- Aug. 12, 2011 **“The role of central pituitary adenylate cyclase-activating peptide (PACAP) signaling in stress-related anxiety”**
4th Northeast Regional Institutional Development Award (IDeA) Meeting
Newport, Rhode Island
- June 16, 2011 **“A role for pituitary adenylate cyclase-activating peptide (PACAP) in mediating the behavioral consequences of repeated stress”**
Vermont Summer Summit (Meeting of biobehavioral laboratories from UVM, McGill, Dartmouth, Middlebury and St. Michael’s Colleges)
Burlington, Vermont
- Jan. 22, 2011 **“Exercise, serotonin and anxiety”**
First Annual Neuroscience, Behavior and Health Forum

- Vermont Chapter of the Society for Neuroscience
Burlington, Vermont
- March 5, 2010 **“The bed nucleus of the stria terminalis: a nexus for stress and emotion”**
Department of Psychiatry Grand Rounds
University of Vermont College of Medicine
Burlington, Vermont
- Jan. 29, 2010 **“A role for pituitary adenylate cyclase-activating peptide (PACAP) expression and signaling in the bed nucleus of the stria terminalis (BNST) in stress-induced anxiety-like behavior”**
“Stress and the Brain” Seminar Series
University of Tennessee
Knoxville, Tennessee
- Oct. 5, 2009 **“A role for pituitary adenylate cyclase-activating peptide (PACAP) expression and signaling in the bed nucleus of the stria terminalis (BNST) in stress-induced anxiety-like behavior”**
Plenary Lecture, The 9th International Symposium on VIP, PACAP and Related Peptides
Kagoshima, Japan
- June 18, 2009 **“The response of neurons in the bed nucleus of the stria terminalis to serotonin: implications for anxiety”**
Vermont Summer Summit (Meeting of biobehavioral laboratories from UVM, McGill, Dartmouth, Middlebury and St. Michael’s Colleges)
Burlington, Vermont
- March 10, 2009 **“Serotonin and anxiety: the role of the bed nucleus of the stria terminalis”**
Department of Psychology
Binghamton University, State University of New York
Binghamton, New York
- March 19, 2008 **“The helpless brain”**
Newport/Derby/Stanstead Osher Lifelong Learning Institute
Newport, Vermont
- Feb. 21, 2008 **“The response of neurons in the bed nucleus of the stria terminalis to serotonin: Implications for anxiety”**
Department of Pharmacology Seminar
University of Vermont College of Medicine
Burlington, Vermont
- Feb. 11, 2008 **“Serotonin, anxiety, and the bed nucleus of the stria terminalis”**
Department of Biology Seminar Program
University of Vermont
Burlington, Vermont
- July 20, 2007 **“Serotonin, anxiety, and the bed nucleus of the stria terminalis”**
Vermont Summer Summit Meeting (Meeting of biobehavioral laboratories from UVM, McGill, Dartmouth, Middlebury and St. Michael’s Colleges)
Burlington, Vermont
- April 30, 2007 **“The Behavioral Neuroscience of Drug Addiction”**
Public Lecture
University of Vermont
Burlington, Vermont

Fall, 2002 **“The Role of Corticotropin Releasing Hormone in Learned Helplessness”**
 Center for Behavioral Neuroscience
 Emory University (video-conferenced with Georgia State University)
 Atlanta, Georgia

PROFESSIONAL EXPERIENCE AND AFFILIATIONS

2022 Ad hoc reviewer, Behavioral Neuroendocrinology, Pathophysiological Basis of Mental Disorders and Addictions Study Section, Center For Scientific Review.

2021 – Present Faculty Sponsor, University of Vermont Chapter of Nu Rho Psi, the National Honor Society in Neuroscience

2021 Ad hoc reviewer, NIH Director’s Early Independence Award program (DP5).

2021 Ad hoc reviewer, Behavioral Neuroendocrinology, Neuroimmunology, Rhythms, and Sleep Study Section, Center For Scientific Review.

2021 Ad hoc reviewer, Special Emphasis Panel, Comparative Medicine Applications submitted to the NIH Office of Research Infrastructure Programs (ORIP), Center For Scientific Review.

2020 – Present Assistant Director, University of Vermont Graduate Neuroscience Program

2019 – Present Associate Director, University of Vermont Undergraduate Neuroscience Program

2018 – 2020 President, Vermont Chapter of the Society for Neuroscience

2016 – Present Editorial Board Member, *Scientific Reports* (Nature Publishing Group)

2016 – 2020 Federal Advisory Committee Act (FACA) Regular Member, Neurobiology (A) and Mental Health and Behavioral Sciences (A) Review Panels. U.S. Department of Veterans Affairs.

2019 – 2020 Member, University of Vermont Vice President for Research Search Committee

2018 Member, Dean’s Task Force on Advising

2015 – 2016 Member, University of Vermont Institutional Animal Care and Use Committee (IACUC).

2018 – 2019 Co-Director, University of Vermont Undergraduate Neuroscience Program

2014 – 2018 Director, University of Vermont Undergraduate Neuroscience Program

2014 – 2015 Ad hoc reviewer, Neurobiology (A) Merit Review Panel, U.S. Department of Veterans Affairs.

2014 Ad hoc reviewer, Support of Competitive Research (SCORE) Program, National Institutes of Health, November 21, 2014.

2013 – 2018 Ad hoc reviewer, Biobehavioral Mechanisms of Emotion, Stress and Health (MESH) Study Section, Center For Scientific Review.

2011 – 2013 Stress, Trauma, Anxiety, Pain and Mood Disorders Focus Group Member
 University of Vermont Neuroscience, Behavior and Health (NBH) Initiative.

2011 – 2013 Department of Psychology Undergraduate Research Coordinator.

2011 Ad hoc reviewer, Mechanisms of Emotion, Stress and Health Special Emphasis Panel, National Institutes of Health, June 20, 2011.

2010 – 2016 Faculty Representative, Vermont Chapter for the Society for Neuroscience.

2010 – 2014 University of Vermont Undergraduate Neuroscience Program Steering Committee.

2010 – 2015 University of Vermont Neuroscience Graduate Program Steering Committee.

2010 – 2015 University of Vermont Neuroscience Graduate Program Admissions Committee.

2008 – Present University of Vermont Chapter for the Society for Neuroscience, member.

2008 – 2010 HELiX, CW LINK, Undergraduate Research Grants Review Committee .

2007 – 2020 University of Vermont Pre-health Committee.

2007 – 2008 Eastern Psychological Association, member.

2007 – 2009 American Psychological Association, member.

2006 – 2020 University of Vermont Department of Psychological Science Undergraduate Committee.

2002 – 2006 Center for Behavioral Neuroscience, Atlanta, GA, member.

2004 Completion of grant proposal writing workshop, The Grant Institute.

1998 – 1999 PsychoNeuroImmunology Research Society, member.

1995 – Present Society for Neuroscience, member.

Ad hoc reviewer for the following journals:

ACS Chemical Neuroscience
Behavioural Brain Research
Biological Psychiatry
Brain Research Bulletin
British Journal of Pharmacology
Cellular and Molecular Neurobiology
ENeuro
European Neuropsychopharmacology
Faculty of 1000
Frontiers in Behavioral Neuroscience
Frontiers in Psychology
Journal of Comparative Neurology
Journal of Depression and Anxiety
Journal of Neuroendocrinology
Journal of Neurophysiology
Journal of Psychopharmacology
Molecular Psychiatry
Neurobiology of Stress
Neuropeptides
Neuropharmacology
Neuropsychopharmacology
Neuroscience
Neuroscience Letters
Neuroscience Research
Pharmacology, Biochemistry and Behavior
Physiology and Behavior
Progress in Neuro-Psychopharmacology & Biological Psychiatry
Psychoneuroendocrinology
Scientific Reports
Translational Psychiatry
Yonsei Medical Journal

Reviewer and ad hoc reviewer for the following granting organizations:

Louisiana Board of Regents
National Institutes of Health (see above)
National Science Foundation
Netherlands Organization for Scientific Research
Neurological Foundation of New Zealand
U.S. Department of Veterans Affairs (see above)
Vermont Genetics Network

FUNDING

PACAP and the response to stressors: neural mechanisms (Competitive Renewal)

Co-Principal Investigator

Direct costs: \$1,200,000; Total cost: \$1,852,793

National Institutes of Health Research Project Grant Award (Parent RO1)

National Institutes of Health, Bethesda, MD

2018-2023

Peptide Interactions in Opioid Relapse

Principle Investigator

Direct Costs: \$28,462.35; Total cost: \$28,462.35

University of Vermont Office of the Vice President for Research REACH Grant Program

2018-2019

Molecular targeting of specific types of neurons in anxiety-related brain regions

Principle Investigator

Direct costs: \$13,285; Total cost: \$13,285

University of Vermont College of Arts and Sciences Seed Grant

2018-2019

PACAP and the response to stressors: neural mechanisms

Principal Investigator

Direct costs: \$1,250,000; Total cost: \$1,890,500

National Institutes of Health Research Project Grant Award (Parent RO1)

National Institutes of Health, Bethesda, MD

2012-2018

A neuroimaging study on the cognitive and anxiolytic benefits of exercise

Co-Investigator

Direct costs: \$8000; Total cost: \$8000

University of Vermont Neuroscience, Behavior and Health Pilot Grant

2013

Neural mechanisms of stress-induced relapse of drug seeking behavior

Principal Investigator

Direct costs: \$7000; Total cost: \$7000

University of Vermont Neuroscience, Behavior and Health Pilot Grant

2012

Blood levels of the peptide, PACAP, correlate with individual differences in anxiety in rats.

Principal Investigator

Direct costs: \$7564; Total cost: \$7564

University of Vermont College of Arts and Sciences Faculty Research Support Award

2012-2013

Role of PACAP in anxiety-like behavioral consequences of chronic stress

Co-Investigator

Direct costs: \$99,916; Total cost: \$99,916

NIH/NCRR

Center of Biomedical Research Excellence (COBRE) in Neuroscience

2010-2011

Exercise, Serotonin and Anxiety

Principal Investigator

Direct costs: \$275,000; Total cost: \$403,775

National Institutes of Health Exploratory/Developmental Research Grant Award (Parent R21)

National Institutes of Health, Bethesda, MD

2009-2011

Development of PACAP receptor antagonists for stress-related behavioral, endocrine and metabolic disorders

Co-Investigator

Direct costs: \$30,000; total cost: \$30,000

Research Opportunities Grant Program

University of Vermont

2009-2010

The role of 5-HT7 receptors in the bed nucleus of the stria terminalis in mediating learned helplessness

Principal Investigator

Direct costs: \$57,121; Total cost: \$57,121
2008 Young Investigator Award, National Alliance for Research on Schizophrenia and Depression (NARSAD)
2008-2011

Modulation of BNST 5-HT responses by corticosterone
Postdoctoral Fellowship Recipient
Direct costs: 147,372; Total cost: 147,372
Ruth L. Kirschstein National Research Service Award
National Institutes of Health, Bethesda, MD
2004-2007

PUBLICATIONS: BOOKS AND BOOK CHAPTERS

Hammack, S.E., Braas, K.M., May, V. (2021) Chemoarchitecture of the BNST: neurophenotypic diversity and function. In: Handbook of Clinical Neurology, The Human Hypothalamus/Anterior Hypothalamus, D. Swaab and R. Buijs, eds. Elsevier, United Kingdom.

Missig, G., Parsons, R.L., Vizzard, M.A., **Hammack, S.E.**, Braas, K.M., May, V. (2016) PACAP circuits mediating the sensory and behavioral consequences of pain. In: Current Topics in Neurotoxicology Vol. 11, Pituitary Adenylate Cyclase Activating Polypeptide - PACAP; D. Reglodi and A. Tamas, eds. Springer, Switzerland, pp. 631-650.

Toufexis, D., **Hammack, S.E.** “Anti-Anxiety Drugs.” *Drugs, The Straight Facts* (High School Book Series). Ed. David J. Triggler. Philadelphia, PA: Chelsea House Publishers.

PUBLICATIONS: RESEARCH ARTICLES

Boucher, M.N., Aktar, M. Braas, K.M., May, V., **Hammack, S.E.** (2021) Activation of lateral parabrachial nucleus (LPBn) PACAP-expressing projection neurons to the bed nucleus of the stria terminalis (BNST) enhances anxiety-like behavior. *Journal of Molecular Neuroscience*, 72(3): 451-458. PMID: 34811712.

Boucher, M.N., May, V., Braas, K.M., **Hammack, S.E.** (2021) PACAP orchestration of stress-related responses in neural circuits, *Peptides*, 142:170554. PMID: 33865930.

May V., Johnson, G.C., **Hammack, S.E.**, Braas, K.M., Parsons, R.L. (2021) PAC1 Receptor Internalization and Endosomal MEK/ERK Activation Is Essential for PACAP-Mediated Neuronal Excitability. *Journal of Molecular Neuroscience*, 71(8): 1536-1542. PMID: 33675454.

Johnson, G.C., Parsons, R., May, V., **Hammack, S.E.**, (2020) The Role of Pituitary Adenylate Cyclase-Activating Polypeptide (PACAP) Signaling in the Hippocampal Dentate Gyrus, *Frontiers in Cellular Neuroscience*, 14:111. PMID 32425759

Johnson, G.C., Parsons, R.L., May, V., **Hammack, S.E.** (2020) Pituitary adenylate cyclase-activating polypeptide-induced PAC1 receptor internalization and recruitment of MEK/ERK signaling enhance excitability of dentate gyrus granule cells, *American Journal of Physiology- Cell Physiology*, 318(5):C870-C878. PMID: 32186931

Johnson, G.C., May, V., Parsons, R.L., **Hammack, S.E.** (2019) Parallel signaling pathways of pituitary adenylate cyclase activating polypeptide (PACAP) regulate several intrinsic ion channels, *Annals of the New York Academy of Sciences*, 1455(1):105-112. PMID: 31162688

Miles, O.W., May, V., **Hammack, S.E.**, (2018) Pituitary adenylate cyclase-activating peptide (PACAP) signaling and the dark side of addiction, *Journal of Molecular Neuroscience*, 68(3): 453-464. PMID: 30074172

Miles, O.W., Thrailkill, E.A., Linden, A.K., May, V., Bouton, M.E., **Hammack, S.E.** (2018) Pituitary adenylate cyclase-activating peptide in the bed nucleus of the stria terminalis mediates stress-induced reinstatement of cocaine seeking in rats, *Neuropsychopharmacology* 43(5): 978-986. PMID: 28656976

King, S. B., Toufexis, D.J., **Hammack, S.E.** (2017) Pituitary adenylate cyclase activating polypeptide (PACAP), stress and sex hormones, *Stress*, 20(5): 465-475. PMID: 28610473

Sackheim, A.M., Stockwell, D., Vilalaba, N., Haines, L., Scott, C.L., Russell, S., **Hammack, S.E.**, Freeman, K. (2017) Traumatic brain injury impairs sensorimotor function in mice, *Journal of Surgical Research*, 213:100-109. PMID: 28601302

King, S.B., Lezak, K.R., O'Reilly, M., Toufexis, D.J., Falls, W.A., Braas, K.M., May, V., **Hammack, S.E.** (2017) The Effects of Prior Stress on Anxiety-like Responding to Intra-BNST Pituitary Adenylate Cyclase Activating Polypeptide (PACAP) in Male and Female Rats, *Neuropsychopharmacology*, 42(8): 1679-1687. PMID: 28106040

Mazzone, C.M., Pati, D., Michaelides, M., DiBerto, J., Fox, J.H., Tipton, G., Anderson, C., Duffy, K., McKlveen, J.M., Hardaway, J.,A., Magness, S.T., Falls, W.A., **Hammack, S.E.**, McElligott, Z.A., Hurd, Y.L., Kash, T.L. (2016) Acute engagement of Gq-mediated signaling in the bed nucleus of the stria terminalis induces anxiety-like behavior, *Molecular Psychiatry*, 23(1): 143-153. PMID: 27956747

Mathew, R., Tatarakis, A., Rudenko, A., Johson-Venkatesh, E., Yang, Y., Murphy, E., Todd, T., Schepers, S., Siuti, N., Matorell, A., Falls, W., **Hammack S.**, Walsh, C., Tsai, L., Umemori, H., Bouton, M., Moazed, D. (2016) Inhibition of memory by a microRNA negative feedback loop that downregulates SNARE-mediated vesicle transport, *eLife*, 2016; 5:e22467. PMID: 28001126

Missig, G., Mei, L., Vizzard, M.A., Braas, K.M., Waschek, J.A., **Hammack, S.E.**, May, V. (2016) Parabrachial PACAP activation of amygdala endosomal ERK signaling regulates the emotional component of pain, *Biological Psychiatry*, 81(8): 671-682. PMID: 28057459

Hammack, S.E., Todd, T.P., Kocho-Schellenberg, M., Bouton, M.E. (2015) Role of the bed nucleus of the stria terminalis in the acquisition of contextual fear at long or short context-shock intervals, *Behavioral Neuroscience*, 129(5): 673-8. PMID: 26348716.

Hammack, S.E., May, V. (2015) Pituitary adenylate cyclase activating polypeptide in stress-related disorders: data convergence from animal and human studies, *Biological Psychiatry*, 78(3): 167-77. PMID: 25636177.

Longden, T.A., **Hammack, S.E.**, Nelson, M.T. (2014) Channeling stress: Inwardly-rectifying K⁺ channels in stress and disease, *Channels*, 8(4): 296-297. PMID: 25478622.

Lezak, K.R., Roman, C.W., Braas, K.M., Schutz, K.C., Falls, W.A., Schulkin, J., May, V., **Hammack, S.E.** (2014) Regulation of bed nucleus of the stria terminalis PACAP expression by stress and corticosterone, *Journal of Molecular Neuroscience*, 54(3): 477-84. PMID: 24614974.

Missig, G., Roman, C.W., Vizzard, M.A., Braas, K.M., **Hammack, S.E.**, May, V. (2014) Parabrachial nucleus (PBN) pituitary adenylate cyclase activating polypeptide (PACAP) signaling in the amygdala: implication for the sensory and behavioral effects of pain, *Neuropharmacology*, 86: 38-48. PMID: 24998751.

Roman, C.W., Lezak, K.R., Hartsock, M.J., Falls, W.A., Braas, K.M., Howard, A.B., **Hammack, S.E.**, May, V., (2014) PAC1 receptor antagonism in the bed nucleus of the stria terminalis (BNST) attenuates the endocrine and behavioral consequences of chronic stress, *Psychoneuroendocrinology*, 47: 151-65. PMID: 25001965.

Longden, T.A., Dabertrand, F., Hill-Eubanks, D., **Hammack, S.E.**, Nelson, M.T., (2014) Stress-induced glucocorticoid signaling remodels neurovascular coupling through impairment of cerebrovascular KIR channel function, *Proceedings of the National Academy of Sciences*, 111(20): 7462-7. PMID: 24808139.

Kocho-Schellenberg, M., Lezak, K.R., Harris, O.M, Roelke E., Gick, N., Choi, I., Edwards, S., Wasserman, E., Toufexis, D.J., Braas, K.M., May, V., **Hammack, S.E.**, (2014) Pituitary adenylate cyclase activating peptide (PACAP) in the bed nucleus of the stria terminalis (BNST) produces anorexia and weight loss in male and female rats, *Neuropsychopharmacology*, 39(7): 1614-23. PMID: 24434744.

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Conference Abstracts

M. N. Boucher, V. May, **S. E. Hammack**. Activation of LPBn PACAP afferents in the BNST increases anxiety-like behavior (Stress Neurobiology Workshop, University of South Carolina, Columbia, SC, May 12), 2022

2. M. N. Boucher, S. K. Moriarty, K. S. AbedRabbo, E. B. Kotler, G. P. Heely, H. M. Hill, V. May, **S. E. Hammack** Activation of lateral parabrachial nucleus (LPBn) pituitary adenylate cyclase-activating polypeptide (PACAP) afferents in the bed nucleus of the stria terminalis (BNST) increases anxiety-like behavior (NEURON conference, Quinnipiac University, North Haven, CT, Apr. 24), 2022.

Aktar, M., Cardarelli, A., May, V.M., **Hammack, S.E.** Inhibition of PAC1 receptor-expressing neurons in the bed nucleus of the stria terminalis (BNST) reduces anxiety like behavior, Platform Presentation, Vermont Chapter of the Society for Neuroscience, (2022).

Aktar, M., Lepeak, L., May, V., **Hammack, S.E.** Pituitary adenylate cyclase activating polypeptide (PACAP) neurons in the bed nucleus of the striaterminalis (BNST) and their projections, *Proc. Soc. Neurosci. (Virtual)*, 2021.

Boucher, M.N., Moriarty, S.K., Kotler, E.B., Rice, M.R., May, V., **Hammack, S.E.** Activation of lateral parabrachial nucleus pituitary adenylate cyclase-activating polypeptide afferents in the bed nucleus of the stria terminalis increases anxiety-like behavior, *Proc. Soc. Neurosci. (Virtual)*, 2021

Aktar, M., Miles, O., Thrailkill, E., May, V., **Hammack, S.E.** Effect of BNST PACAP on stress-induced reinstatement of cocaine seeking behavior. Stress Peptide Advanced Research, Education, & Dissemination (SPARED) Center at McLean Hospital Think Tank (Virtual), 2021.

Johnson, G.C., May V., **Hammack, S.E.** PACAP/PAC1 in the dentate gyrus of the hippocampus modulates contextual fear conditioning and increases granule cell excitability through an extracellular regulated kinase dependent signaling cascade, Platform Presentation and Poster, Vermont Chapter of the Society for Neuroscience (2019)

King, S.B., Toufexis, D.J., May, V., **Hammack, S.E.** Long duration anxiogenic effects of BNST PACAP are not due to conditioned anxiety, Platform Presentation and Poster, Vermont Chapter of the Society for Neuroscience (2019)

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King, S.B., Toufexis, D.J., May, V., **Hammack, S.E.** Prior Stress Differentially Alters Anxiety-like Responding to Intra-BNST Pituitary Adenylate Cyclase Activating Polypeptide (PACAP) in Male and Female Rats, Vermont Chapter of the Society for Neuroscience (2018)

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