



Marcus M. Weera, Ph.D.

curriculum vitae

Postdoctoral Fellow

Department of Physiology
Louisiana State University Health Sciences Center
New Orleans, LA 70112
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EDUCATION

Ph.D., Integrative Neuroscience *August 2017*
Purdue University, West Lafayette, IN

B.S., Biochemistry & Molecular Biology *May 2011*
With Honors (Magna Cum Laude Equivalent)
Michigan State University, East Lansing, MI

POSITIONS

Postdoctoral Fellow *August 2017 – Present*
Advisor: Nicholas W. Gilpin, Ph.D.
Department of Physiology, LSUHSC, New Orleans, LA
Research Discipline: Neuroscience of alcohol use and stress

Graduate Research/Teaching Assistant *August 2012 – August 2017*
Advisor: Julia A. Chester, Ph.D.
Department of Psychological Sciences, Purdue University, West Lafayette, IN
Research Discipline: Neuroscience and behavioral genetics of alcohol-nicotine interactions

Research Technician *May 2011 – July 2012*
Supervisor: Joseph S. Lonstein, Ph.D.
Department of Psychology, Michigan State University, East Lansing, MI

Undergraduate Research Assistant *January 2010 – May 2011*
Advisor: Colleen C. Hegg, Ph.D.¹ & Joseph S. Lonstein, Ph.D.²
¹Department of Pharmacology & Toxicology, ²Department of Psychology, Michigan State University, East Lansing, MI

Professional Affiliations:

International Behavioural & Neural Genetics Society (IBANGS)	2013 – Present
Research Society on Alcoholism (RSA)	2014 – Present
Society for Neuroscience (SFN)	2019 – Present

RESEARCH

A. Fellowships

Ruth L. Kirschstein Postdoctoral National Research Service Award (F32AA027145) 2019 – 2021

\$95,333 (18 months' support)

Funding agency: NIH/NIAAA

Institution: Louisiana State University Health Sciences Center

Biomedical Alcohol Research Training Grant (T32AA007577) 2017 – 2019

Funding agency: NIH/NIAAA

Institution: Louisiana State University Health Sciences Center

Purdue Research Foundation Fellowship 2016 – 2017

Funding body: Purdue Research Foundation

Institution: Purdue University

Lynn Foundation Fellowship 2012 – 2013

Funding body: Lynn Foundation

Institution: Purdue University

B. Awards & Honors

Enoch Gordis Postdoctoral Recognition Award, Finalist 2020

Research Society on Alcoholism

Volterra Conference NIH Travel Award 2020

Volterra Conference on Stress & Alcoholism

\$1000 travel award

RSA Junior Investigator Award 2018, 2019, 2021

Research Society on Alcoholism

\$250 travel award/year x 3 years

Interdisciplinary Life Sciences (PULSe) 5-Minute Thesis Competition, Winner 2017

Purdue University Interdisciplinary Life Sciences Graduate Program

\$750 award

RSA Student Merit Award

2015, 2016, 2017

Research Society on Alcoholism
\$250 travel awards/year x 3 years

Interdisciplinary Life Sciences (PULSe) Travel Award

2014, 2015, 2016, 2017

Purdue University Interdisciplinary Life Sciences Graduate Program
\$100-250 travel awards/year x 4 years

IBANGS Graduate Travel Award

2014

International Behavioural and Neural Genetics Society
\$450 travel award

Dean's List

2009 – 2011

Michigan State University

C. Publications

1. **Weera MM**, Agoglia AE, Douglass E, Jiang Z, Rajamanikam S, Shackett RS, Justice NJ, Herman MA, & Gilpin NW (2021). Cellular, Physiological, and Behavioral Validation of a CRFR1:Cre^{-td}Tomato Transgenic Rat Line for Use in Basic Neuroscience. *BioRxiv*. DOI: <https://doi.org/10.1101/2021.02.23.432551> (In revision at *eLife*).
2. **Weera MM**, Shackett RS, Kramer HK, Middleton JW, & Gilpin NW (2021). Central Amygdala Projections to Lateral Hypothalamus Mediate Avoidance Behavior in Rats. *J Neurosci*. PMID: 33188067.
3. **Weera MM**, Schreiber AL, Avegno EM, & Gilpin NW (2020). The Role of Central Amygdala Corticotropin-Releasing Factor in Predator Odor Stress-Induced Avoidance Behavior and Escalated Alcohol Drinking in Rats. *Neuropharmacology*. PMID: 32028150.
4. **Weera MM** & Gilpin NW (2019). Biobehavioral Interactions between Stress and Alcohol (Review). *Alcohol Res*. PMID: 31649835.
5. Fernandez RF, Kim SZ, Zhao Y, Foguth RM, **Weera MM**, Counihan JL, Nomura DK, Chester JA, Cannon JR, & Ellis JM (2018). Acyl-CoA Synthetase 6 Enriches the Neuroprotective Omega-3 Fatty Acid DHA in the Brain. *Proc Natl Acad Sci U.S.A.* PMID: 30401738.
6. Avegno EM, Lobell TL, Itoga CA, Baynes BB, Whitaker AM, **Weera MM**, Edwards S, Middleton JW, & Gilpin NW (2018). Central Amygdala Circuits Mediate Hyperalgesia in Alcohol Dependent Rats. *J Neurosci*. PMID: 30054393.

7. **Weera MM**, Agim S, Cannon JR, & Chester JA (2018). Genetic Correlations between Nicotine Reinforcement-Related Behaviors and Propensity toward High or Low Alcohol Preference in Two Replicate Mouse Lines. *Genes Brain Behav.* PMID: 30129253.
8. **Weera MM**, Fields MA, Tapp DN, Grahame NJ, & Chester JA (2017). Effects of Nicotine on Alcohol Drinking in Female Mice Selectively Bred for High or Low Alcohol Preference. *Alcohol Clin Exp Res.* PMID: 29144544.
9. Peng C, Engle SE, Yan Y, **Weera MM**, Berry JN, Arvin MC, Zhao, G, McIntosh JM, Chester JA, & Drenan RM (2017). Altered Nicotine Reward-Associated Behavior Following $\alpha 4$ nAChR Subunit Deletion in Ventral Midbrain. *PLoS One.* PMID: 28759616.
10. Chester JA & **Weera MM** (2016). Genetic Correlation between Alcohol Preference and Conditioned Fear: Exploring a Functional Relationship. *Alcohol.* PMID: 27908524.
11. Smith CD, Piasecki CC, **Weera M**, Olszewicz J, & Lonstein JS (2013). Noradrenergic Alpha-2 Receptor Modulators in the Ventral Bed Nucleus of the Stria Terminalis: Effects on Anxiety Behavior in Postpartum and Virgin Female Rats. *Behav Neurosci.* PMID: 23796237.

D. Invited Symposium Talks

1. Central Amygdala Output Projections in Stress-Induced Avoidance Behavior and Escalation of Alcohol Drinking. *Research Society on Alcoholism*, New Orleans, LA. June 2020*. Symposium organizers: Marcus Weera, Ph.D. & Melissa Herman, Ph.D.
2. Central Amygdala Signaling in Stress-Induced Avoidance Behavior and Escalation of Alcohol Drinking. *Volterra Conference on Alcoholism & Stress*, Volterra, Italy. May 2020*. Symposium organizers: Jeff Weiner, Ph.D. & Igor Spigelman Ph.D.
3. Central Amygdala Signaling in Stress-Induced Avoidance Behavior and Escalation of Alcohol Drinking. *Gordon Research Seminar on Alcohol & the Nervous System*, Galveston, TX. March 2020. Seminar organizers: Elizabeth Avegno, Ph.D. & Katie Holleran, Ph.D.
4. The Role of Central Amygdala CRF Signaling in a Rat Model of Traumatic Stress. *Winter Conference on Brain Research*, Snowmass, CO. January 2019. Symposium organizer: Melissa Herman, Ph.D. & Candice Contet, Ph.D.

**Postponed to 2021 due to COVID-19 pandemic.*

E. Symposium Organized

1. Amygdala Outputs and Alcohol Consumption-Related Behaviors. *Research Society on Alcoholism 44th Annual Meeting/ISBRA Congress*, New Orleans, LA. June 2021. Organizer: Marcus Weera, Ph.D.; Co-organizer: Melissa Herman, Ph.D. (University of North Carolina, Chapel Hill).

F. Department/Program Talks

1. Neural Circuits of Stress-Induced Alterations in Alcohol-Related Behaviors. *Webinars by Early Career Investigators in Addiction Neuroscience (WECAN)*, National Institute on Drug Abuse (NIDA) and National Institute on Alcohol Abuse & Alcoholism (NIAAA), February 2021.
2. Central Amygdala Signaling in Stress-Induced Avoidance Behavior & Escalation of Alcohol Drinking. *Department of Physiology Seminar*, Louisiana State University Health Sciences Center, New Orleans, LA. April 2020.
3. Central Amygdala-Mediated Signaling in a Rat Model of Traumatic Stress. *Neuroscience Center of Excellence Seminar*, Louisiana State University Health Sciences Center, New Orleans, LA. April 2019.
4. Genetically Encoded Tools for Neuroscience Research. *Perspectives on Alcohol Research*, Louisiana State University Health Sciences Center, New Orleans, LA. March 2019.
5. The Role of Central Amygdala Signaling in a Rat Model of Traumatic Stress. *Alcohol & Drug Abuse Center of Excellence Retreat*, Louisiana State University Health Sciences Center, New Orleans, LA. December 2018.
6. Understanding Smoking and Drinking Using Mouse Models. *Interdisciplinary Graduate Programs Retreat*, Purdue University, West Lafayette, IN. May 2017.
7. Genetic Relationship between Nicotine and Alcohol Motivated Behaviors in Mice. *Postdoctoral Job Talk*. Department of Physiology, Louisiana State University Health Sciences Center, New Orleans, LA, February 2017.
8. Genetic Relationship between Nicotine and Alcohol Motivated Behaviors in Mice. *Postdoctoral Job Talk*. Department of Pharmacology, Northwestern University, Chicago, IL, January 2017.

G. Posters

1. **Weera MM**, Avegno EA, Schreiber AL, Middleton JW, & Gilpin NW. Central Amygdala CRF Signaling in Stress-Induced Escalation of Alcohol Drinking & Avoidance Behavior in Rats. *Gordon Research Conference on Alcohol & the Nervous System*, Galveston, TX, March 2020.
2. **Weera MM** & Gilpin NW. Central Amygdala Signaling in Stress-Induced Escalation of Alcohol Drinking & Avoidance Behavior in Rats. *Gordon Research Conference on Amygdala Function*, Easton, MA, August 2019.
3. **Weera MM** & Gilpin NW. Central Amygdala Signaling in Stress-Induced Escalation of Alcohol Drinking & Avoidance Behavior in Rats. *Research Society on Alcoholism*, Minneapolis, MN, June 2019.
4. **Weera MM**, Middleton JW, & Gilpin NW. Central Amygdala to Lateral Hypothalamus Projections Mediate Conditioned Place Avoidance. *Greater New Orleans Society for Neuroscience Meeting*. New Orleans, LA, December 2018.
5. Milo M, **Weera MM**, Gilpin NW, & Middleton JW. Applying Power Spectral Analysis to Genetic Calcium Imaging from Deep Brain Fiber Photometry in Stressed & Naïve Rats. *LSUHSC Summer Research Symposium*. New Orleans, LA, July 2018.
6. Lloyd C, **Weera MM**, & Gilpin NW. Effects of Central Amygdala CRFR1 Blockade on Stress-Induced Escalation of Alcohol Drinking in Rats. *LSUHSC Summer Research Symposium*. New Orleans, LA, July 2018.
7. **Weera MM**, Pahng AR, Whitaker AM, Edwards S, Middleton JW, & Gilpin NW. Stress-induced Activation of Central Amygdala to Lateral Hypothalamus Circuitry in Avoider Rats. *Research Society on Alcoholism*. San Diego, CA, June 2018.
8. **Weera MM**, Pahng AR, Whitaker AM, Edwards S, & Gilpin NW. Stress-induced Activation of Central Amygdala to Lateral Hypothalamus Circuitry in Avoider Rats. *Stress Neurobiology Meeting*, Banff, Canada, June 2018.
9. Ko MJ, Chiang T, Mukadam AA, Mulia GE, **Weera MM**, Chester JA, & Van Rijn RM. Contribution of β -Arrestin and ERK Signaling in the Anxiolytic-Like Effects of the δ -Opioid Receptor Agonist SNC80. *International Narcotics Research Conference*, San Diego, CA, June 2018.
10. Ko MJ, Chiang T, **Weera MM**, Chester JA, & Van Rijn RM. β -Arrestin-Biased Signaling at δ -Opioid Receptors as a Novel Therapeutic Target for Anxiety Disorders. *83rd Cold Spring Harbor Laboratory Symposium on Quantitative Biology*, Cold Spring Harbor, NY, May 2018.
11. **Weera MM**, Pahng AR, Whitaker AM, Edwards S, & Gilpin NW. Predator Odor Stress-Induced Activation of the Central Amygdala and Lateral Hypothalamus in Avoider Rats.

Gordon Research Conference on Alcohol and the Nervous System, Galveston, TX, March 2018.

12. Ko MJ, Chiang T, **Weera MM**, Chester JA, & Van Rijn RM. β -Arrestin-Biased Signaling at δ -Opioid Receptors as a Novel Therapeutic Target for Anxiety Disorders. *Society for Neuroscience Annual Meeting*, Washington, DC, November 2017.
13. **Weera MM** & Chester JA. Nicotine Oral Consumption in High- and Low-Alcohol Preferring Mice. *Research Society on Alcoholism*, 40th Annual Meeting, Denver, CO, June 2017.
14. **Weera MM** & Chester JA. Nicotine-Induced Conditioned Taste Aversion in High- and Low-Alcohol Preferring Mice. *Research Society on Alcoholism*, 40th Annual Meeting, Denver, CO, June 2017.
15. Ko MJ, Chiang T, **Weera MM**, Chester JA, & Van Rijn RM. Anxiolytic-like Effects of Delta Opioid Receptors via β -Arrestin Mediated ERK Activation in Mice. *Greater Indiana Society for Neuroscience Conference*, Indianapolis, IN, March 2017.
16. **Weera MM** & Chester JA. High- and Low-Alcohol Preferring Mice Differ in Intake of and Conditioned Taste Aversion to Nicotine. *Greater Indiana Society for Neuroscience Conference*, Indianapolis, IN, March 2017; *PULSe Retreat*, Purdue University, West Lafayette, IN, August 2016.
17. **Weera MM**, Fields MA, & Chester JA. Effects of Repeated Acute Nicotine Injections on Two-Bottle Choice and Binge-Like Alcohol Drinking in High and Low Alcohol Preferring Female Mice. *Research Society on Alcoholism*, 39th Annual Meeting, New Orleans, LA, June 2016.
18. Rantz EK, **Weera MM**, & Chester JA. Effects of Oxytocin and Carbetocin on Fear-Potentiated Startle in High- and Low-Alcohol-Preferring Mice. *Purdue University Undergraduate Research Symposium*, West Lafayette, IN, April 2016.
19. Vike NL, **Weera MM**, Vega-Alvarez S, Farmer SJ, Shi R, Chester JA. Effects of Mild Traumatic Brain Injury on Alcohol Drinking and Locomotor Activity in High Alcohol Preferring Mice. *PULSe Spring Reception*, Purdue University, West Lafayette, IN, April 2016.
20. **Weera MM**, Drenan, RM, & Chester JA. Nicotine Place Conditioning in Mice Selectively-Bred for High or Low Alcohol Preference. *Research Society on Alcoholism*, 38th Annual Meeting, San Antonio, TX, June 2015.
21. **Weera MM**, Shih PY, Drenan RM, & Chester JA. Reward-related Responses to Nicotine, Alcohol, and Their Co-Administration in Mice Selectively-Bred for High or Low Alcohol

Preference. 16th Annual Genes, Brain, and Behavior Meeting of the International Behavioural and Neural Genetics Society, Chicago, IL, May 2014.

22. **Weera MM** & Drenan RM. β 3-Containing Nicotinic Receptors Mediate Nicotine Activation of the Interpeduncular Nucleus in Mice. *PULSe Spring Reception*, Purdue University, West Lafayette, IN, April 2013.
23. Hayoz S, **Weera M**, Jia C, & Hegg CC. NPY Release in Mouse Olfactory Epithelium is Partially Dependent on the Presence of Functional IP3R3 Receptor Subtype. *Association of Chemoreception Sciences 33rd Annual Meeting*, St. Pete Beach, FL, April 2011.

H. Research Mentoring

Students mentored/supervised in Gilpin Lab:

1. Veronica Samojedny, Undergraduate Student *Aug 2020 – Present*
2. Madeline Martinez, MS, Masters Student in Neuroscience *Aug 2019 – May 2020*
3. Rosetta Shackett, Undergraduate Student *Jan 2019 – Present*
4. Hannah Kramer, MS, PhD Rotation Student *Aug – Dec 2018*
5. Carrie Lloyd, High School Student *Jun – Aug 2018*

Students mentored/supervised in Chester Lab:

1. Molly Fields, Undergraduate Student *Jan 2015 – Aug 2016*
2. Emily Rantz, Undergraduate Student *Aug 2014 – Aug 2016*
3. Molly Craig, Undergraduate Student *Aug 2013 – Aug 2014*

TEACHING

Secondary Instructor, Pathophysiology (HLSC3410RN) *Spring 2020 – Present*
RN to BSN Program, School of Nursing, LSUHSC
Responsibilities: Deliver lectures on pathophysiology related to the nervous system (6 contact hours/semester), write exam questions, and grade writing assignments.

Guest Lecturer, Nursing Physiology (HLSC2410) *Spring 2019 – Present*
Nursing Undergraduate Program, School of Nursing, LSUHSC
Responsibilities: Deliver lectures on physiology related to the nervous system (3 contact hours/semester) and write exam questions.

Instructor of Record, Introduction to Behavioral Neuroscience (PSY222) *Summer 2016*
Department of Psychology, Purdue University
Responsibilities: Designed and prepared lectures and assessments, taught the entirety of the course, held weekly office hours, and graded all assessments (40 contact hours/semester).

Teaching Assistant, Research Methods Lab (PSY203) *Fall 2016, Spring 2015, Fall 2014*
Department of Psychology, Purdue University

Supervisors: Dr. Peter Urcuioli & Dr. Thomas Redick

Responsibilities: Prepared lectures, lab activities, and assessments, trained students in scientific writing, held weekly office hours, and graded assignments (40 contact hours/semester).

Teaching Assistant, Neuroscience of Alcohol Abuse & Alcoholism (PSY392) *Spring 2014*
Alcohol Use & Disorders (PSY421) *Spring 2017*
Department of Psychology, Purdue University
Supervisor: Dr. Julia Chester
Responsibilities: Assisted in preparation and grading of assessments and held weekly office hours (28 office hours/semester).

Teaching Assistant, Research Ethics in Psychology (PSY464) *Spring 2014*
Department of Psychology, Purdue University
Supervisor: Dr. Julia Chester
Responsibilities: Delivered lectures on select topics (3 lectures); assisted in preparation and grading of assessments and held weekly office hours (28 office hours/semester).

Teaching Assistant, Neuroscience of Motivated Behaviors (PSY322) *Fall 2013*
Purdue University
Supervisor: Dr. Kimberly Kinzig
Responsibilities: Lectured on select topics (2 lectures); assisted in preparation and grading of assessments and held weekly office hours (28 office hours/semester)

SERVICE

A. Editorial/Peer Review Services

Review Editor, Editorial Board of Toxicogenomics (specialty section of Frontiers in Genetics, Frontiers in Toxicology, and Frontiers in Environmental Science), Frontiers Journals.
Appointment period: 2021-2023

Invited Manuscript Reviewer: Neuropharmacology (1), Neuroscience Letters (1), Physiology & Behavior (1), Psychiatry Research (1), American Journal of Drug & Alcohol Abuse (1)

Contributor Manuscript Reviewer (with Supervisor): Molecular Psychiatry (1), Biological Psychiatry (2), eLife (1), Neuropsychopharmacology (3), Neuropharmacology (2), Alcohol Research Current Reviews (1), Alcohol (3), Psychopharmacology (1), Pain (1)

Invited Conference Abstract Reviewer: Society for Research on Nicotine & Tobacco (2019)

B. University/Institutional Services

Co-Organizer, D'Angelo NOLA Neuro Seminar Series *2021-*

Note: This is the inaugural neuroscience seminar series focused on mental health and addiction for labs in New Orleans area. Participating labs are from LSUHSC and Tulane University.

Co-Chair of Organizing Committee, ADACE Scientific Retreat, LSUHSC 2020

Note: This is an annual half-day scientific retreat that spotlights a special topic in alcohol and drug abuse research that is of interest to the scientific community and healthcare providers in the greater New Orleans area. This event is supported by LSUHSC's Alcohol & Drug Abuse Center of Excellence (ADACE).

Chair of Organizing Committee, ADACE Postdoctoral Seminars, LSUHSC 2019-20

Note: This is a seminar series that brings promising senior postdoctoral fellows across the United States to LSUHSC on a 1-day visit to foster networking. Postdocs must be working in the area of alcohol and/or drug abuse biomedical research. This is an effort that I co-organized from its inauguration in 2019 and that is supported by LSUHSC's ADACE.

Organizing Committee Member, ADACE Postdoctoral Seminars, LSUHSC 2019-

Moderator, ADACE Scientific Retreat, LSUHSC 2018

Poster Judge, Graduate Research Day, LSUHSC 2017-

Poster Judge, PULSe Rotation Students Research Day, Purdue University 2014-17

Note: This is a half-day event that showcases the research of rotation (first-year) graduate students in the PULSe (Purdue University Life Sciences) program.

Co-Chair, PULSe First-Year Students Peer Mentoring Committee, Purdue University 2013-14

C. Community Outreach

Scientific Mentoring to Increase Diversity in STEM 2020-

Note: This effort aims to provide additional scientific mentoring in local (New Orleans) middle/high schools in partnership with science teachers with the goal of increasing diversity in STEM at undergraduate and graduate levels. I provide weekly one-on-one mentoring to students on their science project.

Co-Chair of Organizing Committee, ADACE Educational Symposium 2020

Note: This is an annual, half-day event that focuses on providing information on a special topic regarding alcohol and drug abuse in the greater New Orleans area. Target audience includes the research community, healthcare providers, teachers, counselors, social workers and any interested party in the general public. Attendees are eligible for continuing education credits (including CME).

Panelist, Careers in Life Sciences Research 2017

Note: This is an event held at a high school in the greater New Orleans area (St. Scholastica Academy) to provide information to students on career options in life sciences research.