AMANDA **AVONA PHD**

403 E. B Street Belleville, IL
Amanda.Avona@Slu.edu, 469-885-1382

EXPERIENCE

AUG. 2022 – PRESENT

ASSISTANT PROFESSOR, SAINT LOUIS UNIVERSITY

Planned and taught both introductory and upper elective undergraduate Biology and Neuroscience courses at SLU. Worked with a team of faculty to refine teaching techniques and prepare materials for introductory biology courses. Developed a "Neurobiology of Disease" course that focused on classroom case study-based learning and class discussion. Created course assignments and formal test assessments.
The courses taught are as follows:

- ***General Biology: Information flow and evolution:*** Focus on genetic information, central dogma, formation of proteins, exchange of genetic information, and evolution over time.
- ***Neurobiology of Disease****:* Molecular basis of neurological diseases/disorders. The course was broken down into 3 sections, neurodegeneration, cortical spreading depression and co-morbid diseases, and genetic disorders.
- ***General Biology****: **Transformation of Energy and Matter**:* Focus on how cells/organisms maintain and use energy. This includes energy stored bonds and chemical reactions, cellular respiration, photosynthesis, and body systems.
- ***Neuroscience Laboratory:*** Introduction to experimental design, cell culture, and animal physiology using crayfish as models to measure heart rate, respiration, and behavior.

NOV. 2021 – APR. 2022

STUDY MANAGER, EMMA THE SLEEP COMPANY: FRANKFURT, GERMANY

Planned and conducted studies for Emma GmbH that examined participant sleep quality and core body temperature. Communicated with medical and research experts to form a Scientific Advisory Board for the company. Worked with external laboratories to develop and plan clinical studies. Discussed goals of studies and company interests with KPIs and sleep researchers. Conducted literature reviews and wrote articles that explained a variety of scientific topics that would be easily accessible and understood by the public.

AUG. 2016 – DEC. 2021

RESEARCH ASSISTANT, THE UNIVERSITY OF TEXAS AT DALLAS

Planned and executed experiments to explore the migraine pathology. Trained and mentored both students and staff to lead to completion of multiple projects and subsequent publication of these works. Presented and answered questions regarding findings with leading researchers in the pain field around the globe. Held journal clubs monthly to discuss current literature in the field. Worked with pharmaceutical companies and used their therapeutics in pre-clinical models.

AUG. 2018 – AUG. 2019

TEACHING ASSISTANT, THE UNIVERSITY OF TEXAS AT DALLAS

Created and presented lectures on neuropharmacology and laboratory methods to multiple classes undergraduate students of approximately 30 students each. Held office hours to answer questions regarding course content. Created and held review sessions for students to clarify concepts in research methods and neuropharmacology. Topics included receptor ligand interactions, neurotransmitter signaling, pharmacokinetics, human anatomy, neuroanatomy, and dose response relationships. Proctored and reviewed exams with students. Uploaded course content and grades into eLearning.

OCT. 2017 – FEB. 2018

RESEARCH INTERN, PHILLIPS UNIVERSITÄT MARBURG

Fostered a collaboration between a lab at The University of Texas at Dallas and The University of Marburg in Germany. Conducted experiments and presented updated findings to the anatomy department and undergraduate students weekly.

NOV. 2014 – AUG. 2016

STUDENT RESEARCHER, THE UNIVERSITY OF TEXAS AT DALLAS

Learned scientific techniques to conduct experiments within a laboratory setting. Analyzed data and began designing experiments based off experimental findings and current literature. Met weekly with PI to give status updates regarding ongoing projects.

EDUCATION

DECEMBER 2021

PHD IN COGNITION AND NEUROSCEICE, THE UNIVERSITY OF TEXAS AT DALLAS

MAY 2018

MASTER OF SCIENCE IN APPLIED COGNITION AND NEUROSCIENCE, THE UNIVERSITY OF TEXAS AT DALLAS

MAY 2015
BACHELOR OF SCIENCE IN NEUROSCIENCE, THE UNIVERSITY OF TEXAS AT DALLAS

SKILLS

Course Development
Communication
Presentation
Assessment Development
Data Analysis
Mentorship

PUBLICATIONS (REVERSE CHRONOLOGICAL ORDER)

1. **Avona A**, Price TJ, Dussor G. Interleukin-6 induces spatially dependent whole-body hypersensitivity in rats: implications for extracephalic hypersensitivity in migraine. J Headache Pain. 2021 Jul 13;22(1):70. doi: 10.1186/s10194-021-01286-8. PMID: 34256692; PMCID: PMC8278737.

2. Mason BN, **Avona A**, Lackovic J, Dussor G. Dural Stimulation and Periorbital von Frey Testing in Mice As a Preclinical Model of Headache. J Vis Exp. 2021 Jul 29;(173). doi: 10.3791/62867. PMID: 34398161.

3. Lenert ME, **Avona A**, Garner KM, Barron LR, Burton MD. Sensory Neurons, Neuroimmunity, and Pain Modulation by Sex Hormones. Endocrinology. 2021 Aug 1;162(8):bqab109. doi: 10.1210/endocr/bqab109. PMID: 34049389; PMCID: PMC8237991.

4. **Avona A,** Mason BN, Burgos-Vega C, Hovhannisyan AH, Belugin SN, Mecklenburg J, Goffin V, Wajahat N, Price TJ, Akopian AN, Dussor G. Meningeal CGRP-Prolactin Interaction Evokes Female-Specific Migraine Behavior. Ann Neurol. 2021 Jun;89(6):1129-1144. doi: 10.1002/ana.26070. Epub 2021 Apr 22. PMID: 33749851; PMCID: PMC8195469

5. **Avona A**, Mason BN, Lackovic J, Wajahat N, Motina M, Quigley L, Burgos-Vega C, Moldovan Loomis C, Garcia-Martinez LF, Akopian AN, Price TJ, Dussor G. Repetitive stress in mice causes migraine-like behaviors and calcitonin gene-related peptide-dependent hyperalgesic priming to a migraine trigger. Pain. 2020 Nov;161(11):2539-2550. doi: 10.1097/j.pain.0000000000001953. PMID: 32541386; PMCID: PMC7572536.

6. **Avona A**, Burgos-Vega C, Burton MD, Akopian AN, Price TJ, Dussor G. Dural Calcitonin Gene-Related Peptide Produces Female-Specific Responses in Rodent Migraine Models. J Neurosci. 2019 May 29;39(22):4323-4331. doi: 10.1523/JNEUROSCI.0364-19.2019. Epub 2019 Apr 8. PMID: 30962278; PMCID: PMC6538861.

7. Burgos-Vega CC, Quigley LD, Trevisan Dos Santos G, Yan F, Asiedu M, Jacobs B, Motina M, Safdar N, Yousuf H, **Avona A**, Price TJ, Dussor G. Non-invasive dural stimulation in mice: A novel preclinical model of migraine. Cephalalgia. 2019 Jan;39(1):123-134. doi: 10.1177/0333102418779557. Epub 2018 May 31. PMID: 29848109; PMCID: PMC6499065.

8. Burgos-Vega CC, Quigley LD, **Avona A**, Price T, Dussor G. Dural stimulation in rats causes brain-derived neurotrophic factor-dependent priming to subthreshold stimuli including a migraine trigger. Pain. 2016 Dec;157(12):2722-2730. doi: 10.1097/j.pain.0000000000000692. PMID: 27841839; PMCID: PMC5315498.

PRESENTATIONS

1. The role of relevant peptides on the sex-specific nature of migraine. The University of Texas at Dallas 2021. *Talk*

2. Dural amylin and CGRP lead to differential sex-specific responses contingent on ovarian hormones in rodent migraine models. The University of Texas at Dallas 2021. *Talk*

3. Dural Calcitonin Gene-Related Peptide produces female specific responses in rodent migraine models. European Pain School August 2019. *Talk*

4. CGRP and Prolactin Signaling in the meninges produces female-specific migraine-related behavior in rodents. International Association for the Study of Pain August 2018. *Poster presentation*

5. Therapeutic effects of light in migraine patients. Phillips Universität Marburg 2018. *Talk*

6. CGRP produces female-specific migraine behavior in rat. Texas Pain Research Consortium May 2017. *Poster presentation*

7. Prolactin signaling in the meninges produces female-specific migraine-related behavior in rats. American Pain Society 2017. *Poster presentation*

8. IL-6 induces spatially dependent hyperalgesic priming in a rat model of migraine. Texas Pain Research Consortium 2015. *Poster presentation*