

Dayna Loyd Averitt, MSCI, Ph.D.

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APPOINTMENTS

POSITION: Assistant Professor

INSTITUTION: Texas Woman's University (2014-current)

<https://twu.edu/biology/faculty-and-staff/dayna-l-averitt-phd/>

POSITION: Affiliate Faculty Member

INSTITUTION: Woodcock Institute for the Advancement of Neurocognitive Research (2018-current)

<https://twu.edu/woodcock-institute/>

POSITION: Principal Investigator / Research Physiologist

INSTITUTION: United States Army Institute of Surgical Research (2011-2013)

EDUCATION AND TRAINING

POSITION: Postdoctoral Research Fellow

ADVISOR: Kenneth M. Hargreaves, D.D.S., Ph.D.

INSTITUTION: University of Texas Health Science Center at San Antonio (2008-2011)

DEGREE: Master of Science in Clinical Investigation

ADVISOR: Kenneth M. Hargreaves, D.D.S., Ph.D.

INSTITUTION: University of Texas Health Science Center at San Antonio (2009-2011)

DEGREE: Doctor of Philosophy

SPECIALIZATION: Biological Sciences

ADVISOR: Anne Z. Murphy, Ph.D.

INSTITUTION: Georgia State University, Atlanta, GA (2003 -2009)

DEGREE: Master of Science

SPECIALIZATION: Biology

ADVISOR: Anne Z. Murphy, Ph.D.

INSTITUTION: Georgia State University, Atlanta, GA (2003-2005)

DEGREE: Bachelor of Arts

MAJOR: Psychology

UNDERGRADUATE RESEARCH ADVISOR: Yvon Delville, Ph.D.

INSTITUTION: University of Texas at Austin, Austin, TX (1999-2001)

CONTINUING EDUCATION AND TRAINING

Animal Care and Use Education

IACUC 101: The Basics, Georgetown University (2017)

IACUC 201: Beyond the Basics, Georgetown University (2017)

IACUC 301: Scenarios, Portland, OR (2018)

Rodent Biomethodology Workshop, Marcel Perret-Gentil, DVM, University of North Texas Health Science Center (2018)

Pedagogy Continuing Education

Scientific Teaching Fellow, Summer Institute on Scientific Teaching, Howard Hughes Medical Institute (2018)

Team-Based Learning 101, Texas Woman's University Center for Faculty Excellence (2018)

Fundamental Principles and Practices of TBL Workshop, Team-Based Learning Collaborative (2019)

Create an Effective Module Workshop, Team-Based Learning Collaborative (2019)

Professional Development

Scientific Writing Workshop, Crystal Herron, Ph.D., Founder and CEO of Redwood Inc. (2019)

FELLOWSHIPS AND HONORS

Distinguished Faculty Member, Graduate Student Council Pioneering Award, Texas Woman's University (2020)

Distinction in Scholarship Faculty Award, Texas Woman's University (2019)

Chancellor's Research Fellowship, Texas Woman's University (2015-2017)

Commander's Award for Outstanding Civilian Service, Department of the Army (2014)

Outstanding Poster Presentation Award, Military Health System Research Symposium (2012)

National Institutes of Health 6th Annual Pain Consortium Mitchell Max Research Excellence Award (2011)

National Institutes of Health 6th Annual Pain Consortium Meeting Travel Award (2011)

Capitol Hill Day Travel Award - Coalition for the Life Sciences (2011)

Young Investigator Travel Award - American Pain Society Annual Scientific Meeting (2011)

International Association for the Study of Pain Travel Award (2008 and 2010)

NIDA Mini-Convention "Frontiers in Addiction Research" Travel Award (2009)

Georgia State University Neurobiology and Behavior Outstanding Graduate Student Fellowship (2008)

Georgia State University Biology Department Graduate Award for Outstanding Instruction (2008)

William M. Suttles Graduate Research Fellowship, Georgia State University (2007)

Georgia State University Dissertation Research Grant (2006-2007)

Center for Behavioral Neuroscience Scholar, Georgia State University (2003-2008)

Undergraduate Research Fellowship, University of Texas at Austin (2000-2001)

PROFESSIONAL ORGANIZATIONS

Society for Neuroscience

International Association for the Study of Pain

Organization for the Study of Sex Differences

Texas Pain Research Consortium

Sigma Xi Scientific Research Honor Society

International Association for Dental Research

American Association for Dental Research

Texas Society for Microscopy

PROFESSIONAL SERVICE

Panelist, Mentoring Graduate Students, Texas Woman's University (2019)

Brains on Halloween! Neuroscience Outreach Day, Hilltop Elementary School, Argyle, TX (2019)

Panelist, Unspoken Rules of Grant Relationship Development, Texas Woman's University (2019)

Research Appreciation Day Poster Judge, University of North Texas Health Science Center (2017-2018)

Edible Car Contest Judge, TWU (2017)

Research Presentation Sigma Xi Judge, TWU Student Creative Arts and Research Symposium (2016-2018)

Research Poster Judge, Federation of North Texas Universities Symposium; Texas Woman's University (2015-2017)

Long Creek Elementary Science Discovery Day (2013)

Alamo Regional Science and Engineering Fair Judge; St. Mary's University (2009, 2010)

Brain Bowl Judge, Brain Awareness Week, Center for Biomedical Neuroscience, UTHSCSA (2009)

McKendree Elementary Science Exploration Night Neuroscience Education Booth; Atlanta (2007)

Murdock Elementary School Brain Awareness Week Speaker; Atlanta (2006-2007)

Central Gwinnett High School Brain Awareness Week Annual Invited Speaker; Atlanta (2005-2008)

Science Olympiad State Tournament Judge, Georgia State University (2005)

Zoo Atlanta Brain Expo Exhibit Leader, Center for Behavioral Neuroscience (2005, 2008)

Brain Camp Mentor, Morehouse School of Medicine (2004)

PROFESSIONAL COMMITTEE APPOINTMENTS

Member, Pain Management Technology Landscape Mapping (TLM) Initiative, Clinical and Rehabilitative Medicine Research Program, United States Army Medical Research and Development Command (2020-current)
Member, Website Committee, American Pain Society (2018-2019)
President and Past President, Sigma Xi Scientific Research Society, TWU Chapter (2017-2021)
Chair, Media Committee, Texas Pain Research Consortium (2015-current)
Treasurer, Special Interest Group on Sex, Gender and Pain, International Association for the Study of Pain (2010-14) Atlanta Chapter of the Society for Neuroscience Councilor, Graduate Student Representative (2005-2008)

INSTITUTIONAL COMMITTEE APPOINTMENTS

Research Advisory Council, Texas Woman's University (2017-current)
Celebration of Science Planning Committee, Texas Woman's University (2018-current)
Director, TWU Vivarium, Texas Woman's University (2016-current)
Chair, Institutional Animal Care and Use Committee, Texas Woman's University (2016-current)
Sigma Xi Representative, TWU Creative Arts and Research Symposium Planning Committee (2016-2018)
Member, Institutional Animal Care and Use Committee, Texas Woman's University (2015-2016)
Member, Anesthesiology Resident Research Committee, San Antonio Military Medical Center (2012- 2013)
Chair of the Neurobiology and Behavior Graduate Student Association, Georgia State University (2004-2007)

DEPARTMENTAL COMMITTEE APPOINTMENTS

Member, Alternate, Peer Review Committee, Biology Department, Texas Woman's University (2020-current)
Member, Graduate Curriculum and Admissions, Biology Department, Texas Woman's University (2018-current)
Member, Social Media, Biology Department, Texas Woman's University (2018-current)
Member, Neuroscience Federation Committee, Biology Department, Texas Woman's University (2014-current)
Member, Institutional Effectiveness, Biology Department, Texas Woman's University (2018-2020)
Member, Graduate Curriculum, Biology Department, Texas Woman's University (2015-2018)
Member, Department Chair Search Committee, Department of Biology, Texas Woman's University (2017-2018)

EXTERNAL DEPARTMENTAL COMMITTEE APPOINTMENTS

Member, Flavor Chemist Search Committee, Department of Nutrition, Texas Woman's University (2015-2016)

JOURNAL/EDITORIAL/REVIEWER ACTIVITY

Editorial Board Member:

Associate Editor, *PAIN* (2021-current)
Associate Editor, Pain Mechanisms Specialty Section, *Frontiers in Pain Research* (2021-current)
Review Editor, Pain Mechanisms Specialty Section, *Frontiers in Pain Research* (2020)

Manuscript Ad Hoc Reviewer:

PAIN, Pharmaceutical Research, BMC Anesthesiology, Brain Research, Brain Research Bulletin, Neuroscience, Pharmacology, Biochemistry and Behavior, Frontiers in Integrative Neuroscience, Burns, Biology of Sex Differences, Translational Neuroscience

Grant Reviewer:

National Institute on Dental and Craniofacial Research (NIDCR) Special Grants Review Committee DSR Study Section (2021)
Early Career Reviewer, National Institute of Health Somatosensory and Pain Systems Study Section (SPS) (2020)
Congressional Directed Medical Research Programs (CDMRP), 2019 Defense Medical Research and Development Program (DMRDP), Pain Management Panel (Spring 2020)
Congressional Directed Medical Research Programs (CDMRP), 2019 Military Burn Research Program (MBRP), Idea Development – 1 (ID-1) Panel (September 2019)

Congressionally Directed Medical Research Programs (CDMRP), FY18 Peer Review Medical Research Program, Pain Medicine Panel (Summer 2018)

Joint Program Committee-8/Clinical and Rehabilitative Medicine Research Program (JPC-8/CRM RP) (June 2019)

Grant Ad Hoc Reviewer:

Defense Medical Research and Development Program (DMRDP), FY18 Clinical Research Intramural Initiative (CRII), Military Performance Optimization Award (MPORA) (Fall 2018)

Research Enhancement Program, Texas Woman's University (2018)

Medical Research Council (United Kingdom) – Neurosciences and Mental Health Board / Pain, sleep, fatigue (May 2018)

CONSULTING

Battlefield Pain Management Research Task Area, U.S. Army Institute of Surgical Research, Oak Ridge Institute for Science and Education (ORISE) Program (2016-2020)

TEACHING EXPERIENCE

Undergraduate Courses

Mammalian Physiology – Texas Woman's University (2014-current)

Undergraduate Research – Texas Woman's University (2014-current)

Biology of Aging – Texas Woman's University (2015-current)

Independent Study – Texas Woman's University (2015, 2017)

Biology Seminar – Texas Woman's University (2015-2018)

Pathophysiology – Texas Woman's University (2014-2015)

Animal Biology Laboratory – Georgia State University (2006-2007)

Fundamentals of Neurobiology – Teaching Assistant at Georgia State University (2004)

Graduate Courses

Biology Seminar – Texas Woman's University (2018-current)

Graduate Research – Texas Woman's University (2016-current)

Systems Neuroscience – University of Texas at Dallas (2014)

Neurobiology Laboratory – Teaching Assistant at Georgia State University (2005)

MENTORING EXPERIENCE

High School Student Research

Alexis Barton High School Student (2017-2019)

Hansa Boddu Texas Academy of Math and Science Scholar (2018-2019)

Undergraduate Research

William Benton Undergraduate Research, 2015-2016

Quality Enhancement Program Experiential Student Scholar Research Grant (2016)

Quality Enhancement Program Travel Award (2016)

Sigma Xi Best Undergraduate Poster Presentation Award (2016)

Bench Supervisor, AIT Laboratories/HealthTrackRx (2016-current)

Rowda Beshar Undergraduate Research, 2015-2016

Yu Jin Lee Undergraduate Research, 2015-2016

Cierra Lopez Undergraduate Research, 2016

Sirima Tongkhuya Undergraduate Research, 2015-2017

Quality Enhancement Program Experiential Student Scholar Research Grant (2017)

Honor's Capstone Project (2017)

Honor's Research Scholar Award (2017)

Chancellor' Student Research Fellow (2017)

	Sigma Xi Best Undergraduate Poster Presentation Award (2017)
	TWU Undergraduate Student Travel Award (2017)
	TWU Honor's Student Travel Award (2017)
	<i>UTHSCSA PA School (2019-current)</i>
Sushmitha Ananth	Undergraduate Research, 2015-2018
	Quality Enhancement Program Experiential Student Scholar Research Grant (2018)
	Honor's Research Scholar Award (2018)
	Redbud Outstanding Student Leader Award (2018)
	<i>UNTHSC MPH program (2018-current)</i>
Daisy Cantu	Undergraduate Research, 2016-2018
	Quality Enhancement Program Experiential Student Scholar Research Grant (2018)
	Chancellor' Student Research Fellow (2018)
	<i>Accepted into TWU PhD program (2018-current)</i>
Taylor Harris	Undergraduate Research, 2016-2018
	Honor's Capstone Project (2018)
	S-STEM Scholar (2018)
	Honor's Research Scholar Award (2018)
	Chancellor' Student Research Fellow (2018)
	Sigma Xi Best Undergraduate Poster Presentation Award (2018)
Hanna McDonald	Undergraduate Research, 2016-2019
	Honor's Research Grant (2018)
	Chancellor's Student Research Scholar (2019)
	Honor's Capstone (2019)
	<i>UNTHSC PA School (2019-current)</i>
Estefany Montelongo	Undergraduate Research, 2018-2019
	Honor's Capstone (2019)
	<i>Accepted into TAMU Dental School (2019-current)</i>
Emily Simmons	Undergraduate Research, 2019-2020
	Honor's Capstone (2020)
	Center for Student Research Small Grant, 2019-2020
Erica Rodriguez	Undergraduate Research, 2019-2021
	Center for Student Research Small Grant, 2019-2020
	Quality Enhancement Program Experiential Student Scholar Research Grant (2019)
Natalia Santos	Undergraduate Research, 2019-2021
	Center for Student Research Small Grant, 2020-2021
Michael Hunter	Undergraduate Research, 2019-2021
	Quality Enhancement Program Experiential Student Scholar Research Grant (2020)
Angela Ramirez-Lopez	Undergraduate Research, 2020-2021
	Center for Student Research Small Grant, 2020-2021

Dissertation Committee Chair, Biology Department

Sukhbir Kaur Lulla	2015-current
	Quality Enhancement Program Microgrant (2017)
	American Pain Society Young Investigator Travel Award (2017)
	International Association for the Study of Pain Travel Award (2018)
	TWU Center for Student Research Small Grant (2018)
	Texas Society for Microscopy Small Grant (2019)
	Chancellor's Student Research Scholar (2019)
	Red Bud Leadership Award for Community Service (2019)
	Canadian Pain Society Travel Award (2020)
	Graduate Council Award for Exceptional, Original Scholarship (2020)

Rebecca Hornung	2013-2019 Chancellor's Student Research Scholar (2015) Sigma Xi Best Graduate Poster Presentation Award (2017) Quality Enhancement Program Microgrant (2018) TWU Center for Student Research Small Grant (2018)
Paramita Basu	2013-2019; Co-Chair Chancellor's Student Research Scholar (2016-2019) TWU Center for Student Research Small Grant (2018) TWU Center for Student Research Small Grant (Summer 2018) Quality Enhancement Program Microgrant (2018) Graduate Council Award for Exceptional, Original Scholarship (2017) Experimental Biology Travel Award (2018) Best Graduate Poster Presentation, Federation of North Texas Universities (2018) Phi Kappa Phi Love of Learning Award (2018) International Association for the Study of Pain Travel Award (2018) Postdoctoral Fellowship, Pittsburg Center for Pain Research (2019-current)
Daisy Cantu	2018-current Center for Student Research Small Grant (2018 and 2021) Quality Enhancement Program Microgrant (2018) International Association for the Study of Pain Travel Award (2020) TWU Alumni Association Research Award (2021)
Taylor Hickman	2018-current Center for Student Research Small Grant (2019) Center for Student Research Small Grant, 2020-2021

Dissertation Committee Member, Biology Department

Namrata Raut	2014-2020
Mengjie Cao	2014-current
Yasar Arfat Kasu	2016-current
Mosleh Alkhatatbeh	2017-current
Anne Davenport	2014-current
Rinki Dasgupta	2018-current
Akshaya Arva	2017-current
Farhan Lakdawala	2019-current
Kiran Hina Tajuddin	2018-current

Dissertation Committee Member, Outside Department

Nutrition	
Sanique South	2016-2020

Master's Committee Member, Biology Department

Shuvalaxmi Dasgupta	2016-2018
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PEER-REVIEWED PUBLICATIONS**PRIMARY RESEARCH PUBLICATIONS (maiden name Dayna R. Loyd)** * indicates undergrad, grad or postdoc author

1. Kaur, S. *, Lopez-Ramirez, A. *, Hickman, T.M. *, Hunter, M.P.*, **Averitt, D.L.** (2021) Effect of Serotonin Receptor Subtype 3A (5HT3A) on Rat Trigeminal Sensory Neurons. *Texas Society for Microscopy*, under review.
2. Hornung, R.S.*, Benton, W.L.*, Tongkhuya, S.A.*, Uphouse, L., Kramer, P., **Averitt, D.L.** (2020) Progesterone and allopregnanolone rapidly attenuate estrogen-associated mechanical allodynia in rats with persistent temporomandibular joint inflammation. *Frontiers in Integrative Neuroscience*, in press. doi: 10.3389/fnint.2020.00026.

3. Basu, P.*, Hornung, R.S.*, **Averitt, D.L.**, Maier, C.M. (2019) *Euphorbia bicolor* (Euphorbiaceae) latex extract reduces inflammatory cytokines and oxidative stress in a rat model of orofacial pain. *Oxidative Medicine and Cellular Longevity*, 19:8594375. doi: 10.1155/2019/8594375.
4. Basu, P.*, Tongkhuya, S.A.*, Harris, T.L.*, Riley, A.R., Maier, C.M., Granger, J., Wojtaszek, J., **Averitt, D.L.** (2019) *Euphorbia bicolor* (Euphorbiaceae) latex phytochemicals induce long-lasting non-opioid peripheral analgesia in a rat model of inflammatory pain. *Frontiers in Pharmacology*, 10:958. doi: 10.3389/fphar.2019.00958.
5. Kaur, S.*, Benton, W.L.*, Tongkhuya, S.A.*, Lopez, C.M.C.*, Uphouse, L., **Averitt, D.L.** (2018) Sex differences and estrous cycle effects of peripheral serotonin-evoked rodent pain behaviors. *Neuroscience*, 384: 87-100.
6. Salas, M.M.*, Clifford, J.L., Hayden, J.R., Iadarola, M.J., **Averitt, D.L.** (2017) Local resiniferatoxin induces long-lasting analgesia in a rat model of full thickness thermal injury. *Pain Medicine*, 18(12): 2453-2465.
7. Nyland, J.E.*, McLean, S.A., **Averitt, D.L.** (2015) Prior stress exposure increases pain behaviors in a rat model of full thickness thermal injury. *Burns*, 41(8): 1796-1804.
8. Clifford, J.L., Mares, A., Hansen, J., **Averitt, D.L.** (2015) Preemptive perineural bupivacaine attenuates the maintenance of mechanical and cold allodynia in a rat spinal nerve ligation model. *BMC Anesthesiology*, 15: 135.
9. Fowler, M., Clifford, J.L., Garza, T.H., Slater, T.M., Arizpe, H.M., Novak, J., Petz, L.M. and **Loyd, D.R.** (2014) A rat model of full thickness thermal injury characterized by thermal hyperalgesia, mechanical allodynia, pronociceptive peptide release and tramadol analgesia. *Burns*, 40(4): 759-771.
10. **Loyd, D.R.**, Sun, X.X., Locke, E., Salas, M.M., Henry, M.A. and Hargreaves, K.M. (2012) Sex differences in serotonin enhancement of capsaicin-evoked calcitonin gene-related peptide release from human dental pulp. *PAIN*, 153: 2061-2067.
11. **Loyd, D.R.**, Chen, P.B. and Hargreaves, K.M. (2012) Antihyperalgesic effects of anti-serotonergic compounds on serotonin- and capsaicin-evoked thermal hyperalgesia in the rat. *Neuroscience*, 203: 207-215.
12. **Loyd, D.R.**, Weiss, G., Henry, M.A., Hargreaves, K.M. (2011) Serotonin increases the functional activity of capsaicin-sensitive rat trigeminal nociceptors via peripheral serotonin receptors. *PAIN*, 152(10): 2267-2276.
13. **Loyd, D.R.**, Wang, X., Murphy, A.Z. (2008) Sex differences in μ -opioid receptor expression in the rat midbrain periaqueductal gray are essential for eliciting sex differences in morphine analgesia. *J. Neuroscience*, 28(52):14007-14017.
14. **Loyd, D.R.** and Murphy, A.Z. (2008) Androgen and estrogen receptor localization on periaqueductal gray neurons projecting to the rostral ventromedial medulla in the male and female rat. *J. Chem. Neuroanatomy*, 36(3-4): 216-226.
15. **Loyd, D.R.**, Morgan, M.M. and Murphy, A.Z. (2008) Sexually dimorphic activation of the periaqueductal gray – rostral ventromedial medulla circuit during the development of morphine tolerance in the rat. *Eur. J. Neuroscience* 27: 1517-1524.
16. **Loyd, D.R.**, Morgan, M.M. and Murphy, A.Z. (2007) Morphine preferentially activates the periaqueductal gray – rostral ventromedial medullary pathway in the male rat: a potential mechanism for sex differences in antinociception. *Neuroscience* 147(2): 456-468.
17. **Loyd, D.R.** and Murphy, A.Z. (2006) Sex differences in the anatomical and functional organization of the midbrain periaqueductal gray – rostral ventromedial medullary pathway: a potential circuit mediating sex differences in morphine analgesia in the rat. *J. Comp. Neurol.* 496: 723-738.
18. Cervantes, M.C., David, J.T., **Loyd, D.R.**, Salinas, J.A., and Delville, Y. (2005) Lead exposure alters the development of agonistic behavior in golden hamsters. *Developmental Psychobiology* 47(2): 158-165.

REVIEW ARTICLE PUBLICATIONS

1. **Averitt, D.L.**, Eidson, L.N., Doyle, H.H., and Murphy, A.Z. (2019) Neuronal and Glial Factors Contributing to Sex Differences in Opioid Modulation of Pain. Invited Review in *Neuropsychopharmacology*, 44(1): 155-165.
2. Clifford, J.L., Fowler, M., Hansen, J.J., Cheppudira, B.P., Nyland, J.E.*, Salas, M.M.*, McGhee, L.L., Petz, L.N., **Loyd, D.R.** (2014) State of the Science Review: Advances in pain management in wounded service members over a decade at war. *Journal of Trauma and Acute Care Surgery*, 77(3 Suppl 2): S228-236.
3. **Loyd, D.R.** and Murphy, A.Z. (2014) The Neuroanatomy of Sexual Dimorphism in Opioid Analgesia. Invited Review in a Special Issue on The Importance of Sex in the Etiology, Presentation, and Treatment of Neurological Disorders. *Experimental Neurology*, 259C: 57-63.

4. Cheppudira, B.P. *, Greer, A., Mares, A., Fowler, M., McGhee, L., Devore, D., Petz, L., **Loyd, D.R.**, Clifford, J.L. (2013) Curcumin: A Novel Therapeutic for Burn Pain and Wound Healing. *Expert Opinion on Investigational Drugs*, 22(10): 1295-303.
5. **Loyd, D.R.**, Henry, M.A. and Hargreaves, K.M. (2013) Serotonergic Neuromodulation of Peripheral Nociceptors. Invited Review in a Special Issue on Signal Processing in Peripheral Sensory Organs. *Seminars in Cell and Developmental Biology*, 24: 51-57.
6. **Loyd, D.R.** and Murphy, A.Z. (2009) The role of the periaqueductal gray in the modulation of pain in females: Is the anatomy and physiology really that different? Invited Review in a Special Issue on The Periaqueductal Gray. *Neural Plasticity*, Volume 2009, Article 46289, 12 pages, doi: 10.1155/2009/46289.

TEXTBOOK/EDUCATIONAL PUBLICATIONS

1. Basu, P. *, **Averitt, D.L.**, Maier, C.M. (2020) *Euphorbia bicolor* (Euphorbiaceae) Latex Phytochemicals and Applications to Analgesia. In *The Neuroscience of Anesthetics and Analgesics*. Preedy, V.R. (ed.). Elsevier. *In press*.
2. **Averitt, D.L.**, Hornung, R.S. *, and Murphy, A.Z. (2019) Role of Sex Hormones on Pain. In *Oxford Research Encyclopedia of Neuroscience*. Oxford University Press. <http://dx.doi.org/10.1093/acrefore/9780190264086.013.247>
3. **Loyd, D.R.** and Murphy, A.Z. (2013) "Forebrain Modulation of the Periaqueductal Gray" in *Encyclopedia of Pain 2nd Edition*. Schmidt, R.F. and Gebhart, G.F. (eds.). Springer-Verlag Berlin Heidelberg, doi: 10.1007/978-3-642-28753-4, chapter 1534.
4. **Loyd, D.R.** and Murphy, A.Z. (2013) "Sex Differences in Descending Pain Modulatory Pathways" in *Encyclopedia of Pain 2nd Edition*. Schmidt, R.F. and Gebhart, G.F. (eds.). Springer-Verlag Berlin Heidelberg, doi: 10.1007/978-3-642-28753-4, chapter 3967.
5. **Loyd, D.R.** and Murphy, A.Z. (2012) "Pain and Analgesia" in *Handbook of Clinical Gender Medicine*. Schenck-Gustafsson K, DeCola, PR, Pfaff DW, Pisetsky DS (eds.). Basel, Karger, pp 183-188.

RESEARCH ABSTRACT PUBLICATIONS

1. Cantu, D. *, Kaur, S. *, Murphy, A.Z., **Averitt, D.L.** (2019) Sex differences in the amygdaloid projections to the periaqueductal gray during inflammatory pain in the rat. *The FASEB Journal* 33(1S): 01 Apr 2019.
2. Basu, P. *, Hornung, R.S. *, Maier, C., **Averitt, D.L.** (2019) Reduction of oxidative stress as a potential mechanism underlying *Euphorbia bicolor* latex extract-induced analgesia in a rat model of orofacial pain. *J Pain* 17(4S): S81.
3. McDonald, H. *, Kaur, S. *, **Averitt, D.L.** (2019) Peripheral serotonin enhances orofacial nocifensive behavior in female rats at lower doses during proestrus. *The FASEB Journal* 33(1S): 01 Apr 2019.
4. Basu, P. *, Harris, T. *, Tongkhuya, S. *, Riley, A., Wojtaszek, J., Granger, J., **Averitt, D.L.**, Maier, C. (2018) *Euphorbia bicolor* (Euphorbiaceae) latex extract induces antinociception and analgesia in a rat inflammatory pain model. *The FASEB Journal* 32(1S): 01 Apr 2018.
5. Basu, P. *, Harris, T. *, Tongkhuya, S. *, Riley, A., Wojtaszek, J., Granger, J., Maier, C., **Averitt, D.L.** (2018) Phytochemical analysis and analgesic properties of *Euphorbia bicolor* latex extract. *J Pain* 19(3S): S50.
6. Hornung, R. *, Benton, W. *, Tongkhuya, S. *, **Averitt, D.L.** (2017) Protective role of progesterone against allodynia in rats with persistent temporomandibular joint inflammation. *J Pain* 18(1S): S5.
7. Lulla, S. *, Ananth, R. *, Beshler, R. *, **Averitt, D.L.** (2017) Rapid modulatory effects of 17 β -estradiol on serotonin's pronociceptive activity on the TRPV1-expressing population of trigeminal neurons. *J Pain* 18(1S): S5.
8. Tongkhuya, S. *, Lopez, C. *, Benton, W. *, **Averitt, D.L.** (2017) Peripheral serotonin evokes sexually dimorphic orofacial nocifensive behavior in rats. *J Pain* 18(1S): S8.
9. Basu, P. *, Maier, C., **Averitt, D.L.** (2016) Novel effects of *Euphorbia bicolor* (Euphorbiaceae) latex extract on nociceptors. *J Pain* 17(4S): S81.
10. Benton, W.L. *, Beshler, R.H. *, Lee, J. *, **Averitt, D.L.** (2016) Sex differences in peripheral serotonergic pain processing in male and female rats. *J Pain* 17(4S): S68.
11. Clifford, J.L., Mares, A., Hansen, J., **Averitt, D.L.** (2015) Preemptive perineural bupivacaine attenuates mechanical and cold allodynia in a rat model of neuropathic pain. *J Pain* 16(4): S57.
12. Nyland, J.E. *, McLean, S.A., **Averitt, D.L.** (2015) Combined serotonin and norepinephrine reuptake inhibition reduces the effects of stress on post-injury pain behaviors in a rat model of burn injury. *J Pain* 16(4): S66.

13. Salas, M.M.*, Hayden, J.R., Slater, T.M., Fowler, M., Clifford, J.L., Petz, L.N., Iadarola, M.J., **Loyd, D.R.** (2013) Resiniferatoxin attenuates pain behaviors in a rat model of full thickness thermal injury. *J Pain* 14(4): S49.
14. Cheppudira, B.*, Greer, A., Mares, A., Garza, T.H., Fowler, M., Petz, L.N., **Loyd, D.R.**, Clifford, J.L. (2013) The anti-inflammatory and analgesic activity of curcumin in a rat model of full thickness thermal injury. *J Pain* 14(4):S 52.
15. **Loyd, D.R.**, Sun, X.X., Locke, E.E., Henry, M.A., Hargreaves, K.M. (2011) Serotonin enhances CGRP release from female human trigeminal nociceptors. *J Pain* 12(4): P44.
16. Kling, M.A., Loyd, D.R., Sansbury, N., Ren, K., Murphy, A.Z. (2003) Effects of short-term vagus nerve stimulation (VNS) on Fos expression in rat brain nuclei. *Biol Psychiatry* 53(8): 146S.

NON-PEER REVIEWED PUBLICATIONS

1. **Averitt, D.L.** and Ruparel, S. Texas Pain Research Consortium Defies Hurricane Harvey to Host Second Biennial Pain Research Conference. Pain Research Forum. 17 Oct 2017. Available at: <http://www.painresearchforum.org/news/87546-xxx>
2. **Averitt, D.L.** and Ruparel, S. University of Texas system hosts pain conference, announces formation of Texas Pain Research Consortium. Pain Research Forum. 17 Aug 2015. Available at: <http://www.painresearchforum.org/news/57453-university-texas-system-hosts-pain-conference-announces-formation-texas-pain-research>
3. **Loyd, D.R.** and Fehrenbacher, J.L. Dispatches from Milan: SIG-sponsored satellite symposium highlights sex/gender differences in pain and analgesia. Pain Research Forum. 18 Dec 2012. Available at: <http://www.painresearchforum.org/comment/268#comment-268>.

PRESS COVERAGE OF RESEARCH

<https://www.wfaa.com/article/news/potential-alternative-to-opioids-discovered-in-denton-lab/287-5d818ab2-0016-492a-9a3e-ea2999513641>

<https://www.sciencedaily.com/releases/2013/05/130511194835.htm>

<https://www.sciencedaily.com/releases/2008/12/081223091310.htm>

POSTER PRESENTATIONS BY MENTEES

REGIONAL

1. Kaur, S. and **Averitt, D.L.** Identification of a neuroendocrine interaction underlying sex differences in trigeminal pain processing. Texas Society of Microscopy, Bryan, TX, 2020. Selected for Oral Presentation.
2. Hickman, T.M., Kaur, S., McDonald, H.R., Montelongo, E., Horning, R.S., **Averitt, D.L.** Gonadal hormones modulate peripheral serotonin levels and plasticity in serotonin receptor expression: a potential mechanism underlying sex differences in trigeminal pain. Celebration of Science, Texas Woman's University, Denton, TX, 2019. Poster Award Finalist.
3. Basu, P., Hornung, R.S., Maier, C., **Averitt, D.L.** Reduction of oxidative stress as a potential mechanism underlying *Euphorbia bicolor* latex extract-induced analgesia in a rat model of orofacial pain. Learn by Doing Quality Enhancement Program Grantees Conference, Texas Woman's University, Denton, TX, 2019.
4. Cantu, D., Kaur, S., Murphy, A.Z., **Averitt, D.L.** Sex differences in the amygdaloid projections to the periaqueductal gray during inflammatory pain in the rat. Learn by Doing Quality Enhancement Program Grantees Conference, Texas Woman's University, Denton, TX, 2019.
5. Kaur, S., McDonald, H., **Averitt, D.L.** Estrogen and serotonin interact to modulate rodent trigeminal sensory neurons. Gulf Coast Consortium Translational Pain Conference, Selected for Oral Presentation, Houston, TX, 2019.
6. Hornung, R.S., Basu, B.A., Kramer, P., **Averitt, D.L.** Allopregnanolone attenuates estrogen-exacerbated mechanical allodynia in a rat model of temporomandibular joint inflammation. Gulf Coast Consortium Translational Pain Conference, Houston, TX, 2019.

7. Cantu, D., Kaur, S., Murphy, A.Z., **Averitt, D.L.** Sex differences in the amygdaloid projections to the periaqueductal gray during inflammatory pain in the rat. Gulf Coast Consortium Translational Pain Conference, Houston, TX, 2019.
8. Basu, P., Hornung, R.S., Maier, C., **Averitt, D.L.** *Euphorbia bicolor* latex extract reduces inflammatory cytokines and oxidative stress in a rat model of orofacial pain. Gulf Coast Consortium Translational Pain Conference, Houston, TX, 2019.
9. Montelongo, E., Ananth, A., Kaur, S., Kramer, P., **Averitt, D.L.** Plasticity of the serotonin receptor 3 expression in human dental pulp: a potential role in orofacial pain. National Conference on Undergraduate Research, Kennesaw State University, Kennesaw, GA, 2019.
10. McDonald, H., Kaur, S., Hanson, L., **Averitt, D.L.** Gonadal hormones modulate serotonin-evoked orofacial pain and a potential neuroimmune interaction. Undergraduate Research Day at the Texas Capitol, Austin, TX, 2019.
11. Kaur, S., McDonald, H., **Averitt, D.L.** Estrogen and serotonin interact to modulate rodent trigeminal sensory neurons. Texas Woman's University Arts and Sciences Student Research Symposium, Oral Presentation, Denton, TX, 2019.
12. Basu, P., Hornung, R.S., **Averitt, D.L.**, Maier, C. *Euphorbia bicolor* latex extract reduces oxidative stress biomarkers and orofacial pain. Texas Woman's University Arts and Sciences Student Research Symposium, Oral Presentation, Denton, TX, 2019.
13. Boddu, H., Hornung, R., **Averitt, D.L.** A study of potential pathways for progesterone's attenuated of pain behaviors. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2019.
14. McDonald, H., Kaur, S., Barton, A., Hanson, L., **Averitt, D.L.** Gonadal hormones modulate serotonin-evoked orofacial pain and a potential neuroimmune interaction. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2019. Poster Award Winner.
15. Montelongo, E., Ananth, A., Kaur, S., Kramer, P., **Averitt, D.L.** Plasticity of the serotonin receptor 3 expression in human dental pulp: a potential role in orofacial pain. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2019.
16. Cantu, D., Kaur, S., Murphy, A.Z., **Averitt, D.L.** Sex differences in the amygdaloid projections to the periaqueductal gray during inflammatory pain in the rat. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2019. Poster Award Winner.
17. Hornung, R.S., Basu, B.A., **Averitt, D.L.** Allopregnanolone attenuates estrogen-exacerbated inflammatory allodynia at the rat temporomandibular joint. Texas Woman's University Arts and Sciences Student Research Symposium, Oral Presentation, Denton, TX, 2019.
18. Hornung, R.S., Benton, W.L., Tongkhuya, S., Uphouse, L., **Averitt, D.L.** Progesterone efficacy on pain behaviors associated with estrogen in a rat model of persistent temporomandibular joint inflammation. Celebration of Science, Texas Woman's University, Denton, TX, 2018.
19. Kaur, S., Lopez, C., Tongkhuya, S., **Averitt, D.L.** 17-beta-estradiol enhances a serotonergic pain mechanism in female sensory neurons. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2018.
20. McDonald, H., Lopez, C., Tongkhuya, S., Lulla, S.K., **Averitt, D.L.** Sex differences in serotonin enhancement of TRPV1-evoked pain in trigeminal sensory neurons. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2018.
21. Cantu, D., Kaur, S., Murphy, A.Z., **Averitt, D.L.** Sex differences in neural projections to the periaqueductal gray: identification of novel pathways in female rats. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2018. Poster Award Winner.
22. Ananth, S., Kaur, S., Kramer, P., **Averitt, D.L.** Plasticity of 5HT1B and 5HT1D receptor expression in human dental pulp across the menstrual cycle: a potential role of hormones on trigeminal pain. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2018. Poster Award Winner.
23. Harris, T., Basu, P., Maier, C., **Averitt, D.L.** *Euphorbia bicolor* latex extract produces long-lasting non-opioid peripheral analgesia. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2018. Poster Award Winner.

24. Hornung, R., Benton, W., Tongkhuya, S., Uphouse, L., **Averitt, D.L.** Efficacy of progesterone treatment on pain behaviors associated with estrogen in a rat model of temporomandibular joint inflammation. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2018.
25. Basu, P., Tongkhuya, S., Riley, A., Wojtaszek, J., Granger, J., Maier, C., and **Averitt, D.L.** Analysis of analgesia, antioxidant activity, and phytochemical content of *Euphorbia bicolor* (*Euphorbiceae*) latex extract. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2018.
26. Ananth, S., Kaur, S., Kramer, P., **Averitt, D.L.** Plasticity of 5HT1B and 5HT1D receptor expression in human dental pulp across the menstrual cycle: a potential role of hormones on trigeminal pain. Quality Enhancement Program Experiential Student Scholar Research Symposium, Texas Woman's University, Denton, TX, 2018.
27. Cantu, D., Kaur, S., Murphy, A.Z., **Averitt, D.L.** Sex differences in neural projections to the periaqueductal gray: identification of novel pathways in female rats. Quality Enhancement Program Experiential Student Scholar Research Symposium, Texas Woman's University, Denton, TX, 2018.
28. Basu, P., Tongkhuya, S., Riley, A., Wojtaszek, J., Granger, J., Maier, C., and **Averitt, D.L.** Analysis of analgesia, antioxidant activity, and phytochemical content of *Euphorbia bicolor* (*Euphorbiceae*) latex extract. Federation of North Texas Area Universities Graduate Student Research Symposium, Denton, TX, 2018. Poster Award Winner.
29. McDonald, H., Tongkhuya S., Lopez, C.M.C., Lulla, S.K., **Averitt, D.L.** Serotonin evokes orofacial nocifensive pain behaviors that are dependent on hormone status. Celebration of the Sciences, Texas Woman's University, 2017.
30. Hornung, R.S., Benton, W.L., Tongkhuya, S., Uphouse, L., **Averitt, D.L.** Protective role of progesterone against allodynia in rats with persistent temporomandibular joint inflammation. 2nd Annual Scientific Meeting, Texas Pain Research Consortium, Galveston, TX, 2017.
31. Basu, P., Tongkhuya, S.A., Maier, C., **Averitt, D.L.** Antinociceptive and analgesic properties of *Euphorbia bicolor* latex extract. 2nd Annual Scientific Meeting, Texas Pain Research Consortium, Galveston, TX, 2017.
32. Lulla, S.K., Ananth, S., Beshler, R.H., **Averitt, D.L.** Rapid modulatory effects of 17-beta-Estradiol on serotonin's pronociceptive activity on the TRPV1-expressing population of trigeminal neurons. 2nd Annual Scientific Meeting, Texas Pain Research Consortium, Galveston, TX, 2017.
33. Benton, W.L., Tongkhuya, S., Lee, J., **Averitt, D.L.** Hormone replacement therapy in a rat model of temporomandibular joint disorder pain. Quality Enhancement Program Experiential Student Scholar Research Symposium, Texas Woman's University, Denton, TX, 2017.
34. Tongkhuya, S., Basu, P., Maier, C., **Averitt, D.L.** Analgesic effects of *Euphorbia bicolor* latex extract in a rat model of acute peripheral pain. Quality Enhancement Program Experiential Student Scholar Research Symposium, Texas Woman's University, Denton, TX, 2017.
35. Lulla, S.K., Ananth, S., Beshler, R.H., **Averitt, D.L.** Effects of hormonal fluctuations on serotonergic neuromodulation of the TRPV1 expressing subpopulation of sensory neurons. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2017. Poster Award Winner.
36. McDonald, H., Tongkhuya, S., Lopez, C., Lulla, S.K., **Averitt, D.L.** Serotonin evokes spontaneous orofacial pain behaviors that are dependent on hormone status. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2017.
37. Tongkhuya, S., Basu, P., Maier, C., **Averitt, D.L.** Analgesic effects of *Euphorbia bicolor* latex extract in a rat model of acute peripheral pain. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2017. Poster Award Winner.
38. Hornung, R., Benton, W., Tongkhuya, S., Uphouse, L., **Averitt, D.L.** Protective role of progesterone against allodynia in rats with persistent temporomandibular joint inflammation. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2017. Poster Award Winner.
39. Lulla, S.K., Ananth, S., Beshler, R.H., **Averitt, D.L.** Effects of hormonal fluctuations on serotonergic neuromodulation of the TRPV1 expressing subpopulation of sensory neurons. Federation of North Texas Area Universities Graduate Student Research Symposium, Denton, TX, 2017.
40. Hornung, R.S., Benton, W.L., Tongkhuya, S., Uphouse, L., **Averitt, D.L.** Progesterone manipulation in a hormone replacement therapy protocol in a rat model of temporomandibular joint disorder. Federation of North Texas Area Universities Graduate Student Research Symposium, Denton, TX, 2017.
41. Lulla, S.K., Ananth, S., Tongkhuya, S., Benton, W.L., Beshler, R.H., **Averitt, D.L.** Gonadal hormone modulation of peripheral serotonergic pain processing. Celebration of the Sciences, Texas Woman's University, 2016.

42. Basu, P., Maier, C., **Averitt, D.L.** Effects of *Euphorbia bicolor* (*Euphorbiaceae*) latex extract on proinflammatory peptide release from sensory neurons. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2016. Poster Award Winner.
43. Benton, W.L., Tongkhuya, S., Lee, J., **Averitt, D.L.** Hormone replacement therapy in a rat model of temporomandibular joint disorder pain. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2016. Poster Award Winner.
44. Beshar, R., Lulla, S.K., Ananth, S., **Averitt, D.L.** Sex differences in serotonergic neuromodulation of trigeminal nociceptors. Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2016.
45. Benton, W.L., Lee, J., Beshar, R.H., **Averitt, D.L.** Peripheral Serotonin Evokes Sexually Dimorphic and Estrous Cycle Dependent Pain Behaviors in Male and Female Rats. Celebration of the Sciences, Texas Woman's University, 2015.
46. Benton, W.L., Lee, J., Beshar, R.H., **Averitt, D.L.** Peripheral Serotonin Evokes Sexually Dimorphic and Estrous Cycle Dependent Pain Behaviors in Male and Female Rats. 1st Annual Scientific Meeting, Texas Pain Research Consortium, Richardson, TX, 2015.
47. Benton, W.L., Lee, J., Beshar, R.H., **Averitt, D.L.** Do steroid hormones modulate pain mechanisms in females? Texas Woman's University Arts and Sciences Student Research Symposium, Denton, TX, 2015.

NATIONAL

48. Kaur, S., McDonald, H.R., **Averitt, D.L.** Fluctuating estrogen levels exacerbate serotonin-evoked pain signaling in trigeminal sensory neurons. Society for Neuroscience, Chicago, IL, 2019.
49. Hickman, T.M., Kaur, S., McDonald, H.R., Montelongo, E., Horning, R.S., **Averitt, D.L.** Gonadal hormones modulate peripheral serotonin levels and plasticity in serotonin receptor expression: a potential mechanism underlying sex differences in trigeminal pain. Society for Neuroscience, Chicago, IL, 2019.
50. Hornung, R.S., Benton, W.L., Tongkhuya, S., Uphouse, L., **Averitt, D.L.** Progesterone efficacy on pain behaviors associated with estrogen in a rat model of persistent temporomandibular joint inflammation. Organization for the Study of Sex Differences, Atlanta, GA, 2018.
51. Cantu, D.J., Kaur, S., Murphy, A.Z., **Averitt, D.L.** Sex differences in steroid-sensitive neural projections to the periaqueductal gray: identification of novel pain pathways in female rats. Organization for the Study of Sex Differences, Atlanta, GA, 2018.
52. McDonald, H., Lopez, C.M., Tongkhuya, S., Kaur, S., **Averitt, D.L.** Sex differences and estrous-cycle effects of serotonergic potentiation of capsaicin-evoked orofacial nocifensive behavior. Organization for the Study of Sex Differences, Atlanta, GA, 2018.
53. Kaur, S., Lopez, C., Tongkhuya, S., **Averitt, D.L.** Sex differences in modulatory effects of 17 β estradiol on serotonergic neuromodulation of TRPV1 expressing sensory neurons. Organization for the Study of Sex Differences, Atlanta, GA, 2018.
54. Ananth, S., Kaur, S., Kramer, P., **Averitt, D.L.** Detection of serotonin receptor and estrogen receptor alpha protein expression in human dental pulp: a potential trigeminal pain mechanism. Organization for the Study of Sex Differences, Atlanta, GA, 2018.
55. Basu, P., Harris, T., Tongkhuya, S., Riley, A., Wojtaszek, J., Granger, J., **Averitt, D.L.**, and Maier, C. *Euphorbia bicolor* (*Euphorbiaceae*) latex extract induces antinociception and analgesia in a rat inflammatory pain model. Experimental Biology, San Diego, CA, 2018.
56. Basu, P., Harris, T., Tongkhuya, S., Riley, A., Wojtaszek, J., Granger, J., Maier, C., **Averitt, D.L.** (2018) Phytochemical analysis and analgesic properties of *Euphorbia bicolor* latex extract. 37th Annual Scientific Meeting, American Pain Society, Anaheim, CA, 2018.
57. Ananth, S., Kaur, S., Kramer, P., **Averitt, D.L.** Plasticity of 5HT1B and 5HT1D receptor expression in human dental pulp across the menstrual cycle: a potential role of hormones on trigeminal pain. National Conferences on Undergraduate Research, University of Central Oklahoma, Ardmore, OK, 2018.
58. Cantu, D., Kaur, S., Murphy, A.Z., **Averitt, D.L.** Sex differences in neural projections to the periaqueductal gray: identification of novel pathways in female rats. National Conferences on Undergraduate Research, University of Central Oklahoma, Ardmore, OK, 2018.

59. Hornung, R.S., Benton, W.L., Tongkhuya, S., Uphouse, L., **Averitt, D.L.** Protective role of progesterone against allodynia in rats with persistent temporomandibular joint inflammation. 36th Annual Scientific Meeting, American Pain Society, Pittsburg, PA, 2017.
60. Lulla, S.K., Ananth, S., Beshler, R.H., **Averitt, D.L.** Rapid modulatory effects of 17-beta-Estradiol on serotonin's pronociceptive activity on the TRPV1-expressing population of trigeminal neurons. 36th Annual Scientific Meeting, American Pain Society, Pittsburg, PA, 2017.
61. Tongkhuya, S., Lopez, M.C., Benton, W.L., **Averitt, D.L.** Peripheral serotonin evokes sexually dimorphic orofacial nocifensive behavior in rats. 36th Annual Scientific Meeting, American Pain Society, Pittsburg, PA, 2017.
62. Basu, P., Maier, C., **Averitt, D.L.** Latex extract of *Euphorbia bicolor* displays nociceptive and antinociceptive properties in cultured sensory neurons and evokes pain behaviors in rats. 46th Annual Society for Neuroscience Meeting, San Diego, CA, 2016.
63. Lulla, S.K., Beshler, R.H., Benton, W.L., Ananth, S., **Averitt, D.L.** 17-beta-Estradiol enhances serotonergic neuromodulation of the transient receptor potential vanilloid 1 channel-expressing subpopulation of trigeminal sensory neurons. 46th Annual Society for Neuroscience Meeting, San Diego, CA, 2016.
64. Basu, P., Maier, C., **Averitt, D.L.** Novel effects of *Euphorbia bicolor* (*Euphorbiaceae*) latex extract on nociceptors. 35th Annual Scientific Meeting, American Pain Society, Austin, TX, 2016.
65. Benton, W.L., Beshler, R.H., Lee, J. **Averitt, D.L.** Sex differences in peripheral serotonergic pain processing in male and female rats. 35th Annual Scientific Meeting, American Pain Society, Austin, TX, 2016.
66. Benton, W.L., Lee, J., Beshler, R.H., **Averitt, D.L.** Peripheral Serotonin Evokes Sexually Dimorphic and Estrous Cycle Dependent Pain Behaviors in Male and Female Rats. 45th Annual Society for Neuroscience Meeting, Chicago, IL, 2015.
67. Nyland, J.E., Slater, T.M., McLean, S.A. and **Averitt, D.L.** Combined serotonin and norepinephrine reuptake inhibition reduces the effects of stress on post-injury pain behaviors in a rat model of burn injury. Military Health System Research Symposium, Fort Lauderdale, FL, 2015.
68. Clifford, J.L., Mares, A., Hansen, J., **Averitt, D.L.** Preemptive perineural bupivacaine attenuates mechanical and cold allodynia in a rat model of neuropathic pain. 34th Annual Scientific Meeting, American Pain Society, Palm Springs, CA, 2015.
69. Nyland, J.E., McLean, S.A., **Averitt, D.L.** Combined serotonin and norepinephrine reuptake inhibition reduces the effects of stress on post-injury pain behaviors in a rat model of burn injury. 34th Annual Scientific Meeting, American Pain Society, Palm Springs, CA, 2015.
70. Nyland, J.E., Garza, T.H., Slater, T.M., Fowler, M., Clifford, J.L., Petz, L.N., **Loyd, D.R.** Development of opioid tolerance in a rat model of full thickness thermal injury. 43rd Annual Society for Neuroscience Meeting, San Diego, CA, 2013.
71. Mares, A., Hansen, J.J., Hayden, J.R., Clifford, J.L., Petz, L.N., Fowler, M., **Loyd, D.R.** A rat model of spinal nerve ligation to examine the effect of preemptive local bupivacaine on the development of neuropathic pain. Military Health System Research Symposium, Fort Lauderdale, FL, 2013.
72. Salas, M.M., Jones, J., Fowler, M., **Loyd, D.R.**, Petz, L.N., Renz, E.M., Maani, C.V., Sueltenfuss, M., Orman, J., Clifford, C.L. Pain medication profile for severely burned military service members in OIF and OEF. Military Health System Research Symposium, Fort Lauderdale, FL, 2013.
73. Salas, M.M., Hayden, J.R., Slater, T.M., Fowler, M., Clifford, J.L., Petz, L.N., Iadarola, M.J., **Loyd, D.R.** Resiniferatoxin attenuates pain behaviors in a rat model of full thickness thermal injury. American Pain Society 32nd Annual Scientific Meeting, New Orleans, LA, 2013.
74. Cheppudira, B., Greer, A., Mares, A., Garza, T.H., Fowler, M., Petz, L.N., **Loyd, D.R.**, Clifford, J.L. The anti-inflammatory and analgesic activity of curcumin in a rat model of full thickness thermal injury. American Pain Society 32nd Annual Scientific Meeting, New Orleans, LA, 2013.

INTERNATIONAL

75. Kaur, S., Hickman, T.M., and **Averitt, D.L.** Role of excitatory serotonin receptor, 5HT_{2A}, and estrogen fluctuations in trigeminal pain signaling. Canadian Pain Society, Calgary, 2020 (accepted but meeting was cancelled due to pandemic).

76. Hickman, T.M., Simmons, E.H., Hanson, L.K., and **Averitt, D.L.** (2020) Estrogen triggers serotonin release from cultured macrophages: a potential mechanism for sex differences in pain International Association for the Study of Pain, Amsterdam, 2020 (delayed to 2021).
77. Cantu, D.J., Rodriguez, E.A., Santos, N., and **Averitt, D.L.** (2020) Exposure to Sub-chronic Stress Enhances Orofacial Inflammatory Hypersensitivity in Male and Female Rats. International Association for the Study of Pain, Amsterdam, 2020 (delayed to 2021).
78. Hornung, R.S., Basu, P., and **Averitt, D.L.** (2019) Allopregnanolone attenuates estrogen-exacerbated inflammatory allodynia at the rat temporomandibular joint. Selected for Oral Presentation, International Association for Dental Research, Vancouver, Canada, 2019.
79. Kaur, S., McDonald, H., **Averitt, D.L.** (2019) Estrogen and serotonin interact to modulate rodent trigeminal sensory neurons. International Association for Dental Research, Vancouver, Canada, 2019.
80. Basu, P., Harris, T., Tongkhuya, S., Riley, A., Wojtaszek, J., Granger, J., Maier, C., **Averitt, D.L.** *Euphorbia bicolor* (*Euphorbiaceae*) latex phytochemicals induce long-lasting, non-opioid peripheral analgesia in male and female rats. International Association for the Study of Pain, Boston, MA, 2018.
81. Hornung, B.S., Benton, W.L., Tongkhuya, S., Uphouse, L., **Averitt, D.L.** Progesterone rapidly attenuates estrogen-associated pain behaviors following ovariectomy in rats with persistent temporomandibular joint inflammation. International Association for the Study of Pain, Boston, MA, 2018.
82. Kaur, S., McDonald, H., Ananth, S., **Averitt, D.L.** Modulatory role of 17 β -estradiol on serotonergic potentiation of transient receptor potential vanilloid 1 expressing trigeminal sensory neurons. International Association for the Study of Pain, Boston, MA, 2018.
83. Slater, T.M., Garza, T.H., Fowler, M., Clifford, J.L., Petz, L.N., **Loyd, D.R.** Upregulation in the expression of pronociceptive neuropeptides in the spinal dorsal horn following thermal injury in the rat. Military Health System Research Symposium, Fort Lauderdale, FL, 2012.
84. Garza, T.H., Fowler, M., Slater, T.M., Clifford, J.L., Petz, L.N., **Loyd, D.R.** Characterization of pain behaviors in a rat model of partial thickness thermal injury. Military Health System Research Symposium, Fort Lauderdale, FL, 2012.

POSTER PRESENTATIONS

85. **Loyd, D.R.**, Sun, X.X., Locke, E.E., Salas, M.M., Henry, M.A., Hargreaves, K.M. Sex differences in serotonin enhancement of capsaicin-evoked calcitonin gene-related peptide release from human dental pulp. 14th World Congress on Pain, International Association for the Study of Pain, Milan, Italy, 2012.
86. **Loyd, D.R.**, Garza, T.H., Slater, T.M., Clifford, J.L., Petz, L.N., Fowler, M. Dual mechanism therapeutics attenuate pain behaviors in a rat model of thermal injury. Military Health System Research Symposium, Fort Lauderdale, FL, 2012.
87. **Loyd, D.R.**, Sun, X.X., Locke, E.E., Henry, M.A., Hargreaves, K.M. Serotonin enhances CGRP release from female human trigeminal nociceptors. 30th Annual American Pain Society Scientific Meeting, Austin, TX, 2011.
88. **Loyd, D.R.**, Sun, X.X., Locke, E.E., Henry, M.A., Hargreaves, K.M. Serotonin enhances proinflammatory peptide release from rat and human trigeminal nociceptors. 6th Annual Symposium on Advances in Pain Research, NIH, 2011.
89. **Loyd, D.R.**, Weiss, G., Henry, M.A., Hargreaves, K.M. Serotonin enhances capsaicin-sensitive trigeminal nociceptor function via serotonin receptor colocalization with TRPV1 in rat trigeminal sensory neurons. 13th Annual World Congress on Pain, International Association for the Study of Pain, Montreal, QC, 2010.
90. **Loyd, D.R.** and Hargreaves, K.M. Serotonin modulates capsaicin-sensitive rat trigeminal sensory neurons. Annual NIDCR Trainee Day, Washington, DC, 2010.
91. **Loyd, D.R.** and Hargreaves, K.M. Serotonin modulates TRPV1-mediated nociceptor activation and CGRP release via serotonin receptors in rat trigeminal sensory neurons. 39th Annual Society for Neuroscience Meeting, Chicago, IL, 2009.
92. **Loyd, D.R.** and Murphy, A.Z. Lesioning mu opioid receptor-containing neurons in the ventrolateral periaqueductal gray attenuates morphine analgesia as a function of mu opioid receptor density. 12th World Congress on Pain, International Association for the Study of Pain, Glasgow, Scotland, 2008.

93. **Loyd, D.R.** and Murphy, A.Z. Selective lesions of mu opioid receptor-containing neurons in the periaqueductal gray significantly attenuates systemic morphine analgesia in male but not female rats. 37th Annual Society for Neuroscience Meeting, San Diego, CA, 2007.
94. Murphy, A.Z. and **Loyd, D.R.** Anatomical and physiological characterization of the midbrain periaqueductal gray in the female rat: identification of novel pain pathways. 37th Annual Society for Neuroscience Meeting, San Diego, CA, 2007.
95. **Loyd, D.R.**, Morgan, M.M., Murphy, A.Z. Sex differences in the activation of the periaqueductal gray-rostral ventromedial medulla circuit during morphine tolerance in the rat. 36th Annual Society for Neuroscience Meeting, Atlanta, GA, 2006.
96. **Loyd, D.R.** and Murphy, A.Z. Sex differences in the organization and activational effects of the periaqueductal gray-nucleus raphe magnus circuit in morphine analgesia. 34th Annual Society for Neuroscience Meeting, San Diego, CA, 2004.
97. Cervantes, C., David, J. T., **Loyd, D.R.**, Delville, Y. Effects of lead on agonistic behavior in Syrian hamsters. 33rd Annual Society for Neuroscience Meeting, New Orleans, LA, 2003.

ORAL PRESENTATIONS

1. "Sex Differences in Opioid Modulation of Pain" DFW HealthLINE Meeting, Denton, TX (2019).
2. "The Painful Role of Peripheral Serotonin in Females" Symposium Chair and Speaker. Organization for the Study of Sex Differences, Atlanta, GA, (2018).
3. "Sex Differences in Serotonergic Modulation of Trigeminal Nociceptors" Texas Pain Research Consortium Conference hosted by the University of Texas Medical Branch, Hotel Galvez, TX (2017).
4. "Sex Differences in Serotonergic Neuromodulation of Pain" Biochemistry Seminar Series, Texas Woman's University (2016).
5. "Sex Differences in Serotonergic Modulation of Peripheral Nociceptors" Texas Pain Research Consortium Conference, University of Texas at Dallas (2015).
6. "Why is Pain More Prevalent in Women?" Faculty Spotlight Series, Texas Woman's University (2015).
7. "Sex Differences and the Effects of Stress on Pain and Analgesia" Biology Seminar Series, Texas Woman's University (2014).
8. "Modeling Human Pain Conditions: A Translational Approach to Improving Pain Management" Biology Seminar Series, Texas Woman's University (2013).
9. "Basic Science Pain Research at the US Army Institute of Surgical Research" in Pain Management in Wounded Service Members: A Department of Defense Perspective Symposium at the 32nd Annual American Pain Society (2013).
10. "Sex Differences in Serotonin Modulation of Trigeminal Nociceptors" 31st Annual American Pain Society Basic Science Data Blitz (2012).
11. "Modeling Human Pain Conditions in Rats: A Translational Approach" United States Army Institute of Surgical Research (2011).
12. "Serotonin Modulation of Trigeminal Nociceptors" Georgia State Neuroscience Institute (2011).
13. "Serotonin Enhances Proinflammatory Peptide Release from Rat and Human Trigeminal Nociceptors" 2nd Annual Frontiers of Translational Science Research Day, University of Texas Health Science Center (2011).
14. "Serotonin Modulation of Trigeminal Nociceptors" Annual Dental Science Symposium, University of Texas Health Science Center (2010).
15. "Sex Differences in Morphine Analgesia and the Descending Modulation of Pain" 9th Annual W. M. Keck Center for Behavioral Biology Conference, North Carolina State University (2008).
16. "Sex Differences in Morphine Analgesia" Biology Department Undergraduate Seminar Series Speaker, Georgia State University (2007).
17. "Sex Differences in Morphine Analgesia and the Descending Modulation of Pain" 1st Annual Center for Behavioral Neuroscience Graduate Student Retreat Keynote Address, Ocoee, TN (2007).
18. "Sex Differences in Morphine Analgesia" 14th Annual Animal Behavior Conference at the Center for the Integrative Studies of Animal Behavior, University of Indiana (2007).

RESEARCH SUPPORT

Pending External Support

None.

Current External Support

NIH/NIDCR R15 DE025970-01A1 FY Total Cost: \$385,514

Period: Sept 1, 2018 – August 31, 2021

“Sex Differences in Serotonergic Modulation of Trigeminal Pain”

Principal Investigator

NIH/NIDCR R15 DE025970-01A1S1 FY Total Cost: \$48,072

Diversity Supplement

Period: April 1, 2020 – August 31, 2021

Current Internal Support

None.

Completed External Support

DoD/Defense Medical Research and Development Intramural Program D13ARATDA_I_13_J8_503

Period: Mar 11, 2013 – Mar 10, 2015

“Effect of Resiniferatoxin on Burn Pain”

Principal Investigator

DoD/Defense Health Program 6.7 D_OSD_I_13_J7_610

Period: Feb 2, 2013 – Dec 31, 2014

“Analysis of Outcomes of the Use of Regional Anesthesia for Combat Casualty Care in the US Military Healthcare System from 2003-2012”

Associate Investigator

NIH/NIDCR F32 DE021309

Period: Aug 1, 2010 – June 30, 2011

“Serotonin Modulation of Trigeminal Nociceptors”

Principal Investigator

NIH/NIDCR T32 DE14318

Period Oct 1, 2008 – Jul 31, 2010

Postdoctoral Research Fellow on Institutional Research Training Grant (COSTAR)

Completed Internal Support

Research Enhancement Program (REP) Grant, Texas Woman’s University

Period: Dec 1, 2018 – Aug 31, 2019

“Studies on the Antioxidant Phytochemicals in Euphorbia bicolor (Euphorbiaceae) and their Mechanisms of Action in Reducing Inflammation and Pain”

Co-Investigator

Research Enhancement Program (REP) New Investigator Competition Grant, Texas Woman’s University

Period: Dec 1, 2017 – Aug 31, 2018

“Estrogen Enhances the Pain-evoking Effects of Serotonin”

Principal Investigator

Research Enhancement Program (REP) New Investigator Competition Grant, Texas Woman’s University

Period: Dec 1, 2016 – Aug 31, 2017

“Role of the 5HT2A receptor on Estrous-cycle Dependent Changes in Pain”

Principal Investigator

Research Enhancement Program (REP) New Investigator Competition Grant, Texas Woman’s University

Period: Dec 1, 2015 – Aug 31, 2016

“Effects of Estrous Cycle on Trigeminal Pain”

Principal Investigator

Research Enhancement Program (REP) New Investigator Competition Grant, Texas Woman’s University

Period: Dec 1, 2014 – Aug 31, 2015

“Steroid Hormone Modulation of Pain in Females”

Principal Investigator

Equipment Internal Grants

Teaching and Research Grant for Equipment and Technology (TARGET), Texas Woman’s University

Period: November 7, 2017 – July 31, 2018

Purchase of a patch clamp electrophysiology rig

Co-Applicant

Teaching and Research Grant for Equipment and Technology (TARGET), Texas Woman’s University

Period: November 7, 2017 – July 31, 2018

Purchase of dual reagent injector addition to an existing plate reader to allow calcium imaging of live cells

Primary Applicant