

Laureate Institute for Brain Research
6655 S. Yale Ave, Tulsa, OK 74136

Figueroa-Hall

Leandra K. Figueroa-Hall, Ph.D.
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CURRENT POSITIONS AND AFFILIATIONS

Laureate Institute for Brain Research, Tulsa, OK; 2022-
Associate Investigator

TRAINING

Laureate Institute for Brain Research, Tulsa, OK; 2019-2022
Postdoctoral Research Associate; Mentors: Jonathan Savitz Ph.D. and Martin Paulus, M.D.
Project: *In vivo* inflammatory challenge to identify astrocyte-enriched extracellular vesicle TLR4-modulating miRNA signatures in depression

Yale University, School of Medicine; Department of Pediatrics/Gastroenterology, New Haven, CT; 2017-2019
Postdoctoral Fellow; T32 NIH Training Grant (Internal Medicine DK00701741);
Mentors: Nadia A. Ameen, MBBS and Fred Gorelick, M.D.
Project 1: Generation of Myo5B-deficient human models for the study of Microvillus inclusion disease (MVID)
Project 2: Glucocorticoid regulation of intestinal ion transport/activity in native intestine

EDUCATION

Ph.D. Biomedical Sciences, Oklahoma State University-Center for Health Sciences, (CHS), Tulsa, OK; 2017
Department of Pharmacology/Physiology; Mentor: Dr. Randall L. Davis

M.Sc. Biomedical Research, University of Maryland-School of Medicine, Baltimore, MD; 2011
Department of Microbiology and Immunology; Mentor: Dr. Andrei E. Medvedev

B.Sc. Biology University of the Virgin Islands, St. Thomas, USVI; 2008

PEER-REVIEWED PUBLICATIONS

Leandra K. Figueroa-Hall, Bohan Xu, Rayus Kuplicki, Bart Ford, Kent Teague, Henry Yeh, Michael R. Irwin, Jonathan B. Savitz, and Martin P. Paulus. Psychiatric symptoms are not associated with circulating C-reactive protein concentrations after controlling for medical, social, and demographic factors. (In press)

Burrows K, **Figueroa-Hall LK**, Kuplicki R, Stewart JL, Alarbi AM, Ramesh R, Savitz JB, Teague TK, Risbrough VB, Paulus MP. Neuronally-enriched exosomal microRNA-27b mediates acute effects of ibuprofen on reward-related brain activity in healthy adults: a randomized, placebo-controlled, double-blind trial. *Sci Rep.* 2022 Jan 17;12(1):861. doi: 10.1038/s41598-022-04875-y. PMID: 35039595; PMCID: PMC8764091.

May AC, Burrows K, **Figueroa-Hall LK**, Kirlic N, White EJ, Smith R, Ekhtiari H, Paulus MP, Savitz J, Stewart JL; T1000 Investigators. Sex differences in circulating inflammatory mediators as a function of substance use disorder. *Drug Alcohol Depend.* 2021 Apr 1;221:108610. doi: 10.1016/j.drugalcdep.2021.108610. Epub 2021 Feb 15. Erratum in: *Drug Alcohol Depend.* 2021 Jul 1;224:108743. PMID: 33631550; PMCID: PMC8026624.

Burrows K, Stewart JL, Kuplicki R, **Figueroa-Hall L**, Spechler PA, Zheng H, Guinjoan SM, Savitz JB, Kent Teague T, Paulus MP. Elevated peripheral inflammation is associated with attenuated striatal reward anticipation in major depressive disorder. *Brain Behav Immun.* 2021 Jan 25;S0889-1591(21)00020-9. doi: 10.1016/j.bbi.2021.01.016. PMID: 33508469.

Figueroa-Hall LK, Paulus MP, Savitz J. Toll-Like Receptor Signaling in Depression. *Psychoneuroendocrinology.* 2020;121:104843.

*Ahsan MK, ***Figueroa-Hall L**, Baratta V, et al. Glucocorticoids and serum- and glucocorticoid-inducible kinase 1 are potent regulators of CFTR in the native intestine: implications for stress-induced diarrhea. *Am J Physiol Gastrointest Liver Physiol.* 2020;319(2):G121-g132. (*Co-authors, first)

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Figueroa-Hall LK, Stevens CW, Davis RL. Anti-inflammatory effects of fentanyl and morphine on LPS-induced TLR4 neuroinflammatory signaling. *Oklahoma State Medical Proceedings*. 2019;3(3):1-12.

Figueroa-Hall LK, Michael AB, Das S, Stevens CW, Davis RL. LPS-induced TLR4 neuroinflammatory signaling in CHME-5 microglial cells. *Neuroimmunology Neuroinflammation*. 2017;4:219-231.

Figueroa L, Xiong Y, Song C, Piao W, Vogel SN, Medvedev AE. The Asp299Gly polymorphism alters TLR4 signaling by interfering with recruitment of MyD88 and TRIF. *J Immunol*. 2012;188(9):4506-4515.

BOOK CHAPTER

Ameen N, Kopic S, Ahsan Md K, and **Figueroa-Hall LK** (2020). Secretory Diarrhea; Volume 2: Ion Transport Across Epithelial Tissues and Disease; Ion Channels and Transporters of Epithelia in Health and Disease Book 2nd Edition; (Hamilton KL and Devor DC), APS-Springer-Nature.

HONORS & AWARDS

The American Physiological Society (APS) Minority Travel Fellowship Award

2016, 2018-Travel Award for Experimental Biology

Oklahoma State University

2017-Women's Faculty Council Student Research Award (Recognition for quality of research)

2015-Regents' Distinguished Faculty Teaching Award Review and Selection Committee

2015-Research Day, 2nd place poster for Department of Pharmacology/Physiology

2014-Research Day, Best poster for Department of Pharmacology/Physiology

Society for Neuroscience (SFN)

2015-2017, Neuroscience Scholars Program- NSP Associate

Federation of American Societies for Experimental Biology (FASEB)

2016-Travel Award for the Postdoctoral Preparation Institute 2016

2016-Travel Award for APS Writing and Reviewing for Scientific Journals Course

2014-Minority Travel Award

American Association of Immunologists (AAI)

2011-AAI Trainee Award

ACADEMIC PRESENTATIONS

Laureate Institute for Brain Research

2022- Brownbag Series; Toll-like receptor (TLR) signaling in depression

2021- T1000; Predictors of Suicidal Thoughts and Behaviors in Community-Dwelling Psychiatric Patients: A One-Year Longitudinal Study

2022- Brownbag Series; TLR4 signaling in depression- Grant Overview

NATIONAL CONFERENCE PRESENTATIONS

Leandra K. Figueroa-Hall, Kaiping Burrows, Ahlam M. Alarbi, Chibing Tan, T. Kent Teague, Brett McKinney, Rajagopal Ramesh, Yoon-Hee Cha, Salvador Guinjoan, Sahib Khalsa, Victoria B. Risbrough, Martin P. Paulus, and Jonathan Savitz (2022). Characterization of human astrocyte-enriched extracellular vesicle miRNAs after an *in vivo* lipopolysaccharide challenge. Oral presentation at the annual meeting of the International Society of Extracellular Vesicles.

Leandra K. Figueroa-Hall, Md Kaimul Ahsan, Caihong Qiu, Yinghong Ma, and Nadia A. Ameen (2018). Generation of Myo5B-deficient experimental models to study Microvillus inclusion disease (MVID). Poster presentation at the annual meeting for Experimental Biology (EB)-APS and GI & Liver Section Trainee Symposium.

- L.K. Figueroa-Hall**, S. Das, C.W. Stevens, and R.L. Davis (2016). Characterization of TLR4 neuroinflammatory signaling mechanisms and the effects of fentanyl citrate on CHME-5 human microglial cells. Poster presentation at the annual meeting for EB.
- L.K. Figueroa-Hall**, S. Das, C.W. Stevens, and R.L. Davis (2015). Characterization of TLR4 neuroinflammatory signaling mechanisms and the effects of fentanyl citrate on CHME-5 human microglial cells. Poster presentation at the annual meeting for Society for Neuroscience (SFN).
- L.K. Figueroa-Hall**, D. Buck, S. Das, C. Stevens, and R.L. Davis (2013). Investigating the TLR4 signaling mechanisms in CHME-5 human microglial cells and the effects of β -Funaltrexamine treatment. Poster presentation at the annual meeting for the American Association of Immunologists (AAI).
- L.K. Figueroa-Hall**, D. Buck, S. Das, C. Stevens, and R.L. Davis (2012). β -Funaltrexamine inhibits IL-1R and TLR4-signaling pathways. Diversity Fellows Poster Session. Poster presentation at annual meeting for SFN.
- Leandra K. Figueroa** and Andrei E. Medvedev (2011). Asp299Gly polymorphism decreases the TLR4-elicited activation of MyD88- and TRIF-dependent signaling pathways. Oral/Poster presentations at the annual meeting for the AAI.

STATE AND REGIONAL CONFERENCE PRESENTATIONS

- Kaiping Burrows*, **Leandra K. Figueroa-Hall***, Ahlam M. Alarbi, Jennifer L. Stewart, Rayus Kuplicki, Chibing Tan, Rajagopal Ramesh, Jonathan B. Savitz, Sahib Khasla, T. Kent Teague, Victoria Risbrough, and Martin P. Paulus (2021). Ibuprofen-mediated astrocyte-enriched exosome miR-23b expression attenuates TNF and IL-17A to promote improved brain reward processing. Oral presentation at the annual End2Cancer meeting.
- Leandra K. Figueroa-Hall**, Md Kaimul Ahsan, Caihong Qiu, Yinghong Ma, and Nadia A. Ameen (2018). Generation of Myo5B-deficient experimental models to study Microvillus inclusion disease (MVID). Poster presentation at the 6th Annual Yale Pediatric Research Forum; Yale University, SOM.
- L.K. Figueroa-Hall**, S. Das, C.W. Stevens, and R.L. Davis (2017). Opioid compounds modulate LPS-induced NF- κ B activation in microglial cells. Poster presentation for OSU-CHS Research Day 2017.
- L.K. Figueroa-Hall**, S. Das, C.W. Stevens, and R.L. Davis (2015). Investigating TLR4 neuro-inflammatory signaling mechanisms and the effects of opioid compounds in CHME-5 human microglial cells. Poster presentation for OSU-Tulsa Day 2015.
- L.K. Figueroa-Hall**, S. Das, C.W. Stevens, R.L. Davis (2015). TLR4, Opioids and the Inflammatory Response in the Brain". Oral Presentation for 3MT Competition.
- L.K. Figueroa-Hall**, D. Buck, S. Das, C. Stevens, and R.L. Davis (2015). Investigating TLR4-signaling mechanisms in CHME-5 human microglial cells and the effects of β -Funaltrexamine treatment. Poster presentation for OSU-CHS Research Day 2015.
- L.K. Figueroa-Hall**, S. Das, C.W. Stevens, R.L. Davis (2015). Characterization of TLR4 neuroinflammatory signaling mechanisms and the effects of fentanyl citrate on CHME-5 human microglial cells. Poster presentation for Research Partners Citywide Research Day, University of Oklahoma.
- L. K. Figueroa**, E.K. Green, D.J. Buck, C.W. Stevens, and R.L. Davis (2012). Pro-Inflammatory Mediator-Activated TLR/IL-1R/NF- κ B Signaling is inhibited by β -Funaltrexamine. Poster presentation for OSU-CHS Research Day 2012.
- L.K. Figueroa-Hall**, S. Das, C.W. Stevens, R.L. Davis (2011). The D299G Polymorphism inhibits Signal Transduction by Interfering with the MyD88- and TRIF-dependent Signaling Pathways. Poster presentation for the Graduate Research Conference- University of Maryland, SOM.

TEACHING EXPERIENCE

Phoenix Rising Alternative High School

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2021, What makes the body go round?

Oklahoma State University's American Indians into Psychology Program

2021, Guest Lecture: Toll-like receptor signaling in depression

University of Tulsa, Introduction to Neuroscience

2020, Guest Lecture: Toll-like receptor signaling in depression

Tulsa Community College

2015, Southeast Campus. Guest Lecturer for Intro to Biology for Majors, "TLR4 and Neuroinflammation"

2013, Metro Campus. Guest Lecturer for Physiology, "Toll-like Receptors: An In-Depth Look"

Oklahoma State University-CHS

2012-2013, Teaching Assistant for OSU-CHS Summer Academy, "Mysteries of Biomedical Sciences"

University of Maryland, School of Medicine, Department of Medical Research Technology

2009-2010, Guest Lecturer for Undergraduate Senior Applied Cellular and Molecular Biology, "Two-Component Regulatory Systems"

PROFESSIONAL AFFILIATIONS

2022-Present-Psychoneuroimmunology (PNIRS)

2022-Present- International Society of Extracellular Vesicles (ISEV)

2015-Present-The American Physiological Society (APS)

2016-Present- Society for the Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS)

2009-2016- American Association of Immunologists (AAI)

2012-2016- Society for Neuroscience (SFN)

2015, 2016-American Society for Pharmacology and Experimental Therapeutics (ASPET)

PROFESSIONAL SERVICE

Laureate Institute for Brain Research

2022-Present, Brownbag Series- Coordinator

2020-2022, Diversity Committee- Secretary

Ad hoc Reviewer

Physiological Medicine

British Journal of Pharmacology

Physiological Genomics

Journal of Affective Disorders

Bosnian Journal of Biomedical Sciences

Yale University, School of Medicine

2018-2019, Yale Postdoctoral Association- Secretary

Oklahoma State University

2017-Present, Manuscript Reviewer for Oklahoma State Medical Proceedings

2016, Judge for OSU 2016 Research Day (Medical Student Posters)

2015-2016, Judge for OSU Scholar Development Research Symposium

The American Physiological Society

2018- Experimental Biology; Judge for APS Undergraduate Poster Session

2016-Experimental Biology; Judge for APS Bruce Undergraduate Poster Session

2016- FASEB Postdoctoral Preparation Institute 2016

2016- Writing and Reviewing for Scientific Journals Course

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TABERC/SFN/OPS Annual Meeting

2017, Judge for high school poster session

Annual Biomedical Research Conference for Minority Students (ABRCMS)

2016, Abstract Reviewer

Society for the Advancement of Chicanos, Latinos, and American Indians

2016, Abstract Reviewer

COMMUNITY SERVICE

Laureate Institute for Brain Research

2020-Present; Philanthropy and Community Outreach Diversity Subcommittee

Eugene Field Elementary School, Tulsa, OK

2015-2016, Reading Partners

2013-2014, Lunch Buddy Program

2013-2014, Global Gardens

Oklahoma State University, CHS, Biomedical Sciences Graduate Student Association

2014-2017, Member: Curious Cowboys STEM Camp; Roy Clark Elementary STEM Night; Eugene Fields Science Fair

- Videoconference: Professional Development Series (organizer):
 - “An Introduction to Fellowship Opportunities and Grant Writing”, by Dr. Albert Avila, NIH-NIDA
 - “Manuscript: Authorship and the Submission/Review Process,” by Dr. Sue Barman, Michigan State University

2013-2014, President: Curriculum Oversight Committee-Graduate Student Member; Eugene Fields Science Fair

2012-2013, Vice-President: Zumbathon for Alliance for Lupus Research (Organizer); Eugene Field Science Fair