

Epiphani C. Simmons, Ph.D.

Postdoctoral Fellow; Stanford University
Department of Neurology in the College of Medicine
epiphani@stanford.edu

EDUCATION

University of Arizona
Doctor of Philosophy- Neuroscience
Graduation Date: May 2021

University of Missouri- Columbia
Bachelor of Science- Biochemistry
Graduation Date: August 2017

RESEARCH EXPERIENCE

Postdoctoral Research Fellow 2021-current
Department of Neurology
Research: Determining the role of stroke-induced loss of pericytes on blood-brain barrier integrity and cognition in the post-mortem brain
Stanford University
Supervisor: Marion Buckwalter, MD, PhD

Graduate Research Assistant -PhD Candidate 2017-2021
Department of Pharmacology and Toxicology
Dissertation: Pharmacological induction of mitochondrial biogenesis through 5-HT_{1F} receptor agonism as a novel therapeutic strategy for spinal cord injury
University of Arizona
Supervisor: Rick Schnellmann, PhD

Undergraduate Researcher 2014-2017
Department of Obstetrics and Gynecology
Research: Determining effects of an endometriosis- induced epigenetic changes in utero on embryo development using a surgical rat model
University of Missouri-Columbia
Supervisor: Kathy Timms, PhD

Undergraduate Researcher- Leadership Alliance Summer Intern 2016
Department of Integrative Physiology
Research: Evaluating the development of GnRH neurons in Fgf8 hypomorphic embryos in a mouse model
University of Colorado- Boulder
Supervisor: Pei-San Tsai, PhD

MANUSCRIPTS

Simmons EC, Scholpa NE, Crossman JD, Schnellmann RG. Mitochondrial biogenesis for the treatment of spinal cord injury. The Neuroscience of Spinal Cord Injury, Treatments: Experimental and Clinical. (In Press, April 2022).

Simmons EC, Scholpa NE, Schnellmann RG. FDA-approved 5-HT_{1F} receptor agonist lasmiditan induces mitochondrial biogenesis and enhances locomotor and blood-spinal cord barrier recovery after spinal cord injury. Experimental Neurology 2021.

Simmons EC, Scholpa NE, Schnellmann RG. Mitochondrial biogenesis as a therapeutic target for traumatic and neurodegenerative CNS diseases. Experimental Neurology. Experimental Neurology 2020.

Simmons EC, Scholpa NE, Cleveland KC, Schnellmann RG. 5-HT_{1F} receptor agonist induces mitochondrial biogenesis and promotes recovery from spinal cord injury. JPET 2020.

Scholpa NE, Simmons EC, Crossman JD, Schnellmann RG. Time-to-treatment window and cross-sex potential of β 2-adrenergic receptor-induced mitochondrial biogenesis-mediated recovery after spinal cord injury. Toxicology and Applied Pharmacology 2020.

Scholpa NE, Simmons EC, Tilley DG, Schnellmann RG. B₂-adernergic receptor-mediated mitochondrial biogenesis improves skeletal muscle recovery following spinal cord injury. Experimental Neurology 2019.

GRANT SUPPORT

Stanford College of Medicine Propel Scholar- <u>Postdoctoral Fellowship</u>	2021-current
National Institute for Neurological Diseases and Stroke (NINDS)- Individual NRSA for diverse PhD Students- <u>F31 Training Fellowship</u>	2020-2021
National Institute for Aging (NIA)- Translational Research in AD and Related Diseases - <u>T32 Training Fellowship</u>	2019-2020

HONORS AND AWARDS

Society of Experimental Biology and Medicine (SEBM) - Young Investigator Award	2020
American Society for Pharmacology and Experimental Therapeutics (ASPET) - Travel Award	2020
National Neurotrauma Society (NNS) Diversity Travel Award	2019
NIH-Initiative for Maximizing Student Diversity- Graduate Fellowship	2017-2018
NIH- IMSD EXPRESS- Undergraduate Fellowship	2014-2017
Graduate Assistance Fellowship Award	2017-2018
The Leadership Alliance (LANS) Trainee - Undergraduate Research Intern	2016
George C. Brooks Scholar	2013-2017
University of Missouri Multi Cultural Scholar	2014- 2015

LABORATORY AND TECHNICAL SKILLS

- Human RUSH biobank project management
- Human RNA sequence preparation
- Human cell culture
- RT-PCR and qPCR
- Electron microscopy
- Confocal microscopy
- Inkscape
- Microsoft Office
- Endnote
- Graphpad Prism
- ImageJ
- Metabolomics analysis (Metabolon software)
- Survival rodent surgeries (SCI, stroke)
- *In vivo* drug administration via various routes
- Cre/lox breeding and colony management
- Behavioral analyses
- Mammalian cell culture
- *In vitro* migration/scratch assay
- Trans-endothelial electrical resistance (TEER)
- siRNA knockdown *in vitro*
- Immunofluorescence
- Mitochondrial isolation
- Mitochondrial respiration assay (seahorse)
- Flow cytometry

POSITIONS HELD & SERVICE

<u>Ad Hoc Reviewer- Vascular Pharmacology</u>	2021-current
<u>Bio-X Undergraduate Mentor- Stanford University</u>	2022-current
<u>Colors in STEM Coordinator- Graduate College- University of Arizona</u>	2018-2021
<u>IMSD Express Peer Mentor- Research Office- University of Missouri</u>	2015-2017
<u>Undergraduate Research Ambassador- Research Office- University of Missouri</u>	2015-2017

PROFESSIONAL SOCIETY MEMBERSHIPS

National NeuroTrauma Society (NNS)	2020-Current
American Society for Pharmacology and Experimental Therapeutics (ASPET)	2019-Current
Society of Experimental Biology and Medicine (SEBM)	2019-Current
Society of Endocrinology	2015-2017

ABSTRACTS AND PRESENTATIONS

Simmons EC, Carroll SC, Schnellmann RG. Restoration of the blood-spinal cord barrier through 5-HT_{1F} receptor mediated mitochondrial biogenesis. Experimental Biology, San Diego, CA. 2020.

Simmons EC, Carroll SC, Schnellmann RG. Restoration of the blood-spinal cord barrier after spinal cord injury through 5-HT_{1F} receptor mediated mitochondrial biogenesis. NeuroTrauma International Symposium, Pittsburgh, PA. 2019.

Simmons EC, Scholpa NE, Cleveland NH, Schnellmann RG. 5-HT_{1F} receptor agonists induce mitochondrial biogenesis and promote recovery from spinal cord injury. NeuroTrauma International Symposium, Toronto, Canada. 2018

Simmons EC, Nabli H, Timms K. Determining effects of an endometriosis- induced host uterus on embryos using a surgical rat model. Undergraduate Research and Achievement Forum, Columbia, MO, 2017.

Simmons EC, Kavanagh S, Tsai P. Evaluating the development of GnRH neurons in E13.5 and E15.5 Fgf8 hypomorphic embryos in a mouse model. Annual Biomedical Research Conference for Minority Students, Tampa, FL, 2016.

Simmons EC, Kavanagh S, Tsai P. Evaluating GnRH neuron distribution in E13.5 and E15.5 Fgf8 hypomorphic embryos in a mouse model. Leadership Alliance National Symposium, Stamford, CT, 2016.

Simmons EC, Nabli H, Timms K. Determining epigenetic hindrance on embryos using a surgical rat model for endometriosis. Undergraduate Research and Achievement Forum, Columbia, MO, 2016.

Simmons EC, Nabli H, Timms K. Determining epigenetic modification causing embryo demise following in utero exposure to endometriosis. Annual Biomedical Research Conference for Minority Students, Seattle, WA, 2015.

Simmons EC, Evans, B, Nabli, H, Timms, K. Potential epigenetic hindrance on embryos utilizing an endometriotic rat model. Undergraduate Research and Achievement Forum, Columbia, MO, 2015.