

Heather Snell, PhD

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Yale School of Medicine
Department of Neuroscience
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EDUCATION

PhD	University of North Texas Health Science Center: Doctor of Philosophy Fort Worth, Texas Laboratory of Dr. Eric B Gonzales-Department of Pharmacology and Neuroscience Dissertation title: Characterization of guanidine compound interaction with the GABA-A ρ 1 receptor	October 2015 (With distinction)
BS	Louisiana State University: Bachelor of Science Baton Rouge, La Major: Biochemistry Minor: Chemistry	May 2010
BA	Louisiana State University: Bachelor of Art Baton Rouge, La Major: English Literature Minor: Latin	May 2010

Assistant Professor

Yale School of Medicine
Department of Neuroscience
New Haven, CT

January 2024

Associate Researcher

Albert Einstein College of Medicine
Dominick P. Purpura Department of Neuroscience
Bronx, NY
Laboratory of Dr. Kamran Khodakhah
Project: "*Elucidating the mechanism of intrinsic activity of cerebellar Purkinje cells*"

February 2022-December 2023

HONORS/SCHOLARSHIPS/AWARDS/FUNDING

NINDS/NIMH R21 Grant MPI with Peri Kurshan (\$275,000)	June 2023-June 2025
Allen Institute: Next Generation Leaders Council	2022-2025
Dominick P. Purpura Department of Neuroscience 2022 retreat Best Poster Presentation	2022
The Grass Foundation Trustee Recognition Award (\$1,000)	2022
Janelia Leading Edge Fellow	2022
NASM/Ford Foundation Postdoctoral/Early Career Fellowship (\$50,000)	2021
Sloan Kettering Institute Academic Job Search Bootcamp Selected Attendee	2020-2022

United Negro College Fund Ernest E. Just Associate Fellow	2020-2022
Society for Neuroscience-Neuroscience Scholars Program Fellow	
Dominick P. Purpura Department of Neuroscience 2019 Society for Neuroscience Best Poster Presentation Award	Spring 2020
BRAINS (Broadening the Representation of Academic Investigators in Neuroscience) Fellow	2019
UNTHSC Student Bridge Grant	2015-2017
2015 SPINES symposium travel award, Chicago Illinois	Fall 2015
Neurobiology Course scholarship at Marine Biological Laboratory (MBL) in Woods Hole Massachusetts,	Summer 2015
UNTHSC Student Leadership Professional Development Fund (SL/PDF) Travel Award	Fall 2014
Society for the Advancement of Chicanos and Native American in Science (SACNAS) Travel Scholarship Award to National Conference	Fall 2014
Neuroscience Scholar Program Associate Fellow (Society for Neuroscience)	2014-2016
UNTHSC Moorman Family Scholarship	2014-2015
UNTHSC Neurobiology of Aging T32 Training Grant Fellowship	2014-2015
FASEB MARC Program Poster/Oral Presentation Travel Award- Experimental Biology National Conference	Spring 2014
Institute of Aging and Alzheimer's Disease Research (IAADR) Fellowship	2013-2014
Student Leadership Professional Development Fund (SL/PDF) Travel Award	Spring 2014
UNTHSC Graduate Student Association Scholarship	2013-2014
Post Course Research Fellow at Marine Biological Laboratory (MBL) in Woods Hole Massachusetts,	Summer 2012
Summer Program in Neuroscience, Ethics, & Survival (SPINES) Fellow at the Marine Biology Laboratory (MBL) in Woods Hole Massachusetts	Summer 2012
Society for Advancement of Chicanos and Native Americans in Science (SACNAS) Travel Scholarship Award to National Conference	Fall 2011
Institute for Aging and Alzheimer's Disease Research (IAADR) Associate Fellowship	2011-2012
UNTHSC Minority Opportunities in Research and Education (MORE) fellowship	2010-2012

RESEARCH EXPERIENCE

Post-doctoral training: Albert Einstein College of Medicine Dominick P. Purpura Department of Neuroscience Faculty Mentor: Dr. Kamran Khodakhah Research Project: " <i>Elucidating the mechanism of intrinsic activity of cerebellar Purkinje cells</i> " Research Project: " <i>Elucidating the mechanisms underlying attacks of dyskinesia in an Episodic Ataxia Type 2 Mouse Model</i> "	January 2016-February 2022
Graduate Training: University of North Texas Health Science Center Department of Pharmacology and Neuroscience Faculty Mentor: Dr. Eric B Gonzales Research Project: " <i>Crystallization and Characterization of a Gamma-Aminobutyric acid A Receptor</i> " Research Project: " <i>Characterization of guanidine compound interaction with the GABA-A ρ1 receptor</i> "	2010-2015
Summer Research Opportunity: Marine Biological Laboratory Faculty Mentor: Dr. Steven Zottoli Research Project: " <i>Touch sensitivity of supramedullary neurons in the cunner, <i>Tautoglabrus adspersus</i></i> "	July- August 2012
University of North Texas Health Science Center Department of Molecular Biology & Immunology	August 2010- November 2010

Faculty Mentor: Dr. Abha Sharma
Rotation Research Project: "Treatment of non-small lung carcinomas with chemotherapeutic agents"

Undergraduate Research Opportunity: Louisiana State University
Department of Entomology
Faculty Mentor: Dr. Lane Foil,
Research Project: "The control of leishmaniasis disease"

2007-2009

Louisiana State University
Department of Biochemistry
Faculty Mentor: Dr. E Hawkins
Research Project: "Isolation and cloning of the adh gene."

2007-2008

PUBLICATIONS

* denotes co-first authors

Snell HD, Vitenzon A, Tara E, Buschmann-Vera J, Khodakhah K (*In Prep*) Mechanism underlying Caffeine-Induced motor impairment in an Episodic Neurological Disorder.

Snell HD*, Vitenzon A*, Tara E*, Chen C, Tindi J, Jordan B, Khodakhah K (2022) Mechanism of Stress-Induced attacks in an Episodic Neurologic Disorder. *Science Advances*. April; 8(16) doi: 10.1126/sciadv.abh2675 <https://www.science.org/doi/10.1126/sciadv.abh2675>

Zuo Z, Smith RN, Chen Z, Agharkar AS, **Snell HD**, Huang R, Liu J, Gonzales EB (2018) Identification of a unique Ca²⁺-binding site in rate acid-sensing ion channel 3. *Nat. Commun*. April; 9:2082 doi: 10.1038/s41467018-04424-0 <https://www.nature.com/articles/s41467-018-04424-0>

Snell HD and Gonzales EB (2016) 5-(N, N-Hexamethylene) amiloride is a GABA-A $\rho 1$ receptor positive allosteric modulator. *Channels* Nov-Dec; 10(6): 498-506. doi: 10.1080/19336950.2016.1207021 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5034777/>

Snell HD and Gonzales EB (2015) Amiloride and GMQ allosteric modulation of the GABA-A $\rho 1$ receptor: influences of the intersubunit site. *J Pharmacol Exp Ther*. June; **353**(3): 551-559. PMID: 25829529 doi: 10.1124/jpet.115.222802 <https://jpet.aspetjournals.org/content/353/3/551.long>

INVITED TALKS

Mount Sinai Department of Genetics and Genomic Sciences	2024
Gordon Research Seminar- Cerebellum	2023
Weill Cornell Emerging Leaders in Neuroscience Seminar	2023
University of Minn. Center for Cerebellar Structure/Function Seminar	2023
Series Oregon Health & Science University Neuroscience Futures Seminar	2023
Series Stanford Wu Tsai Neurosciences Institute BELONG Seminar Series	2023
University of Florida Rising Star Seminar Series	2023
Columbia University Annual Departmental Seminar Series	2023
Mount Sinai Neuroscience Seminars	2023
Ford Foundation/NASM: Conference of Ford Fellows	2022
Emory SOM Steve Warren Early Career Investigator Seminar Series	2022
Harvard Medical School Neuroscience INCEPT (Interdisciplinary Neuroscience Colloquia of Extramural Postdoc Talks)	2022
Yale Neuroscience Department: Seminars at Yale Neuroscience Advanced Postdoc Extramural Series (SYNAPSES)	2022
California State University, Chico State BRAIN Alliance Talk	2022
McGill University Department of Biology 2021 Seminar Series	2021
Brandeis: Invited Postdoctoral seminar	2021

Summer Program in Neuroscience, Excellence and Success (SPINES) Marine Biological Laboratory	2021
UNTHSC Spring 2021 Diversity Seminar Series	2021
Vanderbilt SOM Gathering of Pharmacology and Cell signaling Research (GPCR) Invited postdoc seminar series	2021
Weill Cornell Medicine Frontiers in Neuropsychiatry Seminars (FINS) series	2020
Gordon Research Conference, Cerebellum	2019
Albert Einstein College of Medicine Rare Disease Day	2019
Invited Job talk (Albert Einstein College of Medicine)	2015

PRESENTATIONS

Oral

Black in Neuro Conference: " <i>Mechanism of Stress-Induced Attacks in Episodic Ataxia Type 2</i> "	2020
Gordon Research Conference, Cerebellum: " <i>Disruption of Purkinje Cell Pacemaking Underlies Attacks in Episodic Ataxia Type 2</i> "	2019
15 th UNTHSC Annual Neurobiology of Aging Trainee Symposium: " <i>Characterizing The Guanidine Compound Interaction Site In GABAA Rho1 Receptors</i> "	2015
SPINES pre-Society for Neuroscience symposium abstract: " <i>Characterization of guanidine compound interaction with the GABA-A ρ1 receptor</i> "	2015
Society for the Advancement of Chicanos and Native Americans in Science National Conference abstract: " <i>Allosteric Modulation of the Human GABA-A rho1 Receptor By ASIC Non-proton Ligands</i> "	2014
Marine Biological Laboratory Summer Program in Neuroscience and Survival (SPINES) Symposium abstract: " <i>Pre Crystallization Screening of a GABAA-ρ receptor</i> "	2012

Poster

NINDS OPEN Connections Poster Symposium: Advancing Scientific Excellence Through Diversity: " <i>Cerebellar mGluR1 receptors are required for caffeine-induced attacks of dyskinesia in Episodic Ataxia Type 2</i> "	2022
Society for Neuroscience abstract: " <i>Cerebellar mGluR1 receptors are required for caffeine-induced attacks of dyskinesia in Episodic Ataxia Type 2</i> "	2021
Society for Neuroscience Connectome abstract: " <i>The role of adrenergic transmission in stress-induced cerebellar dysfunction</i> "	2021
Society for Neuroscience abstract: " <i>Mechanisms Underlying Stress-Induced Attacks in an Episodic Ataxia Type 2 Mouse Model</i> "	2019
Gordon Research Conference abstract: " <i>Disruption of Purkinje Cell Pacemaking Underlies Attacks in Episodic Ataxia Type 2</i> "	2019
Society for Neuroscience abstract: " <i>Mechanisms Underlying Stress-Induced Attacks in an Episodic Ataxia Type 2 Mouse Model</i> "	2018
Society for Neuroscience abstract: " <i>Noradrenergic and metabotropic transmission as the bases for paroxysmal dyskinesia in a mouse model of Episodic Ataxia Type 2</i> "	2017
Albert Einstein College of Medicine Dominick P. Purpura Department of Neuroscience Retreat abstract: " <i>Elucidating the mechanism controlling intrinsic activity in Purkinje cells</i> "	2017
Society for Neuroscience abstract: " <i>Characterization of guanidine compound interaction with the GABA-A ρ1 receptor</i> "	2015
Dissertation Defense: " <i>Characterization of guanidine compound interaction with the GABA-A ρ1 receptor</i> "	2015
UNTHSC Research Appreciation Day abstract: " <i>Characterizing the amiloride potentiation site in GABAA rho1 receptors</i> "	2015
Society for Neuroscience abstract: " <i>Characterizing the amiloride potentiation site in GABAA rho1 receptors</i> "	2014
Experimental Biology National Conference abstract: " <i>Novel GABAA-rho1 interactions with acid sensing ion channel ligands</i> "	2014

Society for Neuroscience Diversity Poster Session abstract: <i>"Characterizing the amiloride potentiation site in GABAA rho1 receptors"</i>	2014
UNTHSC Research Appreciation Day abstract: <i>"NOVEL GABAA-RHO1 INTERACTIONS WITH ACID SENSING ION CHANNEL LIGANDS"</i>	2014
18 th Annual UT Austin Neuroscience Symposium abstract: <i>"Crystallization of a homomeric GABAA receptor"</i>	2014
Society for Neuroscience abstract: <i>"Crystallization of a homomeric GABAA receptor"</i>	2013
Nation Directors of Graduate Studies meeting: <i>"PROGRESS TOWARDS CRYSTALLIZING A GABAA RECEPTOR"</i>	2013
UNTHSC Research Appreciation Day (RAD) abstract: <i>"PROGRESS TOWARDS CRYSTALLIZING A GABAA RECEPTOR"</i>	2013
Society for Neuroscience Diversity Forum abstract: <i>"Pre Crystallization Screening of a GABA_A-ρ (GABAC) receptor"</i>	2012
Society for the Advancement of Chicanos and Native Americans in Science National Conference (SACNAS) National Conference abstract: <i>"Pre Crystallization Screening of a Gamma-Aminobutyric Acid A Receptor"</i>	2011
UNTHSC Research Appreciation Day (RAD) abstract: <i>"Pre Crystallization Screening of a GammaAminobutyric Acid A Receptor"</i>	2011

MENTORED TRAINEES

High school

Jordan Corley	2022
Samantha Kucerak	2021
Isabel Orama	2020-2021
Chenelle Gordon (SUNY Albany 2020)	2019-2020
Alesandra Martin (Binghamton University 2019)	2018-2019
Jack Silvers (Harvard 2020)	2019
Georgia Kiriakou	2018
Julia Kischkat	2018

Undergraduate

Alesandra Martin (Binghamton University)	2022
Marissa Costa (UMass)	2017

ORGANIZATIONS/ LEADERSHIP

Einstein Pelham Lab Summer Highschool Research Program (Assistant Director)	2022-Present
United Network of Interdisciplinary Thinkers, Yo! (UNITY!) Cofounder	2020-Present
The Swaliga Foundation (Board of Directors Member: Development Committee/Junior Board Founder)	2020-Present
Einstein College of Medicine Dominick P. Purpura Department of Neuroscience Postdoctoral Works in Progress (WIP) Committee	2019-Present
Albert Einstein College of Medicine NeuronAir Podcast (Co-Founder, Social Media)	2019-Present
Einstein College of Medicine Junior Investigator Research Award Scientific Review Officer (SRO)	Fall 2019
Einstein College of Medicine Dominick P. Purpura Department of Neuroscience Retreat Planning Committee	Spring 2019
Her Honor Mentoring (Mentor)	2018-Present
Einstein College of Medicine Senate (Post-doctoral senator)	2018-2022
Know Science Foundation (Board Member/Content Coordinator)	2018-Present
Einstein Post-doctoral Association (Neuroscience Post-doctoral Representative)	2017-2022
Einstein Post-doctoral Association	2016-Present
Sigma Xi Research Society	2015-Present
UNTHSC K-12 Outreach Student Ambassador	2014-2015
American Association for the Advancement of Science	2013-present
Society for Neuroscience	2012-Present

