

Timothy Joshua Hines, Ph.D.

The Jackson Laboratory, Bar Harbor, ME
Timothy.hines@jax.org

EDUCATION AND TRAINING:

The Jackson Laboratory

Postdoctoral Associate, Mentor: Rob Burgess

Sept 2018 – present

University of South Carolina

PhD, Biological Sciences, Mentor: Deanna Smith

Aug 2012 – Aug 2018

Appalachian State University

Bachelor of Arts degree, Psychology

Minor, German and Chemistry

Bachelor of Science degree, Psychology

Concentration, Natural Sciences

Aug 2008 – May 2012

RESEARCH EXPERIENCE

Postdoctoral Associate

Peripheral Neuropathy – Dr. Rob Burgess's lab at Jax

Sept 2018 – present

- Characterizing novel mouse models of inherited peripheral neuropathy
- Investigating the cellular and biochemical mechanisms underlying the pathology of Charcot-Marie-Tooth disease

Graduate Research Assistant

Neural Cell Biology – Dr. Deanna Smith's lab at USC

Feb 2013 – Aug 2018

- Experienced in cryosectioning, immunofluorescence, primary neuron culture, confocal and widefield microscopy, and basic biochemical techniques
- Maintained mouse colony, and performed animal injections and surgeries adhering to IACUC protocol
- Presented at multiple regional and national conferences

Molecular Physiology – Dr. David Mott's lab at USC

Oct 2012 – Feb 2013

- Learned techniques such as cell culture and transfection, and Western blotting
- Gained knowledge in how epilepsy affects neural transmission

Undergraduate Research Assistant

Behavioral Neuroscience – Dr. Mark Zrull's lab at App. State Univ.

July 2010 – July 2012

- Learned valuable research skills, such as writing a research paper and presentation
- Used immunohistochemistry and microscopy methods to gather data from tissue samples
- Ran animal behavioral experiments adhering to IACUC protocol
- Presented at several regional and national conferences

Social Psychology – Dr. Denise Martz's lab at App. State Univ.

Jan – May 2010

- Developed behavioral coding for "fat talk"
- Produced research design to explore "fat talk" empirically

TEACHING EXPERIENCE

Teaching Assistant – Physiology

Summer 2018

- Instructed an undergraduate physiology lab

Teaching Assistant – Biology 101

Fall 2013 & 2017, Spring 2018

Teaching Assistant – Chemistry 102

Fall 2012, Spring 2013

- Led recitation sessions for an introductory chemistry class
- Instructed an accompanying chemistry lab

HONORS & AWARDS

Dean's List (GPA > 3.45)
Chancellor's List (GPA > 3.85)

Fall '08, '09, '10
Spring '11, '12, Fall '11

GRANTS & FELLOWSHIPS

University of South Carolina Presidential Fellowship	\$32,000 (Aug 2012 – May 2016)
Sloan Foundation Fellowship	\$7,395 (Aug 2012)
Kathryn Hinnant-Johnson Memorial Fellowship	\$1000 (May 2018)
Travel Grant from The Jackson Laboratory	\$1000 (Jan 2020)
Travel Grant from Appalachian State Office of Student Research	\$400 (Mar 2012)
Travel Grant from University of South Carolina Graduate School	\$200 (Oct 2012)
Travel Grant from UAB Neuroscience Roadmap Scholars	\$200 (Jul 2015)

ACADEMIC MEMBERSHIPS

Psi Chi, Psychology Honor Society	2010 – present
Society for Neuroscience	2012 – present
American Society for Cell Biology	2014 – present
Peripheral Nerve Society	2019 – present

STUDENT ORGANIZATIONS

Graduate Association for Biological Sciences	2013 – 2018
Graduate Association for Brain Awareness (GABA)	2015 – 2018

COURSES AND WORKSHOPS ATTENDED

21 st Century Mouse Genetics (Bar Harbor, ME)	October 2018
Quantitative Trait Mapping in Diversity Outbred Mice (Bar Harbor, ME)	August 2019
Introduction to Image Analysis with FIJI (Bar Harbor, ME)	March 2020

ACADEMIC AND COMMUNITY SERVICE

Columbia, SC District 5 High School Science Fair Judge	Spring 2016
Prepared and gave presentations at local schools as part of GABA	2015 – 2018
Ad hoc reviewer for BMC Molecular Biology, FASEB, Journal of Neuroscience, and Neurobiology of Disease	

PRESENTATIONS

Hines TJ, Minton BR, Francis TC, Ross JL, Crane DA, Zrull MC. (2011). *Environmental Enrichment Affects Severity and Intensity of Audiogenic Seizures in Rat*. Poster session presented at the National Conference for Undergraduate Research, Ithaca, New York.

Hines TJ, Minton BR, Zrull MC. (2012). *Effects of Environmental Enrichment on Rat Behavior in the Open Field Test*. Poster session presented at the National Conference for Undergraduate Research, Ogden, Utah.

Hines TJ, Eichorst RE, Doyle AM, Hinnant SG, Cobb DE, Minton BR, Zrull MC. (2012). *Observations on environmental enrichment and exploratory behavior in young rats*. Poster session presented at the Society for Neuroscience Conference, New Orleans, Louisiana.

Hines TJ, Gao X, Smith DS. (2015). *Knocking out Lis1 in adult mice produces a lethal phenotype*. Poster presented at UAB NEURAL conference, Birmingham, Alabama.

Hines TJ, Gao X, Smith DS. (2016). *Inducible knockout of Lis1 in adult mice causes death following a progressive decline in motor and autonomic functions*. Poster presented at Molecular Mechanisms of Axon Degeneration meeting, Bar Harbor, Maine.

Hines TJ, Gao X, Sahu S, Lange MM, Turner JR, Twiss JL, Smith DS. (2018). *An Essential Post-Developmental Role for Lis1 in Mice*. Poster presented at Society for Neuroscience Conference, Washington D.C.

Hines TJ, Tao F, Partin C, O'Connor C, Züchner S, Burgess RW. (2019). *Genetic modifiers of Charcot-Marie-Tooth disease – integrating human and mouse genetics*. Poster presented at Molecular Mechanisms of Axon Degeneration meeting, Loch Lomond, Scotland.

Hines TJ, Spaulding EL, Bais P, Burgess RW. (2019). *Profiling transcription and translation in motor neurons from mouse models of Charcot-Marie-Tooth disease*. Poster presented at EMBL meeting for Protein Synthesis and Translation Control, Heidelberg, Germany.

PUBLICATIONS (* indicates equal contributions)

Hines TJ, Minton BR, Zrull MC. (2012). *Effects of Environmental Enrichment on Rat Behavior in the Open Field Test*. Proceedings paper for the National Conference for Undergraduate Research, 259-265.

Kalinski AL*, **Hines TJ***, Smith DS, Twiss JL. (2015). *Neuronal transport and spatial signaling mechanisms in neural repair*. *Encyclopedia of Cell Biology*, Elsevier Press, Eds. RA Bradshaw and P Stahl.

Gao FJ*, Shi L*, **Hines TJ**, Hebbar S, Neufeld KL, Smith DS. (2017). *Insulin signaling regulates a functional interaction between Adenomatous Polyposis Coli (APC) and cytoplasmic dynein*. *Molecular Biology of the Cell*, 28(5):587-599.

Hines TJ, Gao X, Sahu S, Lange MM, Turner JR, Twiss JL, Smith DS. (2018). *An Essential Post-Developmental Role for Lis1 in Mice*. *eNeuro*. doi: 10.1523/ENEURO.0350-17.2018.

Shi L, **Hines TJ**, Muthusamy N, Bergson C, Smith DS. (2018). *NEEP21 Family Member Calcyon Increases Lysosome Motility in Axons by Binding Microtubule Motors and Heterotetrameric Adaptor Proteins*. *Molecular Biology of the Cell*, 29(17):2055-2068.

Morelli KH, Griffin LB, Pyne NK, Wallace LM, Fowler AM, Oprescu SN, Takase R, Wei N, Meyer-Schuman R, Mellacheruvu D, Kitzman JO, Kocen SG, **Hines TJ**, Spaulding EL, Lupski JR, Nesvizhskii A, Mancias P, Butler IJ, Yang XL, Hou YM, Antonellis A, Harper SQ, Burgess RW. (2019). *Allele-Specific RNA Interference: Precision Gene Therapy for Dominant Forms of Charcot-Marie-Tooth Disease*. *Journal of Clinical Investigation*, 129(12):5568-5583.

Racine JJ, Chapman HD, Doty R, Cairns BM, **Hines TJ**, Tadenev ALD, Anderson LC, Green T, Dyer ME, Wotton JM, Bichler Z, White J, Ettinger R, Burgess RW, Serreze DV. (2020). *T cells from NOD-Perlg mice target both pancreatic and neuronal tissue*. Submitted to *Journal of Immunology*, in revision.

Spaulding EL, Bais P, **Hines TJ**, Hill DP, Gobet C, Pipis M, Reilly MM, Jennings MJ, Horvath R, Bai Y, Shy ME, Alvarez-Castelao B, Schuman EM, Storkebaum E, Burgess RW. (2020). *Mutations in tRNA synthetases impair translation and activate the integrated stress response in inherited peripheral neuropathies*. Submitted to *Science*, in revision.

STUDENTS MENTORED

University of South Carolina Undergraduates: Michael Alexander, Zak Roth, Chloe Jerrold-Jones, Meghann Lange, Stephanie Muscat

JAX High School Interns: Calvin Partin, Kyle Collin

JAX Summer Student Program: Fahad Nabi