

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. DO NOT EXCEED FIVE PAGES.

NAME: Ross Allen Carson

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Medical Student

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Michigan	B.S.	05/2014	Neuroscience & Evolutionary Anthropology
University of Pittsburgh School of Medicine	M.D.	06/2019	Medicine, Physician Scientist Training Program

NOTE: The Biographical Sketch may not exceed five pages. Follow the formats and instructions below.

A. Personal Statement

As an undergraduate at the University of Michigan I was involved in research which sought to elucidate the mechanism of peripheral nerve degeneration after acute nerve injury using the model organism *Drosophila melanogaster*. This experience was an excellent introduction into neuroscience research and allowed me to develop a sense of scientific creativity. I am currently studying in the Physician Scientist Training Program (PSTP) at the University of Pittsburgh School of Medicine. My first summer project in the PSTP was mapping the mammalian synapse and developing a simple mouse model for testing novel treatments of neuromuscular diseases. This project involved collecting electrophysiological recordings and working with collaborators at Carnegie Mellon University to develop a virtual model of this biological system. Currently, I am working on another project at the University of Pittsburgh School of Medicine that seeks understand the impact of glucocorticoids on neuronal stem cell biology and improve outcomes for premature infants treated prenatally with glucocorticoids. This project employs of a broad range of biochemical procedures which complement the genetic and electrophysiological techniques I have previously studied. Although I have not decided on a medical specialty, I will continue to pursue a career in neuroscience which will bridge the gap between the bench and the bedside.

B. Positions and Honors

Positions and Employment

ACTIVITY/OCCUPATION	BEGINNING DATE (mm/yy)	ENDING DATE (mm/yy)	FIELD	INSTITUTION/COMP ANY	SUPERVISOR/ EMPLOYER
Undergraduate Research Fellow	06/2012	06/2014	Neuroscience	University of Michigan	Catherine Collins, PhD
Summer Internship	06/2013	08/2013	Pediatric Neuro-Rehabilitation	Motts Children's Hospital	Anne Comstock, MS
Physician Scientist Training Program	06/2014	Present	Neurobiology and Pharmacology	University of Pittsburgh School of Medicine	Richard Steinman, MD PhD

Other Experience and Professional Memberships

2014- Member, AMA
2014- Member, American Physician Scientist Association
2015- President of the University of Pittsburgh School of Medicine Health and Wellness Committee
2015- University of Pittsburgh School of Medicine FAST Group Coordinator
2015- Physical Medicine and Rehabilitation Interest Group Coordinator

Honors

2012 Underwood-Alger Scholarship, University of Michigan
2014 8 Semester Angel Scholar, University of Michigan
2014 B.S. with Highest Honors, University of Michigan
2014 Christine Psujek Memorial Award for Best Honors Thesis, University of Michigan
2015 Physicians Scientist Training Program, University of Pittsburgh School of Medicine

C. Contribution to Science

My work at the University of Michigan focused on the role of calcium in axonal degeneration after nerve injury. It was previously known that shortly after injury intracellular calcium levels dramatically increase shortly after injury and that this influx was absolutely necessary for axonal degeneration to occur. To understand the role calcium plays in degeneration and how the post-injury calcium influx is regulated, I developed a novel technique using the model organism *Drosophila melanogaster*. My work highlights the role of specific ion channels in the progression of axon degeneration and suggests that calcium plays an important role throughout the process of degeneration. This work provides a mechanistic basis for how membrane excitability is linked to axon degeneration and provides new targets for pharmacological therapy.

- a) Mishra B, Carson R, Hume RI, Collins C. Sodium and potassium currents influence Wallerian degeneration of injured *Drosophila* axons. *J. Neurosci.* 2013;33(48):18728-39. doi:10.1523/JNEUROSCI.1007-13.2013. PMID: PMC3841444.
- b) Carson R. Regulation of Calcium in *Drosophila* Motorneuron Axon Degeneration. Thesis, University of Michigan. Ann Arbor: deepblue.lib.umich, 2014. <http://deepblue.lib.umich.edu/bitstream/handle/2027.42/107704/rosscars.pdf?sequence=1>

D. Research Support

Ongoing Research Support

PSTP, University of Pittsburgh Medical School