BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Chambers, Jeremy Wayne	Assistant Professor of Cellular Biology and Pharmacology
eRA COMMONS USER NAME (credential, e.g., agency login) CHAMBERSJWL	

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

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
West Liberty University, West Liberty, WV	B.S.	05/02	Biology and Chemistry
Clemson University, Clemson, SC	Ph.D.	12/07	Biochemistry
University of Pennsylvania, Philadelphia, PA	Postdoc	12/08	Cancer Biology
The Scripps Research Institute, Jupiter, FL	Postdoc	11/11	Molecular Therapeutics

A. Personal Statement

The goal of the research in this proposal is to determine the relationship between Sab-mediated signaling and mitochondrial fission during primary myopathies and atrophy. Of relevance to this application, I developed and spearheaded the investigations regarding Sab-mediated signaling during my postdoctoral research. I found that Sab hosted signaling components capable of promoting changes in mitochondrial physiology leading to mitochondrial dysfunction and cell death. Further, I showed that inhibition of signaling on Sab was a therapeutic option to treat degenerative human disease. In particular, inhibition of Sab-mediated events prevented mitochondrial dysfunction and cardiotoxicity during ischemia/reperfusion injury in adult rats. It was from this work that I developed the idea that Sab expression may alter mitochondrial morphology and ultimately lead to bioenergetic decline and loss of muscle mass. I propose this scenario is central to the pathophysiology of primary myopathies. By examining the problem of targeting mitochondria for fission from the unique perspective proposed in this application we will define a novel aspect in pathogenesis of primary myopathies and unearth new therapeutic targets to improve treatments of primary myopathies and atrophy.

B. Positions

Positions and Employment

2003-2007	Graduate Research Assistant and Teaching Assistant, Clemson University, Department of Genetics and Biochemistry, Clemson, SC.
2008	Postdoctoral Research Assistant, University of Pennsylvania, School of Medicine, Department of Cancer Biology, Philadelphia, PA.
2009-2011	Research Associate, The Scripps Research Institute, Translational Research Institute and Department of Molecular Therapeutics, Jupiter, FL.
2011	Senior Research Associate, The Scripps Research Institute, Translational Research Institute and Department of Molecular Therapeutics, Jupiter FL.
2011-present	Assistant Professor, Florida International University, Herbert Wertheim College of Medicine, Department of Cellular Biology and Pharmacology, Miami, FL.

C. Peer-reviewed Publications

1. Prado, A, Petroianu, GA, Lorke, DE, Chambers, JW. **A trivalent approach for determining in vitro toxicology: Examination of oxime K027.** *Journal of Applied Toxicology.* Published online May 22, 2014. PMID: 24853289

2. Chambers, JW, Pachori, A, Howard, S, Iqbal, S, LoGrasso, PV. **Inhibition of JNK Mitochondrial Localization and Signaling is Protective Against Ischemia-Reperfusion Injury in Rats**. *Journal of Biological Chemistry*. 288(6). (2013). 4000-4011. PMID: 23258542.

3. Chambers, JW, Howard, S, LoGrasso, PV. **Blocking c-Jun N-terminal Kinase (JNK) Translocation to the Mitochondria Prevents 6-Hydroxydopamine-induced Toxicity in Vitro and in Vivo**. *Journal of Biological Chemistry*. 288(2). (2013). 1079-1087. PMID: 23184940.

4. Boregowda, S, Krishnappa, V, Chambers, JW, LoGrasso, PV, Lai, W, Ortiz, LA, Phinney, PG. **Atmospheric Oxygen Inhibits Growth and Differentiation of Marrow-Derived Mouse Mesenchymal Stem Cells via a p53-Dependent Mechanism: Implications for Long-Term Culture Expansion.** *Stem Cells.* 30(5). (2012). 975-987.

5. Chambers, JW, Cherry, L, Laughlin, JD, Figuera-Losada, M, and LoGrasso, PV. **Selective Inhibition of Mitochondrial JNK Signaling Achieved Using Peptide Mimicry of the Sab Kinase Interacting Motif-1 (KIM1).** *ACS Chemical Biology*. 6(8). (2011). 808-818. PMID: 21563797.

6. Chambers, JW and LoGrasso, PV. **Mitochondrial c-jun-N-Terminal Kinase (JNK) Signaling Initiates Physiological Changes Resulting in Amplification of Reactive Oxygen Species Generation**. *Journal of Biological Chemistry*. 286(18). (2011). 16052-16062. PMID: 21454558.

7. Chambers, JW, Pachori, A, Howard, S, Ganno, M, Hanson, D, Kamenecka, T, Song, X, Duckett, D, Chen, W, Ling, YY, Cherry, L, Cameron, MD, Lin, L, Ruiz, CH, LoGrasso, PV. **Small Molecule c-jun-N-terminal Kinase (JNK) Inhibitors Protect Dopaminergic Neurons in a Model of Parkinson's Disease.** *ACS Chemical Neuroscience* 2(4). (2011). 198-206.

8. Dodson, HC, Lyda, TL, Chambers, JW, Morris, MT, Christensen, KC, and Morris, JC. **Quercetin, a fluorescent bioflavanoid, inhibits *Trypanosoma brucei* hexokinase 1.** *Experimental Parasitology*. 127(2). (2011). 423-428.

9. Kamenecka, T, Jiang, R, Song, X, Duckett, D, Chen,W, Ling, YY, Habel, J, Laughlin, JD, Chambers, J, Figuera-Losada, M, Cameron, MD, Lin, L, Ruiz, CH, and LoGrasso, PV. **Synthesis, Biological Evaluation, X-Ray Structure, and Pharmacokinetics of Aminopyrimidine c-jun-N-terminal Kinase (JNK) Inhibitors.** *Journal of Medicinal Chemistry*. 53(1). (2010). 419-431.

10. Chambers, JW, Maguire, TG, and Alwine, JC. **Glutamine metabolism is essential to human cytomegalovirus infection.** *Journal of Virology*. 84(4). (2010). 1867-1873.

11. Chambers, JW, Kearns, MT, Morris, MT and Morris, JC. **Assembly of heterohexameric trypanosome hexokinases reveals that hexokinase 2 is a regulable enzyme.** *Journal of Biological Chemistry*. 283(22). (2008). 14963-14970.

12. Chambers, JW, Fowler, ML, Morris, MT, and Morris, JC. **The anti-trypanosomal agent Ionidamine inhibits *Trypanosoma brucei* hexokinase 1.** *Molecular and Biochemical Parasitology*. 158(2). (2008). 202-207.

13. Chambers, JW, Morris, MT, Smith, KS, and Morris, JC. **Residues in an ATP binding domain influence sugar binding in a trypanosome hexokinase.** *Biochemical and Biophysical Research Communications*. 365(3). (2008). 420-425.

14. Morris, MT, Debruin, C, Yang, Z, Chambers, JW, and Morris, JC. **Activity of a second *Trypanosoma brucei* hexokinase is controlled by an 18-amino acid tail.** *Eukaryotic Cell*. 5(12). (2006). 2014-2023.

D. Research Support

1. Hearing the Ovarian Cancer Whisper. Jacquie Liggett Research Fellowship. (July 1, 2014 – June 30, 2016). ($50,000.00). Jeremy Chambers (PI).