

CURRENT APPOINTMENT

March 2014-present Postdoctoral Associate, University of Maryland, College Park
Department of Bioengineering
Engineering biomaterials that generate immunotherapy in multiple sclerosis, neuroblastoma, and cardiovascular disease.

EDUCATION

Aug. 2009-March 2014 Georgia Regents University, Augusta, GA
Ph.D Doctor of Philosophy in the Biomedical Sciences
Section of Experimental Medicine – Department of Medicine
Thesis Advisor: Jennifer C. Sullivan, Associate Professor, jensullivan@gru.edu
Thesis title: *The Impact of Blood Pressure and Transforming Growth Factor-Beta on the Renal T cell Profile in Male and Female Spontaneously Hypertensive Rats*
*Funded by the American Heart Association Predoctoral Fellowship and American Physiological Society William Townsend Porter Pre-doctoral Fellowship

Sept. 2004- May 2008 University of Maryland, College Park, MD
B.S. Major: Biological Sciences with concentration in Microbiology
Immunology, Medical and Food Microbiology Courses Taken
College Park Scholar in the Life Sciences

LABORATORY SKILLS (not exclusive)

ELISA • Immunohistochemistry • Primary and secondary cell culture • Vascular reactivity by wire myography • Immunology • Immune Cell Isolation • Mixed lymphocyte reaction • Multi-color flow cytometry analysis with surface and intracellular staining • DNA purification and detection • Protein purification and detection • RNA purification and real time-polymerase chain reaction (RT-PCR) • 2D and 1D gel electrophoresis • SDS-PAGE and western and slot blot analysis • Immunoprecipitation • Bacterial isolation, detection, and transformation • Cardiovascular Physiology • Metabolic Studies • Rodent Husbandry, including drug delivery via gavage, intraperitoneally, intramuscularly, in drinking water, and/or osmotic mini-pumps, metabolic cage studies, survival surgeries such as orchiectomy and ovariectomy, and collection of serum, plasma, and tissue for analytical processing • Experience with various animal models of cardiovascular and renal disease and inflammation

PUBLICATIONS IN REFERRED JOURNALS

1. Zimmerman MA, Babak B, **Tipton AJ**, O'Connor P, and Sullivan JC. Chronic Ang II Infusion Induces Sex-Specific Increases in Renal T cells in Sprague Dawley Rats. *Am J Physiol Renal Physiology*. In press.
2. **Tipton AJ**, Baban B, and Sullivan JC. Female Spontaneously Hypertensive Rats Have a Compensatory Increase in Renal Regulatory T Cells Following the Development of Hypertension. *Hypertension*. 2014 Sep;64(3):557-64.
3. **Tipton AJ** and Sullivan JC. Sex Differences in T Cells in Hypertension. *Clin Ther*. 2014 Aug 16. (invited review)
4. **Tipton AJ** and Sullivan JC. Sex Differences in Blood Pressure Control: Are T Cells the missing link? *Hypertension*. 2014 Aug;64(2):237-9. (editorial commentary)
5. Barshishat-Kupper M, **Tipton AJ**, McCart EA, McCue J, Mueller GP, Day RM. Effect of Ionizing Radiation on Liver Protein Oxidation and Metabolic Function in C57BL/6J Mice. *Int J Radiat Biol*. 2014 Aug 11:1-10.
6. Brinson KN, Elmarakby AA, **Tipton AJ**, Crislip GR, Yamamoto T, Baban B, Sullivan JC. Female SHR have greater blood pressure sensitivity and renal T cell infiltration following chronic NOS inhibition than males. *Am J Physiol Regul Integr Comp Physiol*. 2013 Oct;305(7):R701-R710.
7. Day RM, Davis TA, Barshishat-Kupper, M, McCart EA, **Tipton AJ**, Landauer MR. Enhanced hematopoietic protection from radiation by the combination of genistein and captopril. *Int Immunopharmacol*. 2013 Jan 15;15(2):348-356.

8. **Tipton AJ**, Baban B, and Sullivan JC. Female spontaneously hypertensive rats have greater renal anti-inflammatory T lymphocyte infiltration than males. *Am J Physiol Regul Integr Comp Physiol*. 2012 Aug 15;303(4):R359-67.
9. Barshishat-Kupper M, Mungunsukh O, **Tipton AJ**, McCart EA, Davis TA, Landauer MR, and Day RM. Captopril modulates HIF-1 α and erythropoietin, responses in a murine model of total body irradiation. *Experimental Hematology*. 2011 Mar;39(3):293-304.

FUNDING

July 2013 – March 2014 American Heart Association Predoctoral Fellowship

Sept. 2011– June 2013 American Physiological Society William Townsend Porter Predoctoral Fellowship

*Designated as the Eleanor Ison Franklin Fellow for having the highest ranked renewal application, Sept. 2012 – Aug. 2013

ABSTRACTS/POSTER/ORAL PRESENTATIONS (selected out of 13)

1. **Tipton AJ**, Li B, and Sullivan JC. Female spontaneously hypertensive rats have a compensatory increase in renal regulatory T cells in response to elevated blood pressure. *FASEB J*. April 2014 28:1083.3 (poster)
2. **Tipton AJ**, Baban B, and Sullivan JC. Male SHR Have Higher HMGB1 Mediated Renal T Cell Activation Compared to Females. *Hypertension*. 2013;62:A89 (**oral**)
3. **Tipton AJ**, Womack M, Sullivan JC. Neither Hypertension nor Sexual Maturation is Responsible for Elevated Mesenteric Arterial Expression of TGF- β in Female Spontaneously Hypertensive Rats (SHR). *FASEB J*. April 9, 2013 27:1113.3 (poster)
4. **Tipton AJ**, Baban B, and Sullivan JC. Female sex hormones blunt renal pro-inflammatory T cell infiltration compared to males. *Hypertension*. 60(3): supplement.
5. **Tipton AJ** and Sullivan JC. Female spontaneously hypertensive rats (SHR) have higher expression of TGF- β and smad signaling in mesenteric arteries following the development of hypertension. *FASEB J*. March 29, 2012 26:880.1. (poster and **oral**)
6. **Tipton AJ**, Baban B, and Sullivan JC. Mycophenolate mofetil reduces blood pressure to a greater extent in female SHR than in males. *Hypertension*. 58:e33-e183, P450, 2011. (poster)
7. **Tipton AJ** and Sullivan JC. Sex differences in downstream TGF-beta signaling in the arteries of spontaneously hypertensive rats. *The Physiologist*. 56(6):10.3, 2011. (poster and **oral**)

PROFESSIONAL EXPERIENCE

Scientific Laboratory Appointments

June 2008- July 2009	<p>Biological Science Laboratory Technician, GS-05 Uniformed Services University of the Health Sciences, Bethesda, Maryland</p> <ul style="list-style-type: none"> Investigated protein modification biochemically by measuring protein oxidation within the lungs caused by high levels of radiation. Completed plasmid purification for pulmonary drug delivery in a mouse model.
June 2007-May 2008	<p>Research Intern, Center for Food Safety & Applied Nutrition, Office of Regulatory Science Food & Drug Administration, College Park, MD</p> <ul style="list-style-type: none"> Designed new detection technique to locate living or dead <i>Shigella</i> in produce. Analyzed the efficiency of an amphiphilic compound on established food safety detection methods of <i>Salmonella</i> in peanut butter.
June – Aug. 2006	<p>Research Intern, University of Chicago Summer Research Program, Chicago, Illinois</p> <ul style="list-style-type: none"> Purified <i>Bacillus anthracis</i> protein toxins using three types of chromatography columns and performed radioactive assays to determine the activity of the purified toxins.

- Assessed the effects of the toxin on colon cell integrity *in vitro* by measuring transepithelial resistance.
- Sept. 2003- May 2004 Research Intern, Biological Resource Engineering Dept., University of Maryland
- Researched how dimensionality affects the simulation of cardiac dynamics.
 - Designed dimensional simulation of cardiac dynamics using C programming.

Teaching Experience

- May - Aug 2013 Mentor to Eric Williams, Pre-matriculation medical student scholar
Georgia Regents University, Augusta, GA
- May - July 2013 Mentor to Beverly Li, UPSTART undergraduate student
Georgia Regents University, Augusta, GA
- May - July 2012 Mentor to Mandy Wommack, Pre-matriculation medical student scholar
Georgia Regents University, Augusta, GA
- June – Aug. 2005 Intern, Up, Up, and Away Program, University of Maryland, College Park, MD
- Enhanced the knowledge of 40 middle school students about the aerodynamics of flight and created a fun and inclusive learning environment.
- June – Aug. 2004 Program Assistant, Engineering, Science, and Technology to Energize and Expand Young Minds Program at University of Maryland, College Park, MD
- Supervised 10 students, ages 16-17, with their research projects.
 - Tutored students on the math section of the SAT and counseled on college preparation.

Leadership Skills

- Nov. 2012 Discussion Facilitator during “Networking in Your Scientific Discipline: Physiology” Session and a Panelist on “Graduate School Experience: My Personal Story,” a Professional Development Session at the Annual Biomedical Research Conference for Minority Students, San Jose, California

AWARDS/HONORS (within last 3 years)

- April 2014 2014 Caroline tum Suden/Frances Hellebrandt Professional Opportunity Awards
- April 2014 Research with Distinction from APS: Water and Electrolyte Homeostasis Section
- Sept. 2013 “I want to be a Pro!” abstract award from Miltenyi Biotec (grant for equipment purchase)
- May 2013 American Heart Association Predoctoral Fellowship (2 years of support)
- April 2013 Award for Excellence in Research from the College of Graduate Studies at Georgia Regents University
- April 2013 Research with Distinction from APS: Water and Electrolyte Homeostasis Section
- April 2013 APS Minority Travel Fellowship Award to attend Experimental Biology Meeting, Boston
- April 2013 Travel Award to attend Emory University STEM Research and Career Symposium
- Sept. 2012 American Heart Association High Blood Pressure Research (HBPR) New Investigator Travel Award for Trainees to attend HBPR 2012 Scientific Sessions
- Aug. 2012 Travel Award to attend FASEB-MARC Leadership Development and Grant Writing Seminar Program
- April 2012 Finalist (2nd place out of 4 finalists) for American Physiological Society: Water and Electrolyte Homeostasis (WEH) Section Pre-doctoral Research Recognition Award at Experimental Biology
- April 2012 Selected for Steven M. Horvath Professional Opportunity Award, declined to accept WEH award
- April 2012 APS/NIDDK Minority Travel Fellowship Award to attend Experimental Biology Meeting