

Adrienne E. Williams  
410 Neville Street,  
LIF-B, Biology Department  
Beckley WV, 25801  
304-929-1250  
adrienne.williams@mail.wvu.edu

## **EDUCATION:**

### **Graduate**

University of Florida, Gainesville, Florida

College of Medicine

August 13, 2009-August 11, 2015

Doctor of Philosophy in Medical Sciences

Interdisciplinary Program in Biomedical Sciences:

- Immunology and Microbiology Concentration
- Clinical and Translational Science Interdisciplinary Concentration

Doctoral Supervisor: Dr. Seunghee Cha, DDS, PhD

Clinical Supervisor: Dr. Carol Stewart, MS, DDS

*Dissertation: Innate Immune Regulation and MicroRNA in Sjögren's syndrome.*

### **Baccalaureate**

West Virginia University, Morgantown, West Virginia

Eberly College of Arts and Sciences

August 21, 2005-May 5, 2009

- Bachelor of Science Biology
- Bachelor of Science Forensic and Investigative Science

*Magna Cum Laude*

## **TEACHING and MENTORING EXPERIENCE:**

- 2019- Translational Science, BIOL 493J, WVU Institute of Technology  
2018- Immunology, BIOL 454, WVU Institute of Technology  
2017- Biology Seminar: Capstone Experience, BIOL 494, WVU Institute of Technology  
2017- Human Anatomy and Physiology I and II courses, BIOL 230/BIOL 231, WVU Institute of Technology  
2017- General Biology I Lecture and Laboratory, BIOL 111, WVU Institute of Technology  
2017- General Biology II Laboratory, BIOL 112, WVU Institute of Technology  
2015-2017 Machen Opportunity Scholars Program Life Coach, University of Florida  
2009-2017 Mentored Research, University of Florida, Colleges of Medicine and Dentistry  
2009-2017 Seminar and Journal Club lectures, University of Florida, Colleges of Medicine and Dentistry

## **POSITIONS and HONORS:**

### **Positions and Employment Experience**

- 2018- IDEA Faculty Fellow, WVU Office of the Provost IDEA Fellowship, Morgantown, WV  
2018- Assistant Professor, WVU Institute of Technology, Leonard C. Nelson College of Engineering and Sciences, Department of Biology, Beckley, WV  
2017 Visiting Assistant Professor, WVU Institute of Technology, Leonard C. Nelson College of Engineering and Sciences, Department of Biology, Beckley, WV  
2017 Adjunct Assistant Professor, WVU Institute of Technology, Leonard C. Nelson College of Engineering and Sciences, Department of Biology, Beckley, WV

- 2015-2017 Postdoctoral Fellow, T90 Postdoctoral Fellowship at University of Florida College of Dentistry, Department of Oral Biology, Gainesville, FL
- 2013-2015 Executive Officer and Treasurer, PhDMoms Graduate Student Organization, University of Florida, Gainesville FL
- 2009-2015 Clinical and Translational Science Institute Fellow/Graduate Research Assistant, College of Medicine, Interdisciplinary Program in Biomedical Sciences, University of Florida, Gainesville, FL
- 2007-2009 Undergraduate Fellow, McNair Scholars Post-Baccalaureate Achievement Program, West Virginia University, Morgantown, WV

### Awards and Honors

- 2016 PhD/Post-doc Poster Presentation 1<sup>st</sup> place, University of Florida College of Dentistry Spring Synergy
- 2015 PhD/Post-doc Oral Presentation 1<sup>st</sup> place, University of Florida College of Dentistry Spring Synergy
- 2014 PhD/Post-doc Oral Presentation 2<sup>nd</sup> place, University of Florida College of Dentistry Spring Synergy
- 2014 Graduate Student Mentoring Award, University of Florida-Howard Hughes Medical Institute Science for Life Program
- 2014 Graduate Research Award, University of Florida College of Medicine Medical Guild, 3<sup>rd</sup> place Immunology and Microbiology Concentration Competition
- 2012 Wrigley Basic Salivary Research Award, International Association for Dental Research
- 2012 PhD/Post-doc Oral Presentation 2<sup>nd</sup> place, University of Florida College of Dentistry Spring Synergy
- 2011 Carl Storm Underrepresented Minority Fellowship, Salivary Glands and Exocrine Biology Gordon Research Conference, travel award

### RESEARCH SUPPORT:

Transition to Scientific Independence Award 02-01-16 to 01-31-17

University of Florida College of Dentistry

*MicroRNA and translational regulation in Sjögren's syndrome monocytes.*

Overall goals: To investigate functional roles of SjS-associated miRNAs in innate immune/stress responses and determine how ribosomes distinguish foreign RNA through unconventional translation initiation.

Role: Principal Investigator

T90 DE021990 NIH/NIDCR R.A. Burne (PI) 08-16-15 to 12-31-16

*Comprehensive Training Program in Oral Biology.*

Overall goals: The major goal of this project is to produce a group of highly skilled and interactive scientists who will generate new knowledge and translate discoveries to tangible advances in the detection, prevention, treatment and cure of diseases and abnormalities of the oral and craniofacial complex.

Role: Postdoctoral Fellow

Sjögren's Syndrome Foundation Student Fellowship  
American Association for Dental Research

08-01-13 to 08-01-14

*The role of differentially expressed co-stimulatory molecules on the T-cell responses of Sjögren's syndrome.*

Overall goals: To investigate altered expression of co-stimulatory molecules in specific antigen presenting cell populations and evaluate whether there are altered regulatory T cell characteristics in a Sjögren's syndrome-prone mouse model.

Role: Principal Investigator

T90 DE021990 NIH/NIDCR R.A. Burne (PI)

08-16-12 to 08-15-15

*Comprehensive Training Program in Oral Biology.*

Overall goals: The major goal of this project is to produce a group of highly skilled and interactive scientists who will generate new knowledge and translate discoveries to tangible advances in the detection, prevention, treatment and cure of diseases and abnormalities of the oral and craniofacial complex.

Role: Predoctoral Fellow

UL1 RR029890 and TL1 RR029889

NIH/NCATS

12-01-11 to 08-15-12

*University of Florida Clinical and Translational Sciences Institute Pre-doctoral Training Program Fellowship.*

Overall goals: The major goal of this project is to train a broad spectrum of pre-collegiate, undergraduate and graduate students and faculty to conduct multidisciplinary and interdisciplinary investigations and, make a major contribution to a new national workforce of clinical & translational science researchers and research teams.

Role: Predoctoral Fellow

R01 DE19644 NIH/NIDCR S. Cha (PI)

07-01-10 to 06-31-16

*Expression and functions of microRNA in autoimmune Sjögren's syndrome.*

Overall goals: The project is to identify aberrant expression of miRNA that are involved in innate immune responses and to understand its pathological implications in autoimmune Sjögren's syndrome.

Role: Pre- and Postdoctoral Fellow

Ronald E. McNair Post-Baccalaureate Achievement Program  
West Virginia University

06-01-07 to 05-05-09

*CR1 elements present in forensically important blowflies.*

Overall goals: The project is to identify and classify mobile genetic elements among local species of blowflies that may be used as markers for identification during forensic investigations.

Role: Undergraduate Fellow

## **PUBLICATIONS:**

### **Peer-Reviewed Publications** (†authors contributed equally)

Zuo J†, **Williams AE**†, Park YJ, Choi K, Chan AL, Reeves WH, Bubb MR, Lee YJ, Park K, Stewart CM, and Cha S. Muscarinic type 3 autoantibodies reliably detected by an in-cell western assay are associated with clinical aspects of Sjögren's syndrome. *Journal of Immunological Methods*. 2016 Oct. PMID: PMC5036946

**Williams AE**, Choi K, Chan AL, Lee YJ, Reeves WH, Bubb MR, Stewart CM, and Cha S. Sjögren's syndrome-associated microRNAs in CD14(+) monocytes unveils targeted TGF $\beta$  signaling. *Arthritis Research and Therapy*. 2016 May 3. PMID: 27142093.

**Gauna AE**, Park YJ, Nayar G, Onate M, Jin JO, Yu Q, Stewart C, and Cha S. MicroRNA-146a negatively regulates co-stimulatory molecule CD80 with potential implications in Sjögren's syndrome pathogenesis. *Molecular Immunology*. 2015 Oct 21. PMID: 26505653.

Nayar G†, **Gauna AE**†, Chukkapalli S, Velsko I, Kesavalu L, and Cha S. Polymicrobial infection alter inflammatory microRNAs in rat salivary glands during periodontal disease. *Anaerobe*. 2015 Oct 16. PMID: 26481834.

Park YJ, Koh J, **Gauna AE**, Chen S, and Cha S. Identification of regulatory factors for mesenchymal stem cell-derived salivary epithelial cells in a co-culture system. *PLoS One*. 2014 Nov. 9(11):e112158. PMID: 25402494.

Lee BH, **Gauna AE**, Perez G, Park YJ, Pauley KM, and Cha S. Autoantibodies against muscarinic type 3 receptor in Sjögren's syndrome inhibit aquaporin 5 trafficking. *PLoS One*. 2013 Jan. 8(1):e53113. PMID: 23382834.

Pauley KM, **Gauna AE**, Grichtchenko II, Chan EK, and Cha S. A secretagogue-siRNA conjugate confers resistance to cytotoxicity in a cell model of Sjögren's syndrome. *Arthritis and Rheumatology*. 2011 Oct; 63(10):3116-25. PMID: 21567383.

Pauley KM, Stewart CM, **Gauna AE**, Dupre LC, Kuklani R, Chan AL, Pauley BA, Reeves WH, Chan EK, and Cha S. Altered miR-146a expression in Sjögren's syndrome and its functional role in innate immunity. *European Journal of Immunology*. 2011 Jul; 41(7):2029-39. PMID: 21469088.

Thompson ML, **Gauna AE**, Williams ML, Ray DA. Multiple chicken repeat 1 lineages in the genomes of oestroid flies. *Gene*. 2009; 448(1):40-5. PMID: 19716865.

### Chapters in Edited Books

**Gauna AE** and Cha S. Costimulatory molecules in rheumatic diseases revisited with an emphasis on their roles in autoimmune Sjögren's syndrome. Ed. S. Stanilova. *Genes and Autoimmunity- Intracellular Signaling and Microbiome Contribution*. InTech. Mar. 2013. ISBN 978-953-51-1028-6.

Pauley KM, Lee BH, **Gauna AE**, and Cha S. Mechanisms of salivary gland secretory dysfunction in Sjögren's syndrome. Ed. A. Harrison. *Insights and Perspectives in Rheumatology*. InTech. Jan. 2012. ISBN: 978-953-307-846-5.

### Invited Review Articles

Park YS, **Gauna AE**, and Cha S. Mouse models of primary Sjögren's syndrome. *Current Pharmaceutical Design*. 2015. 21(18):2350-64. PMID: 25777752.

**Gauna AE** and Cha S. Priority Paper Evaluation: Akt2 deficiency as therapeutic strategy protects against acute lung injury. Ed. J Wilkinson. *Immunotherapy. Future Medicine*. 2014. 6(4):377-80. PMID: 24815778.

Lee BH, **Gauna AE**, Pauley KM, Park YJ, and Cha S. Animal models in autoimmune diseases: lessons learned from mouse models for Sjögren's syndrome. *Clinical Reviews in Allergy and Immunology*. 2012 Feb 42(1):35-44. PMID: 22105703.

#### **ABSTRACTS and PRESENTATIONS** (\*presenting author):

MicroRNA-146a in Salivary Gland Epithelial Cells Inhibits Co-Stimulatory Molecule CD80 Expression and Increases Autoreactive T Cell Activation in Sjögren's Syndrome. **AE Gauna\***, J-O Jin, Q Yu, C Stewart, and S Cha. American College of Rheumatology Annual Meeting. Boston, Massachusetts. November 2014. Abstract ID #2174. *Research abstract and poster presentation*

Using prerequisite courses to predict grades in dental school. PL Sandow\*, S Cha, **AE Gauna**. ADEA Annual Session and Exhibition 2014. San Antonio, Texas. March 2014. *Educational research abstract*

MicroRNA distinctions in Sjögren's syndrome and autoimmune patients. JB Riccobono\*, **AE Gauna**, G Nayar, and S Cha. 4<sup>th</sup> Annual Florida Undergraduate Research Conference. Miami, Florida. February 2014. *Undergraduate abstract and poster presentation*

Poly-microbial periodontal pathogens-induced miRNA expression profile in rat salivary glands. G Nayar\*, **AE Gauna**, I Velsko, L Kesavalu, and S Cha. UF Undergraduate Research Symposium. Gainesville, Florida. March 2013. *Undergraduate abstract and poster presentation*

MicroRNA-146a alters CD80 in Sjögren's syndrome. **AE Gauna\***, YJ Park, MD Onate, KM Pauley, BH Lee, C Stewart, and S Cha. International Association for Dental Research General Session. Iguacu Falls, Brazil. June 2012. Abstract ID #166339. *Abstract and oral presentation*

Identification of microRNA profiles in primary Sjögren's syndrome. **AE Gauna\***, M Onate, KM Pauley, C Stewart, and S Cha. Clinical and Translational Sciences Institute Research Day. Gainesville, Florida. June 2012. *Abstract and poster presentation*

Differential CD80 expression in Sjögren's syndrome-like autoimmune disease mouse model. M Onate\*, **AE Gauna**, KM Pauley, S Cha. 1<sup>st</sup> Annual Florida Statewide Student Research Symposium. Jacksonville, Florida. March 2011. *Undergraduate abstract and poster presentation*

MicroRNA regulation of the inflammasome in Sjögren's syndrome. L Walker\*, KM Pauley, **AE Gauna**, S Cha. 12<sup>th</sup> Annual Undergraduate Research Symposium. Gainesville, Florida. March 2011. *Undergraduate abstract and poster presentation*

Aberrant miR-146a expression in Sjögren's syndrome negatively regulates CD80 expression. **AE Gauna\***, M Onate, KM Pauley, and S Cha. Gordon Research Conference on Salivary Glands and Exocrine Secretion. Galveston, Texas. February 2011. *Abstract and poster presentation*

Discovering class I mobile elements in the *Cochliomyia macellaria* (Diptera: Calliphoridae) genome. **AE Gauna\***, ML Thompson, and DA Ray. Buffalo University McNair Conference. Buffalo, New York. July 2008. *Undergraduate research presentation*

CR1 Elements Present In Forensically Important Blowflies. ML Thompson\*, **AE Gauna**, and DA Ray. North American Forensic Entomology Association 6<sup>th</sup> Annual Meeting. Atlantic City, NJ. June 2008. *Graduate student poster presentation*

The effect of ultraviolet-B radiation of the response of duckweed (*Lemna minor*) growth and survival to increasing salinity. **AE Gauna**\*, C Kite\*, and A DiCocco\*. West Virginia University Total Science Experience Symposium. Morgantown, WV. April 2008. *Undergraduate biology capstone presentation*