MATTHEW L. WILLIAMS, Ph.D.

EDUCATION

August 2009 – June 2015	Ph.D., Medical Sciences, focus in Medical Microbiology and Immunology, University of Florida. College of Medicine. GPA 3.70
August 2005 – May 2009	B.S., Honors Biology Major, Applied and Environmental Microbiology Minor, graduated *summa cum laude*, West Virginia University. GPA 3.8

EXPERIENCE

January 2017- Current	Assistant Professor, Biology Department, West Virginia University Institute of Technology. Teach Microbiology, Genetics, Biology Methods, Senior Seminar, General Biology 1 and General Biology 2 lecture and labs.
July 2015-December 2016	Postdoctoral Research Associate. University of Florida, Department of Oral Biology. Studying antagonism mechanisms of a novel probiotic organism against the oral pathogen *Streptococcus mutans.* Also investigating mechanisms of biofilm formation and competence gene regulation in *S. mutans*.
August 2009- June 2015	Pre-Doctoral Fellow/ Graduate Research Assistant, University of Florida, Department of Oral Biology. Studied protein translocation and genetics in the oral Gram-positive bacterium *Streptococcus mutans*. Identified a novel accessory protein in the Signal Recognition Particle pathway.
November 2014-November 2016	Testing Assistant, University of Florida, Dean of Students Office. Exam proctoring for the Disability Resource Center.
January 2008- May 2009	Research for Honors Thesis, West Virginia University, Biology Department. Explored the speciation of *myotis* bat species and forensically important flies using transposable genetic elements as markers of evolution.
May 2008-August 2008	Environmental Ecology Internship, West Virginia University, Biology Department. Investigated effects of acid rain on cultivable fungi in an experimental forest.
Jan 2008-May 2008	Research Biol 411, West Virginia University, Biology Department. Practical laboratory experience researching *Drosophila* D1 protein interactions via cDNA libraries and a yeast two hybrid system.
April 2007-May 2009	Delivery Foreman/Manager at the Dailey Athenaeum Newspaper. In charge of delivery crew, schedules, route preparation, inventory, van maintenance, and customer satisfaction.
2005-2009	West Virginia Honors Scholar, PROMISE Scholar, and Presidential Scholar, West Virginia University

AWARDS AND HONORS

Research and abstract selected for press release to media at ASM General Meeting in New Orleans May 2015.

Second Place Oral Presentation. University of Florida Spring Synergy Celebration of Science. April 2014.

F31 Awarded- NIH/NIDCR F31DE023710. "Studies of YlxM of *Streptococcus mutans*, a newly identified component of the Signal Recognition Particle Pathway" July 2013-June 2015.

University of Florida Graduate Student Council Travel Award for ASM General 2013.

T90 Oral Biology Training Grant, Pre-doctoral Fellowship, Department of Oral Biology, University of Florida 2010-2013.

Poster Award. Florida Branch ASM Meeting October 2010.

T32 Oral Biology Training Grant, Pre-doctoral Fellowship, Department of Oral Biology, University of Florida 2009-2010.

WVU President's list (4.0 GPA) each semester of junior year onward (Spring 2007-Spring 2009).

WVU Dean's list (>3.5 GPA) in Spring and Fall 2006.

WVU Presidential Scholarship 2005-2009. Competitive merit-based scholarship based on college entry examination scores, essays, and high school performance.

West Virginia Promise Scholarship 2005-2009. Competitive merit-based scholarship based on college entry examination scores, essays, and high school performance.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Association for Dental Research

American Dental Education Association

American Society for Microbiology

University of Florida College of Dentistry Student Research Group

Phi beta kappa honors fraternity

TEACHING AND MENTORSHIP

January 2017-Current	Assistant Professor at West Virginia University Institute of Technology. Current teaching duties are General Biology , General Biology II, Microbiology, Genetics, Biology Methods, Senior Seminar, and mentoring students enrolled in research credit.
2016-2017	Mentored numerous dental students in the UF College of Dentistry. Each student went on to publish data, present at national or international conferences and one decided to pursue a DMD/PhD dual program where her dissertation work is following up on the work we started.
2016	Mentored visiting dentist from Sichuan University in China.
2014-2015	Mentored a dental student in the UFCD Summer Research Program. Summer 2014. She presented her research at AADR in Boston November 2014 and at the University of Florida Spring Celebration of Science 2015, where she won first place in two separate divisions.
2009-2016	UF Oral Biology Department lectures covering the latest finds in bacterial protein translocation.
2014-2016	Testing assistant at the University of Florida Disability Resource Center.
2009-2015	Assisted with the mentorship of six undergraduate researchers in my graduate studies laboratory.

SERVICE

Faculty Advisor for WVU Tech Garden and Agriculture Club

Faculty Advisor for WVU Tech Pre-Health Professions Club

Faculty Advisor for WVU Tech Biology Club

WVU Tech Legislative Committee Chair

WVU Tech Convocations Committee Member

WVU Tech Faculty Assembly Member

Reviewer for Antimicrobial Agents and Chemotherapy

Initiated the UFCD Postdoc Association 2015-2017

UFCD Postdoc Association Representative 2015-2017

Foster parent for Phoenix Animal Rescue 2013-2016

Volunteer Student Dental Assistant in the UF dental Clinics 2013-2015

UF Student Parents/PhDMoms 2013-2015

PUBLICATIONS AND ABSTRACTS

Brittan McClain and **M.L. Williams** Discovery of Novel Probiotics Against *Staphylococcus Aureus*. *Manuscript in preparation*

J.D. Gaiser and **M.L.Williams** Characterization of the Piney Creek Watershed. *Manuscript in preparation*

Williams, M.L., Rike, K.M., Crowley, P.J, and Brady, L.J. "A novel regulator of protein translocation in *Streptococcus mutans*" *Manuscript in preparation.*

Londono, L., **Williams, M.L,** and Burne, R.A. "Streptococcus A12 Modifies the Architecture of Streptococcus mutans Biofilms" International Association for Dental Research General Session March 2017. San Francisco, CA

Lee, K., Chakraborty, B., **Williams, M.L.**, Nascimento, M., and Burne, R.A. "Antagonism of Streptococcus mutans by Oral Commensal Clinical Isolates" International Association for Dental Research General Session March 2017. San Francisco, CA

Xuelian Huang, Sara Palmer, Sang-Joon Ahn, Vincent Richards, **Matthew Williams**, Marcelle Nascimento, and Robert Burne. "Characterization of a Highly Arginolytic Streptococcus Species That Potently Antagonizes *Streptococcus mutans*". Applied and Environmental Microbiology. April 2016.

Williams, M.L., Rike, K.M., and Brady, L.J. "Characterizing the Interactions and Effects of YlxM within the Signal Recognition Particle Pathway of *Streptococcus mutans".* American Society for Microbiology General Meeting May 2015. New Orleans, LA.

Williams, M.L., Rike, K.M., and Brady, L.J. "YlxM is an Accessory Protein that Modulates SRP Pathway Activity in *Streptococcus mutans*". University of Florida Spring Celebration of Science April 2015. Gainesville, FL.

Rike, K.M., **Williams, M.L.**, and Brady, L.J. "Characterizing the interaction between YlxM and Ffh of the Signal Recognition Particle Pathway of *Streptococcus mutans*". University of Florida Spring Celebration of Science April 2015. Gainesville, FL.

Rike, K.M., **Williams, M.L.**, and Brady, L.J. "Characterizing the interaction between YlxM and Ffh of the Signal Recognition Particle Pathway of *Streptococcus mutans*". American Association for Dental Research General Session November 2014. Boston, MA.

Williams, M.L., Crowley, P.J., Hasona, A. and Brady, L.J. "YlxM is a Newly Identified Accessory Protein that Influences the Function of Signal Recognition Particle (SRP) Pathway Components in *Streptococcus mutans.*" J Bacteriol. 2014 Jun; 196(11):2043-2052 PMID: 24659773.

Williams, M.L., Crowley, P.J. and Brady, L.J. "Streptococcus mutans YlxM modulates Ffh-FtsY complex formation and GTPase activity" University of Florida College of Dentistry Spring Synergy Celebration of Science April 2014. Gainesville, FL.

Williams, M.L., Crowley, P.J. and Brady, L.J. "Streptococcus mutans YlxM modulates Ffh-FtsY complex formation and GTPase activity" University of Florida College of Medicine Celebration of Research March 2014. Gainesville, FL.

Williams, M.L., Crowley, P.J. and Brady, L.J. "Streptococcus mutans YlxM modulates Ffh-FtsY complex formation and GTPase activity" American Association for Dental Research Annual Meeting March 2014. Charlotte, NC.

Williams, M.L. and Brady, L.J. "YlxM: A Novel Component of the *Streptococcus mutans* Signal Recognition Particle Pathway" Graduate Student Research Day 2013. Gainesville, FL.

Williams, M.L. and Brady, L.J. "YlxM: A Novel Component of the *Streptococcus mutans* Signal Recognition Particle Pathway". American Society for Microbiology General Meeting May 2013. Denver, CO.

Williams, M.L. and Brady, L.J. "YlxM of *Streptococcus mutans*, a newly identified component of the Signal Recognition Particle pathway" University of Florida College of Dentistry Spring Synergy Celebration of Science April 2013. Gainesville, FL.

Williams ML, Crowley PJ, Runac J, and LJ Brady. "Characterization of the *sat* operon of the Oral Pathogen *Streptococcus mutans*." ASM Annual Meeting Florida Branch 2010; 31.

Thompson ML, Gauna AE, **Williams ML**, Ray DA. "Multiple chicken repeat 1 lineage in the genomes of oestroid flies." Gene. 2009 Dec; 448(1):40-5. PMID: 19716865. Erratum in: Gene. 2010 Nov; 468(1-2):58. PMID: 19716865.

TECHNICAL EXPERTISE

- Water sampling for numerous biological and chemical properties
- Protein engineering, expression, and purification (Proficient with FPLC- GE AKTA and Bio-Rad BioLogic, spin and gravity flow columns)
- Cloning and other molecular biology techniques (PCR, quantitative PCR, restrictions, ligation, transformation, mutagenesis, etc.)
- Protein-protein and protein-nucleic acid interactions (ELISA, Biolayer Interferometry, EMSA, surface plasmon resonance)
- Western blotting
- Experiment optimization
- Aseptic technique
- Culture experience with multiple microorganisms (diverse bacteria and fungi; limited tissue culture experience)
- Microscopy
- Bioinformatics
- Proficient in PC and Mac computers including extensive experience with Microsoft Office programs
- Abundant writing and presentation experience
- Management and customer service experience