

Amanda Williams, M.S., Ph.D.

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Education and Training

- Ph.D., Microbiology and Immunology Meharry Medical College 2018
- *Dr. Amosy M'Koma Laboratory*
 - *Thesis Title: "Studies on Inflammatory Bowel Disease Molecular Biomarkers for Differential Diagnostics: An Analysis with Special Reference to Human Alpha-Defensin 5"*
- Master of Science, Laboratory Investigations Vanderbilt School of Medicine 2008
- *Emphasis on cell biology, microbiology, and cancer biology*
 - *Learned in greater detail the specifics of many lab techniques and protocols such as proteomics, western blotting, PCR, microscopy, and antibody production so that I can troubleshoot experiments when problems arise.*
 - *Project Title: "A Role for Myeloid Translocation Gene 16 in the Intestine"*
- Bachelor of Science, Biology Lipscomb University 2003
- *Graduated cum laude*
 - *Participant in Honors Program*

Scholarships, Awards, and Service

- Lipscomb University Women in STEM Club 2020-Present
- *Founding faculty advisor*
 - *Work with a group of young women from across various STEM field to gain club approval.*
 - *Club will focus on unity amongst women in various STEM fields across campus, and also to bring awareness in the community of opportunities for women in STEM fields.*
- Faculty Major Advisor 2018-Present
- *Advise major students on courses to take in order to complete their major in a timely manner.*
 - *Volunteer each summer to advise incoming freshman for their freshman schedules.*
- Health Professions Advisory Committee 2018-Present
- *Interview students applying to medically-related professional schools in order to help them with interview improvement and to draft letters of recommendation for their applications.*
- Student Scholars Symposium Organizational Committee 2014-Present
- *Annual institutional research meeting*
 - *Help with all aspects of organization, including program drafting, space allocation, and chairing sessions the day of the meeting.*

Langford-Yates Fellowship Selection Committee	2014-Present
<ul style="list-style-type: none"> • <i>Score research proposals by undergraduate students in order to make make recommendations to the Board of Directors for fellowship awards.</i> 	
Lipscomb University Faculty Summer Grant Award	Summer, 2019
<ul style="list-style-type: none"> • <i>Grant awarded to Lipscomb Faculty members in order to focus on their research for one summer.</i> • <i>Award was used to focus on HD5 and colitis research project, to develop research protocols, and to work in a more intentional way with undergraduate research interns. The data gathered from that summer is currently being used to draft a manuscript for publication.</i> 	
New Faculty Hiring Committee	2018-2020
<ul style="list-style-type: none"> • <i>Worked with colleagues to interview and hire two new faculty members in our department.</i> 	
Faith and Science Advisory Committee Member	2018-2019
<ul style="list-style-type: none"> • <i>Served on committee for Faith and Science initiative</i> • <i>Worked to develop vision for initiative and to set both short and long-term goals for the Faith and Science Professor.</i> 	
American Cancer Society ResearchHERS Ambassador	2018-2019
<ul style="list-style-type: none"> • <i>Served as one of 50 ambassadors for the state of Tennessee chapter of ACS, with the goal to raise awareness of women in science and to raise money for grants specifically for female scientists.</i> 	
Faculty Advisor, Study Abroad in Florence, Italy	Spring, 2018
<ul style="list-style-type: none"> • <i>Mentored and taught a group of 15 college students from Lipscomb for the entire semester.</i> • <i>Developed "Disease and Culture" course to teach while abroad</i> • <i>Lived in villa with the students and traveled across Europe with them, offering mentorship and help in emergency situations.</i> 	
Meharry Medical College	2018
<ul style="list-style-type: none"> • <i>Transition Award (Given to top graduating PhD students)</i> • <i>Top Scholar Award (Given to student with highest GPA in graduating class)</i> • <i>Presentation judge for Year I PhD Rotation Student Presentations</i> 	
Lebanon High School Biotechnology Lab Consultant	2017-2018
<ul style="list-style-type: none"> • <i>Consulted with Lebanon High School in Lebanon, TN to develop a biotechnology program for their high school students.</i> • <i>Suggested curriculum, methodological focus, and equipment.</i> • <i>Connected the high school with vendors for equipment and consumable resources.</i> 	
Peer Reviewer	2017
<ul style="list-style-type: none"> • <i>Gut</i> 	
American Society of Colon and Rectal Surgeons Annual Meeting	2016

- *New England Society of Colon and Rectal Surgeons Award: Best Clinical Podium Presentation*

Lipscomb University College of Liberal Arts and Science 2015

- *Excellence in Scholarship Award*

Meharry Medical College 2014

- *Pamela and Frank S. Royal Endowed Scholarship*
- *First Year PhD Award*

Joshua Project, Lipscomb University 2012-2014

- *Institutional mentorship program specifically for students who live off campus. Designed to help them meet more students (via a student mentor) and faculty, and to help them navigate life as a freshman on Lipscomb's campus.*
- *Served as faculty mentor for freshman student*
- *Met weekly with student over coffee or lunch to talk about life and faith*

Biomolecular Science Graduate Program Development Team 2011-2012

- *Worked with colleagues and administration to develop a Masters of Science program housed within our department.*
- *1-year MS degree (in Biomolecular Science) with a research component*
- *Program continues to be one of the most successful graduate degree programs housed in our college.*

Certifications

Responsible Conduct of Research Instructor Certified US Department of Health

- *Certified by the USDH to build and instruct RCR courses on an institutional level.*

Protecting Human Research Participants National Institutes of Health

- *Certified and thus able to write for IRB approval of experiments on human subjects.*

Institutional Animal Care and Use Committee (IACUC) Certified Vanderbilt University

- *Certified by Vanderbilt University Medical Center in mouse and gerbil husbandry and in the ethics of animal experimentation.*

Radiation Safety Certified Vanderbilt University

- *Certified by Vanderbilt University Medical Center in ordering, handling, and disposing radioactive materials.*

Employment History

Provost's Office, Lipscomb University 2019-Present

- *Institutional IRB Coordinator*
- *25% Administrative re-assignment to develop a Responsible Conduct of Research program with implementation by Fall 2020*
- *2020-2021: Train and certify faculty and staff in RCR*

- *Developed training program with the university's Center for Teaching and learning.*
- *Bi-weekly seminar with on-campus speakers to discuss important topics related to research ethics.*
- *2021-2022 goals: Help colleges and departments across campus develop and implement training for research students*
- *Re-assignment to reduce each year as programs are implemented across campus.*

Biology Department, Lipscomb University

2018-Present

- *Assistant Professor*
- *Undergraduate courses taught include: Microbiology, Introduction to Microbiology, Biomolecular Research Methods, Molecular Biology, Biology Seminar*
- *Graduate courses taught include: Biomolecular Laboratory I, Biomolecular Laboratory II, Research Methodology and Experimental Design, Microbial Pathogenesis, Applied Laboratory: Immunology, Cellular and Molecular Physiology, miRNAs*
- *Lead investigator on research projects:*
 - *The Role of Human alpha-defensin 5 in IBD (Current)*
 - *Viral Activation of Immunoproteasomes*
- *Mentor graduate and undergraduate student research projects*

Biology Department, Lipscomb University

2010-2018

- *Instructor/Research Coordinator*
- *Lead investigator on viral activation of immunoproteasomes*
- *Member of several committees including a grant writing committee and the committee that developed and implemented our Masters of Science in Biomolecular Science program.*
- *Graduate courses taught include Introduction to Research (a molecular research methods course), Biomolecular Lab I, and Biomolecular Lab II.*
- *Undergraduate courses taught include Introduction to Microbiology and Lab, Cell Biology Lab, Genetics Lab, and Biomolecular Research Methods*
- *Coordinate various other graduate and undergraduate student research projects, while helping teach students about research and various research methods.*
 - *Research projects include*
 - *Breast cancer invasion and angiogenesis with Dr. Beth Conway*
 - *TLR4 response to short chain fatty acids in the colon with Dr. Jon H. Lowrance*
 - *Neural development in zebrafish with Dr. Bonny Millimaki*
 - *Caloric restriction and aging with Dr. Mary Sledge*
- *Manage the department's Summer Research Internship, a 10-week research program for undergraduate students who qualify and are accepted into the program.*

Dr. Chris Williams Laboratory, Vanderbilt University

2007-2010

- *Lab Manager, colon disease research laboratory*
- *Involved with several research projects involving colon disease including:*
 - *Myeloid Translocation Genes*
 - *MTG16*
 - *MTGR1*
 - *BVES and colon cancer*

- *Train and teach students, post-docs, and other scientists various techniques, the details about how those techniques work, and why we do the experiments*
- *Maintain the day-to-day operations of the lab*
 - *Organizing and ordering supplies and reagents as needed for the lab, and keeping stock supplies available*
 - *Ensuring each person has the equipment and supplies needed for their experiments*
 - *Organize files and paperwork for equipment and supplies*
 - *Maintain equipment by cleaning when needed, replacing parts when needed, troubleshooting, and contacting vendors when problems arise*
- *Maintain a large mouse colony*
 - *4 mouse lines*
 - *Oversee genotyping and husbandry*
 - *Regularly update database to keep up with each mouse and animal experiments*
- *Plan, organize, and run large experiments, collect and analyze data, interpret data, and communicate results with Dr. Williams and other researchers*
- *Write and edit manuscripts for publication*
- *Write and edit protocols for animal use in our experiments*

Dr. Richard Peek Laboratory, Vanderbilt University

2003-2007

- *Research Assistant I-II*
- *Involved in research projects with Helicobacter pylori*
 - *Strain comparison of carcinogenic 7.13 with its parental, non-carcinogenic strain B128*
 - *The study of how B-catenin translocation is affected by H. pylori*
 - *How H. pylori uses Decay Accelerating Factor (DAF) to mediate inflammation within the stomach*
- *Specialized in microarray experiments, data analysis, and interpretation*
- *Conducted experiments to supplement student projects*
- *Conducted experiments on Mongolian gerbils and mice*
- *Set up and organized database and storage system for the lab's oligonucleotides*
- *Helped organize a lab move to a new building and set up the laboratory in a new space*

Career Development

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| Grant Workshop | 2020 |
| <ul style="list-style-type: none"> • Grant-writing workshop at Vanderbilt University | |
| Responsible Conduct of Research Instructor's Workshop | 2019 |
| <ul style="list-style-type: none"> • <i>Workshop presented by US Department of Health to train RCR Coordinators on appropriate institutional RCR instruction. Salt Lake City, UT</i> | |
| Keystone Symposium | 2019 |
| <ul style="list-style-type: none"> • <i>Innate Immunity and Environment in IBD, Taos, NM</i> | |
| American Society of Colon and Rectal Surgeons Annual Meeting, Los Angeles, CA | 2016 |
| Keystone Symposium | 2016 |
| <ul style="list-style-type: none"> • <i>Cytokine JAK-STAT Signaling in Immunity and Disease, Steamboat Springs, CO</i> | |

- Grant Writing Workshop 2011
- *The Grantsmanship Training Program, Detroit, MI*
- MS Defense, Vanderbilt University 2008
- *A role for Myeloid Translocation Gene 16 in the Intestine*
- American Society of Microbiology Annual Meeting, Atlanta, GA 2005

Thesis Advising

- Laura Schmutzer 2014-2016
- *Master's in Nutrition and Dietetics, working on project related to the influence of yogurt supplementation on maternal milk bacterial species.*

Publications

Peer Reviewed Papers:

Rana T, Koroklova OY, Rachakonda G, **Williams AD**, Hawkins AT, James SD, Sakwe AM, Hui N, Wang L, Yu C, Goodwin JS, Izban MG, Offodile RS, Washington MK, Ballard BR, Smoot DT, Shi XZ, Forbes DS, Shanker A, M'Koma AE. Linking bacterial enterotoxins and alpha defensin 5 expansion in Crohn's colitis: A new insight into the etiopathogenic and differentiation triggers driving colonic inflammatory bowel disease. PLoS One. 2021.

Williams AD, Korolkova OY, Sakwe AM, Geiger TM, James SD, Muldoon RL, Herline AJ, Goodwin JS, Izban MG, Washington MK, Smoot DT, Ballard BR, Gazouli M, M'Koma AE. Human alpha defensin 5 is a candidate biomarker to delineate inflammatory bowel disease. PLoS One. 2017 Aug 17.

Poindexter SV, Reddy VK, Mittal MK, **Williams AD**, Washington MK, Harris E, Mah AT, Hiebert SW, Singh K, Chaturvedi R, Wilson KT, Lund PK, Williams CS. Transcriptional co-repressor MTG16 regulates small intestinal crypt proliferation and crypt regeneration after radiation-induced injury. American J Physiol Gastroint Liver Physiol. 2015 Jan 8.

Parang B, Rosenblatt D, **Williams AD**, Washington MK, Revetta F, Short SP, Reddy VK, Hunt A, Shroyer NF, Engel ME, Hiebert SW, Williams CS. The transcriptional corepressor MTGR1 regulates intestinal secretory lineage allocation. FASEB J. 2014 Nov 14.

Myers JN, Schaffer MW, Korolkova OY, **Williams AD**, Gangula PR, M'Koma AE. Implications of the colonic deposition of free hemoglobin-alpha chain: a previously unknown tissue by-product in inflammatory bowel disease. Inflammatory Bowel Disease. 2014 Sep;20(9): 1530-47.

Friggeri L, Hargrove TY, Rachakonda G, **Williams AD**, Wawrzak Z, Di Santo R, De Vita D, Waterman MR, Tortorella S, Villalta F, Lepesheva GI. Structural basis for rational of inhibitors targeting Trypanosoma cruzi sterol 14-alpha-demethylase: two regions of the enzyme molecule potentiate its inhibition. J Medicinal Chemistry. 2014 Aug 14; 57(15):6704-17.

Williams CS, Bradley AM, Chaturvedi R, Singh K, Piazuelo MB, Chen X, McDonough EM, Schwartz DA, Brown CT, Allaman MM, Couburn LA, Horst SN, Beaulieu DB, Choksi YA, Washington MK, **Williams AD**, Fisher MA, Zinkel SS, Peek RM Jr, Wilson KT, Hiebert SW. MTG16 contributes to colonic epithelial integrity in experimental colitis. *Gut* (2012). July 24.

Barrett CW, Fingleton B, **Williams AD**, Ning W, Fischer MA, Washington MK, Chaturvedi R, Wilson KT, Hiebert SW, Williams CS. MTGR1 is required for tumorigenesis in the murine AOM/DSS colitis-associated carcinoma model. *Cancer Research*. 2011. 71(4):1302-12.

Whitten CW, **Williams AD**, Williams CS. (2010). Murine Colitis Modeling using Dextran Sulfate Sodium (DSS), *JoVE*. Issue 35, <http://www.jove.com/index/details.stp?ID=1652>, 10.3791/1652

O'Brien DP, Israel DA, Krishna U, Romero-Gallo J, Nedrud J, Medof ME, Lin F, Redline R, Lublin DM, Nowicki BJ, Franco AT, Ogden S, **Williams AD**, Polk DB, Peek RM Jr. The Role of Decay-accelerating Factor as a Receptor for *Helicobacter pylori* and a Mediator of Gastric Inflammation. *The Journal of Biological Chemistry* 2006; 281; 13317-23.

Review Articles:

Williams AD and M'Koma AE. Delineation of Inflammatory Bowel Disease by Molecular Biometrics: Verification versus Validation. *Clinics in Surgery*. 2017.

Williams AD and M'Koma AE. Molecular Differentiation of Ulcerative Colitis and Crohn's Colitis: Is it Achievable? *Clinical Laboratory International*. 2015.

Conference Papers:

Note: Any student authors are noted by italics

International/National Conferences:

Williams AD, *King H, Rubenic L*, M'Koma AE. The application of microarray pathway analysis to search for and screen molecular biomarkers in Inflammatory Bowel Disease. Keystone Symposium: Innate Immunity and Environment in IBD, Taos, NM, 2019.

Williams AD, Sakwe A, Smoot D, Washington B, Ballard T, M'Koma AE. Indeterminate colitis precision into Crohn's colitis and Ulcerative colitis using molecular biometrics. American Society of Colon and Rectal Surgeons Annual Meeting, Los Angeles, CA, 2016.

Landers DV, Keith KA, de la Torre D, Wheless W, MacQuarrie CD, Williams AD. The JAK/STAT pathway is responsible for immunoproteasome activation and potentially MHCII presentation with both TNF-alpha and IFN-gamma in murine macrophages, but not murine dendritic cells. Keystone Symposium: JAK/STAT, Steamboat Springs, CO, 2016.

Williams AD. miRNAs: New Discoveries and Potential Therapeutic Interventions. Christian Scholars Conference, Abilene, TX, 2015.

Regional Conferences:

Scherr C and **Williams AD**. Connection of alpha defensin 5 and apoptosis of colon cells in Crohn's colitis patients. Association of Southeastern Biologists, 2021

Fisher E and **Williams AD**. Determining the HD5 binding affinity to NCM colon cells. Association of Southeastern Biologists, 2021.

Lisk E and **Williams AD**. The role of HD5 on mediated cell death. Association of Southeastern Biologists, 2021

Rubenic L, **Williams AD**. The evaluation of Reg1A as a potential biomarker to differentiate Inflammatory Bowel Disease, Association of Southeastern Biologists, 2019.

Dotson K, *Cunningham B*, **Williams AD**. The immunoproteasome may not be responsible for increased MHC1 presentation in the presence of TNF-alpha. Association for Southeastern Biologists Annual Meeting, 2017.

Forchetti M, **Williams AD**. JAK2 may be the pathway responsible for immunoproteasome activation in the presence of TNF-alpha, Association of Southeastern Biologists Annual Meeting, 2017.

Skrabut M, *Williams AD*, *Millimaki B*. Topoisomerase II beta and axonal pathfinding. Association of Southeastern Biologists Annual Meeting, 2016.

Mitchell M, **Williams AD**. Immunoproteasome subunit activation by TNF-alpha via JAK2 signaling. American Society for Microbiology Regional Meeting, 2015.

Landers DV, *de la Torre D*, **Williams AD**. Determining the role of the JAK/STAT pathway in immunoproteasome activation in JAWSII dendritic cells. American Society for Microbiology Regional Meeting, 2015.

Landers DV, **Williams AD**. Determining the potential role of NF-kappa B in immunoproteasome subunit expression induced by TNF-alpha. Association of Southeastern Biologists Annual Meeting, 2015.

Keith KA, **Williams AD**. The involvement of the JAK/STAT pathway in the regulation and induction of immunoproteasomes following IFN-gamma stimulation. Association of Southeastern Biologists Annual Meeting, 2015.

Bourgeois D, *Hannah B*, **Williams AD**, *Conway RE*. Prostate-specific membrane antigen activates integrin beta-1 in a laminin dependent manner resulting in increased endothelial cell activation. Association of Southeastern Biologists Annual Meeting, 2012.

State Conferences:

Schmutzer L, *Marshall A*, **Williams AD**. Human milk bacterial levels in response to yogurt supplementation. Tennessee Academy of Nutrition and Dietetics, 2016.

MacQuarrie CD, *Keith KA*, **Williams AD**. Immunoproteasome subunit activation in response to TNF-alpha. Tennessee Academy of Science Annual Meeting, 2013.

Keith KA, MacQuarrie CD, Williams AD. Immunoproteasome subunit activation in response to IFN-gamma. Tennessee Academy of Science Annual Meeting, 2013.

McNeil JB, Williams AD, Lowrance JH. Exon profile of human brain derived neurotrophic factor in non-cancerous breast epithelium using HMEC and MCF-10A cell lines. Tennessee Academy of Science Annual Meeting, 2013.

Richardson N, Dowler J, Williams AD, Conway RE. Investigation of endothelial cell activation by synthetic laminin and collagen peptides. Tennessee Academy of Science Annual Meeting, 2013.

Owens N, Williams AD, Millimaki B. Loss of Cin-4, a protein with homology to the catalytic domain of topoisomerase II, causes defects in neural migration in *C. elegans*. Tennessee Academy of Science Annual Meeting, 2013.

Hutchinson DJ, Williams AD, Conway RE. Integrin-dependent endothelial cell activation by synthetic peptide QSLDL. Tennessee Academy of Science Annual Meeting, 2013.

Houry R, Williams AD, Conway RE. CD-10 expression and promoter methylation in breast cancer cells. Tennessee Academy of Science Annual Meeting, 2013.

Cosminsky B, Williams AD, Conway RE. CD10 function on human breast cancer cell invasion. Tennessee Academy of Science Annual Meeting, 2012.

Joiner K, Williams AD, Conway RE. MMP-2 and prostate specific membrane antigen generate small laminin peptides that activate endothelial cells through focal adhesion kinase. Tennessee Academy of Science Annual Meeting, 2012.

Belles ME, Williams AD, Conway RE. ECE-1 and CD10 protein expression in invasive breast cancer. Tennessee Academy of Science Annual Meeting, 2012.

Patterson A, Rampp B, Williams AD, Conway RE. Prostate specific membrane antigen processes laminin downstream of matrix metalloproteases in endothelial cell activation and angiogenesis. Tennessee Academy of Science Annual Meeting, 2011.

Kellum B, Williams AD, Conway RE. Endothelin converting enzyme-1 expression levels in breast cancer cells. Tennessee Academy of Science Annual Meeting, 2011.

Rampp B, Patterson A, Williams AD, Conway RE. Small extracellular matrix peptides regulate endothelial cell activation. Tennessee Academy of Science Annual Meeting, 2011

Anderson C, Eubanks C, Gragg S, Williams AD, Lowrance JH. The influence of environmental pH on Group B Streptococcus virulence factor expression. Tennessee Academy of Science Annual Meeting, 2011.

Pannell J, Rogers W, Williams AD, Sledge MK. Genetic diversity of *Daleia foliosa* using ISSR markers. Tennessee Academy of Science Annual Meeting, 2011.

Brawner K, Williams AD, Lowrance JH. Brain derived neurotrophic factor expression in prostate cancer cells during stress. Tennessee Academy of Science Annual Meeting, 2011.

Watson M, Williams AD, Conway RE. The role of endothelin converting enzyme-1 in human breast cancer cell invasion. Tennessee Academy of Science Annual Meeting, 2011.

Maerz PW, Williams AD, Lowrance JH. Brain derived neurotrophic factor expression during cellular stress in T-lymphoblasts. Tennessee Academy of Science Annual Meeting, 2011.

Institutional Conferences:

Meharry Medical College's Annual Student Research Day:

Williams AD, M'Koma AE. Human defensin alpha-5 is a candidate biomarker for distinguishing Inflammatory Bowel Diseases, 2017

Salonga S, Williams AD, Korolkova O, M'Koma AE. Determining molecular differences between ulcerative colitis and Crohn's Disease, 2015.

Lipscomb University's Annual Student Scholars Symposium:

Kirmani K and Williams AD. Investigating the effects of HD5 treatment on wound healing in colon cells, 2021.

Bukenya G and Williams AD. The effects of HD5 on colonic wound healing, 2021.

Bain R and Williams AD. Determination of apoptosis in colorectal epithelial cells upon treatment with HD5, 2021.

Meador M, Hinerman M, Ryan N, Snyder J, Williams AD. Effects of HD5 on colonic wound healing and Fibrinogen beta chain, 2021.

Whiting E, Lander G, Haga P, Milam R, Williams AD. HD5 and Prothrombin: Potential factors in impaired wound healing of Crohn's colitis patients, 2021.

Boushra M, Makram J, St. John E, Seiber K, Williams AD. Dose-Dependent effects of HD5 treatments on MMP-7 gene expression in relation to wound healing in healthy colon cells, 2021.

Scherr C, Lisk E, Baird S, Maner K, Williams AD. The effect of HD5 on epidermal growth factor receptor, 2021.

Cannone M, Stanely E, Gad G, Awad M, Williams AD. The impact of human alpha defensin 5 on the expression of E-cadherin on the wound healing in inflammatory bowel diseases, 2021.

Fisher EG, Lynn TC, Patel KN, Torres ML, Williams AD. Assessing the Effects of Human alpha-Defensin 5 on CMKLR1 and Colonic Epithelial Wound Healing, 2021.

Kling H, Williams AD. Analysis of smooth muscle contraction pathway proteins as potential biomarkers for IBD, 2020.

Fisher E, Williams AD. Determining developmental pathways that might differentiate IBD from potential biomarkers, 2020.

Scillion M, Williams AD. The effect of HD5 on cell death in normal human colonocytes, 2020.

Kokoy S, Roland A, Mohammad A, Reed T, Williams AD. The effect of Human Defensin 5 on the activation of apoptosis in Human colon cell lines.

Hibma J, Clark S, Roach C, Bain R, Williams AD. Resulting canonical apoptosis of colorectal epithelial cells upon treatment with human alpha defensin 5, 2020

Drobny K, Roy K, Glassco M, Kling H, Horton B, Moussaed A, Williams AD. Apoptotic responses to human alpha defensin 5 in normal human colonocytes, 2020.

Berta C, Wigger S, Gerges M, LeCates D, Williams AD. The role of HD5 in activation of cell death in colorectal epithelial cells, 2020.

Marvel O, Williams AD. Examining differential apoptotic biomarkers in Inflammatory Bowel Disease for increased diagnostic accuracy, 2020.

Green S, Williams AD. The downstream effects of mutations in the von Willebrand Factor Protein and how it leads to von Willebrand Disease Type I, 2020.

Kartman M, Brents R, Haga R, Olicia M, Williams AD. The effect of Hepatitis C Core Viral protein on the expression of MHCI through the JAK/STAT pathway, 2019.

Driskill H, Holt A, Williams AD. The activation of specific immunoproteasome subunits within the JAK/STAT pathway in Hepatocytes, 2019.

Moussaed A, Gerges M, Maner K, Rhodes J, Williams AD. How IFN-gamma and IFN-alpha influence immunoproteasome expression in HepG2 cells, 2019.

Cook L, Milligan J, Obregon C, Vasseur C, Williams AD. The presence of HCCVP effects on MECL1 expression in Hepatocytes, 2019.

Cartwright J, Driskill H, Hood E, Bowen M, Williams AD. The effect of Hepatitis C Core Viral Protein on STAT3 expression in the presence of IFN-alpha and -gamma, 2019.

Obregon C, Sullivan S, Wilcox B, Jones N, Williams AD. The effectiveness of IFN-alpha and IFN-gamma on MECL1 expression in HEPG2 cells, 2019.

Drobny K, Wickremasinghe E, Kling H, Roy K, Williams AD. Cytokine effect on the production of STAT1 in the HepG2 cells, 2019.

Ray A, Bryant M, Mohammad A, Kokoy S, Williams AD. Different immunologic effects of IFN-alpha and IFN-gamma on HepG2 cells, 2019.

Swanson E, Williams N, McReynolds K, Ghebranos V, Williams AD. Effect of Hepatitis C Core Viral protein on LMP2 in the interferon activated JAK/STAT pathway, 2019.

Reed T, Roland A, Patel S, Alsadi M, Williams AD. Effects of IFN-alpha and IFN-gamma on MHCI expression, 2019.

Scillion M, Edmonds S, Wurst M, Fontecha J, Williams AD. The effect of IFN-alpha and IFN-gamma on LMP7 in Hepatocytes, 2019.

Brasil B, Jarosinski A, Reagor C, Welborn M, Williams AD. Hepatitis C Core Viral protein's effect on STAT1 expression in the presence of interferons alpha and gamma, 2019.

Brents R, Haha R, Scillion M, Whiting E, Williams AD. How cytokine treatment affects the activation of STAT3 through JAK/STAT, 2019.

Jarosinski A, Williams AD. Neutrophil dysfunction in systemic Lupus Erythematosus, 2019.

McReynolds K, Williams AD. A literature review on amyloid beta aggregation in Alzheimer's Disease and therapeutic approaches, 2019.

Swanson E, Williams AD. A review of gamma frequency findings in Alzheimer's Disease, 2019.

Kirmani K, Williams AD. Understanding the implications of PARP inhibitors as a potential target therapy in triple negative breast cancers, 2019.

Bowen M, Williams AD. The role of Tau proteins in Alzheimer's Disease: A neurodegenerative brain disorder, 2019.

Fontecha MJ, Williams AD. IL-17A production of IL-6 and it's apoptotic effects on systemic Lupus Erythematosus, 2019.

Kartman M, Williams AD. The immune response to the Influenza virus, the role of IFITM3, and how SNP rs12252 increases susceptibility: a literature review, 2019.

Ghebranious V, Williams AD. A comprehensive review on the Ebola Virus glycoprotein, 2019.

Davison L, Williams AD. Administration of JAK2 chemical inhibitor AG490 prevents formation of the immunoproteasome in HEPG2 cells, 2018.

Holt A, Williams AD. The effect of IFN-gamma on immunoproteasome expression levels in HEPG2 cells at varying time points, 2018.

Cunningham B, Williams AD. Localization of MHCI in antigen presenting cells, 2018.

Davison L, Williams AD. Immunoproteasome expression levels in response to IFN-gamma in HEPG2 cells, 2017.

Couch M, Williams AD, Millimaki B. The effect of Top2-beta inhibition with Hu331 on expression of dcc in *Danio rerio*, 2017.

Mitchell M, Williams AD. Immunoproteasome activation by TNF-alpha via JAK2 signaling, 2016.

Wheless M, Williams AD. MHCI presentation may be dependent upon the immunoproteasome in murine macrophages, but not murine dendritic cells, 2016.

Landers DV, Williams AD. The JAK/STAT Pathway is responsible for immunoproteasome activation and potentially MHCI presentation with IFN-gamma in murine macrophages, but not murine dendritic cells, 2016.

Schmutzer L, Marshall A, **Williams AD**. Yogurt supplementation for lactation. Lipscomb University Student Scholars Symposium, 2015.

Mitchell M, **Williams AD**. Immunoproteasome activation by IFN-gamma. Lipscomb University Student Scholars Symposium, 2015.

Keith KA, **Williams AD**. Immunoproteasome subunit expression levels in response to IFN-gamma, 2014.

MacQuarrie C, **Williams AD**. Immunoproteasome subunit expression levels in response to TNF-alpha, 2014.

Additional Student Mentoring Activities

Graduate Students (BMS Program):

Rebecca Cowell	2021
• <i>The effects of HD5 on wound healing and SerpinE1 in colonic epithelial cells</i>	
Ben Arrants	2021
• <i>Wound healing and PLG expression in colonic epithelial cells after treatment with HD5</i>	
Rachel Turgeon	2021
• <i>miRNA: Finding a Biomarker for Adult Polyglucosan Body Disease</i>	
Maddy Powell	2020
• <i>APOE3CH Homozygosity in the Progression of Alzheimer's Disease</i>	
Shelby Lott	2020
• <i>HMGA protein's intricate role and involvement in esophageal cancer</i>	
Christine Nguyen	2019
• <i>Association between TBX22 mutations and X-Linked Cleft Palate: A Systemic Review</i>	
Johnetta Dean	2019
• <i>Pregnancy related infection leads to acute kidney injury</i>	
Laura Wade	2019
• <i>Desmoplakin and E-cadherin levels in Ulcerative and Crohn's colitis</i>	
Wabi Tela	2019
• <i>Mfsd2a as a key genetic biomarker for decline in blood-brain barrier integrity and related dysfunction</i>	
Morgan Stubblefield	2019
• <i>Role of Galectin class of proteins in Glioblastoma</i>	

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| Caitlon Jacoby | 2019 |
| <ul style="list-style-type: none">• <i>Immunoproteasome subunit expression in HepG2 cells in response to IFN-Gamma and Hepatitis C viral core protein</i> | |
| Erick Gonzalez | 2018 |
| <ul style="list-style-type: none">• <i>HD5 induces apoptosis in normal colonic epithelial cells</i> | |
| Hannah King | 2018 |
| <ul style="list-style-type: none">• <i>Determining diagnostic markers for Inflammatory Bowel Diseases</i> | |