

ERIN BASSFORD TAYLOR

Department of Physiology and Biophysics
University of Mississippi Medical Center
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Education

Doctor of Philosophy, May 2015, University of Mississippi Medical Center (UMMC)

Major: Microbiology and Immunology, GPA: 4.0

Dissertation Title: "Molecular and functional characterization of antiviral cytotoxic T lymphocytes in channel catfish, *Ictalurus punctatus*"

Master of Science, December 2006, Mississippi State University (MSU)

Major: Biochemistry and Molecular Biology, GPA: 4.0

Thesis title: "Enzymatic characterization of a unique maize defense cysteine protease and analysis of trichomes from resistant and susceptible maize inbreds"

Bachelor of Science, May 2004, MSU

Major: Biochemistry and Molecular Biology, GPA: 3.97

Research Experience

Instructor- Physiology, UMMC

Jan. 2017-present

Postdoctoral Research Fellow- Physiology, UMMC

April 2015- Dec. 2016

Graduate Assistant- Microbiology, UMMC

Aug. 2009-March 2015

Research Associate- Soil Microbiology, MSU

Sept. 2006-Dec.2008

Graduate Research Assistant- Biochemistry, MSU

Aug. 2004-Sept. 2006

Pediatric Oncology Intern- St. Jude Children's Research Hospital

June 2003-Aug. 2003

Student Researcher- Biochemistry, MSU

June 2002- Aug. 2004

Teaching Experience

Guest Lecture, Biomedical Sciences Master's program, Fall 2017

Guest Lecture, Medical Student Research Program, Summer 2017

Summer Undergraduate Research Experience, Lab Olympics Instructor, Summer 2015, 2016, 2017

Guest Lecturer, Advanced Immunology, Department of Microbiology, Spring 2016

Adjunct Microbiology Instructor, taught General Microbiology (4.0 credit hours), Millsaps College, Fall 2013, Fall 2014

Davis Magnet Elementary Project REACH Teaching Program, Spring 2013, Fall 2013, Spring 2014, Spring 2015

Medical Microbiology Anaphylaxis Simulation Instructor, Fall 2012-Fall 2014

Dental Hygiene Oral Pathology Guest Instructor, Fall 2012, Spring 2013, Fall 2013

Medical and Graduate Student Biochemistry Tutor, Fall 2010-2012

Medical Microbiology Lab Assistant, Fall 2010

Soil Microbiology Lab Teaching Assistant, Spring 2007-2008

Undergraduate Biochemistry Tutor, Spring 2005-2008

Undergraduate Mentorship

Julius Chembo, Lemoyne-Owen College, Summer Undergraduate Research Experience (SURE)- Summer 2016, Summer 2017

Akil Strawder, Southern University, SURE- Summer 2015

Jeremiah Reese, Belhaven University, SURE- Summer 2014

Maurice Whalen, Tougaloo College, Fall 2014

Thomas Rouselle, University of Southern Mississippi, and Jeremiah Reese, Belhaven University, SURE, Summer 2013, Summer 2014

Jemarcus Welch, Tougaloo College, Fall 2012

Andrew Sinclair, Belhaven University, and Thomas Rouselle, University of Southern Mississippi, SURE, Summer 2012

Bailey Burkhalter, Tulane University, SURE, Summer 2011

Leadership/Service

Physiologists in training Journal Club organizer, 2017

UMMC Postdoctoral Advisory Committee, 2016-2017

Board member, School of Graduate Studies in the Health Sciences Alumni Association, 2015-2018

Graduate Student Representative to the UMMC Interprofessionalism Committee, 2014-2015

Team Leader, Department of Microbiology Discovery U- Spring 2014, Spring 2015

Group Leader, PhUN week, Mississippi Children's Museum 2014-2017

Madison Central High School Discovery U Mentor- Spring 2014

Philanthropy Coordinator- UMMC Associated Student Body 2013-2014

Graduate Student Representative to the UMMC Multicultural Student Healthcare Association, 2013-2014

English Conversation Group for International Graduate Students Leader, Spring 2013

President- UMMC Graduate Student Body 2012-2013

Graduate Student Representative to UMMC Service Learning Committee, 2012-2013

Philanthropy Coordinator- UMMC Graduate Student Body, 2011-2012

Science Fair Judge: 2010-present

Fellowships/Grants

National Institutes of Health- National Heart, Lung, and Blood Institute F32 Postdoctoral fellowship: July 2017-present.

American Heart Association Postdoctoral Fellowship: January 2017-July 2017

National Institutes of Health- National Heart, Lung, and Blood Institute T32 Training Grant, April 2015- December 2016.

USDA-National Institute of Food and Agriculture Predoctoral Fellowship: August 2013- April 2015.

Honors and Scholarships

Trustmark Postdoctoral Publication Award- UMMC School of Graduate Studies in the Health Sciences Honors Day 2017

Caroline tum Suden/Frances Hellebrandt Professional Opportunity Award- Experimental Biology 2017

Outstanding Presenter Award- UMMC School of Graduate Studies Research Day, October 2016

Travel Award- APS Conference on Inflammation, Immunity, and Cardiovascular Disease, August 2016

2016 Juan Carlos Romero and APS Water & Electrolyte Homeostasis Section Postdoctoral Research Recognition Award- Experimental Biology 2016

Randall Trustmark Graduate Student Research Award- UMMC School of Graduate Studies in the Health Sciences Honors Day 2015

2015 AAI Trainee Abstract Award- AAI Annual Meeting 2015

1st place: Rural Interdisciplinary Case Experience (RICE) Bowl- UMMC, October 2014

Travel Award- North American Comparative Immunology Workshop, May 2014

Outstanding Presenter Award- UMMC Graduate Student Research Day, October 2013

2013 Associated Student Body Student of the Year- UMMC, May 2013

Dean's Service Award, UMMC School of Graduate Studies in the Health Sciences Honors Day 2013

Outstanding Student Oral Presentation- Eastern Fish Health Workshop, May 2013

Best Poster Presentation- 3rd North American Comparative Immunology Workshop, June 2012

Outstanding Presenter Award- UMMC School of Graduate Studies Research Day, October 2011

Outstanding Presenter Award- UMMC School of Graduate Studies Research Day, October 2010

Phi Kappa Phi inductee, UMMC, October 2010

Ing "IKE" Ho PhD student scholarship, UMMC, August 2009

Gamma Sigma Delta inductee-Honor Society of Agriculture, Mississippi State University, April 2004

Barry M. Goldwater Scholarship, Barry Goldwater Scholarship and Excellence in Education Program for Scientists and Engineers, March 2003

Charlie Rabb Ashford Endowment Scholarship, Mississippi State University College of Agriculture and Life Sciences, August 2002

Professional Society Membership

American Physiological Society, April 2015-present

American Heart Association, August 2015-present

International Society of Developmental and Comparative Immunology, April 2012-present

American Association of Immunologists, February 2013-present

Publications

Taylor EB, Sasser JM. (2017). Role of natural killer cells and T lymphocytes in pregnancy and preeclampsia. *Clinical Science*. 131 (24): 2911-2917.

Spann RA, Lawson WJ, Bidwell GL, Zamarripa CA, Maranon RO, Bandyopadhyay S, **Taylor EB**, Reckelhoff JF, Garrett MR, Grayson BE. (2017). Rodent Vertical Sleeve Gastrectomy Alters Maternal Immune Health and Feto-placental Development. *Clinical Science*. 2017 Nov 22. (epub ahead of print).

Mathis, KW, **Taylor EB**, Ryan MJ. (2017). Anti-CD3 antibody therapy attenuates the progression of hypertension in female mice with systemic lupus erythematosus. *Pharmacological Research*. 120: 252-257.

Taylor EB, Ryan MJ. (2017). Mycophenolate mofetil attenuates hypertension in an experimental model of autoimmune disease. *Journal of the American Heart Association*.

El Jamal SM, **Taylor EB**, Abd Elmageed ZY, Alamodi AA, Selimovic D, Alkhateeb A, Hannig M, Hassan SY, Santourlidis S, Friedlander PL, Haikel Y, Vijaykumar S, Kandil E, Hassan M. Interferon gamma-induced apoptosis of head and neck squamous cell carcinoma is connected to indoleamine-2,3-dioxygenase via mitochondrial and ER stress-associated pathways. *Cell Div*. 2016 Aug 2;11:11.

Taylor EB, Ryan MJ. (2016). Understanding mechanisms of hypertension in systemic lupus erythematosus using animal models. *Therapeutic Advances in Cardiovascular Disease*.

Taylor EB, Moulana M, Stuge T, Quiniou SMA, Bengten E, Wilson M. (2016). Leukocyte immune-type receptors are markers of antiviral cytotoxic cells in channel catfish, *Ictalurus punctatus*. *Journal of Immunology*. epub ahead of print

El-Khattouti A, Selimovic D, Hannig M, **Taylor EB**, AbdElmageed ZY, Hassan SY, Haikel Y, Kandil E, Leverkus M, Brodell RT, Megahed M, Hassan M. (2015). Imiquimod-induced apoptosis of melanoma cells is mediated by ER stress-dependent Noxa induction and enhanced by NFκ-B inhibition. *Journal of Cellular and Molecular Medicine*. epub ahead of print.

Taylor EB, Wilson M, Bengten E. (2015). The Src protein kinase Lck binds to CD2, CD4-1, and CD4-2 in channel catfish, *Ictalurus punctatus*. *Molecular Immunology* 66(2): 126-138.

Taylor EB, Quiniou SMA, Nayak DK, Bengten E, Wilson M. (2015). Identification of SHIP-1 and SHIP-2 homologs in channel catfish, *Ictalurus punctatus*. *Developmental and Comparative Immunology* 51(1): 79-87.

Moulana M, **Taylor EB**, Edholm ES, Quiniou SM, Wilson M, & Bengtén E. (2014) Identification and characterization of TCRγ and TCRδ chains in channel catfish, *Ictalurus punctatus*. *Immunogenetics* 66: 545-61.

Luthe DS & **Taylor EB**. (2013). Maize Insect Resistance 1 – Cysteine Protease. In *Handbook of Proteolytic Enzymes*, 3rd Edition

Edholm E-S, Bengtén, E, Stafford JL, Sahoo, M., **Taylor, EB**, Miller, NW, & Wilson, M. (2010). Identification of two IgD+ B cell populations in channel catfish, *Ictalurus punctatus*. *J. Immunol*, 185:4082-9.

Taylor EB, & Williams, MA (2010). Microbial protein in soil: influence of extraction method and C amendment on extraction and recovery. *Microb Ecol.* 59: 390-399.

Williams MA, **Taylor EB**, and Mula HP (2010). Metaproteomic characterization of a soil microbial community following carbon amendment. *Soil Biol and Biochem.* 42: 1148-1156.

Mohan, S., Ma, P.W., Pechan, T., **Bassford, E.R.**, Williams, W.P., Luthe, D.S. (2006). Degradation of the *S. frugiperda* peritrophic matrix by an inducible maize cysteine protease. *J. Insect Physiol.* 52: 21-28.

Abstracts (oral presentations are denoted with an asterisk)

Taylor EB, Barati M, Powell D, Ryan MJ. The role of plasma cells in autoimmune associated hypertension. ASN Kidney Week 2017 Annual Meeting, New Orleans, LA.

Wolf VL, **Taylor EB**, Ryan MJ. Immunosuppression with cyclophosphamide attenuates renal injury but not hypertension in an experimental model of autoimmune disease. 2017 Council on Hypertension Scientific Sessions, San Francisco, CA.

Taylor EB, George, EM, Garrett MR, Ryan MJ Sasser JM. Immunological Characterization of the Dahl SS Model of Superimposed Preeclampsia. 2017 Council on Hypertension Scientific Sessions, San Francisco, CA.

Taylor EB*, Ryan MJ. Expansion of Regulatory T cells using Low-dose Interleukin-2 Attenuates Hypertension in an Experimental Model of Autoimmune Disease. Experimental Biology 2017, Chicago, IL.

Taylor EB*, Ryan MJ. Depletion of antibody-secreting plasma cells attenuates hypertension in an experimental model of autoimmune disease. 2016 Council on Hypertension Scientific Sessions, Orlando, FL.

Taylor EB, Garrett MR, Ryan MJ, Sasser JM. Prior preeclampsia results in persistent immune activation following pregnancy in the Dahl salt sensitive rat. APS Immunity, Inflammation, and Cardiovascular Disease 2016, Westminster, Colorado.

Taylor EB*, Strawder AJ, Ryan MJ. Mycophenolate Mofetil Attenuates Hypertension in an Experimental Model of Systemic Lupus Erythematosus. Experimental Biology 2016, San Diego, CA.

Blackmon LE, **Taylor EB**, Bengten E, Wilson M. Monoclonal antibodies CC34 and CC41 are markers for cytotoxic cells and bind catfish leukocyte immune-type receptors. South Central Branch American Society of Microbiology Annual Meeting 2015, Hattiesburg, MS.

Spencer D, **Taylor EB**, Wilson M, Bengtén E. Identification and characterization of interleukin-6 in channel catfish, *Ictalurus punctatus*. South Central Branch American Society of Microbiology Annual Meeting 2015, Hattiesburg, MS.

Taylor EB*, Wilson M, Bengten E. Leukocyte immune-type receptors (LITRs) are markers of antiviral cytotoxic T lymphocytes in channel catfish, *Ictalurus punctatus*. AAI Meeting 2015, New Orleans, LA.

Reese J, Spencer DA, **Taylor EB**, Wilson M, Bengten E. Mississippi Academy of Sciences Annual Meeting, Hattiesburg, MS, February 2015.

Blackmon LE, **Taylor EB**, Wilson M, Bengten E. Monoclonal antibodies CC34 and CC41 are markers of cytotoxic cells and bind to leukocyte immune-type receptors. UMMC Graduate Student Research Day. Jackson, MS.

Spencer DA, **Taylor EB**, Bengten E, Wilson M. October 2014. Identification of IL-6 and IL-10 homologs in channel catfish, *Ictalurus punctatus*. UMMC Graduate Student Research Day. Jackson, MS.

Taylor EB*, Wilson M, Bengten E. Leukocyte immune-type receptors (LITRs) are markers of channel catfish antiviral cytotoxic cells. 5th North American Comparative Immunology Workshop, Albuquerque, NM.

Taylor EB*, Wilson M, Bengten E. Leukocyte Immune-Type Receptors (LITRs): Markers of antiviral cytotoxic cells in channel catfish, *Ictalurus punctatus*. 39th Eastern Fish Health Workshop, Shepherdstown, WV, May 2014.

Taylor EB*, Wilson M, Bengten, E. T cell co-receptor function in channel catfish, *Ictalurus punctatus*. Mississippi Academy of Sciences Annual Meeting, Hattiesburg, MS, February 2014.

Taylor EB, Wilson M, Bengten, E. October 2013. T cell co-receptor function in channel catfish, *Ictalurus punctatus*. UMMC Graduate Student Research Day. Jackson, MS.

Taylor EB*, Chinchar VG, Wilson M, Bengten, E. May 2013. Identification of antiviral cytotoxic T lymphocytes in channel catfish, *Ictalurus punctatus*. 38th Eastern Fish Health Workshop, Gettysburg, PA.

Taylor EB*, Chinchar VG, Wilson M, Bengten E. October 2012. Antiviral cytotoxic cells in channel catfish, *Ictalurus punctatus*. South Central Branch American Society of Microbiology Annual Meeting, Starkville, MS.

Taylor EB*, Chinchar VG, Wilson M, Bengten, E. October 2012. Characterization of antiviral cytotoxic cells in channel catfish, *Ictalurus punctatus*. UMMC Graduate Student Research Day. Jackson, MS.

Wilson M, **Taylor EB**, Bengten E. June 2012. What we know and what we don't know about catfish, *Ictalurus punctatus*, B and T cells. 3rd North American Comparative Immunology Workshop. Rochester, NY.

Taylor EB*, Chinchar VG, Wilson M, Bengten E. June 2012. Antiviral cytotoxic cells in channel catfish, *Ictalurus punctatus*. 3rd North American Comparative Immunology Workshop. Rochester, NY.

Majji S, **Taylor EB**, Hanson L, Arnizaut A, Wilson M, Bengten E, Chinchar VG. April 2012. Innate and Acquired Anti-viral Immunity in Catfish. 38th Eastern Fish Health Workshop. Lake Placid, NY.

Taylor EB, Chinchar VG, Wilson M, Bengten E. October 2011. Identification of antiviral cytotoxic cells in channel catfish, *Ictalurus punctatus*. UMMC Graduate Student Research Day. Jackson, MS.

Taylor EB, Nayak DK, Wilson M, Bengten E. October 2010. Identification of SHIP-1 and SHIP-2 homologs in channel catfish, *Ictalurus punctatus*. UMMC Graduate Student Research Day. Jackson, MS.

Wilson M, Edholm ES, **Taylor EB**, Sahoo M, Bengtén E. IgD-bearing cell populations in the channel catfish, *Ictalurus punctatus* 5th Aquatic Animal Models for Human Disease, Corvallis, OR, 2010.

Bassford ER, Luthe DS. April 2006. Kinetic Analysis of a Unique Maize Cysteine Protease. MSU GSA Annual Research Symposium. Mississippi State, MS.