Leah Marie Wuescher

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Education

The University of Toledo College of Medicine Toledo, OH
Ph.D. *Completed December 2012*
Research: Effects of menin on hepatic glucose production

The University of Toledo Toledo, OH
B.S. *Completed December 2007*
Major: Biology

Publications

- Schultz CM, Goel A, Dunn A, Knauss H, Huss C, Launder D, **Wuescher LM**, Conti HR, Worth RG. Stepping up to the Plate(let) against *C. albicans*. *Infect Immun.* 2020 Jan 13. pii: IAI.00784-19. doi: 10.1128/IAI.00784-19.
- **Wuescher LM**, Nishat S, Worth RG. Characterization of a transgenic mouse model of chronic conditional platelet depletion. *Res Pract Thromb Haemost.* 2019;00:1–9. doi: 10.1002/rth2.12255
- Adams S**, Wuescher LM,** Worth R, Yildirim-Ayan E**.** Mechano-Immunomodulation: Mechanoresponsive Changes in Macrophage Activity and Polarization**.** *Ann Biomed Eng.* 2019 Jun 19. doi: 10.1007/s10439-019-02302-4.
- Nishat S, **Wuescher LM**, Worth RG. Platelets enhance dendritic cell responses against S. aureus through CD40-CD40L interactions. *Infect Immun.* 2018 Jun 18. pii: IAI.00186-18. doi: 10.1128/IAI.00186-18.
- Meikle CKS, Kelly CA, Garg P, **Wuescher LM**, Ali RA, Worth RG. Cancer and Thrombosis: The Platelet Perspective. *Front. Cell Dev. Biol.* 2017 Jan 5;4:147. doi: 10.3389/fcell.2016.00147. eCollection 2016. Review.
- Ali RA, **Wuescher LM**, Dona KR, Worth RG. Platelets mediate host defense against Staphlococcus aureus through direct bactericidal activity and by enhancing macrophage activities. *J Immunol.* 2017 Jan 1;198(1):344-351. Epub 2016 Nov 28.
- Haller ST, Kumarasamy S, Folt DA, **Wuescher LM**, Stepkowski S, Karamchandani M, Waghulde H, Mell B, Chaudhry M, Maxwell K, Upadhyaya S, Drummond CA, Tian J, Filipiak WE, Saunders TL, Shapiro JI, Joe B, Cooper CJ. Targeted disruption of Cd40 in a genetically hypertensive rat model attenuates renal fibrosis and proteinuria, independent of blood pressure. *Kidney International* 2017 Feb;91(2):365-374. doi: 10.1016/j.kint.2016.08.015
- Ali RA, **Wuescher LM**, Worth RG. Platelets: Essential Components of the Immune System. *Curr Trends in Immunol*. 2015;16:65-78.
- Law W, **Wuescher LM**, Ortega A, Hapiak VM, Komuniecki PR, Komuniecki R. Heterologous expression in remodeled C. elegans: A platform for monoaminergic agonist identification and anthelmintic screening. *Plos Pathog*. 2015 Apr 30;11(4):e1004794.

- **Wuescher LM**, Takashima A, Worth RG. A novel conditional platelet depletion mouse model reveals the importance of platelets in protection against S. aureus bacteremia. *J Thromb Haemost*. 2015 Feb;13(2):303-13. doi: 10.1111/jth.12795
- Stechschulte LA, **Wuescher L**, Marino JS, Hill JW, Eng C, Hinds Jr. TD. Glucocorticoid receptor β stimulates Akt1 growth pathway by attenuation of PTEN. *J Biol Chem* 2014 Jun 20;289(25):17885-94. doi: 10.1074/jbc.M113.544072
- Angevine K, **Wuescher L**, Mensah-Osman EJ. Loss of Menin mediated by endothelial cells treated with CoPP is associated with increased maturation of adipocytes. *Adipocyte* 2013 Oct 1;2(4):207-16. doi: 10.4161/adip.24722
- Angevine K, **Wuescher L**, Andrews K, Alexander LA, McInerney MF, Kieffer TJ, Mensah-Osman EJ. Menin and GIP are inversely regulated by food intake and diet via PI3/AKT signaling in the proximal duodenum. *Nutrition and Diabetes* 2012 Dec 3;2:e55. doi: 10.1038/nutd.2012.30
- **Wuescher L**, Angevine K, Patel PR, Mensah-Osman EJ. Menin liver ppecific hemizygous mice challenged with high fat diet show increased weight gain and markers of metabolic impairment. *Nutrition and Diabetes* 2012 May 28;2:e34. doi: 10.1038/nutd.2012.7
- **Wuescher L**, Angevine K, Hinds T, Ramakrishnan S, Najjar SM, Mensah-Osman EJ. Insulin regulates Menin expression, cytoplasmic localization and interaction with FOXO 1. *Am J Physiol Endocrinol Metab* September 2011 301:E474-E483; published ahead of print June 21, 2011, doi:10.1152/ajpendo.00022.2011

Abstracts ***(NOTE: Married September 2010, legally changed name from Leah Palladino to Leah Wuescher)***

- **Wuescher LM,** Schultz CM, Dunn A, Goel A, Worth RG. Platelet-Mediated Killing of *C. albicans*. *Midwest Platelet Conference 2018 (Poster presentation).*
- **Wuescher LM,** Takashima A, Worth RG. Platelets are Critical for Survival from *Staphylococcus aureus* Blood Infection in Mice. *Midwest Platelet Conference 2014 (Poster presentation)*
- **Wuescher LM**, Takashima A, Worth RG. Platelets are Critical for Survival from *Staphylococcus aureus* Blood Infection in Mice. *Midwest Microbial Pathogenesis Conference 2013 (Poster presented by RG Worth)*
- **Wuescher L,** Angevine K, Mensah-Osman EJ. Hepatic FoxO1 Acetylation is Regulated by Menin and Influenced by Insulin Signaling. *Experimental Biology Meeting 2012 (Poster presentation)*
- **Wuescher L,** Angevine K, Mensah-Osman EJ. Insulin regulates Menin expression, localization and interaction with FOXO 1. *38th Annual Pharmacology Research Colloquium 2011 (Oral presentation)*
- **Palladino L**, Angevine K, Patel P, Mensah-Osman E, Menin Liver Specific Hemizygous Mice Exhibit a Metabolic Syndrome Phenotype when Challenged with High Fat Diet. *37th Annual Pharmacology Research Colloquium 2010 (Poster presentation)*
- **Palladino L**, Angevine K, Patel P, Mensah-Osman E, Menin Liver Specific Hemizygous Mice Exhibit a Metabolic Syndrome Phenotype when Challenged with High Fat Diet. *First Annual Cardiovascular and Metabolic Diseases Student Research Forum 2010 (Oral presentation, 3rd place award)*
- **Palladino L**, Burgess A, Vanella L, Kim DH, Sodhi K, Peterson S, Abraham NG, Mensah-Osman E. L-4F Improves Metabolic Syndrome Phenotype in HO-2 Null Mice by Decreasing

NFkB Activity & Increasing Adiponectin Levels. *Experimental Biology Meeting 2010 (Poster presentation)*

- **Palladino L**, Angevine K, Kim DH, Sodhi K, Inoue K, Gotlinger KH, Burgess A, Vanella L, Abraham NG, Mensah-Osman E. L-4F Rescues the Inflammatory Phenotype of HO-2 null Mice through Induction of HO-1 and Epoxyeicosatrienoic Acids (EETs) and Decreased NF-kB Activity. *Winter Eicosanoid Conference 2010 (Oral presentation)*
- **Palladino L**, Angevine K, Ramakrishnan S, Bowman T, Ledford K, Najjar S, Mensah-Osman E. Menin in the Liver is a Metabolic Sensor Tightly Regulated by Insulin for its Clearance. *36th Annual Pharmacology Research Colloquium 2009 (Poster presentation)*
- Angevine K, **Palladino L**, Ramakrishnan S, Mensah-Osman E. Menin – A central player in Metabolic and Energy Homeostasis. *36th Annual Pharmacology Research Colloquium 2009*

Skills

In vivo (mouse): Retro-orbital injection, cardiac stick, intraperitoneal injection, submandibular bleed, subcutaneous injection, tail vein injection, handling/breeding mutant mouse models, ear punch, tail snip, genotyping, retro-orbital bleeding, glucose tolerance testing, insulin tolerance testing, NMR, blood pressure measurement, tissue harvesting, serum analysis, intravital imaging

In vivo (*C. elegans*): Confocal microscopy, RNA isolation, worm lysis, worm maintenance

Human procedures: Venipuncture, platelet purification

In vitro: T cell isolation, cell culture, lentiviral infection, siRNA and plasmid transfection, western blotting, immunoprecipitation, co-immunoprecipitation, quantitative real time polymerase chain reaction (qPCR), polymerase chain reaction (PCR), agarose gel electrophoresis, polyacrylamide gel electrophoresis (PAGE), flow cytometry, RNA isolation, DNA isolation, ELISA, immunocytochemistry (cell and tissue sections), maxi/mini/midiprep, luciferase, cellular fractionation, bacterial culture, PCR fusion, confocal microscopy

Research Experience

University of Toledo College of Medicine Toledo, OH
Research Assistant Professor *Sept 2019-Present*
Lab Affiliation: Randall Worth, Ph.D.

- The role of platelets in bacterial infection and clearance

University of Toledo College of Medicine Toledo, OH
Research Associate *Jan 2017-Sep 2019*
Supervisor: Randall Worth, Ph.D.

- The role of platelets in bacterial infection and clearance

I-Corps@Ohio Columbus, OH
Entrepreneurial Lead *May 2016-Aug 2016*
Supervisor: Randall Worth, Ph.D.

- Business model generation for getting medical technology to market

University of Toledo College of Medicine Toledo, OH
Postdoctoral Fellow *April 2014-Jan 2017*
Supervisor: Randall Worth, Ph.D.

- The role of platelets in bacterial infection and clearance

University of Toledo Toledo, OH
Postdoctoral Fellow *July 2013-April 2014*
Supervisor: Richard Komuniecki, Ph.D.
- Analyzing neuropeptide release in *C. elegans* ASI neurons

University of Toledo College of Medicine Toledo, OH
Research Associate *January 2013-July 2013*
Supervisor: Randall Worth, Ph.D.
- Analysis of a novel mouse model of chronic platelet depletion

University of Toledo College of Medicine Toledo, OH
Ph.D. Candidate *August 2008-December 2012*
Supervisor: Edith Mensah-Osman M.D., Ph.D.
- Researching the effects of a small peptide on the metabolic syndrome phenotype of a diabetic mouse model

University of Toledo Toledo, OH
Undergraduate Researcher *August 2006-December 2007*
Supervisor: Douglas W. Leaman, Ph.D.
- Characterization of murine XAF1

University of Toledo Toledo, OH
Undergraduate Researcher *Fall 2007*
Supervisor: Yun-Ming Lin, Ph.D.
- Developing new catalysts to allow efficient synthesis of biologically interesting small organic molecules

Cuyahoga County Board of Heath -Water Quality Program Parma, OH
Water Quality Intern *Summers 2005-2007*
Supervisor: Harry Stark, RS, MPH
- Conducted biological and chemical monitoring of streams as a stormwater technician

Society Memberships

The American Heart Association 2013-Present

The International Society for Heart and Lung Transplantation 2013

American Association of Immunologists 2019-Present
- *AAI Public Policy Fellow* *2019-2020*

Mentoring

High School Students
Arukshita Goel – Junior and Senior years at Sylvania Southview High School – Nov. 2016 – August 2018

2017 – Ohio Junior Science and Humanities Symposium (3rd place)
UT Research Day – 1st place
National Junior Science and Humanities Symposium (poster)

2018 – Ohio Junior Science and Humanities Symposium (1st place)
National Junior Science and Humanities Symposium (3rd place)
Amy Dong – Junior at Sylvania Southview High School – February 2019 - Present

Undergraduate Students
Keith Dona – Case Western Reserve University – May 2015 – August 2015
Chadwick Huss – University of Toledo – January 2019 – Present
Arukshita Goel – University of Toledo – June 2019 – Present

MSBS-MS Student
Christina Schultz – August 2017 – June 2018

Medical Students
Allison Dunn – April 2017 – August 2017
Kavya Pai – February 2018 – August 2018
Hanna Knauss – February 2019 – Present

Scholarship

Journal Peer Review
PLOS One, ad hoc
Journal of Thrombosis and Hemostasis, ad hoc

Past Research Support
Title: The Women & Philanthropy Thrombosis and Hemostasis Research Center
Agency: Women & Philanthropy at the University of Toledo
Period of Support: 2018
Total Project Award: $63,200
Leah M. Wuescher and Randall G. Worth, Department of Medical Microbiology and Immunology, University of Toledo College of Medicine
Role: Co-Investigator

Patents
Issued
Title: Use of Acyl-Homoserine Lactone Derivatives as Anti-Thrombotic Agents
Inventors: Randall G. Worth, Glenn R. Westphal, Brenton R. Keeley, Leah M. Wuescher
Patent #10,195,177 B2