

**C. Henrique Serezani**  
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## **EDUCATION AND TRAINING**

### EDUCATION

02/1994 -12/1998	B.S., Biology, University of São Paulo State, Assis-SP, Brazil
03/1999 -05/2001	M. S., Parasitology, University of São Paulo, Sao Paulo-SP, Brazil Thesis Title: Strategies to study the role of the protein meta 1 in leishmanial species.
06/2001-05/2005	Ph.D., Immunology, University of São Paulo, Sao Paulo-SP, Brazil Thesis title: Cross-talk between leukotriene B4 and NADPH oxidase in phagocytes

### TRAINING

07/2003- 11/2004	PhD training (sandwich program) at University of Michigan School of Medicine, Ann Arbor, Michigan
06/2005 -09/2009	American Lung Association Postdoctoral Research Fellow, Department of Medicine, Division of Pulmonary and Critical Care Medicine, Ann Arbor, Michigan.

## **ACADEMIC APPOINTMENTS**

09/ 2009- 03/2012	Clinical Lecturer in Medicine.
04/2012- 07/2016	Assistant Professor, Department of Microbiology and Immunology, Indiana University School of Medicine, Indianapolis, Indiana
08/2016 -	Assistant Professor, 1) Department of Medicine, Division of Infectious Diseases, 2) Department of Pathology, Microbiology and Immunology, Vanderbilt University Medical Center, Nashville, Tennessee

## **PROFESSIONAL ORGANIZATIONS**

2006 - present: American Thoracic Society  
2009 - present: American Association of Immunologist. Member  
2013 - present: American Heart Association. Member  
2013 - present: American Diabetes Association. Member  
2012 - present: Society of Leukocyte Biology. Member

## **PROFESSIONAL ACTIVITIES**

### INTRAMURAL

From 2012-2016 at IUSM

2013-2014 Microbiology & Immunology Seminar Series (CHAIR)  
2013 - 2016 Graduate Education Policy Committee, MEMBER  
2013 - 2016 IBMG Student Recruitment, MEMBER  
2014 - 2016 Graduate oversight committee, MEMBER  
2014 - 2016 IACUC, MEMBER

#### VUMC

08/2016 – present Infectious Disease Research Operations, Member  
02/2018 – present Vanderbilt Center Immunobiology, Planning committee

#### EXTRAMURAL ACTIVITIES:

##### CO-CHAIR:

2015 Midwest Microbial Pathogenesis Conference Indianapolis

#### EDITORIAL BOARD

2013-2014 Plos Pathogens  
2013- Mediators of Inflammation  
2014- Journal of Translational Medicine  
2014-2015 Science Translational Medicine  
2020 - Pathogens

#### AD HOC REVIEWER:

Journal of Immunology Virulence  
Journal of Biological Chemistry Gene  
Medical Mycology Biochimie  
Am. J. Physiology. Lung Cellular/Molecular Physiology British Journal of Pharmacology  
Expert Opinion on Therapeutic Targets Can. J. Physiol and Pharm  
PLoS One Virus  
Journal of Applied Physiology Scientific Reports  
BMC Genomics J. Clinical Investigation  
J. Clinical Investigation Insights Nature Microbiology  
Infection and Immunity mBio  
PLoS Neglected Tropical Diseases Mucosal Immunology  
Jove BBA -Molecular Basis of Disease  
Journal of Innate Immunity Frontiers in Cellular and Infection  
Microbiology Endocrinology  
Molecular Endocrinology Mem. Instituto Oswaldo Cruz (Brazil)  
Methods International Immunology Cellular and Molecular  
J. Leukocyte Biology Immunology Cell Biology (Australia)  
Prostaglandins and Other Lipid Mediators Immunology Letters  
Journal of Infectious Diseases Oncotarget  
Journal of Diabetes and its Complications European J. Immunology  
Nature Science Translational Medicine  
Pathogens and diseases (UK) aka *FEMS microbiology* Science Signaling

#### GRANT REVIEWER

2014	Institute for Clinical and Translational Research at University of Wisconsin
2014, 2015	Medical Research Council (UK)
2015	Cystic Fibrosis Foundation Canada
2015	National Council for Scientific and Technological Development (CNPq), Brazil.
2016	
2017	John Hopkins University Diabetes Research Center
2018	Lung Cellular, Molecular, and Immunobiology (LCMI)-Ad Hoc
2019	Lung Injury Repair Remodeling – LIRR Ad Hoc
2019	ASCT special emphasis R15 grant – Ad hoc
2019	Center for Diabetes Research U of Michigan Pilot grant
2019	U of Connecticut Center for Innovation- Ad Hoc
2020	Allergy Immunology Transplantation Research Committee (AITC)- Ad Hoc
2020	Allergy Immunology Transplantation Research Committee (AITC)- Standing member

## PROFESSIONAL HONORS AND AWARDS

### RESEARCH

1996-98	Fundação de Amparo à Pesquisa do Estado de São Paulo, FAPESP, Brasil.
2000-02	Coordenação de Aperfeiçoamento de Pessoal de Nível Superior
2005-05	Travel Assistance Award, Latin American Association of Immunology (ALAI).
2001-05	Fundação de Amparo à Pesquisa do Estado de São Paulo, FAPESP, Brasil
2003-04	Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (Training Brazil-USA)
2007-2009	American Lung Association Senior Research Training Award
2010-2010	American Heart Association Career Development Award
2013-2013	Showalter Scholar
2017-2018	Junior Faculty Leadership Development Program. Vanderbilt University Medical School.
2020	Society for Leukocyte Biology Image Contest – Honorable Mention

### TEACHING

2014	Randy Rosenthal Graduate Student Advocacy Award (IUSM)
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### SERVICE

2014-2015	Associate Scientific Advisor for Science Translational Medicine (AAAS)
2015	Watanabe Translational Research Scholar (IUSM)
2018 -	Vanderbilt Center of Immunobiology Steering Committee
2018 -	AAI Minority Affairs Committee
2019-	Society for Leukocyte Biology Diversity, Equity and Inclusion Committee

## TEACHING ACTIVITIES

### GRADUATE SCHOOL COURSE

#### IUSM

10/2012	Intracellular infection (J829)
02/2013	Innate Immunity (G728)
04/2013	Infection and tissue injury (G729)
10/2013	Pathogen recognition Receptors (J807)
02/2014	Innate Immunity (G728)
04/2015	Innate Immunity (G729)
01/2016	Introduction to Immunology (G728- course director)

#### VUMC

01/2017, 2018, 2019	Monocytes and macrophages; Mechanisms of pathogen recognition Dendritic cells (MIM8329)
03/2017, 2018, 2019	Regulation of the innate immune system (Foundations 3)
08/2017, 2018, 2019	Innate Immunity and The Induced Responses of Innate Immunity. Foundations 2 (MIM8334)

### MEDICAL SCHOOL COURSES

Spring/2014 X604 Clinical Problem Solving

### RESEARCH SUPERVISION

#### UNDERGRADUATE:

Ana Elisa Ferreira	07/2012 - 06/2013
Project title: Role of PPAR-gamma in polymicrobial sepsis	
Current position: PhD student	
Flavia Sisti	07/2012 - 06/2013
Project title: Role of PTEN in polymicrobial sepsis	
Current position: PhD student	

#### VISITING SCHOLAR:

Marina Reis	03/2006 -10/2010
Thesis title: Identifying the sequences of events involved in leukotriene-enhanced fungal killing by macrophages.	
Current position: Director of a diagnostic laboratory	

Mariana Morato-Marques	07/2006 - 08/2011
Thesis title: Role of leukotriene B4 in fungal host defense.	
Current position: Research assistant	

Edson Yshisawa	01/2011 – 12/2016
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Thesis title: Identification of signaling programs induced by platelet-activating factor in macrophages.

Current position: Postdoc

Luciano Filgueiras 08/2012 - 07/2013

Thesis title: Role of systemic leukotriene B4 in sterile inflammation in diabetes.

Current position: Medical Science Liaison at Pfizer

Naiara Dejana 03/2014- 01/2015

Thesis title: Cross-talk between prostaglandin E2 and Th17 cells during skin infection in diabetic mice

Current position: Postdoc

Annie Pinos 04/2015- 10/2016

Thesis title: Role of suppressor of cytokine signaling-1 in polymicrobial sepsis: A glycolytic view.

Current position: Postdoc

#### ROTATION STUDENTS

Emily Waskow 2013

Brad Griesenauer 2013

Shuangshuang Yang 2014

#### PHD STUDENT MENTOR

Stephanie Brandt 05/2013 -08/2017

Thesis title: Leukotriene B4 levels determine *Staphylococcus aureus* skin infection outcome.

Current position: Postdoc

Nathan Klopfenstein 06/2017

Project title: Role of prostaglandin E2 in impaired skin host defense in preexisting conditions.

#### GRADUATE STUDENT THESIS ADVISORY COMMITTEE

Gail Gardiner 2012- 2016

Brad Griesenauer 2013- 2016

Sebastian Carrasco 2013- 2015

Matthew Muramatsu 2013- 2017

Nicole Shepherd 2013- 2017

Arianne Aslamy 2014- 2016

Danting Cao 2014- 2015

Cody Stothers (chair) 2017 -

Ly Pham (chair) 2017 -

Joshua Postoak 2017-

Cara Lang 2018 -

Neil Sprenkle (chair) 2018 -

#### SUMMER RESEARCH PROGRAM

Nathan Delafield 2013

Stacy Blank 2014

Ai-xin Chen 2014

Huiam Mubarak 2015

Sidney Castelanoos 2018

POSTDOC ADVISOR

Emilie Bourdonnay 2009-2012

Project title: Cross-talk between kinases and phosphatases during bacteria-induced NADPH oxidase activation in macrophages

Nichole Byers 2014- 2016

Project title: Role of PTEN in methicillin-resistant *Staphylococcus aureus*-induced sepsis

Natalia Tavares 2014- 2015

Project title: microRNA regulation of keratinocyte-induced antimicrobial peptides during *Leishmania amazonensis* infection.

Young Min Son 2015- 2016

Project title: Leukotriene B<sub>4</sub> as a therapeutic approach to boost immunity during bacterial infection in monocytes and neutrophils from bone marrow transplanted people.

Marco Lapa 2017 – 2018

Project title: Langerhans cells and impaired skin host defense in diabetic mice

Paulo Melo 2018-

Project Title: PTEN/microRNA 21 axis in enhanced susceptibility to sepsis during diabetes

**RESEARCH PROGRAM:**

RESEARCH/CREATIVE ACTIVITY

GRANTS/FELLOWSHIPS IN RESEARCH

NIH 1R01 RDK122147A Serezani (PI) 03/01/20 - 02/28/2024  
Prostaglandin E2 Actions and Enhanced Susceptibility to Skin Infection in Diabetic Mice  
This proposal aims to dissect the role of prostanoids in uncontrolled inflammatory response in skin-infected diabetic mice  
Role: Principal Investigator

NIH R21 RAI149207A Serezani (PI) 01/16/20 - 12/31/2021  
Mechanisms underlying poor skin host defense in diabetic conditions  
We are investigating the mechanism involved in enhanced cell death and necrotic cell formation in the infected skin of diabetic mice  
Role: Principal Investigator

DoD DARPA. DOINBC-8064 (YFA17 D17AP00023) Trinh (PI) 07/01/2019 - 06/30/2020  
"ViPaRe (Virulent Pathogen Resistance): A highly Adaptive Defense System Against Virulent Pathogens."  
This subcontract aims to test the effectivity of CRISPR-based antimicrobial effectors in models of skin infection.  
Role: PI – Subcontract

NIH R01 AG065550-01 Turnier (PI) 03/01/20 – 02/28/2025  
Age-associated Innate Immune Dysfunction in Chronic Rhinosinusitis

This proposal aims to understand the role of inflammasome in aging-associated rhinosinusitis  
Role: co-Investigator

NIH 1R01HL152210-01                      Noto (PI)                      03/01/20 – 02/28/2025  
The role of mitochondrial metabolism in neutrophilic lung inflammation  
This project will investigate the role of fatty acid oxidation in lung host defense and inflammation  
Role: co-Investigator

NIH 1R01HL124159-01                      Serezani (PI)                      07/01/14 - 06/30/2024  
“Phosphatase and tensin homolog PTEN actions in polymicrobial sepsis.”  
The aims of this project are to investigate the role of the protein and tensin homolog (PTEN) in the control of the Toll-like receptor adaptor myeloid differentiation factor 88 (MyD88) and its consequences in the acute and chronic phases of sepsis.  
Role: Principal Investigator,

1 R01 AI134036-01                      Aronoff (PI)                      08/01/2017 -07/30/2022  
The role of macrophages in chorioamnionitis and group B streptococcal infections. “Here we are aiming to study the contributions of maternal and fetal macrophages to host defense and tissue inflammatory responses during bacterial infection”.  
Role: co-Investigator

NIH R01AR73874                      Perrien (PI)                      07/01/2018 – 06/30/2023  
“The contribution of innate immunity to heterotopic ossification in fibrodysplasia ossificans progressive (FOP)”. This project aims to dissect the role of TNFalpha and activin A in macrophage differentiation during FOP.  
Role: co-Investigator

#### RESEARCH SUPPORT COMPLETED

March of Dimes #6-FY17-295                      Aronoff (PI)                      08/01/2017 -07/30/2019  
“Defining Macrophage Contributions to Immune Responses during Chorioamnionitis.”  
The aims of this project are to unveil novel interactions between fetal macrophages and bacteria using RNAseq analysis and instrumented fetal membrane-on-chip (IFMOC).  
Role: co-Investigator

NIH R03 AI110990-01                      Serezani (PI)                      12/2014-11/2016  
“LTB<sub>4</sub> and the control of methicillin-resistant *Staphylococcus aureus* infection.”  
This project aimed to develop novel immunotherapeutic approaches to treat MRSA skin infections.  
Role: Principal Investigator

NIH U54HD071598                      Renbarger (PI)                      10/2015-09/2016  
“Improving host defense in human stem cell transplant recipients with LTB<sub>4</sub>”.  
The aims of this project were to determine whether exogenous LTB<sub>4</sub> increases neutrophil antimicrobial effector functions in patients that received human stem cell transplant.  
Role: co-Principal Investigator

RT-349159 Am. Lung Assoc.                      Byers (PI)                      07/2015-06/2016  
The role of PTEN in macrophage activation and function in MRSA host defense.  
This project aimed to study the mechanisms by which the phosphatase and tensin homolog PTEN inhibits lung host defense during *Staphylococcus aureus* infection

Role: Mentor

R00HL103777 Serezani (PI) 04/2012- 03/2015  
"Regulation of Toll-Like Receptor-Induced NFkB Activation by G $\alpha$ i-Coupled Receptors."

The aims of this project were to investigate the molecular programs involved in the modulation of pathogen recognition receptor expression and activity in macrophages challenged with different GPCR ligands.

Role: Principal Investigator

R56AI065543 Moore (PI) 08/2012– 09/2014

"HSCT-induced changes that impair lung innate immunity." This project aimed to dissect whether stem cell transplantation altered epithelial cells and resulted in epigenetic, miRNA, and scavenger receptor dysregulation of alveolar macrophages, which impair host defense against bacterial pathogens.

Role: Co-Principal Investigator

Showalter Foundation Serezani (PI) 07/2013 - 06/2014

"MicroRNAs and macrophage responsiveness in type 1 diabetes."

This project aimed to investigate the role of microRNAs in the enhanced susceptibility to infection in murine models of type 1 diabetes.

Role: Principal Investigator

NIH K99HL103777 Serezani (PI) 08/2010- 03/2012

"Regulation of Toll-Like Receptor-Induced NFkB Activation by G $\alpha$ i-Coupled Receptors."

The aims of this project were to investigate the molecular programs involved in the modulation of pathogen recognition receptor expression and activity in macrophages challenged with different GPCR ligands.

Role: Principal Investigator

Am. Lung Assoc. Serezani (PI) 07/2008-06/2010

Modulation of alveolar macrophage effector functions by eicosanoids: role of lipid rafts and downstream signaling molecules.

This project aimed to study the role of different membrane microdomains in enhancing alveolar macrophage antimicrobial effector functions

Role: PI

American Heart Association (AHA) Serezani (PI) 07/2010 -08/2010

Role of leukotriene B<sub>4</sub> in mediating MyD88-induced NFkappaB activation: from the plasma membrane to the nucleus.

Role: Principal Investigator

## PUBLICATIONS AND PRESENTATIONS:

1. **Serezani CH**, Franco AR, Wajc M, Umada Yokoyama-Yasunaka JK, Wunderlich G, Borges MM, Uliana SR. Evaluation of the murine immune response to *Leishmania* meta 1 antigen delivered as recombinant protein or DNA vaccine. **Vaccine**. 2002; 20(31-32):3755-63.

2. Aronoff DM, Canetti C, **Serezani CH**, Luo M, Peters-Golden M. Cutting edge: macrophage inhibition by cAMP: differential roles of protein kinase A and exchange protein activated by cAMP-1. **J. Immunol.**
3. **Serezani CH**, Aronoff DM, Jancar S, Mancuso P, Peters-Golden M. Leukotrienes enhance the bactericidal activity of alveolar macrophages against *Klebsiella pneumoniae* through the activation of NADPH oxidase. **Blood** 2005; 106:1067-1075.
4. **Serezani CH**, Aronoff DM, Jancar S, Peters-Golden M. Leukotriene B<sub>4</sub> mediates p47phox phosphorylation and membrane translocation in polyunsaturated fatty acid-stimulated neutrophils. **J. Leukoc. Biol.** 2005; 78:976-984.
5. **Serezani CH**, Perrela JH, Russo M, Peters-Golden M, Jancar S. Leukotrienes are essential for the control of *Leishmania amazonensis* infection and contribute to strain variation in susceptibility. **J. Immunol.** 2006; 177:3201-3208. **Corresponding author**
6. Ballinger MN, Paine R 3rd, **Serezani CH**, Aronoff DM, Choi ES, Standiford TJ, Toews GB, Moore BB. Role of granulocyte macrophage colony-stimulating factor during gram-negative lung infection with *Pseudomonas aeruginosa*. **Am. J. Respir. Cell. Mol. Biol.** 2006, 34(6):766-74
7. Aronoff DM, Peres CM, **Serezani CH**, Ballinger MN, Carstens JK, Coleman N, Moore BB, Peebles RS, Faccioli LH, Peters-Golden M. Synthetic prostacyclin analogs differentially regulate macrophage function via distinct analog-receptor binding specificities. **J. Immunol.** 2007; 178:1628-1634.
8. Peres CM, Aronoff DM, **Serezani CH**, Flamand N, Faccioli LH, Peters-Golden M. Specific leukotriene receptors couple to distinct G proteins to effect stimulation of alveolar macrophage host defense functions. **J. Immunol.** 2007; 179:5454-61.
9. **Serezani CH**, Chung J, Ballinger MN, Moore BB, Aronoff DM, Peters-Golden M. Prostaglandin E<sub>2</sub> suppresses bacterial killing in alveolar macrophages by E prostanoïd receptor 2/4-mediated inhibition of NADPH oxidase activation. **Am. J. Respir. Cell. Mol. Biol.** 2007; 37:562-70.
10. Coffey MJ, **Serezani CH**, Phare SM, Peters-Golden M. NADPH oxidase deficiency results in reduced alveolar macrophage 5-lipoxygenase expression and decreased leukotriene synthesis. **J. Leukoc. Biol.** 2007; 82:1585-91. **Co-first author**
11. Canetti C, **Serezani CH**, Atrasz RG, White ES, Aronoff DM, Peters-Golden M. Activation of phosphatase and tensin homologue on chromosome ten (PTEN) mediates the inhibition of Fcγ receptor phagocytosis by prostaglandin E<sub>2</sub> in alveolar macrophages. **J. Immunol.** 2007; 179:8350-6. **Co-first author.**
12. Aronoff DM, **Serezani CH**, Carstens JK, Marshall T, Gangireddy SR, Peters-Golden M, Reddy RC. Stimulatory Effects of Peroxisome Proliferator-Activated Receptor-gamma on Fcγ Receptor-Mediated Phagocytosis by Alveolar Macrophages. **PPAR Res.** 2007 ; 2007:52546
13. Brock TG, **Serezani CH**, Carstens JK, Peters-Golden M, Aronoff DM. Effects of prostaglandin E<sub>2</sub> on the subcellular localization of Epac-1 and Rap1 proteins during Fcγ receptor-mediated phagocytosis in alveolar macrophages. **Exp. Cell. Res.** 2008; 314:255-63.
14. Aronoff DM, Hao Y, Chung J, Coleman N, Lewis C, Peres CM, **Serezani CH**, Chen G-H, Flamand N, Brock TG, Peters-Golden M. Misoprostal impairs reproductive tract innate immunity against *Clostridium sordellii*. **J. Immunol.** 2008; 180:8222-30.
15. Medeiros AI, Sá-Nunes A, Turato WM, Secatto A, Frantz FG, Sorgi CA, Serezani CH, Deepe GS Jr, Faccioli LH. Leukotrienes are potent adjuvant during fungal infection: effects on memory T cells. **J. Immunol.** 2008;181(12):8544-51.
16. Weinlich R, Bortoluck KR, Chehab CF, **Serezani CH**, Ulbrich AG, Peters-Golden M, Russo M, Amarante-Mendes GP. TLR4/MYD88-dependent, LPS-induced synthesis of PGE<sub>2</sub> by macrophages or dendritic cells prevents anti-CD3-mediated CD95L upregulation in T cells. **Cell Death Differentiation** 2008; 15:1901-9

17. Chung J, **Serezani CH**, Huang SK, Jagirdar R, Brock TG, Aronoff DM, Peters-Golden M. Rap1 activation is required for Fcγ receptor-dependent phagocytosis. **J. Immunol.** 2008; 181:5501-9.
18. Lee SP, **Serezani CH**, Ballinger MN, Medeiros A, Peters-Golden M. Crosstalk between prostaglandin E<sub>2</sub> and leukotriene B<sub>4</sub> regulates phagocytosis in alveolar macrophages via combinatorial effects on cyclic AMP. **J. Immunol.** 2009; 182:530-7.
19. Costa-Junior HM, Mendes AN, Davis GH, da Cruz CM, Ventura AL, **Serezani CH**, Faccioli LH, Nomizo A, Freire-de-Lima CG, Bisaggio Rda C, Persechini PM. ATP-induced apoptosis involves a Ca<sup>2+</sup>-independent phospholipase A<sub>2</sub> and 5-lipoxygenase in macrophages. **Prostaglandins Other Lipid Mediators** 2009; 88(1-2):51-61.
20. Campos MRM, **Serezani CH**, Peters-Golden M, Jancar S. Differential kinase requirement for enhancement of FcγR-mediated phagocytosis in alveolar macrophages by leukotriene B<sub>4</sub> vs. D<sub>4</sub>. **Molec. Immunol.** 2009; 46:1204-11.
21. Medeiros AI, **Serezani CH**, Lee SP, Peters-Golden M. Efferocytosis impairs pulmonary macrophage and lung antibacterial function via PGE<sub>2</sub>/EP2 signaling. **J. Exp. Med.** 2009; 206:61-8.
22. Aronoff DM, Lewis C, **Serezani CH**, Eaton KA, Phipps JJ, Peters-Golden M, Mancuso P. E prostanoid 3 receptor deletion improves pulmonary host defense and protects mice from death in severe *Streptococcus pneumoniae* infection. **J. Immunol.** 2009; 183:2642-9.
23. **Serezani CH**, Aronoff DM, Sitrin RG, Peters-Golden M. FcγRI ligation leads to a complex with BLT1 in lipid rafts that enhances lung macrophage antimicrobial functions. **Blood** 2009; 114:3316-24.
24. Mancuso P, Lewis C, **Serezani CH**, Goel D, Peters-Golden M. Intrapulmonary administration of leukotriene B<sub>4</sub> enhances pulmonary host defense against pneumococcal pneumonia. **Infect. Immun.** 2010, 78: 2264-71.
25. Thelen T, Hao Y, Medeiros AI, Curtis JL, **Serezani CH**, Kobzik L, Harris LH, Aronoff DM. The class A scavenger receptor, macrophages receptor with collagenous structure, is the major phagocytic receptor with *Clostridium sordellii* expressed by human decidual macrophages. **J. Immunol.** 2010;185(7):4328-35.
26. **Serezani CH**, Lewis C, Jancar S, Peters-Golden M. Leukotriene B<sub>4</sub>-induced reduction of SOCS1 is required for murine macrophage MyD88 expression and NFκB activation. **J. Clinical Investigation.** 2010; 121(2):671-82. **Co-corresponding author**
27. Kim S-H, **Serezani CH**, Okunishi K, Aronoff DM, Peters-Golden M. Type I PKA/ A kinase anchoring protein 10 mediates prostaglandin E<sub>2</sub> potentiation of LPS-induced NO production in alveolar macrophages. **J. Biol. Chem.** 2011; 286(11):8875-83. **Co-first author.**
28. Marques, MM, Campos, MRM, Kane, S., Rangel, AP, Ballinger, MN., Sang-Honn Kim, Peters-Golden, M, Jancar, S and **Serezani, C.H.** Leukotrienes target F-actin/cofilin-1 to enhance alveolar macrophage anti-fungal activity. **J. Biol. Chem.**, 2011; 286(33):28902-13. **Corresponding author**
29. **Serezani, CH**, Kane, S, Medeiros AI, Kim, SH, Lee, S, Lewis, C, Bourdonnay, E, Ballinger, M., Peters-Golden, M. *Novel role for PTEN in activating the actin depolymerization factor cofilin-1 during prostaglandin E<sub>2</sub>-mediated inhibition of C. albicans phagocytosis.* **Science Signaling**, 2012; **5(210): ra12.**
30. Zastona, Z., **Serezani, C.H.**, Okunishi, O., Aronoff, D.M., Peters-Golden, M. Prostaglandin E<sub>2</sub> restrains macrophage maturation via E prostanoid receptor 2/protein kinase A signaling. **Blood**, 2012; *119(10):2358-67*
31. **Serezani, C.H.**, Kane, S., Collins, L., Morato-Marques, M, Osterholzer, J.J., Peters-Golden, M. Macrophage dectin-1 expression is controlled by leukotriene B<sub>4</sub> via a GM-CSF/PU.1 axis. **J. Immunol.** 2012; **189(2):906-15. Corresponding author**
32. Mancuso P, Myers MG Jr, Goel D, **Serezani CH**, O'Brien E, Goldberg J, Aronoff DM, Peters-Golden M. Ablation of Leptin Receptor-Mediated ERK Activation Impairs Host Defense against Gram-Negative Pneumonia. **J. Immunol.** 2012; 189(2):867-75.

33. Secatto A, Rodrigues LC, **Serezani CH**, Ramos SG, Dias-Baruffi M, Faccioli LH, Medeiros AI. 5-Lipoxygenase deficiency impairs innate and adaptive immune responses during fungal infection. **PLoS One**. 2012; 7(3):e31701.
34. Bourdonnay, E., **Serezani, CH.**, Aronoff, DM., Peters-Golden, M. Regulation of alveolar macrophage phagocyte oxidase: hierarchy of activating kinases and their inhibition by prostaglandin E<sub>2</sub>. **J. Leukoc. Biol.** 2012;92(1):219-31.
35. Filgueiras LR Jr, Martins JO, **Serezani CH**, Capelozzi VL, Montes MB, Jancar S. Sepsis-induced acute lung injury (ALI) is milder in diabetic rats and correlates with impaired NFκB activation. **PLoS One**. 2012; 7(9):e44987. 2012 PMCID: PMC3443211
36. Mor-Vaknin N, Legendre M, Yu Y, **Serezani CH**, Garg SK, Jatzek A, Swanson MD, Gonzalez-Hernandez MJ, Teitz-Tennenbaum S, Punturieri A, Engleberg NC, Banerjee R, Peters-Golden M, Kao JY, Markovitz DM. Murine colitis is mediated by vimentin. **Sci. Rep.** 2013;3:1045. doi: 10.1038/srep01045. 2013 PMCID: PMC3540396.
37. Soares EM, Mason KL, Rogers LM, **Serezani CH**, Faccioli LH, Aronoff DM. Leukotriene B<sub>4</sub> enhances innate immune defense against the puerperal sepsis agent *Streptococcus pyogenes*. **J. Immunol.** 2013; 190(4):1614-22. PMCID: PMC3563855.
38. Hoggatt J, Mohammad KS, Singh P, Hoggatt AF, Chitteti BR, Speth JM, Hu P, Poteat BA, Stilger KN, Ferraro F, Silberstein L, Wong FK, Farag SS, Czader M, Milne GL, Breyer RM, **Serezani CH**, Scadden DT, Guise TA, Srour EF, Pelus LM. Differential stem- and progenitor-cell trafficking by prostaglandin E<sub>2</sub>. **Nature**. 2013; 495(7441):365-9. PMCID: PMC3606692.
39. Domingo-Gonzalez R, Katz S, **Serezani CH**, Moore TA, Levine AM, Moore BB. Prostaglandin E<sub>2</sub>-Induced Changes in Alveolar Macrophage Scavenger Receptor Profiles Differentially Alter Phagocytosis of *Pseudomonas aeruginosa* and *Staphylococcus aureus* Post-Bone Marrow Transplant. **J. Immunol.** 2013; 190 (11):5809-17. PMCID: PMC3660503.
40. Rogers LM, Thelen T, Fordyce K, Bourdonnay E, Lewis C, Yu H, Zhang J, Xie J, **Serezani CH**, Peters-Golden M, Aronoff DM. EP<sub>4</sub> and EP<sub>2</sub> Receptor Activation of Protein Kinase A by Prostaglandin E<sub>2</sub> Impairs Macrophage Phagocytosis of *Clostridium sordellii*. **Am. J. Reprod. Immunol.** 2013 1(1):34-43. PMCID:PMC3864121
41. Simões RL, Arruda MA, Canetti C, **Serezani CH**, Fierro IM, Barja-Fidalgo C. Proinflammatory responses of heme in alveolar macrophages: repercussion in lung hemorrhagic episodes. **Mediators Inflamm.** 2013; 2013:946878. PMCID: PMC3652176.
42. Ferreira, A.E., Sisti, F., Sonogo, F., Filgueiras, L., Brandt, S., Wang, S., Wang, Z., Du, H., Cunha, F.Q., Alves-Filho, F.Q., **Serezani, C.H.** PPAR-γ/IL-10 axis inhibit MyD88 expression to improve murine polymicrobial sepsis. **J. Immunol.** 2014; 192 (5):2357-2365. PMCID: PMC3943997.
43. Wang, Z., Filgueiras, L., Wang, S., Peters-Golden, M **Serezani, C.H.** Leukotriene B<sub>4</sub> enhances inflammatory microRNA expression to amplify macrophage MyD88 expression. **J. Immunol.** 2014; 192 (5):2349-2356. PMCID:PMC3943984.
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55. Filgueiras LR, Brandt SL, Ramalho TR, Jancar S, **Serezani CH**. Imbalance between HDAC and HAT activities drives aberrant STAT1/MyD88 expression in macrophages from type 1 diabetic mice. **J. Diabetes Complications**. 2017;31(2):334-339. PMID: PMC5296405.
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62. Salina, AG, Brandt, S., Klopfenstein, N., Blackman, A., Glosson, N., Brodskyn, C., Tavares, N., Bonyek, I., Medeiros, AI, **Serezani, CH** Leukotriene B4 licenses inflammasome activation to enhance skin host defense. **Under Review – PNAS**
63. Melo P., Pinneros A., **Serezani, CH.** microRNA21 enhances glycolysis-mediated susceptibility to murine sepsis. **Under Review – Cell Reports**

#### INVITED REVIEW.

64. Flamand N, Mancuso P, **Serezani CH**, Brock TG. Leukotrienes: mediators that have been typecast as villains. *Cell Mol Life Sci.* 2007;64 (19-20):2657-70. **Invited Review.**
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66. Medeiros A, Peres-Buzalaf C, Fortino Verdán F, **Serezani CH.** Prostaglandin E2 and the suppression of phagocyte innate immune responses in different organs. **Mediators Inflamm.** 2012;2012:327568.
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#### EDITORIALS.

72. **Serezani CH.** Pulmonary Hypertension Blocking Macrophage Leukotriene B<sub>4</sub> Prevents Endothelial Injury and Reverses Pulmonary Hypertension. **Sci Transl Med**, 2013 5:200ra117. DOI:10.1126/scitranslmed.3006674
73. **Serezani CH.** It Takes Two to Tango: How Phagocytes and Innate Lymphoid Cells Control IBD Outcome. **Sci Transl Med**, 2014 6:248ec137. DOI:10.1126/scitranslmed.3010116
74. **Serezani CH.** AIDS/HIV Unveiling Neutrophil—T Cell Interactions in HIV Infection. **Sci Transl Med**, 2014 6:230ec60. DOI:10.1126/scitranslmed.3009042
75. **Serezani CH.** Pentraxin 3 Sends Urinary Tract Infection Down the Drain. **Sci Transl Med**, 2014 6:236ec86. DOI:10.1126/scitranslmed.3009309
76. **Serezani CH.** Too Much of a Good Thing: Finding an *IL1B* Polymorphism That Increases Tuberculosis Susceptibility. **Sci Transl Med.** 2014 6:260ec187. DOI:10.1126/scitranslmed.aaa1237
77. **Serezani CH.** CD147 Hooks Meningococcus **Sci Transl Med**, 2014 6:242ec111. DOI:10.1126/scitranslmed.3009600
78. **Serezani CH.** A Cytokine a Day Keeps Diabetes Away **Sci Transl Med**, 2014 6:254ec161. DOI:10.1126/scitranslmed.3010409
79. **Serezani CH.** The Advantages of Being a Superantigen. **Sci Transl Med** 2014 6:266ec211. DOI:10.1126/scitranslmed.aaa3457

80. **Serezani CH.** Just keep breathing: how mitochondrial metabolism influences sepsis outcome *Sci Transl Med*, 2015 7:272ec18. DOI:10.1126/scitranslmed.aaa5557
81. **Serezani CH.** Taking TREM to the brain. *Sci Transl Med* 2015 7:278ec41. DOI:10.1126/scitranslmed.aaa9865

## PRESENTATIONS

### INTERNAL

#### IUSM

Indiana University School of Medicine Indianapolis, IN 01/2015  
Department of Biochemistry

Title: "Too much of a good thing: how blocking LTB4 improves host defense in diabetes."

Indiana University School of Medicine Indianapolis, IN 03/2015

Department of Physiology

Title: "Leukotriene B<sub>4</sub> in dysfunctional inflammation and host defense in diabetes."

Indiana University School of Medicine Indianapolis, IN 03/2015

Center for Diabetes and Metabolic Diseases

Title: "Leukotriene B<sub>4</sub> in dysfunctional inflammation and host defense in diabetes".

Indiana University School of Medicine Indianapolis, IN 03/2015

Department of Medicine. Division of Pulmonary and Critical Care

Title: "It is a small world: how microRNAs and PTEN shape innate immune responses"

Indiana University School of Medicine Indianapolis, IN 06/2015

Center of excellence in Hematology and transplant

Title: It is a small world: how microRNAs and PTEN shape innate immune responses

Indiana University School of Medicine Indianapolis, IN 03/2015

Department of Medicine. Division of Nephrology

Title: "All paths lead to TIR adaptors: How changes in MyD88 expression influence sepsis outcome

Indiana University School of Medicine Indianapolis, IN 09/2015

CTSI

Title: "Too much of a good thing: how blocking LTB4 improves host defense in diabetes."

#### VUMC

Vanderbilt University Medical Center Nashville, TN 03/2016

Department Pathology, Microbiology and Immunology

Title: "Understanding poor host defense in diabetics"

Vanderbilt University Medical Center Nashville, TN 01/2017

Department Medicine, Division of Clinical Pharmacology

Title: "Putting out the fire during cytokine storm in sepsis"

Vanderbilt University Medical Center Nashville, TN 05/2017

Inflammation Forum

Title: "Understanding susceptibility to Infections in diabetics"

Vanderbilt University Medical Center Nashville, TN  
Department of Medicine Mini Research Retreat

03/2017

Title: "Immuno-metabolism, -Oncology and single cell analysis at Vanderbilt  
"Finding ways to tune down glycolysis during systemic inflammatory  
Responsiveness syndrome (SIRS)"

### EXTRAMURAL

University of Wisconsin – Department of Microbiology and Immunology

Cincinnati's Children Hospital - Div. of Pediatric Critical Care. Cincinnati, OH 04/2015  
"All paths lead to TIR adaptors How changes in MyD88 expression influence sepsis outcome".

Vanderbilt University. Nashville, TN 07/2015  
"Too much of a good thing How blocking leukotriene B<sub>4</sub> improves host defense in diabetes."

National Jewish Hospital – Division of Pulmonary and Critical Care. Denver, CO 08/2015  
"All paths lead to TIR adaptors How changes in MyD88 expression influence sepsis outcome"

Purdue University – School of Veterinary Sciences. West Lafayette, IN 10/2015  
"Understanding sterile inflammation in type 1 diabetes."

Children's National Medical Center, Washington D.C. 10/2015  
"A Pilot Study of Pre- and Post Stem Cell Transplantation (SCT) Phagocytic Function and  
Response to Immune Stimulation with Leukotriene B<sub>4</sub>."

### INVITED SPEAKER AT SCIENTIFIC MEETINGS

"Molecular mechanism of leukotrienes-induced microbicidal activity in alveolar macrophage."  
Brazilian Immunology Society Meeting, Aguas de Sao Pedro, Sao Paulo, Brazil 2005

"Molecular mechanisms involved in prostaglandin E<sub>2</sub>-mediated suppression of alveolar  
macrophage bactericidal activity." 7<sup>th</sup> Latin American Congress of Immunology. Cordoba,  
Argentina. 2005

"Lipid Rafts mediate BLT1 but not CysLT1 signaling and effector functions in alveolar  
macrophages" Bioactive Lipids in Cancer, Inflammation, and Related Diseases. 10th International  
Conference. Montreal, Canada. 2007

"Leukotrienes, microRNAs and MyD88: boosting up innate immune responses." Brazilian  
Immunology Society Meeting, Porto Alegre, Rio Grande do Sul, Brazil. 2010

"Cross-talk between prostaglandin E<sub>2</sub> and PTEN in F-actin polymerization and phagocytosis of  
*Candida albicans*." American Association of Immunologists Meeting. San Francisco, CA. 2011

"Uncovering a novel phosphatase/microRNA network to control macrophage activation." 11<sup>th</sup>  
World Congress of Inflammation. The International Association of Inflammation Societies  
Meeting, Natal, Rio Grande do Norte, Brazil. 2013

"Understanding sterile inflammation in type 1 diabetes." American Association of Immunologists  
Meeting. Pittsburgh, PA. 2014

“Finding the balance between doing the science that excites you managing people and writing successful R01”. NIH- NHLBI Career Development Symposium, Bethesda, MD. 2015

“Understanding impaired host defense in type 1 diabetes by looking at the PGE<sub>2</sub>/DC/Th17 axis”. American Association of Immunologists Meeting. Seattle, WA. 2015

“A little bit of LTB<sub>4</sub> a day, makes skin MRSA go away” Vanderbilt Symposium on Infection and Immunology. Nashville, TN 2016