Kymberly M. Gowdy, MS, PhD

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Education

Postdoctoral Fellowship 2011-2014
National Institute of Environmental Health Sciences (NIEHS)
Laboratory of Respiratory Biology

Postdoctoral Researcher 2008-2011
Duke University Medical Center
Division of Pulmonary, Allergy, and Critical Care, Department of Medicine

Doctor of Philosophy 2004-2008
North Carolina State University, Raleigh, NC
Major: Molecular Biomedical Sciences (Immunology and Toxicology Program)
Dissertation: Increased susceptibility and severity of influenza infection in mice exposed to diesel exhaust.

Master of Science 2001-2004
North Carolina State University, Raleigh, NC
Major: Immunology and Poultry Science
Thesis: Selenium Supplementation and Antioxidant Protection in Broiler Chickens.

Bachelor of Science 1997-2001
Virginia Tech, Blacksburg, VA
Major: Animal Science; Minor: Chemistry

Current Position(s)

Associate Professor with tenure, The Ohio State University 2020-present
Department of Internal Medicine
Division of Pulmonary, Allergy, Critical Care, and Sleep
Member of the Dorothy M. Davis Heart and Lung Research Institute
Courtesy Faculty member in the Department of Microbial Infection and Immunity
Adjunct Faculty member in the College of Public Health

Academic Appointments

Assistant Professor, East Carolina University 2014-2020
Department of Pharmacology and Toxicology, Brody School of Medicine

- Recipient of the 2015 Walter Rosenblith New Investigator Award, Health Effects Institute.
- NIEHS R01 awarded entitled “Novel role for CD163 in ozone induced alterations of pulmonary immunity” funded August 2018. Impact Score: 11, Percentile: 1

Post-doctoral Fellow, National Institute of Environmental Health Sciences 2011-2014

- Mentor: Dr. Michael B. Fessler, Laboratory of Respiratory Biology, Host Defense group, Principal Investigator and group leader.
- Successfully wrote a NIAID K22 entitled "Role of Scavenger Receptor BI in innate immunity during bacterial pneumonia" submitted November 12, 2013. Score: 28
- Co-chaired the annual Biomedical Career fair at NIEHS, an event that has more than 300attendees, an annual budget of $25,000 and approximately 45 local and out of town speakers on careers in the biomedical sciences.

Postdoctoral Fellow, Duke University Medical Center 2008-2011

- Mentor: Dr. Scott M. Palmer, Division of Pulmonary, Allergy, and Critical Care, Lung Transplant group, Principal Investigator and Scientific Director of Lung Transplant Program.
- Investigated the T cell function in pulmonary graft versus host disease. Discovered a novel role for surfactant protein A in protecting against gastrointestinal graft versus host disease and polarizing naïve T cells towards a regulatory phenotype as well as $CD8^+$ T cell dysfunction in the lung after allogeneic bone marrow transplantation.
- Successfully wrote an F32 entitled "Role of Surfactant Protein A in Gastrointestinal Graft Versus Host Disease."

Graduate Research Associate, North Carolina State University 2004-2008

- PhD student in the Department of Molecular Biomedical Sciences, Immunology Program
- Mentors: Dr. M. Ian Gilmour and Dr. Susan Tonkonogy under the cooperative grant between the US Environmental Protection Agency and North Carolina State University.
- Investigated how air pollutants such as diesel exhaust can alter the innate and adaptive immune response by decreasing production of lung collections and polarizing towards a Th2 phenotype to pulmonary pathogens thus delaying clearance (Ph.D. thesis project).

Graduate Research Associate, North Carolina State University 2001-2004

- Master's student in the Department of Poultry Science
- Mentor : Dr. Frank W. Edens , Full professor in Poultry Science
- Determined that selenium supplementation affects antioxidant enzyme activity and immune response to pathogens in broiler chickens (M.S. thesis project).
- Master's thesis received the M.B. "Dutch" Gardner award.

Professional Memberships and Activities

Ohio Valley Society of Toxicology 2020-present
- Councilor 2020-present

International Society for the Study of Fatty Acids and Lipids 2020-present
American Society for Nutrition 2018-present
American Thoracic Society 2011-present
- Membership Committee member 2021-present
- EOPH Program Committee member 2019-present
- Scientific Advisory Committee member 2018-2021
- Basic and Translational Science Working Group 2018-2020
- Science and Innovation Center member 2018-2020
- AII Program Committee member 2012-2014

International Society of Heart and Lung Transplant 2010-2011
American Society of Transplantation 2008-2011

North Carolina Chapter of the Society of Toxicology 2007-2020
- President, Vice President, and Vice President Elect 2016-2019

Society of Toxicology (SOT) 2007-present
- Chair of the Committee of Diversity Initiatives 2020-present
- Vice President Elect of the Inhalation and Respiratory Specialty Section 2021-present
- Councilor, Inhalation and Respiratory Specialty Section 2018-2020
- Councilor, Cardiovascular Toxicology Specialty Section 2017-2019

American Association of Immunologists 2006-present
Alpha Chi Sigma (Professional Chemistry Fraternity) 1999-2004

Editorial Board Appointments

Editorships or editorial board member

Associate Editor for Toxicological Sciences (elected March 2021)

Editorial board member for Toxicological Sciences (elected February 2021), Journal of Immunology (elected June 2020), and Life Sciences (Elected March 2021)

Ad hoc reviewer

American Journal of Reparatory Cell and Molecular Biology, American Journal of Respiratory and Critical Care Medicine, American Journal of Physiology-Lung Cellular and Molecular Physiology, Cell Metabolism, Environmental Health Perspectives, FASEB, Frontiers in Immunology, Infection and Immunity, Journal of Biological Chemistry, JCI-Insight, Journal of Leukocyte Biology, Journal of Immunology, PLOS ONE, Scientific Reports, Toxicology and Applied Pharmacology Toxicological Sciences

Committee Assignments and Administrative Services

University Service:

College of Medicine Space Committee, Ohio State University 2021-present

Department of Internal Medicine Promotion and Tenure Committee, Ohio State University Wexner Medical Center 2021-present

Women in Medicine (WIMS) Committee, Events subcommittee member, Ohio State University 2020-present

Search Committee chair for Flow Cytometry Core Director, Brody School of Medicine, East Carolina University 2019-2020

Faculty Search Committee member, Department of Microbiology and Immunology, East Carolina University 2018-2019

Core Facilities Working Group, appointed by the Vice Chancellor for Research, Economic Development, and Engagement, East Carolina University 2018-2019

Faculty Search Committee member, Department of Pharmacology and Toxicology, East Carolina University 2018-2019

Shared Instrument advisory committee member for the Brody School of Medicine, East Carolina University 2015- 2020

Research Committee member, Brody School of Medicine, East Carolina University 2015- 2019

Brody Women Faculty Committee member: Co-chair of the program committee 2015- 2017

NC LASER TAG committee member, Brody School of Medicine, East Carolina University 2014-2020

Non-University Service:

NIEHS K grant Study Section (ZES1 LWJ-S (KS); Fall 2019, Spring 2020, Spring 2021)

NIEHS U.S. India Collaborative Environmental Health Research Program Study Section (Spring 2021)

NIEHS Time-sensitive R21 study section (June 2020-November 2020)

NIEHS ViCTER Award R01 Grant Application Study Section (March 2021)

P42 SUPERFUND Research Grant Study Section, NIEHS/NIH (June 2019)

Scientific Advisory Committee Member, American Thoracic Society (May 2018-2021)

American Heart Association AIREA Study Section (May 2017, January 2018)

Educational Activities

Courses Directed:
Co-Course Coordinator in for Host Defense block (BSGP 7000) at Ohio State University (Fall 2021-present).

Course Coordinator in Pharmacology Seminar and Journal Club (PHAR 7605) at East Carolina University (Spring 2017- Spring 2020).

Classroom Teaching:
Lecturer in Principles of Toxicology (SP21 PUBHEHS 5315) at Ohio State University College of Public Health (Spring 2021-Present).

Lecturer in Biomedical Sciences Graduate Program Host Defense Block (BSGP 7000) at Ohio State University (Fall 2020- present).

Lecturer in Advanced Toxicology (PHAR 7682) at East Carolina University (Spring 2016- Spring 2019).

Lecturer in Biochemistry/Bioenergetics II: Regulation of Metabolism (BIOC/KINE 8320) - “Lipid Metabolism, Inflammation & Immunity” at East Carolina University under the direction of Dr. Carol Witzack (Spring 2018- Spring 2020).

Lecturer in Introduction to Pharmacology (PADP 6500) - “Respiratory Drugs and Diseases”, “Anti-Virals I”, and “Anti-Virals II” at East Carolina University under the direction of Dr. Lisa Domico (Spring 2016- Spring 2019).

Lecturer in Physiological Proteogenomics (PHYS 7704) – “Principles of Flow Cytometry” at East Carolina University under the direction of Dr. Joesph McClung (Spring 2016- Spring 2019).

Lecturer in Animal Research Methods (CMED 8100) - “Rodent Models of Respiratory Diseases” at East Carolina University under the direction of Dr. Kvin Lertpiriyapong (Fall 2016).

Lecturer in Physiological Systems and Modeling II (BIME 4050) - “Health Effects of Air Pollution” at East Carolina University under the direction of Dr. Barbara Muller-Borer (Spring 2016- Fall 2019).

Lecturer in Air Quality Engineering (ENVE 3303) - “Health Effects of Air Pollution” at East Carolina University under the direction of Dr. Arun Aneja (Fall 2015- Fall 2019).

Lecturer in Principles of Toxicology (PHAR 7680) - “Pulmonary Toxicology”, “Dermal Toxicology”, “Nanotoxicology”, and “Health Effects of Air Pollution” at East Carolina University under the direction of Drs. Jamie DeWitt and Lisa Domico (Fall 2015- Fall 2019).

Lecturer in Cell Biology (BIOL 7480/7481) - “Principles of Flow Cytometry” at East Carolina University under the direction of Dr. Elizabeth Ables (Fall 2015).

Lecturer in General Physiology II (PHY 504) - “Respiratory Diseases” at North Carolina State University under the direction of Dr. John Godwin and Sabrina Robertson (Spring 2013).

Lecturer in NIEHS Summer Internship program – “Toxicity of Heavy Metals” (Spring 2013).

Lecturer in Fundamentals of Toxicology (TOX 701) - “Immunotoxicology” at North Carolina State University under the direction of Dr. Seth Kullman (Fall 2012 and 2013).

Lecturer in Principles of Toxicology (PHAR 7680) - “Immunotoxicology” at East Carolina University under the direction of Dr. Jamie DeWitt (Fall 2012).

Lecturer in NIEHS Scholars Connect Program Seminar -“The Graduate School Experience Panel” and “Preparing for Medical School/Graduate School during your sophomore and junior years” (Fall 2012).

Primary Coordinator for Advanced Topics in Immunology (IMM 816) at North Carolina State University- Lead and coordinated the schedule on Dendritic Cell Biology (Spring 2007).

Lecturer in Avian Anatomy and Physiology Laboratory Course (PO 405) at North Carolina State University under the direction of Dr. Frank Edens (Spring 2004).

Mentoring:

Dr. Alexys Monsoon, MD, Pulmonary and Critical Care Fellow, Ohio State University, July 2021-present.

Dr. Lynn Fussner, MD, Assistant Professor, Ohio State University, September 2021-present.

Hannah Hartlzer, PhD student, Ohio State University, May 2021-present.

Grace Hutton, undergraduate researcher, Ohio State University, January 2021-present.

Nabeeha Rahman, undergraduate researcher, Ohio State University, January 2021-present.

Dr. Katelyn Dunigan-Russell, Ohio State University, June 2020-present.

Michael Yaeger, PhD student, Ohio State University, May 2020-present.

Dr. Sky Reece, Research Associate, East Carolina University, December 2015-March 2020.

Dr. Brita Kilburg-Basnyat, Postdoctoral Associate, East Carolina University, March 2015-June 2018 (currently a project manager at Covance Inc).

Christine Psaltis, PhD student, East Carolina University, October 2016-January 2020, PhD obtained in Pharmacology and Toxicology at East Carolina University (currently employed at Rho, Inc).

Myles Hodge, PhD student, East Carolina University, May 2015-March 2020, PhD obtained in Pharmacology and Toxicology at East Carolina University (currently employed at United States Environmental Protection Agency).

Sarah Bradshaw, undergraduate researcher, East Carolina University, January 2019- April 2020. Recipient of Undergraduate Research and Creativity Award Spring 2019. Currently enrolled in MS program in Biochemistry at North Carolina State University.

Michael Yaeger, Masters Student, East Carolina University, May 2015-May 2018, Biomedical Engineering at East Carolina University. Recipient of Undergraduate Research and Creativity Award Fall 2015 (currently a PhD student at Ohio State University).

Amanda Capen, undergraduate researcher, East Carolina University, August 2016-2017, Graduated with a B.S. in Chemistry at East Carolina University (currently a Chemist at Johnson and Johnson).

Andrea Gilliard, undergraduate researcher, East Carolina University, January 2017-May 2018. Graduated with a B.S. in Biomedical Engineering from East Carolina University in May 2018. Recipient of Undergraduate Research and Creativity Award Spring 2017.

Nethusan Sivanesan, undergraduate researcher, East Carolina University, May 2017-August 2017, currently a senior in Biology at East Carolina University.

Andria Diamone' Boone, undergraduate researcher, East Carolina University, January 2016-May 2017, graduated with a B.S. in Biomedical Engineering at East Carolina University in May 2018. Recipient of Undergraduate Research and Creativity Award Fall 2016.

Angel Allison, undergraduate researcher, East Carolina University, May 2015-August 2015.

Honors and Awards

American Association of Immunologists Early Career Travel Grant 2018

Young Investigator Award, Society of Toxicology, Inhalation and Respiratory Specialty Section 2017

Outstanding Young Investigator Award, Society of Toxicology, Immunotoxicology Specialty Section 2016

Career Development Award, Center for Human Health and the Environment 2015/2018

Walter A. Rosenblith New Investigator Award, Heath Effects Institute 2015

2nd Place, Visiting Pulmonary Scholar Research Poster Competition 2014

1st Place, Visiting Pulmonary Scholar Research Poster Competition 2013

Best Research Poster in Science Day Competition, NIEHS, RTP, NC. 2012

2nd Place, Visiting Pulmonary Scholar Research Poster Competition 2011

Training Program in Pulmonary Clinical Research Grant Recipient 2009

SCCOR Program- Host Factors in Chronic Lung Diseases 2008

American Society of Transplantation Travel Award 2008

Inhalation Toxicology Specialty Section Student Award, Society of Toxicology Annual Meeting 2007

Society of Toxicology Travel Award 2007

Best research poster award, North Carolina Society of Toxicology 2007

M. B. "Dutch" Gardner Outstanding Graduate Student Award for the best Master's Thesis benefiting the poultry industry. 2004

Grants and Contract Awards

Research Support Active:

1. **1R01ES031378-01**
   Title: Dietary DHA mitigates ozone induced pulmonary inflammation
   Period: 05/20/2020 – 02/28/2025 ($2,777,567)
   Role: Principle Investigator (20% effort)

2. **1R01ES028829-01A1**
   Title: Novel role for CD163 in ozone induced alterations of pulmonary immunity
   Period: 08/15/2018 - 05/31/2023 ($2,477,376.00)
   Role: Principle Investigator (20% effort)

3. **1R01ES028269-01A1**
   Title: Oxysterols and Ozone exposure
   Period: 04/01/2018 - 03/31/2023 ($203,554.00 (direct costs to Gowdy))
   Role: PI of subcontract (8% effort)

4. **OSU/Davis Heart and Lung Research Institute Synergy Seed Grant**
   Novel role of macrophage CD163 in obesity
   Period: 5/6/2021-5/31/2022 ($36,717)
   Role: Principal Investigator (0% effort)

5. **OSU/Davis Heart and Lung Research Institute Synergy Seed Grant**
   The role of cholesterol metabolism in world trade center dust induced health effects
   Period: 11/1/2020-10/31/2021 ($25,000)
   Role: Co-Investigator (0% effort)

Pending:

1. **American Lung Association COVID-19 and Emerging Respiratory Viruses Research Award**
   Title: Obesity driven specialized proresolving mediator deficiencies in COVID-19
   Period: 7/1/2021-6/30/2023 ($200,000)
   Principal Investigator: Kymberly Gowdy, PhD and Sonal Pannu, MD (MPI) (6.5% effort)

2. **3R01ES031378-02**
   Title: Dietary EPA mitigates ozone induced pulmonary inflammation through ChemR23 signaling

Period: 10/1/2021-9/30/2022 ($100,000)

Principal Investigator: Kymberly Gowdy, PhD (10% effort)

3. **NIH U54**
   Title: TriState SenNET (Lung and Heart) Tissue Map and Atlas consortium
   Principal Investigator: Finkel T (PI), Konigshoff M (MPI), Mora A (MPI), Rahman I (MPI),
   Role: Co-Investigator (5% effort)

Completed:

1. **NCSU Center for Human Health and the Environment Pilot Grant**
   Title: Impact of acute and chronic ozone exposure on bladder dysfunction
   Period: 6/01/19 – 5/31/20 ($25,000.00)
   Role: Co-Investigator (0% effort)

2. **American Association of Immunologists Fund: Careers in Immunology Fellowship**
   Title: Identifying the Role of Prohibitins in Inflammatory Signaling
   Period: 9/01/18 – 8/30/19 ($25,000.00)
   Role: Principal Investigator/Mentor for PhD Mentee: Christine Psaltis (0% effort)

3. **1F32ES029022-01A1 (awarded but had to decline due to trainee leaving lab)**
   Title: The Role of SPMs in Ozone-Induced Inflammation
   Period: 07/01/2018 - 06/30/2020
   Role: Sponsor for Postdoctoral Mentee: Brita Kilburg-Basnyat, PhD (0% effort)

4. **NCSU Center for Human Health and the Environment Pilot Grant**
   Title: The novel role for estrogen signaling in pulmonary eicosanoid metabolism after ozone exposure
   Period: 5/01/18 – 4/30/19 ($25,000.00)
   Role: Principal Investigator (0% effort)

5. **Brody Brothers Endowment Fund**
   Title: Novel role of immune cell specialized pro-resolving mediators in ozone induced lung injur**y.**
   Period: 1/01/18 – 12/31/18 ($32,735.00)
   Role: Principal Investigator (0% effort)

6. **1R56ES28829-1**
   Title: Novel role for CD163 in ozone induced alterations of pulmonary immunity
   Period: 02/15/2018 - 02/14/2019 ($100,000.00)
   Role: Principal Investigator (10% effort)

7. **East Carolina University Internal Seed Grant**
   Title: The role of essential long-chain n-3 polyunsaturated fatty acids in restoring neutrophil function during obesity enhanced pneumonia.
   Period: 9/1/2016-8/31/2017 ($25,000.00)
   Role: Principal Investigator (0% effort)

8. **S10OD021615-01**
   Title: Cell Sorter Grant for ECU Flow Cytometry Core Facility
   Period: 05/1/2016 - 04/30/2017 ($509,108.00)
   Role: Principal Investigator (0% effort)

9. **Tunitas Therapeutics Contract**
   Title: Chronic administration of rhesus EpsiGam in a non-human primate model of asthma.
   Period: 3/1/2016-2/28/2017 ($542,775.00)
   Role: Co-Investigator (40% effort)

10. **East Carolina University Internal Seed Grant**
    Title: The critical role of SR-BI in protecting against vascular inflammation and dysfunction following ozone exposure.
    Period: 1/1/2016-12/31/2016 ($15,000.00)
    Role: Principal Investigator (0% effort)

11. **Brody Brothers Endowment Fund**
    Title: **Rural Environmental Exposures among Children with Asthma.**
    Period: 11/01/15 – 5/31/17 ($60,000.0
    Role: Co-Investigator (0% effort)

12. **Walter A. Rosenblith New Investigator Award (Health Effects Institute)**
    Title: Scavenger receptor BI regulates oxidized lipid driven pulmonary and vascular inflammation after ozone exposure
    Period: 10/1/2015-9/30/2018 ($450,000.00)
    Role: Principal Investigator (25% effort)

Publications

1. Maguire RL, House JS, Lloyd DT, Skinner HG, Allen TK, Raffi AM, Skaar DA, Park SS, McCullough LE, Kollins SH, Bilbo SD, Collier DN, Murphy SK, Fuemmeler BF, **Gowdy KM**, Hoyo C. Associations between maternal obesity, gestational cytokine levels and child obesity in the NEST cohort. Pediatr Obes. 2021 Jul;16(7):e12763. doi: 10.1111/ijpo.12763. Epub 2020 Dec 30. PMID: 33381912

2. Mattox TA, Psaltis C, Weihbrecht K, Robidoux J, Kilburg-Basnyat B, Murphy MP, **Gowdy KM**, Anderson EJ. Prohibitin-1 Is a Dynamically Regulated Blood Protein With Cardioprotective Effects in Sepsis. J Am Heart Assoc. 2021 Jul 20;10(14):e019877. doi: 10.1161/JAHA.120.019877. Epub 2021 Jul 3. PMID: 34219469

3. Yaeger MJ, Reece SW, Kilburg-Basnyat B, Hodge MX, Pal A, Dunigan-Russell K, Luo B, You DJ, Bonner JC, Spangenburg EE, Tokarz D, Hannan J, Armstrong M, Manke J, Reisdorph N, Tighe RM, Shaikh SR, **Gowdy KM**. Sex Differences in Pulmonary Eicosanoids and Specialized Pro-Resolving Mediators in Response to Ozone Exposure. Toxicol Sci. 2021 Jun 27;183(1):170-83. doi: 10.1093/toxsci/kfab081. Online ahead of print. PMID: 34175951

4. **Gowdy KM**, Kilburg-Basnyat B, Hodge MX, Reece SW, Yermalitsk V, Davies SS, Manke J, Armstrong ML, Reisdorph N, Tighe RM, Shaikh SR. Novel Mechanisms of Ozone-Induced Pulmonary Inflammation and Resolution, and the Potential Protective Role of Scavenger Receptor BI. Res Rep Health Eff Inst. 2021 Mar;(204):1-49. PMID: 33998222

5. Green W, Al-Shaer A, Shi Q, **Gowdy KM**, MacIver N, Milner J, Beck M, Shaikh SR. Metabolic and functional impairment of CD8+ T cells from the lungs of influenza-infected obese mice. J Leukoc Biol. 2021 Apr 13. doi: 10.1002/JLB.4A0120-075RR. Online ahead of print. PMID: 33847405

6. Reece SW, Varikuti S, Kiburg-Basnyat B, Dunigan-Russell K, Hodge MX, Luo B, Madenspacher JH, Thomas SY, Tokarz DA, Tighe RM, Cook DN, Fessler MB, **Gowdy KM**. Scavenger Receptor BI

Attenuates IL-17A-dependent Neutrophilic Inflammation in Asthma. Am J Respir Cell Mol Biol. 2021 Jun;64(6):698-708. doi: 10.1165/rcmb.2020-0007OC.

7. Madenspacher JH, Morrell ED, **Gowdy KM**, McDonald JG, Thompson BM, Muse G, Martinez J, Thomas S, Mikacenic C, Nick JA, Abraham E, Garantziotis S, Stapleton RD, Meacham JM, Thomassen MJ, Janssen WJ, Cook DN, Wurfel MM, Fessler MB. Cholesterol 25-hydroxylase promotes efferocytosis and resolution of lung inflammation. JCI Insight. 2020 Jun 4;5(11):e137189. doi: 10.1172/jci.insight.137189.

8. Maguire RL, House JS, Lloyd DT, Skinner HG, Allen TK, Raffi AM, Skaar DA, Park SS, McCullough LE, Kollins SH, Bilbo SD, Collier DN, Murphy SK, Fuemmeler BF, **Gowdy KM**, Hoyo C. Associations between maternal obesity, gestational cytokine levels and child obesity in the NEST cohort. Pediatr Obes. 2020 Dec 30:e12763. doi: 10.1111/ijpo.12763. Online ahead of print.

9. Iñigo MR, Amorese AJ, Tarpey MD, Balestrieri NP, Jones KG, Patteson DJ, Jackson KC, Torres MJ, Lin CT, Smith CD, Heden TD, McMillin SL, Weyrauch LA, Stanley EC, Schmidt CA, Kilburg-Basnyat BB, Reece SW, Psaltis CE, Leinwand LA, Funai K, McClung JM, **Gowdy KM**, Witczak CA, Lowe DA, Neufer PD, Spangenburg EE. Estrogen receptor-α in female skeletal muscle is not required for regulation of muscle insulin sensitivity and mitochondrial regulation. Mol Metab. 2020 Apr;34:1-15. doi: 10.1016/j.molmet.2019.12.010. Epub 2019 Dec 23.

10. Hussain S, Johnson CG, Scriuba J, Meng X, Stober VP, Liu C, Cyphert-Daly JM, Bulek K, Qian W, Solis A, Sakamachi Y, Trempus CS, Aloor JJ, **Gowdy KM**, Foster WM, Hollingsworth JW, Tighe RM, Li Xiaoxia, Fessler MB, Garantziotis S. TLR5 Participates in the TLR4 Receptor Complex and Promotes MyD88-dependent Signaling in Environmental Lung Injury. Elife. 2020 Jan 28 [Epub ahead of print].

11. Lin WC*, Gowdy KM*, Madenspacher JH, Zemans RL, Yamamoto K, Lyons-Cohen M, Nakano H, Janardhan K, Williams CJ, Cook DN, Mizgerd JP, Fessler MB. Epithelial Membrane Protein 2 Governs Transepithelial Migration of Neutrophils Into the Airspace. J Clin Invest. 2020 Jan 2; 130(1) 157-170. * Both authors contributed equally.

12. McDaniel DK, Ringel-Scaia VM, Morrison HA, Coutermarsh-Ott S, Council-Troce M, Angle JW, Perry JB, Davis G, Leng W, Minarchick V, Yang Y, Chen B, Reece SW, Brown DA, Cecere TE, Brown JM, **Gowdy KM**, Hochella MF, Allen IC. Pulmonary Exposure to Magnéli Phase Titanium Suboxides Results in Significant Macrophage Abnormalities and Decreased Lung Function. Front Immunol. 2019 Nov 28; 10:2714.

13. Martinu T, MacManigle WC, Kelly FL, Nelson ME, Sun J, Zhang HL, Kolls JK, **Gowdy KM**, Palmer SM. IL-17A Contributes to Lung Fibrosis in a Model of Chronic Pulmonary Graft-versus-host Disease.Transplantation. 2019 Nov; 103(11): 2264-74.

14. Hodge MX, Reece SW, Madenspacher JH, **Gowdy KM**. In Vivo Assessment of Alveolar Macrophage Efferocytosis Following Ozone Exposure. J Vis Exp. 2019 Oct 22; 152.

15. Goldberg EJ, Buddo KA, McLaughlin KL, Fernandez RF, Pereyra AS, Psaltis CE, Lin CT, Hagen JT, Boykov IN, Nguyen TK, **Gowdy KM**, Ellis JM, Neufer PD, McClung JM, Fisher-Wellman KH. Tissue-specific characterization of mitochondrial branched-chain keto acid oxidation using a multiplexed assay platform. Biochem J. 2019 May 31;476(10):1521-1537.

16. McPeek M, Malur A, Tokarz DA, Lertpiriyapong K, **Gowdy KM**, Murray G, Wingard CJ, Fessler MB, Barna BP, Thomassen MJ. Alveolar Macrophage ABCG1 Deficiency Promotes Pulmonary Granulomatous Inflammation. Am J Respir Cell Mol Biol. 2019 Sept; 61(3): 332-340.

17. Martin CL, Jima D, Sharp GC, McCullough LE, Park SS, **Gowdy KM**, Skaar D, Cowley M, Maguire RL, Fuemmeler B, Collier D, Relton CL, Murphy SK, Hoyo C. Maternal pre-pregnancy obesity, offspring cord blood DNA methylation, and offspring cardiometabolic health in early childhood: an epigenome-wide association study. Epigenetics. 2019 April; 14(4): 325-340.

18. Aloor JJ, Azzam KM, Guardiola JJ, **Gowdy KM**, Madenspacher JH, Gabor KA, Mueller GA, Lin WC, Lowe JM, Gruzdev A, Henderson MW, Draper DW, Merrick BA, Fessler MB. Leucine-Rich Repeats and Calponin Homology containing 4 regulates the innate immune response. J Biol Chem. 2019 Feb 8;294(6):1997-2008.

19. McGee Hargrove M, Snow SJ, Luebke RW, Wood CE, Krug JD, Krantz QT, King C, Copeland CB, McCullough SD, **Gowdy KM**, Kodavanti UP, Gilmour MI, Gavett SH. Effects of Simulated Smog Atmospheres in Rodent Models of Metabolic and Immunologic Dysfunction. Environ Sci Technol. 2018 Mar 6;52(5):3062-3070.

20. Tighe RM, Birukova A, Yeager MJ, Reece SW, **Gowdy KM**. Euthanasia and Lavage Mediated Effects on Bronchoalveolar Measures of Lung Injury and Inflammation. Am J Respir Cell Mol Biol. 2018 Aug;59(2):257-266.

21. Kilburg-Basnyat B, Reece SW, Crouch MJ, Luo B, Boone AD, Yaeger M, Hodge M, Psaltis C, Hannan JL, Manke J, Armstrong ML, Reisdorph N, Tighe RM, Shaikh SR, **Gowdy KM**. Specialized pro- resolving lipid mediators regulate ozone-induced pulmonary and systemic inflammation. Toxicol Sci. 2018 Jun 1;163(2):466-477.

22. McGee Hargrove M, Snow SJ, Luebke RW, Wood CE, Krug JD, Krantz QT, King C, Copeland CB, McCullough SD, **Gowdy KM**, Kodavanti UP, Gilmour MI, Gavett SH. Effects of Simulated Smog Atmospheres in Rodent Models of Metabolic and Immunologic Dysfunction. Environ Sci Technol. 2018 Mar 6;52(5):3062-3070.

23. Snow SJ, Cheng WY, Henriquez A, Hodge M, Bass V, Nelson GM, Carswell G, Richards JE, Schladweiler MC, Ledbetter AD, Chorley B, **Gowdy KM**, Tong H, Kodavanti UP. Ozone-Induced Vascular Contractility and Pulmonary Injury are Differentially Impacted by Diets Enriched with Coconut Oil, Fish Oil, and Olive Oil. Toxicol Sci. 2018 May 1;163(1):57-69.

24. Thomas SY, Whitehead GS, Takaku M, Ward JM, Xu X, Nakano K, Lyons-Cohen MR, Nakano H, **Gowdy KM**, Wade PA, Cook DN. MyD88-dependent dendritic and epithelial cell crosstalk orchestrates immune responses to allergens. Mucosal Immunol. 2018 May;11(3):796-810.

25. Henderson MW, Madenspacher JH, Whitehead GS, Thomas SY, Aloor JJ, **Gowdy KM**, Fessler MB. Effects of Orally Ingested Arsenic on Respiratory Epithelial Permeability to Bacteria and Small Molecules in Mice. Environ Health Perspect. 2017 2017 Sep 28;125(9):097024.

26. Azzam KM, Madenspacher JH, Cain DW, Lai L, **Gowdy KM**, Rai P, Janardhan K, Clayton N, Cunningham W, Jensen H, Patel PS, Kearney JF, Taylor GA, Fessler MB. Irgm1 coordinately regulates autoimmunity and host defense at select mucosal surfaces. JCI Insight. 2017 Aug 17;2(16). pii: 91914. doi: 10.1172/jci.insight.91914. [Epub ahead of print].

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Review Articles:

1. Pal A, **Gowdy KM**, Oestreich KJ, Beck M, Shaikh SR. Obesity-Driven Deficiencies of Specialized Pro-resolving Mediators May Drive Adverse Outcomes During SARS-CoV-2 Infection. Front Immunol. 2020 Aug 11;11:1997. doi: 10.3389/fimmu.2020.01997. eCollection 2020.

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3. Whelan J, **Gowdy KM**, Shaikh SR. N-3 polyunsaturated fatty acids modulate B cell activity in pre-clinical models: Implications for the immune response to infections. Eur J Pharmacol. 2015 May 27. pii: S0014-2999(15)00465-3.

4. Gowdy KM, Fessler MB. Emerging roles for cholesterol and lipoproteins in lung disease. Pulm Pharmacol Ther. 2013 Aug;26(4):430-7.

Book Chapters:

1. McGee C, Sample C, Kilburg-Basnyat B, Gabor K, Fessler MB, **Gowdy KM**. Influenza-Mediated Lung Infection Models. In: Mouse Models of Innate Immunity, Methods in Molecular Biology, Vol. 1960, Irving C. Allen (Eds): Humana Press, New York, NY, in press.

2. Espenschied ST, Tighe RM, **Gowdy KM**. Flow Cytometry for the Immunotoxicologist. 2018. In: Immunotoxicity Testing. Methods in Molecular Biology, vol 1803. (DeWitt J., Rockwell C., Bowman C. eds), Humana Press, New York, NY, pp 183-197.

3. **Gowdy KM.** Immunosuppressants for Autoimmune Diseases and Organ Transplant. 2018. In: Brody's Human Pharmacology, 6th edition. (Wecker, L., Taylor, D., Theobald, R. eds), Elsiever, Philadelphia, PA, pp 278-285.

4. Luebke, R.W., Beamer, C.A., Bowman, C. DeWitt, J.C., **Gowdy, K**., Johnson, V.J. Shepherd, D,M., and Germolec,D.R. 2009. Immunotoxicology. In, General and Applied Toxicology, 3rd Edition, (Marrs, T., Ballantyne, B., and Syversen, T. eds), John Wiley and Sons, Ltd., Chichester, UK, pp1561-1583.

5. MI Gilmour and **KM Gowdy**. Host Defense and Immunotoxicology of the Lung. Immunotoxicology and Immunopharamacology 3rd Edition. 2007.

Invited Presentations

1. "Iron in the Fire: The Role of CD163 in Ozone Induced Lung Inflammation" *Microbial Infection and Immunity Departmental Seminar Series*, Ohio State University, Columbus, OH, February 2021.
2. "Dietary N-3 PUFAs Modulates Ozone Induced Pulmonary Immunity" *Nationwide Children's Hospital Grand Rounds*, Columbus OH, November 2020.
3. "Dietary N-3 PUFAs Modulates Ozone Induced Pulmonary Immunity" *American Thoracic Society Annual Meeting*, Dallas, TX, May 2019.
4. "Iron in the Fire: The Role of CD163 in Ozone Induced Lung Inflammation" *Division of Pulmonary and Critical Care Research Seminar,* University of Virginia, Charlottesville, VA, May 2019.
5. "Iron in the Fire: The Role of CD163 in Ozone Induced Lung Inflammation" *UC Davis Environmental Health Sciences Center Research Seminar,* University of California, Davis, CA, April 2019.
6. "Iron in the Fire: The Role of CD163 in Ozone Induced Lung Inflammation" *UC Davis Environmental Health Sciences Center Research Seminar,* University of California, Davis, CA, April 2019.
7. "Dietary N-3 PUFAs Modulates Ozone Induced Pulmonary Immunity" *Inflammation Resolution Biology Workshop*, NIEHS, NIH, Research Triangle Park, NC, March 2019.
8. "Inflammatory Responses of Resident and Recruited Immune Cells to Inhaled Toxicants" *Society of Toxicology Annual Meeting*, Baltimore, MD March 2019.
9. "Iron in the Fire: The Role of CD163 in Ozone Induced Lung Inflammation" *School of Pharmacy Research Seminar,* University of Maryland, Baltimore, MD February 2019.
10. "Understanding the Molecular Mechanisms of How Air Pollution Increases Susceptibility to Pulmonary Infections" *Workshop on Environmental Stressors and Infectious Disease*, National Academies of Sciences, Washington, DC January 2019.
11. "Iron in the Fire: The Role of CD163 in Ozone Induced Lung Inflammation" *Department of Pediatrics Research Seminar,* School of Medicine invited talk, University of Pittsburgh, Pittsburgh, PA January 2019.
12. "Iron in the Fire: The Role of CD163 in Ozone Induced Lung Inflammation" *Pulmonary Center invited talk*, Boston University, Boston, MA July 2018.
13. "Clean Up and Clear out; A Novel role for Class B Scavenger Receptors in Environmental Lung Diseases" *Duke University Program in Environmental Health and Integrated Toxicology Seminar Series,* Nicholas School of the Environment, Duke University, November 2017.
14. "Iron in the Fire: The Role of CD163 in Ozone Induced Lung Inflammation" *Toxicology Program Seminar,* University of North Carolina, November 2017.
15. "Clean Up and Clear out; A Novel role for Class B Scavenger Receptors in Infectious and Inflammatory Lung Diseases" *Virginia Tech Carilion Research Institute Seminar,* Virginia Tech, October 2017.
16. "Clean Up and Clear out; A Novel role for Class B Scavenger Receptors in Environmental Lung Diseases" *Pharmaceutical Sciences Research Seminar,* University of New Mexico, September 2017.

17. "Scavenger receptor BI regulates pulmonary inflammation after ozone exposure" *Society of Toxicology International Conference,* New Orleans, LA, March 2016.
18. "Clean Up and Clear out; A Novel role for Class B Scavenger Receptors in Environmental Lung Diseases" *Environmental and Occupational Health Sciences Institute Seminar Program,* Rutgers University, March 2016.
19. "Clean Up and Clear out; A Novel role for Class B Scavenger Receptors in Environmental Lung Diseases" *Airway Biology Seminar Program,* University of North Carolina, November 2015.
20. "Clean Up and Clear out; A Novel role for Scavenger Receptor B-I in Environmental Lung Diseases" *North Carolina State University, Environmental and Molecular Toxicology Program Seminar,* North Carolina State University, April 2015.
21. "Key Role for Scavenger Receptor B-I in the Integrative Physiology of Host Defense during Bacterial Pneumonia" *American Thoracic Society International Conference,* San Diego, CA, May 2014.
22. "Novel mechanisms of impaired pulmonary host defense by environmental factors" *Brody School of Medicine, Pharmacology and Physiology Department (joint seminar) invited talk,* East Carolina University, Greenville, NC 2014.
23. "Key Role for Scavenger Receptor B-I in the Integrative Physiology of Host Defense during Bacterial Pneumonia" *Biological Sciences Department invited talk,* Virginia Tech, Blacksburg, VA 2014.
24. "Key Role for Scavenger Receptor B-I in the Integrative Physiology of Host Defense during Bacterial Pneumonia" *Pulmonary Center invited talk,* Boston University, Boston, MA 2013.
25. "Scavenger Receptor B-I Regulates Pulmonary Host Defense and Neutrophil Function during Bacterial Pneumonia" *Laboratory of Respiratory Biology Work in Progress,* NIEHS, Research Triangle Park, NC 2013.
26. "Novel role for scavenger receptor B-I in pulmonary innate immunity" *Laboratory of Respiratory Biology Work in Progress,* NIEHS, Research Triangle Park, NC 2012.
27. "Viral immunity is impaired in the lungs of allogeneic bone marrow transplanted mice" *Duke University Medical Center Monthly SCCOR meeting*, Duke University Medical Center, Durham, NC 2011.
28. "Role of Surfactant Protein A (SP-A) in Alloimmune Lung Injury" *Duke University Medical Center Monthly SCCOR meeting*, Duke University Medical Center, Durham, NC 2009.
29. "Role of Surfactant Protein A (SP-A) in Alloimmune Lung and Gastrointestinal Injury" *Duke University Medical Center Monthly External Advisory SCCOR meeting*, Duke University Medical Center, Durham, NC 2009.
30. "Diesel Exhaust Exposure Increases Susceptibility to Influenza Infection and Induces Dendritic Cell Migration and Maturation" *American Thoracic Society International Conference*, Toronto, Canada, April 2008.
31. "Increased Severity of Influenza Infection in Mice Exposed to Diesel Exhaust" *American Thoracic Society International Conference,* San Francisco, CA, April 2007.
32. "Decreased Production of Surfactant Proteins after Diesel Exhaust Exposure Increases Susceptibility to Influenza Infection" *American Thoracic Society International Conference* San Diego, CA, April 2006.
33. "Increased Severity of Influenza Infection in Mice Exposed to Diesel Exhaust." *National Health and Environmental Effects Research Laboratory Work in Progress*, U.S. Environmental Protection Agency, Research Triangle Park, NC. 2008.
34. "Increased Susceptibility to Influenza Infection in Mice Exposed to Diesel Exhaust." *National Health and Environmental Effects Research Laboratory Work in Progress*, U.S. Environmental Protection Agency, Research Triangle Park, NC. 2006.
35. "Organic selenium affects broiler responses to immunostimulation." *Poultry Science Association Annual Meeting,* Madison, WI, 2003.