

CURRICULUM VITAE**MICHAEL B. FESSLER, M.D.****I. Personal History**

Present Position: Senior Investigator, Clinical Investigation in Host Defense Group
Chief; Immunity, Inflammation and Disease Laboratory
Division of Intramural Research
National Institute of Environmental Health Sciences
National Institutes of Health, Department of Health and Human Services

ORCID: 0000-0002-8262-8613 (<https://orcid.org/0000-0002-8262-8613>)

ResearcherID: C-6323-2019

II. Educational History**Princeton University**

B.A. in Philosophy 1992
Magna Cum Laude

Harvard Medical School

M.D. 1996

Massachusetts General Hospital

Internal Medicine Residency 1996-99

University of Colorado Health Sciences Center

Fellowship in Pulmonary Sciences and Critical Care Medicine 1999-2002

Board Certification

2000 Internal Medicine
2012 Pulmonary Medicine
2014 Critical Care Medicine

Medical Licensure

Colorado 1999-2007
North Carolina 2006-present

Miscellaneous

Diplomate, NIH Senior Leadership Training Program (2014)
ATS Fellow (inducted 2024)

III. Research Training

1991-1992 Technician, Bristol-Myers Squibb Company: Macromolecular Chemistry Lab

- Developed protocol for amino acid analysis of peptides.
- 1993 Technician, Renal Division, Brigham & Women's Hospital, Boston
Used DD-PCR to characterize mouse model for polycystic kidney disease.
- 1999 Internal Medicine Resident, Massachusetts General Hospital, Boston
Analyzed NMR data to study skeletal muscle ventilatory chemoreflex.
- 2000-2002 National Jewish Medical and Research Center, Denver, CO
Research Fellow

IV. Professional Positions

- 2018-present Chief; Immunity, Inflammation and Disease Laboratory, NIEHS, NIH
- 2023-present Adjunct Professor of Medicine; Duke University School of Medicine, Durham, NC
- 2017-2018 Acting Chief; Immunity, Inflammation and Disease Laboratory, NIEHS, NIH
- 2017-2023 Adjunct Associate Professor of Medicine; Duke University School of Medicine, Durham, NC
- 2013-present Senior Investigator; Division of Intramural Research, NIEHS, NIH
- 2006-2013 Clinical Investigator (Tenure-Track); Division of Intramural Research, NIEHS, NIH
- 2009-2017 Adjunct Assistant Professor of Medicine; Duke University School of Medicine, Durham, NC
- 2013-present Member, Training Faculty; Curriculum in Toxicology, University of North Carolina-Chapel Hill, Chapel Hill, NC
- 2003-2006 Assistant Professor of Medicine, University of Colorado School of Medicine; Denver, CO
- 2002-2003 Instructor of Medicine; University of Colorado School of Medicine, Denver, CO
- 2004-2006 Assistant Professor of Medicine, National Jewish Hospital; Denver, CO
- 2003-2004 Instructor of Medicine; National Jewish Medical and Research Center, Denver, CO
- 2002-2003 Research Fellow; National Jewish Medical and Research Center, Denver, CO

V. Honors and Awards

- 1992 Phi Beta Kappa, Magna Cum Laude, Cane Scholarship, Princeton University
- 2001 Andrew Goodman Research Fellowship Award, National Jewish Hospital
- 2008 Division of Intramural Research Early Career Award, NIEHS, NIH, DHHS
- 2008 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, Sept.)
Smoak K et al. *Journal of Immunology* 2008; 180(5):3305-12.
- 2009 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, June)
Dhungana S et al. *Molecular & Cellular Proteomics* 2009; 8(1):201-213.
- 2010 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, August)
Smoak KA et al. *Cell Metabolism* 2010; 11(6):493-502.
- 2010 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, Sept.)
Madenspacher JH et al. *Journal of Immunology* 2010; 185(3):1660-9.
- 2010 Intramural Research Award, NIEHS, NIH, DHHS
- 2011 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, Oct.)
Merrick BA et al. *Molecular & Cellular Proteomics* 2011; 10(10):M110.006007.
- 2012 Carol Basbaum Award, American Thoracic Society
- 2012 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, Nov.)
Jaramillo R, et al. *Journal of Allergy & Clinical Immunology* 2013; 131(2):405-11.
- 2013 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, July)
Madenspacher J et al., *Journal of Experimental Medicine* 2013; 210(5):891-904.

- 2014 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, May)
Gale et al., *Journal of Allergy and Clinical Immunology* 2014 Mar 18.
- 2014 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, June)
Lowe et al., *Cancer Research* 2014; 74(8):2812-92
- 2014 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, December)
Gowdy et al., *Mucosal Immunol* 2014 Oct 22 Epub.
- 2015 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, September)
Chowdhury et al., *Molecular & Cellular Proteomics* 2015; 14(7):1859-70.
- 2015 Inducted Member, American Society for Clinical Investigation
- 2016 Special Act Award, NIEHS
- 2016 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, November)
Lai et al., *Journal of Biological Chemistry* 2016; 291(37):19651-60.
- 2016 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, December)
Lowe et al., *Cell Death Differ* 2016 Nov. 11
- 2017 NIEHS Group Merit Award, Inflammation Research Implementation
- 2017 Scientific Director's Award for Outstanding Intramural Research, NIEHS/NIH
- 2017 Top Reviewer Award, *American Journal of Respiratory Cell and Molecular Biology*
- 2017 Co-PI; NIH DDIR Innovation Award (competitive NIH intramural program project)
- 2017 Special Act Award, NIEHS
- 2017 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, November)
Fessler et al., *Environmental Health Perspectives* 2017; 125(5):057010
- 2018 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, December)
Madenspacher et al., *Journal of Allergy & Clinical Immunology* 2018
- 2018 Paper of the Year, NIEHS (Madenspacher et al., *Journal of Allergy & Clinical Immunology* 2018 Oct 5. pii: S0091-6749(18)31368-X
- 2019 Top Reviewer Award, *American Journal of Respiratory Cell and Molecular Biology*
- 2020 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, March)
Lin et al., *Journal of Clinical Investigation* 2020
- 2020 Principal Investigator, NIH Director's Challenge Innovation Award
- 2020 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, September)
Madenspacher et al., *JCI Insight* 2020
- 2021 Paper of the Year, NIEHS
Rai et al., *Nature Immunology* 2021
- 2021 Recipient, NIH Intramural Targeted Anti-COVID19 (ITAC) Award
- 2022 NIH Director's Award: NIH COVID Vaccine and Booster Clinic Team
- 2023 Paper of the Year, NIEHS
Rai et al., *Journal of Clinical Investigation* 2023 Nov 1;133(21):e171982
- 2024 Intramural Research Paper of the Month, NIEHS (*Environmental Factor*, March)
Gabor et al., *Journal of Clinical Investigation* 2024

VI. Patents

1. U.S. Patent #: US 9,211,302 B2 (12/15/15): 'Modulation of Lrch4 activity and Therapeutic Application Thereof' (inventors: Michael B. Fessler, Jim J. Aloor). PCT Application No. PCT/US2012/021538; US Application No. 13/980,097

2. PCT Patent Application No. PCT/US19/29801, filed April 30, 2019: 'USE OF EPITHELIAL MEMBRANE PROTEIN 2 (EMP2) TARGETING AGENTS IN TREATING LUNG DISORDERS' (inventors: Michael Brian Fessler, Carmen J. Williams, Wan-Chi Lin).

VII. Cooperative Research and Development Agreements

1. PHS CRADA #0245-19 with Novartis to develop anti-EMP2 biologics for preclinical therapeutic testing.

VIII. Trainees

Postdoctoral fellows:

2007–2008	Suraj Dhungana, Ph.D.; Current Position: Market Development Manager for Biomedical Research, Waters Corporation
2007-2011	David Draper, Ph.D.; Current Position: Associate Director; Scientific Development; MI Bioresearch; Ann Arbor, MI
2007-2015	Jim J. Aloor, Ph.D.; Current Position: Research Associate Professor, East Carolina Diabetes and Obesity Institute, East Carolina University
2009-2012	Saiful Chowdhury, Ph.D.; Current position: Associate Professor (Tenured), Dept. of Chemistry and Biochemistry, University of Texas at Arlington
2010-2018	Julie Lowe, Ph.D.; Current position: Biologist [C], Fessler group
2011-2014	Kymberly Gowdy, Ph.D.; Current Position: Associate Professor of Internal Medicine, Ohio State University
2013-2017	Kristin Gabor, Ph.D.; Current Position: Integrated Product Development Associate; Rho, Inc., Chapel Hill, NC
2015-2022	Wan-Chi Lin, Ph.D.; Current Position: Staff Scientist, NHLBI FACS Core Facility
2016-2022	Prashant Rai, Ph.D.; Current Position: Staff Scientist, Fessler laboratory
2018-2020	Fei Zhao, Ph.D.; Current Position: Study Director, Charles River Laboratories
2021-present	Sookjin Moon, Ph.D.
2022-present	Wilfred Lopez-Perez, Ph.D.

Post-baccalaureate fellows:

2012-2013	Kezia Addo; Current position: Graduate student, University of North Carolina
2011-2012	John Guardiola; Current position: Medical resident, University of Louisville
2016-2017	Emily Mesev; Current position: Graduate student, Princeton University
2017-2019	Sierra Atwater; Current position: Medical student, Duke University
2019-2020	Aidin Alejo; Current position: Medical student, UNC-CH
2022-present	Martin Sharpe

Predoctoral fellows/students:

2012-2013	Lihua Lai (graduate student from Zhejiang University, China) Current position: Associate Prof., Institute of Immunology, Zhejiang Univ.
2013-2015	Michael Henderson (graduate student from University of North Carolina: M.S. in Fessler laboratory, 2015); Current position: Staff Scientist, FDA
2016-2017	Teminioluwa Ajayi, MPH (Medical student, Duke University)

Current position: GI fellow, Baylor College of Medicine

Summer students:

2007 Ugonma Chukwueke; Current position: Instructor in Neurology, Harvard Medical School
 2008 Katherine Weissler; Current position: Postdoctoral fellow, NIAID/NIH
 2012, 2013 William Ge; Current position: Medical student, Harvard Medical School
 2014 Matt Moore; Current position: Internal medicine resident, Georgetown University
 2015 Shiyi Li; Current position: Internal medicine resident, Albert Einstein
 2018 David Lauzier; Current position: Neurosurgery resident, UCLA

Honors/Awards to Trainees

2008 Fellows Award for Research Excellence, NIH
 Recipient: Suraj Dhungana, Ph.D. (Postdoctoral fellow)
 2009 Abstract Travel Award
 American Thoracic Society International Conference 2009
 Recipient: David Draper, Ph.D. (Postdoctoral fellow)
 2009 Oral presentation: 'MyD88 Couples Cholesterol Transport to Inflammation'
 2009 Keystone Conference, Pathogen Receptors, Banff, Canada
 Recipient: Kathleen Smoak, Ph.D. (Biologist)
 2009 Oral presentation: 'ABCG1, a Negative Regulator of Pulmonary Innate Immunity'
 American Thoracic Society International Conference 2009
 Recipient: David Draper, Ph.D. (Postdoctoral fellow)
 2009 Oral presentation: 'ABCG1 is a Negative Regulator of Pulmonary Host Defense'
 NIH Research Festival, Bethesda, MD
 Recipient: David Draper, Ph.D. (Postdoctoral fellow)
 2009 Fellows Award for Research Excellence, NIH
 Recipient: Suraj Dhungana, Ph.D. (Postdoctoral fellow)
 2010 Fellows Award for Research Excellence, NIH
 Recipient: David Draper, Ph.D. (Postdoctoral fellow)
 2010 Fellows Award for Research Excellence, NIH
 Recipient: Jim Aloor, Ph.D. (Postdoctoral fellow)
 2010 Oral presentation: 'MyD88 Couples Cholesterol Transport to Inflammation'
 LIPID MAPS Meeting 2010; Scripps Seaside Forum – UCSD, La Jolla, CA
 Recipient: Kathleen Smoak, Ph.D. (Biologist)
 2011 Fellows Award for Research Excellence, NIH
 Recipient: David Draper, Ph.D. (Postdoctoral fellow)
 2011 Fellows Award for Research Excellence, NIH
 Recipient: Jim Aloor, Ph.D. (Postdoctoral fellow)
 2012 Fellows Award for Research Excellence, NIH
 Recipient: Saiful Chowdhury, Ph.D. (Postdoctoral fellow)
 2012 Oral presentation: 'Lrch4, a novel regulator of TLR pathways'
 99th Annual Meeting, American Association of Immunologists (AAI), Boston, MA
 Recipient: Jim Aloor, Ph.D. (Postdoctoral fellow)
 2012 Best Poster Presentation, NIEHS Science Day

- 2012 Recipient : Kymberly Gowdy, Ph.D. (Postdoctoral fellow)
Semifinalist in both 2013 Intel Science Talent Search and 2013 Siemens Competition in Math, Science and Technology
- 2013 Recipient : William Ge (summer student)
Fellows Award for Research Excellence, NIH
- 2013 Recipient: Julie Lowe, Ph.D. (IRA Postdoctoral fellow)
First Place, Postdoctoral Fellow Poster Competition
Visiting Pulmonary Scholars Symposium, UNC Friday Center
- 2013 Recipient : Kymberly Gowdy, Ph.D. (Postdoctoral fellow)
Awardee, UNC Program in Translational Medicine (\$10,000 stipend)
- 2014 Recipient : Michael Henderson (graduate student)
Best Poster Presentation from Graduate Student
Retreat, UNC Toxicology Curriculum, UNC Friday Center
- 2014 Recipient : Michael Henderson (graduate student)
Second Place, Postdoctoral Fellow Poster Competition
Visiting Pulmonary Scholars Symposium, UNC Friday Center
- 2014 Recipient : Kymberly Gowdy, Ph.D. (Postdoctoral fellow)
Oral presentation: 'SR-BI in Integrated Pulmonary Innate Immune Response'
American Thoracic Society International Conference, San Diego, CA
- 2015 Recipient: Kymberly Gowdy, Ph.D. (Postdoctoral fellow)
Best Poster Presentation (pre-doctoral category)
Visiting Pulmonary Scholars Symposium, UNC Friday Center
- 2015 Recipient : Michael Henderson (graduate student)
Oral presentation: 'A Novel Role for Irgm1 in Immune Homeostasis'
Annual Meeting, American Association of Immunologists (AAI), Boston, MA
- 2015 Recipient: Kathleen Azzam, Ph.D. (Biologist)
Oral presentation: 'TNFAIP8 regulates cancer cell biology'
Annual Meeting, American Association of Immunologists (AAI), Boston, MA
- 2015 Recipient: Julie Lowe, Ph.D. (Postdoctoral fellow)
AAI Trainee Abstract Award
- 2015 Recipient: Julie Lowe, Ph.D. (Postdoctoral fellow)
Poster Award, NIEHS Science Day
- 2016 Recipient: Julie Lowe, Ph.D. (Postdoctoral fellow)
Fellows Award for Research Excellence, NIH
- 2016 Recipient: Julie Lowe, Ph.D. (Postdoctoral fellow)
Fellows Award for Research Excellence, NIH
- 2016 Recipient: Kristin Gabor, Ph.D. (Postdoctoral fellow)
Oral presentation and travel award
Annual Meeting, American Association of Immunologists (AAI), Seattle, WA
- 2016 Recipient: Kristin Gabor, Ph.D. (Postdoctoral fellow)
Oral presentation
Smith-Lemli-Opitz Scientific Conference, Cincinnati, OH
- 2017 Recipient: Kristin Gabor, Ph.D. (Postdoctoral fellow)
Abstract award
AAI Assembly, American Thoracic Society International Conference
- 2017 Recipient: Prashant Rai, Ph.D. (Postdoctoral fellow)

- 2017 Graduate Fellowship, Triangle Center for Evolutionary Medicine
Recipient: Teminioluwa Ajayi (Medical student / pre-doctoral fellow)
- 2017 Minority Trainee Development Scholarship Award
American Thoracic Society
Recipient: Teminioluwa Ajayi (Medical student / pre-doctoral fellow)
- 2017 Outstanding Poster Award, NIH Postbac Poster Day
Recipient : Emily Mesev (Postbac fellow)
- 2017 Fellows Award for Research Excellence, NIH
Recipient: Wan-Chi Lin, Ph.D. (Postdoctoral fellow)
- 2017 Best Poster Award; Duke University Innate Immunity Symposium
Recipient: Prashant Rai, Ph.D. (Postdoctoral fellow)
- 2018 Abstract award and oral presentation; RCMB Assembly, American Thoracic Society International Conference
Recipient: Wan-Chi Lin, Ph.D. (Postdoctoral fellow)
- 2018 Winner, Post-baccalaureate Fellows Three-Minute Communication Challenge
Recipient : Ms. Sierra Atwater (Post-baccalaureate fellow)
- 2018 Third Place; Pre-doc category; Poster Competition, 2018 VPS Symposium
Recipient : Ms. Sierra Atwater (Post-baccalaureate fellow)
- 2018 Oral presentation (selected), Duke University Innate Immunity Symposium
Recipient: Prashant Rai, PhD (Postdoctoral fellow)
- 2018 Fellows Award for Research Excellence, NIH
Recipient: Prashant Rai, Ph.D. (Postdoctoral fellow)
- 2019 Outstanding Poster Award, NIH Postbacc Poster Day
Recipient : Aidin Alejo (Postbacc fellow)
- 2020 Fellows Award for Research Excellence, NIH
Recipient: Prashant Rai, Ph.D. (Postdoctoral fellow)
- 2020 Fellows Award for Research Excellence, NIH
Recipient: Wan-Chi Lin, Ph.D. (Postdoctoral fellow)
- 2020 Best Oral Presentation, NIH Immunology Interest Group Annual Workshop
Recipient: Prashant Rai, Ph.D. (Postdoctoral Fellow)
- 2020 Milstein Abstract Award and Oral Presentation, 8th Annual Meeting of the International Cytokine & IFN Society (ICIS)
Recipient: Prashant Rai, Ph.D. (Postdoctoral Fellow)
- 2021 eSymposium Scholarship Award, Keystone Symposia
Recipient: Prashant Rai, Ph.D. (Postdoctoral Fellow)
- 2023 Undergraduate poster award; Visiting Pulmonary Scholars Symposium
Recipient: Martin Sharpe, B.S. (Post-baccalaureate fellow)

Mentoring and Outreach Activities

Mentoring and diversity are priorities for me. Of the postdoctoral fellows who have passed through my laboratory, three are now faculty members in academia, one has a technology transfer office position in government (NIH), and three are in biomedical industry, of which two have risen to managerial leadership positions. As shown in the section above, most of my trainees have garnered honors while in my laboratory in the form of travel awards, poster awards, FARE awards (14 total to date), and various other distinctions. Regarding demographic balance, to date, seven of fourteen fellows and three of three biologists in my laboratory have been female. I have had three African American and

one African trainee (three post-baccalaureate/predoctoral, one summer student), plus one Hispanic trainee (post-bacc fellow). One of my trainees (Temini Ajayi), obtained a Minority Trainee Development Scholarship Award from the American Thoracic Society (ATS), among other distinctions, while in my laboratory. Formerly, as Deputy Chief of IIDL, I and Dr. Anton Jetten (then, IIDL Chief) recruited Dr. Jennifer Martinez to IIDL as a Tenure-Track Investigator. During my time as Acting Chief of IIDL, we initiated a 'Women in Science Coffee Hour' (conceived and organized by Dr. Jennifer Martinez) in which female outside speakers meet with trainees during their NIEHS visit to discuss career development. I have also held recurrent discussions with IIDL Group Leaders about specific measures that can be taken to improve diversity in IIDL. In 2022, I participated in a 7-week NIH (OIR/COSWD) Diversity, Equity, Inclusion, and Accessibility Workshop Series and in a one-day DEIA course on inclusivity (Small World Solutions 'The New IQ'). I also participated in an NIEHS DIR Working Group on DEIA tasked to provide recommendations to leadership.

Regarding outreach, in 2014, I delivered an oral presentation on translational research and biomedical careers to area high school teachers at the Rx for Science Literacy Workshop of the NC Association for Biomedical Research. In 2015, I gave an oral presentation on my research to students at Athens Drive High School in Raleigh, NC. I have also participated in the ATS Mentoring Program, and in the NIEHS mentoring program (I mentored a Triangle Charter High School student in 2022). As an active clinician, I also spend 1 month per year on medical service as an attending physician in the medical intensive care unit of the Durham VA Medical Center. I perform these duties on a Without Compensation (WOC) status. In this role, I have interacted directly with, and mentored numerous medical students, medical housestaff, and clinical fellows over the past 12 years. I also serve on the Training Faculty of the UNC Curriculum in Toxicology (CiT), as well as on its Executive Committee. In this capacity, I have served on a PhD thesis committee (student: Adam Speen), have hosted a UNC student who obtained an M.S. while in my laboratory (Michael Henderson), and have also served as a consultant for the CiT program. For several years following 2012, I served as an Associate Mentor on the NIH T32 Training Grant for the Integrative Lipid Sciences Training Program at Wake Forest University during which time I also served on the thesis committee for one of the students in the program (Caleb Lord).

IX. Professional Affiliations

American Thoracic Society
NIH Translational Research Interest Group

X. Professional Service and Committees

Extramural

2003-2006	Member, University Hospital Critical Care Committee, University of Colorado School of Medicine, Denver, CO
2003, '04, '08	Chair, Functional Genomics and Proteomics Poster Discussion Session American Thoracic Society International Conference
2004	Chair, Symposium: 'Recharting Ancient Pathways: Proteomics, the Next Frontier of Inflammation Research', American Thoracic Society International Conference
2005-2006	Member, Credentialing Committee National Jewish Medical and Research Center, Denver, CO

- 2008-2011 Member, Program Committee, Respiratory Cell and Molecular Biology Assembly
American Thoracic Society
- 2008- Consultant on extramural R01 award
HL94525 to Dr. John S. Parks (Wake Forest University)
- 2009 Chair, 'Unusual Suspects: New Roles for Old Lipids in Lung Disease & Critical
Illness' Scientific Symposium, American Thoracic Society International Conference
- 2010 Chair, 'Molecular Phenotypes: Bench to Bedside Diagnosis' Scientific Symposium
American Thoracic Society International Conference
- 2010 Lead Facilitator, Thematic Poster Session: 'Regulating Cell Growth and Survival',
American Thoracic Society International Conference
- 2010-2012 Member, Environmental Health Policy Committee, American Thoracic Society
- 2011 Chair, Poster Discussion Session: 'NF-kB: Regulation and Exploitation'
American Thoracic Society International Conference
- 2011 Chair, 'Damage-associated Molecular Patterns in Lung Disease and Critical Illness
Scientific Symposium, American Thoracic Society International Conference
- 2011 Facilitator, Thematic Poster Session: 'Systems Biology and Molecular Profiling'
American Thoracic Society International Conference
- 2011 Facilitator, Thematic Poster Session: 'Airway Immune Mechanisms and
Inflammation', American Thoracic Society International Conference
- 2012 Associate Mentor, Training Grant NHLBI T-32 091797; Integrative Lipid Sciences,
Inflammation, and Chronic Disease Training Program; Wake Forest University
- 2012 Facilitator, Thematic Poster Session: 'Recent Advances in Phagocyte Biology'
American Thoracic Society International Conference
- 2013 Facilitator, Poster Discussion Session: 'Airway Epithelial Activation and Dysfunction'
American Thoracic Society International Conference
- 2013 Consultant on funded extramural R01 application
'The Role of Lumican in the Cornea,' to National Eye Institute, by Dr. Shukti
Chakravarti, Johns Hopkins University School of Medicine
- 2013-present Working Group on Metabolomics and Proteomics, Assembly on Respiratory Cell &
Molecular Biology, American Thoracic Society
- 2013 Moderator, Obesity and Host Defense Session
Obesity and Metabolism: An Emerging Frontier in Health and Disease Meeting
University of Vermont, Burlington, VT
- 2014-2020 Member, Planning Committee; Asthma, Inflammation, and Immunology Assembly
American Thoracic Society
- 2014 Facilitator, Thematic Poster Session: 'Asthma: Preclinical Studies'
American Thoracic Society International Conference
- 2014-present Member, Steering Committee, Visiting Pulmonary Scholar Program
- 2015 Chair/Moderator, Course at AAAAI Annual Meeting: 'NIEHS: Emerging Roles for
Cholesterol Dysregulation and its Treatment in Lung Disease', Houston, TX
- 2015 Chair, NIEHS Scientific Symposium, American Thoracic Society International
Conference
- 2015-2019 Member, Executive Committee, Curriculum in Toxicology
University of North Carolina Chapel Hill
- 2015 Co-chair of 'Lipid Mediators' symposium
48th Annual Meeting of the Society for Leukocyte Biology, Raleigh, NC

- 2016 Chair, 'Emerging Immune Functions of the Pulmonary Epithelium' Scientific Symposium, American Thoracic Society International Conference
- 2017- Member, Program Committee; Allergy, Immunology & Inflammation Assembly American Thoracic Society
- 2018- Mentor, American Thoracic Society Mentoring Program
- 2019- Member, External Advisory Committee, 'Lung Biology and Disease' COBRE, Louisiana State University School of Veterinary Medicine
- 2019- Member, External Advisory Committee, Vermont Lung Center Training Program
- 2020- Member, Experimental ALI Working Group, American Thoracic Society
- 2021- Member, Dissertation Committee, Marissa Guttenberg (Duke University, Nicholas School of the Environment).
- 2021- Member, K99/R00 Advisory Committee, Filiz Korkmaz (Boston University, Department of Medicine).
- 2021- Member, External Advisory Committee, ONES Award (PI: Salik Hussain, WVU)
- 2022 Chair, 'Myeloid Heterogeneity in the Lung' Scientific Symposium American Thoracic Society International Conference
- 2022 Chair, GRC on Immunometabolism in Health and Disease Bryant University, Smithfield, RI

Intramural (NIEHS/NIH)

- 2006-2007 Member, Training and Education Committee
- 2007-2011 Member, Institutional Review Board
- 2007-present Medical Officer, Mechanisms of Susceptibility to Oxidant Stress-Induced Disease Program, Director's Challenge Program
- 2008-present Member, Clinical Advisory Council
- 2008 Meeting Organizer and Chair, NIEHS Symposium on Lipid Raft Biology
- 2007-present Poster Judge, Science Day
- 2008 Host, Distinguished Lectureship Program, May, 2008
Speaker: Dr. Kai Simons (Director Emeritus, Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany)
- 2008, 2012 Panelist, Fellows Grantsmanship Course
- 2009, '10, '13 Panelist, Summers of Discovery Career Panel
- 2010 Organizer, Laboratory of Respiratory Biology Retreat
- 2010-2013 Member, Committee on Promotions III (COP III)
- 2011 Member, DIR Pulse Action Plan Committee
- 2011 Member, NIEHS Strategic Planning Stakeholder Community Workshop
- 2011 Member, NIEHS Clinical Research Support Services Contract Review Panel
- 2011-2015 Member, NIEHS Alion Inhalation Facility Oversight Committee
- 2012-2014 Councilor (elected position), NIEHS Assembly of Scientists Council
- 2012 Member, CRU Staff Clinician Search Committee, NIEHS
- 2012- Member, NIH Center for Human Immunology
- 2012, 2013 Member, NIH Stadtman Immunology Search Committee
- 2012 Chair, Pulmonary/Cardiovascular Disease Subcommittee
NIEHS Inflammation Cross-Divisional Implementation Committee
- 2012 Member, DIR Retreat Planning Committee
- 2013 Judge, NIH Fellows Award for Research Excellence (FARE) Travel Award Competition

2013 Member, Selection Panel for Administrative Coordination Specialist, DIR
 2014- Member, Cross-Divisional Inflammation Evaluation Design Team
 2014 Member, DIR Intramural Research Program Review Group
 2014 Member, Targeted Tenure Track Investigator Search Committee
 2014- Member, NIEHS Pathology Core Committee
 2014- Member, NIEHS Environmental Polymorphisms Registry Steering Committee
 2014- Co-Chair, Epidemiology Branch Tenure Track Investigator Search Committee
 2014- Member, DIR Space and Renovations Advisory Committee
 2014- Member, Committee on Promotions I (COP I)
 2014- Member, Steering Committee, NIEHS Inflammation Faculty
 2014- Member, Planning Committee, NIEHS Inflammation Workshop
 2015 Member, Neurobehavioral Facility Head-Staff Scientist Search Committee
 2015 Chair, Planning Committee, NIEHS DIR Retreat
 2015- Member, NIEHS Fluorescence Imaging Core Facility Advisory Committee
 2016- Member, Staff Pathologist Search Committee, NTP
 2016 Acting Chair, STL Staff Scientist Search Committee
 2016- Chair, NIEHS Conventional Animal Facility Steering Committee
 2017- Member, Steering Committee, NIH Inflammatory Disease Interest Group
 2018- Chair, NL Tenure Track Investigator Search Committee
 2018- Member, Stadtman Search Committee on Immunology
 2018- Chair, Environmental Polymorphisms Registry Internal Advisory Committee
 2018 Session Chair, CIG Immunometabolism Symposium, NIH, Bethesda, MD
 2018- Member, NIEHS Metabolomics Task Force
 2019-2023 Member, NIH Central Tenure Committee
 2019- NIEHS Tenure Track Advisory Committee
 2020 Member, Search Committee for Chief of STL, NIEHS
 2020 Member, Search Committee for TTI for IIDL
 2020 Member, Search Committee for Lead Staff Scientist, NIEHS Metabolomics Core
 2020- Member, Search Committee for TTI for CRB
 2020- Member, Search Committee for Senior Clinical for EAG/CRB
 2020- PI, NIEHS Trans-NIH Metabolomics Consortium
 2020 Chair, Subcommittee of Lab Chiefs to Prioritize DIR Scientific Hiring Areas
 2020 Co-Chair, NIH Stadtman Immunology Search Committee
 2020- DIR Subject Matter Expert, COVID-19
 2021- Member, TTI Advisory Committee, Dr. Ian Myles (TTI, NIAID)
 2022-2023 Member, DIR DEIA Working Group
 2022-2023 Chair, Search Committee for Senior Clinician/CRU Director, CRB
 2022-2023 Chair, Search Committee for Staff Clinician, CRB
 2022 Chair, NIH Stadtman Immunology Search Committee
 2022 Invited participant, 2024-2028 NIEHS Strategic Plan Stakeholder Community Workshop
 2023 Member, Clinical Pathologist Search Committee, CMPB, DTT
 2023 Member, IIDL Tenure-Track Investigator Search Committee
 2024- Chair, NIEHS Distinguished Lecture Series Committee
 2024 Panelist, NIEHS Tenure-Track Investigator Retreat

XI. Review and Referee Activities

Editorial Boards:

Member, Editorial Board, *Am. Journal of Respiratory Cell and Molecular Biology* (2014-present)
 Associate Editor, *Am. Journal of Respiratory Cell and Molecular Biology* (2019-2023)
 Deputy Editor, *Am. Journal of Respiratory Cell and Molecular Biology* (2023-present)
 Faculty Member, *Faculty of 1000 Medicine* (2010 – present)
 Academic Editor, *PLoS ONE* (2010 – 2018)

Ad hoc journal reviewer:

Blood, Cell Metabolism, Cell Host & Microbe, Journal of Immunology, American Journal of Respiratory and Critical Care Medicine, Journal of Biological Chemistry, Journal of the American Medical Association, PLoS ONE, PLoS Computational Biology, PLoS Genetics, Journal of Leukocyte Biology, American Journal of Respiratory Cell and Molecular Biology, Journal of Proteome Research, Proteomics, Environmental Health Perspectives, Toxicological Sciences, Biochemical Pharmacology, Physiological Genomics, Journal of Pediatrics, Occupational and Environmental Medicine, Clinical & Experimental Allergy, Journal of Pharmacology and Experimental Therapeutics, Molecular Therapy – Nucleic Acids, Journal of Allergy & Clinical Immunology, Journal of the American College of Cardiology, BBA Biomembranes, Journal of Innate Immunity, Lancet Respiratory Medicine, Scientific Reports, JCI

Study Sections

2012 American Thoracic Society Foundation research review, Jersey City, NJ
 2015, 2016 Reviewer, Biomedical Advanced Research & Development Authority, DHHS
 2022, 2023 Reviewer, American Thoracic Society Scientific Grant Review Committee

Ad hoc grant application reviewer:

2004 Peer-Reviewed Medical Research Program, U.S. Department of Defense
 2004 Cystic Fibrosis Pilot Grant Program, Toronto Hospital for Sick Children
 2006 Pilot/Feasibility Grant, Yale Skin Diseases Research Core Center
 2007 Integrated Laboratory Systems, Inc., Project Concept Review N11
 2010 Chilean National Science and Technology Research Fund (FONDECYT; Chile)
 FONDECYT National Research Funding Competition
 2011 Standard Proposal, Biotechnology and Biological Sciences Research Council (U.K.)
 2013 National Peer Reviewer, Arizona Biomedical Research Commission
 2014 Reviewer, Research Fellowship, Sigma Delta Epsilon/Graduate Women in Science
 2014-present Scientific Reviewer, NIH Intramural Loan Repayment Program
 2014 Reviewer, National Jewish Hospital Challenge Grant Program
 2014 Reviewer, Director's Investigator Awards Program, NICHD/NIH
 2018 Reviewer, NIEHS-NIA Joint Fellowship Program
 2018 Reviewer, Medical Research Council (U.K.)
 2020 Reviewer, NIEHS NOSI on COVID-19
 2022 Reviewer, Medical Research Council (U.K.)
 2023 Reviewer, Doctoral Fellowship Proposal, Austrian Academy of Sciences

XII. Teaching/Training Activities

2001-2004 Teaching Assistant, Pulmonary Pathophysiology Course, University of Colorado School of Medicine

- 2002 Founding Contributor/Author, The MGH Primary Care Syllabus. Lippincott, Williams & Wilkins. 2002.
- 2002-2006 Attending Physician, Pulmonary Consult Service, Intensive Care Unit
Denver Health Medical Center, Denver, CO
- 2002-2006 Attending Physician, Pulmonary Consult Service, University Hospital, Denver, CO
- 2003-2004 Lecturer, Management of Acute Respiratory Distress Syndrome
Critical Care Conference Series, Fellowship in Pulmonary and Critical Care
Medicine, University of Colorado School of Medicine
- 2003-2004 Lecturer, Respiratory and Hemodynamic Mechanics of the Ventilated Patient
Critical Care Conference Series, Fellowship in Pulmonary and Critical Care
Medicine, University of Colorado School of Medicine
- 2003-2014 Literature Reviewer
Practical Reviews in Critical Care Medicine, Oakstone Medical Publishing.
- 2004-2005 Chiron Bronchiectasis and Ventilator-Associated Pneumonia Training Program
Speaker, 'Ventilator-Associated Pneumonia: A Pulmonologist's Perspective'
- 2004-2006 Attending Physician, Pulmonary Fellows Clinic
National Jewish Medical and Research Center, Denver, CO
- 2007-present Attending Physician – Medical Intensive Care Unit; Pulmonary Consult Service
Durham Veterans Affairs Medical Center, Durham, NC
- 2010-2013 Member, Graduate Thesis Committee
Student: Caleb Lord (Wake Forest University, Department of Pathology)
- 2014-2018 Member, Graduate Thesis Committee
Student: Matthew McPeck (East Carolina University, Department of Toxicology)
- 2015-2020 Member, Graduate Thesis Committee
Student: Adam Speen (University of North Carolina-CH, Toxicology Curriculum)
- 2020- Member, Graduate Thesis Committee
Student: Marissa Guttenberg (Duke Integrated Toxicology & Environmental Health
Program, Duke University School of Medicine)
- 2023 Panelist, Faculty Retreat, NC Diabetes Research Foundation

XIII. Talks at National/International Research Meetings

- 2001 A Proteomic Analysis of Lipopolysaccharide Stimulation of the Human Neutrophil.
Aspen Lung Conference, Aspen, CO
- 2002 Cholesterol Content Affects Inflammatory Potential of the Neutrophil.
American Thoracic Society International Conference
- 2003 A Practical Introduction to Proteomic Analysis (invited speaker)
Post-Graduate Course: "The Whole World Genomics Do-it-Yourself Course"
American Thoracic Society International Conference
- 2003 Genomic and Proteomic Profiling of the Lipopolysaccharide-Stimulated Human
Neutrophil (invited speaker), Pittsburgh International Lung Conference
- 2004 Proteomic Approaches to the Study of Signal Transduction and Inflammation.
'Sunrise Seminar', American Thoracic Society International Conference
- 2005 Liver X Receptor Regulates Pulmonary Innate Immunity
Minisymposium, American Thoracic Society International Conference

- 2006 Proteomic Approaches to the Study of Signal Transduction and Inflammation. 'Sunrise Seminar', American Thoracic Society International Conference
- 2006 A Dual Role for RhoA in Activation of the Human Neutrophil (invited speaker) Grover Conference on the Pulmonary Circulation, Deckers, CO
- 2007 Proteomic Approaches to the Study of Signal Transduction and Inflammation. 'Sunrise Seminar', American Thoracic Society International Conference
- 2009 Cholesterol, a Novel Modifier of Airways Disease: Lessons from Mouse & Man Scientific Symposium, American Thoracic Society International Conference
- 2009 Proteomic Discovery and Functional Validation of Rafts in Inflammation Biology 'Allergy as a mechanism-based case study to apply omics in food and chemicals safety assessment' Workshop (invited speaker) European Commission Joint Research Centre; Ispra, Italy
- 2010 Proteomic Profiling Reveals New Biology in Macrophage Innate Immune Response Scientific Symposium, American Thoracic Society International Conference
- 2010 Lipids/Cholesterol in Acute Lung Injury (invited speaker) Scientific Symposium, American Thoracic Society International Conference
- 2011 Coupling Between Cholesterol and Innate Immunity at the Plasma Membrane Scientific Symposium, American Thoracic Society International Conference
- 2011 MyD88 couples reverse cholesterol transport to inflammation (invited speaker) Gordon Research Conference on Atherosclerosis; Salve Regina University, Newport, RI
- 2013 APOE4 is associated with enhanced innate immune responses and sepsis severity in humans, Gordon Research Conference on Vascular Cell Biology, Ventura, CA
- 2015 A Role for Cholesterol-25-hydroxylase in Resolution of Pulmonary Neutrophilia. American Academy of Allergy, Asthma, and Immunology Annual Meeting Houston, TX
- 2015 p53 as integrator of environmental inputs to inflammation NIEHS Symposium, American Thoracic Society International Conference
- 2015 A Role for Cholesterol-25-hydroxylase in Resolution of Pulmonary Neutrophilia Scientific Symposium, American Thoracic Society International Conference
- 2015 SR-BI in the integrated pulmonary host defense response Scientific Symposium, American Thoracic Society International Conference
- 2015 A novel role for oxysterols in resolution of neutrophilia 48th Annual Meeting of the Society for Leukocyte Biology, Raleigh, NC
- 2021 Sterols in Lung Homeostasis and Immunity FASEB: The Nutrition, Immunity, and Inflammation Conference: From Model Systems to Human Trials
- 2022 Cholesterol in Pulmonary Immunity; Society of Toxicology Annual Meeting; San Diego, CA
- 2022 Oxysterols and LXRs in Pulmonary Immunity; ACR Convergence; Philadelphia, PA
- 2023 Keynote lecture, Third Conference on Small Airways and PExA, University of Gothenburg, Sweden
- 2023 ENDO 2023 (Endocrine Society meeting); Chicago, IL
- 2024 The 52nd Annual Meeting of the Japanese Society for Immunology; Tokyo, Japan (*programmed*)

Miscellaneous Invited Research Talks

- 2002 A Proteomic Analysis of Lipopolysaccharide Stimulation of the Human Neutrophil. Immunology Research in Progress Seminar, NJMRC
- 2003 A Role for Lipid Rafts in Lipopolysaccharide Signal Transduction in the Human Neutrophil, Cardiovascular Research Conference, Cardiology Division, UCHSC
- 2003 Functional Proteomics of LPS-induced TNF- α Production by the Human Neutrophil Pulmonary Research Conference, Duke University Medical Center
- 2004 A Novel Role for Hydroxymethyl-Glutaryl Coenzyme A in LPS-Induced Acute Lung Injury, Denver Health Medical Center Critical Care Grand Rounds
- 2004 Functional Proteomics of LPS-induced TNF- α Production by the Human Neutrophil University of Colorado Proteomics Center
- 2006 A Novel Role for Cholesterol in Innate Immunity Signaling Department of Pathology, Wake Forest University
- 2008 Global Proteomics and Relative Quantification in Toxicology Winter Symposium, RTP Drug Metabolism Discussion Group North Carolina Biotechnology Center
- 2008 Innate Immunity as a Physiologic Signal in Cholesterol Homeostasis Pulmonary Research Conference, Duke University Medical Center
- 2008 Dyslipidemia Modulates Pulmonary Innate Immunity: Studies in Mouse & Man Airway Biology Seminar Series, Duke University Medical Center
- 2008 MyD88 Couples Reverse Cholesterol Transport to Inflammation Symposium on Lipid Raft Biology, NIEHS
- 2008 Quantitative Proteomic Analysis of Macrophage Lipid Rafts Reveals a Role for the Proteasome in Compartmentalized Activation of ERK Laboratory of Pharmacology / Laboratory of Molecular Toxicology, NIEHS
- 2008 Environmental and Genetic Dyslipidemia Modulate Pulmonary Innate Immunity Cystic Fibrosis Center, University of North Carolina
- 2009 Emerging Roles for Cholesterol in Pulmonary Innate Immunity Dept. of Immunology, Duke University
- 2009 A Novel Complex Role for Cholesterol in Pulmonary Innate Immunity Dept. of Microbiology, North Carolina State University
- 2009 MyD88 Couples Reverse Cholesterol Transport to Inflammation Dept. of Pathology, Wake Forest University
- 2009 MyD88 Couples Cholesterol Trafficking to Innate Immunity Laboratory of Signal Transduction, NIEHS
- 2010 Emerging Roles for Cholesterol in Pulmonary Innate Immunity Pulmonary and Vascular Medicine Branch, NHLBI, NIH, Bethesda, MD
- 2010 Cholesterol in Asthma: Bench to Bedside Insights NIH Research Festival, Bethesda, MD
- 2010 S-Acylproteomics of the Macrophage Reveals a Role for Palmitoylation in Mitochondrial Targeting of Plscr3 NIH Research Festival, Bethesda, MD
- 2010 Novel Roles for Cholesterol in Pulmonary Host Defense University of Vermont Lung Center
- 2010 Animal Models of Environmental Endotoxin Exposure

- Evaluating Health Effects to Communities of Confined Animal Feeding Operations
North Carolina State University
- 2011 Tumor Suppressor p53 Integrates Host Defense and Cell Fate During Pneumonia
Duke University Airway Biology Forum
- 2011 Effects of Cholesterol on Pulmonary Inflammation (invited speaker)
Fall 2011 Pulmonary Research Group Symposium, Stowe, VT
- 2012 Cholesterol as a Novel Modifier of Lung Immunity
Grand Rounds, NIH Clinical Center, Bethesda, MD
- 2012 Tumor Suppressor p53 Integrates Host Defense and Cell Fate
Lung Research Conference, Division of Pulmonary and Critical Care Medicine
Johns Hopkins School of Medicine
- 2012 Tumor Suppressor p53 Integrates Host Defense and Cell Fate
Molecular & Cellular Immunology Shock/Trauma Research Center
University of Missouri Kansas City Medical School
- 2012 Cholesterol Trafficking Modifies Pulmonary Immune Responses
Division of Pulmonary, Critical Care, and Sleep Medicine
Brody School of Medicine, East Carolina University
- 2012 Tumor Suppressor p53 Integrates Host Defense and Cell Fate
Division of Pulmonary, Allergy, Critical Care, and Sleep Medicine
Ohio State University
- 2013 Tumor Suppressor p53 Integrates Host Defense and Cell Fate
Departments of Pathobiological Sciences and Comparative Biomedical Sciences
School of Veterinary Medicine, Louisiana State University
- 2013 SR-BI in the Integrative Physiology of Bacterial Pneumonia
University of Vermont Obesity Conference, Burlington, VT
- 2013 Tumor Suppressor p53 Integrates Host Defense and Cell Fate
NCSU Workshop on Allergy and Inflammation; NCSU McKimmon Center; Center for
Comparative Medicine and Translational Research, Raleigh, NC
- 2014 APOE4 as a determinant of the human innate immune response
NIEHS Clinical Research Unit 'TED' talk
- 2014 APOE4 as a determinant of the human innate immune response
Rx for Science Literacy Workshop, NC Association for Biomedical Research
- 2014 A Bench to Bedside Study of APOE4 in the human innate immune response
142nd Meeting of the National Advisory Environmental Health Sciences Council
NIEHS, Research Triangle Park, NC
- 2014 A role for cholesterol 25-hydroxylase in resolution of alveolar neutrophilia
NIH Cytokine Interest Group Lipid Mediators in Inflammation & Disease Meeting
NIH, Bethesda, MD
- 2014 Role of SR-BI in the integrated host defense response during pneumonia
Receptor Mechanisms Discussion Group, NIEHS
- 2015 Novel roles for oxysterols in resolution of inflammation and critical illness
Signal Transduction Laboratory Seminar Series, NIEHS
- 2015 The pulmonary host defense response
Toxicology Curriculum seminar series, University of North Carolina
- 2015 Oxysterols in resolution of lung inflammation
North Carolina State University Toxicology Program Seminar Series; Raleigh, NC

- 2015 Oxysterols as mediators and biomarkers of inflammation resolution
University of Vermont Obesity Conference; Burlington, VT
- 2016 Novel roles for oxysterols in resolution of inflammation
NIH Immunology Interest Group Seminar Series, NIH main campus, Bethesda, MD
- 2016 Oxysterols in resolution of inflammation
Seminar Series, Pulmonary Division, National Jewish Hospital, Denver, CO
- 2016 Proteomic analysis of cellular signaling
Proteomics & Metabolomics Workshop, National Jewish Hospital, Denver, CO
- 2016 Novel roles for oxysterols in resolution of inflammation
Seminar Series, Dept. of Microbiology & Immunology, Wake Forest University
- 2016 Keynote speaker
Duke University Innate Immunity Symposium
- 2016 Oxysterols in resolution of inflammation; Metabolism & Pathogens Symposium,
Rocky Mountain Laboratories, NIAID/NIH, Hamilton, MT
- 2017 Transatlantic Airway Conference; Lucerne, Switzerland
- 2017 NIH Inflammatory Diseases Interest Group Seminar Series; NIH Main Campus
Bethesda, MD
- 2017 Duke Innate Immunity Group; Duke University, Durham, NC
- 2018 NIEHS IIDL Special Seminar
- 2018 NIEHS Symposium: New Approaches for Characterizing Mitochondrial Signaling in
Response to Environmental Stress
- 2019 NIEHS DERT Symposium on Inflammation Resolution
- 2019 NIH Cytokine Interest Group Symposium, Bethesda, MD: 'Cytokines &
Autoimmunity'
- 2019 Respiratory Research Symposium, Novartis Institutes for Biomedical Research
- 2020 Lung Research Conference, Pulmonary/CCM Division, Johns Hopkins University
- 2020 Signal Transduction Laboratory Seminar Series, NIEHS
- 2020 BRITE Spring Seminar Series, North Carolina Central University (*cancelled*
[COVID])
- 2020 Clinical Research Branch Seminar Series, NIEHS
- 2020 Epigenetics and Stem Cell Biology Laboratory Seminar Series, NIEHS
- 2022 Southeastern Immunology Symposium; Duke University
- 2022 Gordon Research Conference on Biology of Acute Respiratory Infection; Ventura, CA
- 2023 Pulmonary Grand Rounds, Duke PACCM Division, Duke University
- 2023 Cedars-Sinai Visiting Scientist Seminar, PCCM Division, Cedars-Sinai Medical Center
- 2024 Pulmonary Grand Rounds, University of Alabama Birmingham PCCM Division

XIV. Research Grants, Contracts, and Special Grants

A. Previous Research Grant Support

AHA # 0275035N

American Heart Association - Michael Fessler, Principal Investigator

"Modulation of Inflammation by Cholesterol and HMG Co-A Reductase Inhibitors: Role of the Lipid Raft"

Total Award Period - 7/1/02 - 6/30/06 \$593,000

Atorvastatin Research Awards Program

Pfizer – Michael Fessler, Principal Investigator

7. Arndt PG, Young SK, Lieber JG, **Fessler MB**, Nick JA, Worthen GS. Systemic inhibition of c-Jun-NH2-Terminal Kinase Decreases Pulmonary Neutrophil Recruitment and Modulates Actin Assembly after LPS Exposure. *American Journal of Respiratory and Critical Care Medicine* 2005; 171:978-986
8. **Fessler MB***, Young SK, Arndt PG, Walker T, Palic MR, Lieber JG, Jeyaseelan S, Nick JA, Worthen GS. A Role for HMG-CoA Reductase in Pulmonary Inflammation and Host Defense. *American Journal of Respiratory and Critical Care Medicine* 2005; 171:606-615.
*Corresponding author
9. Morimoto K, Janssen WJ, **Fessler MB**, McPhillips KA, Borges VM, Bowler RP, Xiao YQ, Kench JA, Henson PM, Vandivier RW. Lovastatin Enhances Clearance of Apoptotic Cells (Efferocytosis) with Implications for Chronic Obstructive Pulmonary Disease. *Journal of Immunology* 2006; 176(12):7657-65
10. Cha SI, **Fessler MB**, Cool CD, King TE, Brown KK. Lymphoid Interstitial Pneumonia: Clinical Features, Associations, and Prognosis. *European Respiratory Journal* 2006; 28(2):364-9
11. Jeyaseelan S, Young SK, **Fessler MB**, Liu Y, Malcolm KC, Yamamoto M, Akira S, and Worthen GS. TRIF-Mediated Signaling Contributes to Innate Immune Responses in the Lung During *Escherichia coli* Pneumonia. *Journal of Immunology* 2007; 178(5):3153-60.
12. **Fessler MB***, Arndt PG, Nick JA, Malcolm KC, Worthen GS. A Dual Role for RhoA in Suppression and Induction of Cytokines in the Human Neutrophil. *Blood* 2007; 109(3):1248-56. *Corresponding author
13. Brass DM, Hollingsworth JW, **Fessler MB**, Savov JD, Maxwell AB, Whitehead GS, Burch LH, Schwartz DA. The IL-1 type 1 receptor is required for the development of LPS-induced airways disease. *Journal of Allergy and Clinical Immunology* 2007; 120(1):121-7.
14. Smoak K, Madenspacher J, Jeyaseelan S, Williams B, Poch KR, Dixon D, Nick JA, Worthen GS, **Fessler MB**. Liver X Receptor Regulates Pulmonary Innate Immunity. *Journal of Immunology* 2008; 180(5):3305-12.
15. **Fessler MB***, Massing MW, Spruell B, Jaramillo R, Draper D, Madenspacher J, Arbes S, Calatroni A, Zeldin DC. Novel Relationship of Serum Cholesterol with Asthma and Wheeze in the United States. *Journal of Allergy and Clinical Immunology* 2009; 124(5):967-74.
*Corresponding author
16. Dhungana S, Merrick BA, Tomer K, **Fessler MB**. Quantitative Proteomic Analysis of Macrophage Rafts Reveals Compartmentalized Activation of the Proteasome and of Proteasome-mediated ERK Activation in Response to Lipopolysaccharide. *Molecular & Cellular Proteomics* 2009; 8(1):201-213.

17. **Fessler MB***, Jaramillo R, Crockett PW, Zeldin DC. Relationship of Serum Cholesterol Levels to Atopy in the U.S. Population. *Allergy* 2010; 65(7):859-64. *Corresponding author
18. Brown JM, Chung S, Sawyer JK, Degirolamo, C, Alger HM, Nguyen T, Zhu X, Duong MN, Brown AL, Shah R, Davis MA, Kelley K, Wilson MD, **Fessler MB**, Parks JS, Rudel LL. Combined Therapy of dietary Fish Oil and Stearoyl-CoA Desaturase 1 (SCD1) Inhibition Prevents the Metabolic Syndrome and Atherosclerosis. *Arteriosclerosis, Thombosis, and Vascular Biology* 2010; 30(1):24-30.
19. Mueller GA, Edwards L, Aloor J, **Fessler MB**, Pomes A, Chapman M, London RE, Pedersen LC. The Structure of the House Dust Mite Allergen Der p 7 Reveals Similarities to the Human Innate Immune Protein LBP. *Journal of Allergy and Clinical Immunology* 2010; 125(4):909-17.
20. Smoak KA, Aloor JJ, Madenspacher JH, Merrick BA, Collins JB, Zhu X, Cavigiolio G, Oda MN, Parks JS, **Fessler MB**. Myeloid Differentiation Primary Response Protein 88 Couples Reverse Cholesterol Transport to Inflammation. *Cell Metabolism* 2010; 11(6):493-502.
21. Draper DW, Madenspacher JH, King DH, Remaley AT, **Fessler MB**. ATP Binding Cassette Transporter G1 Deficiency Dysregulates Host Defense in the Lung. *American Journal of Respiratory and Critical Care Medicine* 2010; 182(3):404-12.
22. Madenspacher JH, Draper DW, Smoak KA, Li H, Suratt BT, Wilson MD, Rudel LL, **Fessler MB**. Dyslipidemia Exerts Opposing Effects on Intrapulmonary and Extrapulmonary Host Defense through Divergent TLR Response Phenotypes. *Journal of Immunology* 2010; 185(3): 1660-9.
23. Schug T, Xu Q, Draper DW, de Silva AP, Purushotham A, **Fessler MB**, Li X. SIRT1 regulates NF- κ B-dependent transcription and attenuates macrophage-mediated inflammation. *Molecular & Cellular Biology* 2010; 30(19): 4712-21.
24. Zhu X, Owen JS, Wilson M, Thomas MJ, Hiltbold-Schwartz E, **Fessler MB**, Parks JS. Macrophage ABCA1 Dampens MyD88 Dependent Toll-Like Receptor Signaling Through Modulation of Free Cholesterol Enrichment in Lipid Rafts. *Journal of Lipid Research* 2010; 51(11):3196-206.
25. Menendez D, Shatz M, Smoak KA, Garantziotis S, **Fessler MB**, Resnick MA. The Human Toll-like Receptor Family is Integrated into the DNA Damage and p53 Response Network. *PLoS Genetics* 2011; 7(3):e1001360.
26. Merrick BA, Dhungana S, Williams JG, Aloor JJ, Peddada S, Tomer KB, **Fessler MB**. Proteomic Profiling of S-acylated macrophage proteins identifies a role for palmitoylation in mitochondrial targeting of phospholipid scramblase 3. *Molecular & Cellular Proteomics* 2011; 10(10):M110.006007.
27. Lord C, Betters JL, Ivanova PT, Milne SB, Madenspacher JH, Chung S, Liu M, Davis MA, Lee RG, Croke RM, Graham MJ, Parks JS, Brasaemle DL, **Fessler MB**, Brown HA, Brown JM. CGI-58/ABHD5-Derived Signaling Lipids Regulate System Inflammation and Insulin Action. *Diabetes* 2012; 61(2):355-63.

28. Draper DW, Gowdy KM, Madenspacher JH, Wilson R, Nakano H, Cook DN, **Fessler MB**. ATP Binding Cassette transporter G1 deletion induces IL-17-dependent dysregulation of pulmonary adaptive immunity. *Journal of Immunology* 2012; 188:5327-36.
29. Kordonowy LL, Lenox CC, Burg E, Gauthier LM, Petty JM, Rincon M, Dixon AE, **Fessler MB**, Poynter ME, Suratt BT. Obesity is associated with neutrophil dysfunction and attenuation of murine acute lung injury. *American Journal of Respiratory Cell & Molecular Biology* 2012; 47(1):120-7.
30. Zhu X, Westcott MM, Bi X, Liu M, Gowdy KM, Cao Q, Gebre AK, **Fessler MB**, Hiltbold EM, Parks JS. Myeloid Cell Specific ABCA1 Deletion Protects Mice from Bacterial Infection. *Circulation Research* 2012; 111:1398-409
31. Madenspacher JH, Azzam KM, Gong W, Gowdy KM, Vitek MP, Laskowitz DT, Remaley AT, Wang JM, **Fessler MB**. Apolipoproteins and apolipoprotein mimetic peptides modulate phagocyte trafficking through chemotactic activity. *Journal of Biological Chemistry* 2012; 287:43730-40
32. Palvinskaya T, Antkowiak M, Burg E, Lenox CC, Ubags N, Cramer A, Rincon M, Dixon AE, **Fessler MB**, Poynter ME, Suratt BT. Effects of acute and chronic low density lipoprotein exposure on neutrophil function. *Pulmonary Pharmacology & Therapeutics* 2013; 26(4):405-11
33. Jaramillo R, Cohn RD, Crockett PW, Gowdy KM, Zeldin DC, **Fessler MB**. Relation between Objective Measures of Atopy and Myocardial Infarction in the United States. *Journal of Allergy & Clinical Immunology* 2013; 131(2):405-11
34. Zhou H, Liao J, Gao HM, Aloor J, Nie H, Wilson B, **Fessler MB**, Hong JS. CD11b/CD18 (Mac-1) is a novel surface receptor for extracellular double-stranded RNA that mediates cellular inflammatory responses. *Journal of Immunology* 2013; 190:115-25
35. Madenspacher JH, Azzam KM, Gowdy KM, Malcolm KC, Nick JA, Dixon D, Aloor JJ, Draper DW, Guardiola JJ, Shatz M, Menendez D, Lowe J, Lu J, Bushel P, Li L, Merrick BA, Resnick MA, **Fessler MB**. p53 integrates host defense and cell fate during bacterial pneumonia. *Journal of Experimental Medicine* 2013; 210(5):891-904
** selected by NIEHS as 1 of the 10 best papers from the Institute for the year 2013
36. Santos AJM, Meinecke M, **Fessler MB**, Holden DW, Boucrot E. Preferential invasion of mitotic cells by Salmonella reveals changes in cell surface cholesterol during cell division. *Journal of Cell Science* 2013; 126(Pt 14):2990-6
37. **Fessler MB***, Rose K, Zhang Y, Jaramillo R, Zeldin DC. Association between Serum Cholesterol and Erythrocyte and Platelet Indices in the National Health and Nutrition Examination Survey. *Corresponding author. *Journal of Lipid Research* 2013; 54(11):3177-88

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39. Yamashita CM*, **Fessler MB***, Vasanthamohan L, Lac J, Madenspacher J, McCaig L, Yao LJ, Puntorieri V, Wang LF, Mehta S, Lewis JF, Veldhuizen RAW. Apolipoprotein E Deficient Mice are Susceptible to the Development of Acute Lung Injury. *Equal contribution. *Respiration* 2014; 87(5):416-27.
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41. Lowe JM, Menendez D, Bushel PR, Garantziotis S, **Fessler MB***, Resnick MA*. p53 and NF- κ B cooperatively promote pro-inflammatory gene expression in primary human macrophages. *Cancer Research* 2014; 74(8):2182-92. *Equal contribution
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43. Gowdy KM, Madenspacher JH, Azzam KM, Gabor KA, Janardhan KS, Aloor JJ, **Fessler MB**. Key Role for Scavenger Receptor B-I in the Integrative Physiology of Host Defense during Bacterial Pneumonia. *Mucosal Immunology* 2015; 8(3):559-71

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44. Romero F, Shah D, Duong M, Penn RB, **Fessler MB**, Madenspacher J, Stafstrom W, Kavuru M, Lu B, Kallen CB, Walsh K, Summer R. A Pneumocyte-macrophage Paracrine Lipid Axis Drives the Lung Toward Fibrosis. *American Journal of Respiratory Cell and Molecular Biology* 2015; 53(1):74-86.
45. Chowdhury SM, Zhu X, Aloor JJ, Azzam KM, Gabor KA, Ge W, Addo KA, Tomer KB, Parks JS, **Fessler MB**. Proteomic Analysis of ABCA1-null Macrophages Reveals a Role for Stomatin-like Protein-2 in Raft Composition and Toll like Receptor Signaling. *Molecular & Cellular Proteomics* 2015; 14(7):1859-70.
46. Gordon SM, Mckenzie B, Kemeh G, Sampson M, Young N, **Fessler MB**, Remaley AT. Rosuvastatin alters the proteome of high density lipoproteins by generating alpha-1-antitrypsin enriched particles with anti-inflammatory properties. *Molecular & Cellular Proteomics* 2015; 14(12):3247-57.
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49. Madenspacher JH, **Fessler MB**. A non-invasive and technically non-intensive method for induction and phenotyping of experimental bacterial pneumonia in mice. *Journal of Visualized Experiments* 2016; Sep 28 (115)
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