

Curriculum Vitae

Irina Petrache, MD
Professor of Medicine
Wollowick Chair in COPD Research
Chief, Division of Pulmonary, Critical Care, and Sleep Medicine
Department of Medicine
National Jewish Health

I. Academic History

A. Colleges and Universities Attended

- 1982 - 1986 *Dr. I. Mesota* Lyceum, Brasov, Romania
Major: Mathematics and Physics. Degree: Baccalaureate
- 1986 - 1992 *Carol Davila* University of Medicine and Pharmacy, Bucharest, Romania
Degree: Doctor of Medicine, MD

B. Board Certifications

- 1992 ECFMG-certified
- 1992 FMGEMS Clinical Component, and Basic Science Component
- 1993 FLEX Part I, and Part II
- 2000, 2010 American Board of Internal Medicine, Pulmonary Medicine
- 2002, 2010 American Board of Internal Medicine, Critical Care Medicine

II. Professional Positions (Internships, Residencies, Fellowships Included)

A. Post-Doctoral Positions

- 1993 - 1996 Saint Luke's Medical Center (since then, residency program transferred to Saint Vincent Medical Center), Case Western Reserve University, Cleveland, OH
Internship and Residency in Internal Medicine
- 1996 - 2000 Johns Hopkins University School of Medicine, Baltimore, MD
Research and Clinical Fellowship in Pulmonary & Critical Care Medicine,
Research Advisors: Augustine M.K. Choi, MD and Joe G.N. Garcia, MD
Fellowship Director: Robert A. Wise, MD

B. Academic Appointments

- 2000 - 2003 Instructor of Medicine, Full-Time Staff
Department of Medicine, Johns Hopkins University, Johns Hopkins Hospital and
Johns Hopkins Bayview Medical Center
Baltimore, MD
- 2003 - 2006 Assistant Professor of Medicine, Full-Time Staff
Department of Medicine, Johns Hopkins University
Johns Hopkins Hospital and Johns Hopkins Bayview Medical Center
- 2000 - 2006 Co-Director, Sarcoidosis Clinic
Department of Medicine, Division of Pulmonary & Critical Care Medicine, Johns
Hopkins University School of Medicine, Baltimore, MD
- 2005 - 2006 Assistant Professor of Pathology, Joint Appointment
Department of Pathology, Johns Hopkins University
- 2006 - 2007 Adjunct Associate Professor of Medicine, Joint Appointment

Department of Pathology, Johns Hopkins University School of Medicine

- 2006 - 2012 Associate Professor of Medicine; Calvin E. English Chair Investigator
Division of Pulmonary, Allergy, Critical Care and Occupational Medicine
Department of Medicine, Indiana University School of Medicine, Indianapolis, IN
- 2008 - 2012 Associate Professor of Biochemistry and Molecular Biology (secondary
appointment) Department of Biochemistry and Molecular Biology, Indiana
University School of Medicine
- 2011 - 2014 Vice Chair of Research
Department of Medicine, Indiana University School of Medicine
- 2012 - 2015 Calvin E. English Chair Professor of Medicine, Biochemistry and Molecular
Biology (Tenured), Indiana University School of Medicine
- 2015 - Present Professor, Division of Pulmonary, Critical Care, and Sleep Medicine; Department
of Medicine, National Jewish Health, Denver, CO
- 2015 - Present Professor, Department of Medicine and Pharmacology Graduate Program,
University of Colorado School of Medicine, Anschutz Medical Campus, Denver,
CO
- 2015 - Present Chief, Division of Pulmonary, Critical Care and Sleep Medicine, National Jewish
Health, Denver, CO

C. Hospital Appointments

- 1995 - 1996 Internist, Part-Time Staff, Emergency Department and Internal Medicine Offices,
Ohio Permanente Medical Group, Cleveland, OH
- 1997 - 2000 Medical Attending, Part-Time Staff, Department of Medicine and Critical Care,
Franklin Square Hospital, Baltimore, MD
- 1997 - 2000 Internist, Part-Time Staff, Urgent Care and Internal Medicine,
Mid-Atlantic Permanente, Baltimore, MD
- 2006 - 2012 Staff Physician, Kindred Hospital, Indianapolis, IN
- 2006 - 2015 Staff Physician, Clarian Health Partners (8/12: Indiana University Health),
Indianapolis, IN
- 2006 - 2015 Staff Physician, Clarian West Medical Center, Indianapolis, IN
- 2006 - 2015 Staff Physician, Wishard (currently Eskenazi) Hospital, Indianapolis, IN
- 2006 - 2015 Staff Physician, Clarian North Medical Center, Indianapolis, IN
- 2006 - 2015 Staff Physician, VA Hospital, Indianapolis, IN
- 2015 - Present Staff Physician, National Jewish Health, Denver, CO

D. Licensures: Medical State Licenses

Active: Colorado 06/23/15- 04/30/2021; Indiana 12/28/05 - 10/31/19

Inactive: Maryland 09/30/05 - 09/29/07; Ohio 10/30/95 - 09/30/98; Utah 03/08/95 - 01/31/96

III. Academic Honors

A. Honors and Awards

1988 - 1992	National Award for Academic Excellence in Medicine, Romania
1992	Special E. Majorana Center for Scientific Culture Scholarship, World Federation of Scientists, Italy
1998 - 1999	National Research Scientific Award; Agency: NHLBI, NIH
2004	The Thurlbeck Award for Research, University of British Columbia
2004	First Annual Respiratory Disease Young Investigators Forum, First Place in the Junior Faculty Category Basic Science
2007 - 2011	Floyd and Reba Smith Chair in Respiratory Disease, Indiana University
2010	Research Frontiers Trailblazer Award, IUPUI
2011 - 2015	Dr. Calvin H. English Chair, Indiana University
2014	Harrington Scholar-Innovator
2014	IUPUI Chancellor's Prestigious External Award Recognition (PEAR)
2015	The Golden Lung Award, excellence in teaching, Pulmonary Critical Care Medicine, Indiana University PCCM fellowship
2015 - Present	Wollowick Chair in COPD Research, National Jewish Health
2016	Elizabeth Rich Award, American Thoracic Society
2016	Most Outstanding Paper by a Senior Investigator, American Physiological Society AJP-Lung
2019	ATS Fellow
2021	Association of American Physicians; Council recommendation of election

B. Special Recognition

1995 - 1996	Chief Resident, Saint Luke's Medical Center, Case Western Reserve University, Cleveland, OH
2006	NIH, NHLBI's Strategic Planning Process for the Division of Lung Diseases Level 1 Working Group on Theme #3: Injury/Inflammation; Repair/Remodeling; Replacement/Regeneration, Bethesda, MD
2007	Faculty Panel, 4 th Annual Respiratory Disease Young Investigators Forum, Pittsburgh, PA
2009	Invited Participant; NHLBI Workshop; COPD: Assessment of the Current State-of-the-Art for Basic and Clinical Research and Shaping the Future
2009 - 2015	Co-Director, Vascular and Cardiac Center for Adult Stem Cell Therapy
2010	Faculty Panel, 7 th Annual Respiratory Disease Young Investigators Forum, San Antonio, TX
2010 - 2011	Program Committee Chair Elect; American Thoracic Society (ATS), Respiratory Cellular and Molecular Biology Assembly (RCMB)
2011 - 2012	Programming Committee Chair; RTS, RCMB
2011 - 2012	Vice Chair of Research, Department of Medicine, Indiana University American Society of Clinical Investigators
2013 - 2015	Chair, American Thoracic Society International Conference Committee
2014	Executive Leadership in Academic Medicine (ELAM) Graduate
2014 - 2015	Scientific Director Indiana Alpha-1 Foundation Accredited Clinical Resource Center
2015 - 2016	Chair-Elect, RCMB Assembly, ATS
2016 - 2018	Chair, RCMB Assembly, ATS
2017	Co-chair and Expert Faculty Panel, 13 th Annual Respiratory Disease Young Investigators' Forum, Denver, CO
2017	Vice-Chair, Gordon Research Conference, Lung Development, Injury and Repair, Lebanon, New Hampshire
2018	Director, The Aspen Lung Conference on COPD, Aspen, CO
2018	Chair, 14 th Respiratory Disease Young Investigators' Forum, Washington DC

- 2019 - 2020 President-Elect, Association of Pulmonary, Critical Care, and Sleep Division Directors (APCCSD), ATS
- 2019 Chair, Gordon Research Conference, Lung Development, Injury and Repair, Lewistown, Maine
- 2020 - 2021 President, Association of Pulmonary, Critical Care, and Sleep Division Directors (APCCSD), ATS

C. Professional Activities and Invited Lectures

Journal Peer Review Activities:

- 2000-2004 *American Journal of Physiology, American Journal of Respiratory and Critical Care Medicine, American Journal of Respiratory Cell and Molecular Biology, Microvascular Research*
- 2005 *Cancer Research, Apoptosis, American Journal of Pathology*
- 2006 *Respiratory Research, Journal of Cellular Physiology, American Journal of Respiratory Cell and Molecular Biology*
- 2007 *Apoptosis, Thorax, Journal of Applied Physiology; Translational Research; The FASEB Journal. American Journal of Respiratory Cell and Molecular Biology; European Respiratory Journal; American Journal of Respiratory and Critical Care Medicine*
- 2008 *COPD-Journal of Chronic Obstructive Pulmonary Disease; AJP-Lung Cellular and Molecular Physiology; Archives of Medical Research; International Journal of COPD; American Journal of Respiratory Cell and Molecular Biology; Therapeutic Advances in Respiratory Disease; Journal of Applied Physiology; Basic Research in Cardiology; American Journal of Respiratory and Critical Care Medicine; Pharmacological Research*
- 2009 *The FASEB Journal; European Respiratory Journal; American Journal of Respiratory Cell and Molecular Biology; Current Molecular Medicine; AJP- Lung Cellular and Molecular Physiology; PATS; American Journal of Respiratory and Critical Care Medicine; Lung; Journal of Vascular Research*
- 2010 *American Journal of Respiratory Cell and Molecular Biology; AJP- Lung Cellular and Molecular Physiology; Journal of Applied Physiology; American Journal of Respiratory and Critical Care Medicine; Current Molecular Medicine; European Respiratory Journal; Journal of Clinical Investigations; Neuroscience Letters; Proceedings of the American Thoracic Society; The FASEB Journal*
- 2011 *The FASEB Journal; Radiation Research; American Journal of Respiratory and Critical Care Medicine; American Journal of Respiratory Cell and Molecular Biology; Journal of Immunology; PLOS One, Respiratory Research, Science Translational Medicine; Journal of Clinical Investigation, Nature Medicine*
- 2012 *European Respiratory Journal; Journal of Clinical Investigation, PLOS One, Respiration, The FASEB Journal*
- 2013 *Journal of Clinical Investigation, PLOS One, New England Journal of Medicine, American Journal of Respiratory and Critical Care Medicine; AJP- Lung Cellular and Molecular Physiology; Respiratory Research; COPD Journal; EMBO Molecular Medicine*
- 2014 *Nature Medicine; AJP- Lung Cellular and Molecular Physiology; American Journal of Respiratory and Critical Care Medicine; European Respiratory Journal; American Journal of Respiratory Cell and Molecular Biology; Biomarkers Intravital; BMC Pulmonary Medicine*

- 2015 *American Journal of Respiratory and Critical Care Medicine; American Journal of Respiratory Cell and Molecular Biology; EMBO Mol Medicine, Journal of Clinical Investigation, Journal of Immunology, The FASEB Journal, Translational Medicine*
- 2016 *Cellular Signaling, Autophagy; Journal of Immunology; AJP- Lung Cellular and Molecular Physiology*
- 2017 *Journal of Clinical Investigation; The FASEB Journal; European Respiratory Journal, American Journal of Respiratory and Critical Care Medicine; Mucosal Immunology, American Journal of Respiratory Cell and Molecular Biology; Science Translational Medicine; Scientific Reports*
- 2018 *Journal of Clinical Investigation; American Journal of Respiratory and Critical Care Medicine; American Journal of Respiratory Cell and Molecular Biology*
- 2019 *American Journal of Respiratory and Critical Care Medicine; AJP- Lung Cellular and Molecular Physiology; Science Translational Medicine*
- 2020 *The FASEB Journal; Journal of Clinical Investigations; JCI Insight, Mature; PLOS-1; Science Translational Medicine; Thorax; American Journal of Respiratory Cell and Molecular Biology; Int J Mol Sci.*

Journal Editorial Activities:

2015-2017 Associate Editor, *American Journal of Physiology-Lung*

Invited Local Seminars:

- 01/05/05 “Sarcoidosis”, Grand Rounds, Good Samaritan Hospital, Baltimore, MD
- 03/23/05 “Apoptotic Mechanisms of Emphysema Development” Physiology Seminar, Department of Physiology, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD
- 02/22/07 “Sphingolipid Signaling and Apoptosis in the Pathogenesis of Pulmonary Emphysema”, Department of Biochemistry, IUPUI
- 06/11/08 “Acute Respiratory Distress Syndrome”, Reid Hospital, Richmond, IN
- 07/10/08 “Emphysema and Alpha-1 Antitrypsin Deficiency”, Alpha-1 Foundation Support Group Meeting, Indianapolis, IN
- 01/21/10 “Mechanism of lung injury amplification in emphysema”, Department of Microbiology and Immunology, Indiana University
- 03/05/14 “Pulmonary Effects of Tobacco Smoke Exposure”, Department of Psychiatry, Indiana University
- 11/11/14 “Lung cell fate in response to cigarette smoke exposure”, Cellular & Integrative Physiology Seminar Series, Indiana University
- 09/08/15 “Sphingolipids in Lung Health and Disease”, Department of Biomedical Research, National Jewish Health
- 11/19/15 “Sphingolipid signaling during lung cell homeostasis and response to injury”, Training Faculty Seminar, Pharmacology Program at University of Colorado Anschutz Medical Campus
- 03/10/17 “Targeting Sphingosine-1-Phosphate Metabolism in COPD”, Department of Medicine, Pulmonary Research in Progress, National Jewish Health
- 11/29/17 “Emphysema”, DOM Grand Rounds, University of Colorado, Denver, CO
- 03/15/18 “Endothelial cell injury and repair in COPD”, DOM Research and Innovation Conference, University of Colorado, Denver, CO
- 04/22/20 “Lung regeneration in COPD” Keynote Speaker, Board of Directors, Council of National Trustees and Friends Retreat, NJH, Denver, CO (cancelled due to COVID-19)

Invited National Seminars:

- 03/12/01 "The Role of Endothelial Cell Cytoskeleton in TNF-induced Pulmonary Endothelial Cell Permeability and Apoptosis" Critical Care and Pulmonary Mini-symposium on Pulmonary Inflammation, Critical Care Medicine Department of the Warren G. Magnuson Clinical Center, NIH and the Division of Pulmonary and Critical Care Medicine, Johns Hopkins University, Baltimore, MD
- 03/05/02 "Cytoskeletal regulation of endothelial cell apoptosis" Division of Pulmonary, Allergy and Critical Care Medicine, University of Pittsburgh, Pittsburgh, PA
- 05/08/02 "Cytoskeletal regulation of TNF-induced endothelial apoptosis" Division of Pulmonary & Critical Care Medicine, University of Pennsylvania, Philadelphia, PA
- 04/25/05 "Apoptotic Mechanisms of Emphysema Development", Division of Pulmonary and Critical Care Medicine, IUPUI, Indianapolis, IN
- 01/14/08 "COPD/Emphysema beyond the protease/anti-protease hypothesis", Pulmonary and Critical Care Division, University of Rochester, Rochester, NY
- 03/24/08 "Alveolar cell apoptosis in COPD", Pulmonary and Critical Care Division University of Washington, Seattle, WA
- 03/22/10 "Ceramide-induced mechanisms of injury amplification in emphysema", Division of Pulmonary Medicine, University of Colorado, Denver, CO
- 09/22/11 "Mechanisms of Emphysema Development; Vascular hypothesis revisited", Division of Pulmonary Medicine; University of Alabama, Birmingham, AL
- 11/02/11 "Mechanisms by which sphingolipids contribute to lung injury induced by cigarette smoking: Department of pharmacology, Rush University, Chicago, IL
- 11/11/11 "Mechanisms of alveolar wall destruction in emphysema". Division of Pulmonary Medicine University of North Carolina, Chapel Hill, NC
- 01/06/12 "Mechanisms and Pathways of Alveolar Wall Injury in Emphysema" Division of Pulmonary Medicine, Duke University, Raleigh, NC
- 01/18/12 "Endothelial cell responses in emphysema pathogenesis", Vascular Biology Center, GHCS (Medical College of Georgia), Augusta, GA
- 03/02/12 "Apoptotic and repair mechanisms in emphysema development", Pulmonary and Critical Care Div., Keck School of Medicine, Univ. of Southern California, LA, CA
- 06/10/12 "Opportunities and challenges in targeting alveolar lung destruction in emphysema", Pulmonary and Critical Care Div., Univ. of Michigan, Ann Arbor, MI
- 11/05/12 "Endothelial-centric Aspects of Emphysema Pathogenesis and Therapeutic Development", Dept. of Environmental Pathology, Univ. of Vermont, Burlington, VT
- 03/14/13 "Targeting endothelial responses to cigarette smoking in COPD", National Jewish Health, Denver, CO
- 03/19/13 "Endothelial-centric aspects of emphysema pathogenesis and therapeutic development", University of Pennsylvania, Philadelphia, PA
- 05/01/13 "Alpha 1 antitrypsin deficiency emphysema: insights into mechanisms of lung remodeling and chronic inflammation", State Chest Conference, Yale University, New Haven, CT
- 05/02/13 "Role of cigarette smoke-induced endothelial injury in emphysema development", Research Talk, Yale University, New Haven, CT
- 11/06/13 "Mechanisms of Repair in Emphysema", Oklahoma Center for Respiratory & Infectious Diseases, Distinguished Scientist Lecture, Oklahoma State University, Stillwater, OK
- 01/22/14 "Mechanisms and role of vascular injury in COPD. A tale of two pro-apoptotic mediators: Ceramide & EMAP II", Research Conference, Pulmonary Division, Columbia University, New York, NY
- 01/22/14 "Mechanisms and role of vascular injury in COPD Alpha-1 antitrypsin-deficiency: from proteinase/antiproteinase to vascular hypothesis in emphysema" Medicine Grand Rounds, Department of Medicine, Columbia University, New York, NY

- 03/24/14 "Mechanisms of injury and repair in pulmonary emphysema", Pulmonary Grand Rounds, Vanderbilt University, Nashville, TN
- 06/02/14 Lung injury and repair following cigarette smoke exposure. Pulmonary Research Conference, Northwestern University, Chicago, IL
- 07/14/14 "Role of the pulmonary microvasculature in the pathogenesis of COPD/emphysema", Seminar Dept of Pharmacology, University of Illinois, Chicago, IL
- 10/20/16 "Gender Differences in Lung Disease", NJH Donor Appreciation Lunch, New York City, NY
- 10/20/16 "The Quest for a Cure of Asthma", NJH Cocktail Reception Honoring Joe and Barbara Carroll, New York City, NY
- 05/31/17 Visiting Professor at Yale University, Sreedhar Nair lecturer, "Contribution of lung microvasculature to emphysema development", New Haven, CT
- 06/13/17 "Mechanisms of lung injury and repair in lung emphysema", CSMC Lung Institute Lecture Series, Cedars-Sinai Medical Center, Los Angeles, CA
- 06/20/17 "Role of Sphingolipid Metabolism in COPD", T32 External Reviewer, Pulmonary Citywide Conference, University of Minnesota, Minneapolis, MN
- 12/07/17 "Lung Repair Approaches in Emphysema", University of Pennsylvania, Pulmonary Biology Seminar Series, Philadelphia, PA
- 05/16/18 "Mechanisms of lung injury and repair in emphysema", University of California – San Diego, Department of Medicine Grand Rounds, San Diego, CA
- 06/14/18 "Mechanisms of pulmonary vascular injury in COPD", University of Wisconsin, Pulmonary Grand Rounds, Madison, WI
- 06/19/18 "Lung repair strategies in emphysema", Northwestern University, Keynote Lecture for Annual Lung Symposium, Chicago, IL
- 11/02/18 "Lung injury and repair in emphysema", University of Iowa, Pulmonary Research Conference, Iowa City, IA
- 11/09/18 "Can the lung be repaired in emphysema?", University of Virginia, Medicine Grand Rounds, Charlottesville, VA
- 11/29/18 "Lung Injury and Repair in Emphysema", Emory University, 20th Annual Roland H. Ingram Lecturer, Atlanta, GA
- 04/08/19 "Mechanisms of Lung Cell Injury in Emphysema", Temple University, Center for Inflammation, Translational and Clinical Lung Research (CILR), Philadelphia, PA
- 06/13/19 "Lung Regeneration Strategies for Emphysema", University of California – Davis, Grand Rounds, Davis, CA
- 06/14/19 "Mechanisms of Cigarette Smoke-Induced Lung Injury in COPD", University of California – Davis, Lung Day, Davis, CA
- 9/17/2019 "Lung regeneration strategies in emphysema". Solbert Permutt Memorial Lecture, Johns Hopkins University, Baltimore, MD
- 12/02/19 "Pulmonary Vascular Remodeling in COPD" DOM Grand Round, University of Chicago, IL

Invited International Seminars:

- 04/12/05 "Apoptotic Mechanisms of Emphysema Development", Kyushu Pulmonary Research Seminar, Kyushu University, Fukuoka, Japan
- 04/18/05 "Apoptotic Mechanisms of Emphysema Development", Pneumo Colloquium Liberte, Nihon University School of Medicine, Tokyo, Japan
- 02/17/12 "Role of sphingolipids in the lung responses to cigarette smoke exposure", James Hogg Research Center, University of British Columbia, Vancouver, Canada
- 10/24/17 "Reparative approaches in COPD using regenerative therapy", St. Joseph's Hospital, Regional Respiriology Clinical and Research Rounds, Hamilton, Ontario, Canada

10/24/17 "Central role of sphingolipid metabolites in lung injury and repair in pulmonary emphysema", St. Joseph's Hospital, Regional Respirology Clinical and Research Rounds, Hamilton, Ontario, Canada

Invited Talks to National and International Meetings and Conferences:

01/05/06 "COPD Pathophysiology" University of Minnesota COPD Summit: New Leaders and Directions in COPD Research, Minneapolis, MN

01/11/06 "The role of ceramide/S1P balance in pulmonary endothelial cell survival and the maintenance of alveolar structure" Gordon Conference on Glycolipid and Sphingolipid Biology, Ventura, CA

05/19/06 ATS Postgraduate Course: COPD; "Role of sphingolipids in emphysema development"

10/09/06 "Diagnostic and therapeutic applications of bacteriophage and adeno-associated virus technologies in pulmonary emphysema" American Academy of Nanomedicine -2nd Annual Meeting, Symposium XIV: Nanotechnology in Gene Delivery and Therapy for Cancer or Viral Diseases, National Academy of Sciences, Washington, DC

06/21/07 "The role of ceramides and S1P in the development of pulmonary emphysema", Session: New horizons in lysophospholipid research, Lysophospholipid Mediators in Health and Disease, 2007 FASEB Summer Research Conference

09/18/07 "Sphingolipids and emphysema" Hot Topics European Respiratory Society ERS Stockholm 2007 Congress

05/19/08 "Sphingolipid Signaling in the Lung", Meet the Professor talk. American Thoracic Society International Conference, Toronto, Canada

08/03/08 "Sphingolipid regulation of pulmonary epithelial cell death" FASEB Summer Conference Lung Epithelium in Development and Disease, Saxtons River, VT

05/18/09 Ceramide: The New Molecular Target In Emphysema; Symposium talk. Unusual Suspects: New Roles For Old Lipids In Lung Disease And Critical Illness, American Thoracic Society International Conference, San Diego, CA

09/04/09 "The Effect of Sphingolipids Dysregulation on Lung Parenchyma; Implications for Human COPD" Symposium talk. DFG-SPP Sphingolipids- Signals and Disease Meeting 2009, Essen, Germany

11/20/09 "Ceramide upregulation causes alveolar epithelial cell apoptosis and emphysema-like disease in mice; Fall 2009 Pulmonary Research Group Symposium Charles River Laboratories, Shrewsbury, MA

05/17/10 "B87-Coins for the Boatman: Clearance of apoptotic cells in lung disease" Symposium talk, American Thoracic Society International Conference, New Orleans, LA

01/20/11 "Ceramide in cell death responses in the pulmonary circulation" at the "Pulmonary Circulation in Health and Disease" Trans-Atlantic Airway Conference, Lucerne, Switzerland

04/11/11 "The role of sphingolipids in COPD"; Sphingolipid in Lung Diseases Symposium, Experimental Biology 2011; Washington, DC

08/16/11 "Endothelial cell apoptosis in lung pathology/emphysema"; Gordon Conference: Lung development, injury, and repair, Newport, RI

05/23/12 "The Smoking Gun: Apoptosis, Autophagy and ER Stress In The Pathogenesis Of Emphysema" talk in the Scientific Symposium Linking Endoplasmic Stress, Autophagy And Apoptosis In Lung Health And Disease, American Thoracic Society International Conference, San Francisco, CA

10/02/12 "Mechanisms of cigarette smoke-induced emphysema". Invited talk to the 2nd

- 10/20/12 International Munich Lung Conference on "*Perspectives 2020: Emerging Trends in Pulmonary Medicine*". Oct 4-6th, 2012, Munich, Germany
"The importance of sphingolipids in lung disease associated with cigarette smoking: from biomarkers to therapeutic targets". Invited talk to the EMBO Molecular Medicine Workshop 2012: Molecular Medicine of Sphingolipids. Ramot, Sea of Galilee, Israel
- 05/21/14 "Can the Damaged Lung Be Repaired?" Hidden Players In COPD: Gender, Environment, And Genes, ATS International Conference, San Diego, CA
- 06/06/14 "New antibody therapy development in emphysema". Harrington Discovery Institute Scientific Symposium, Cleveland, OH
- 10/23-24/14 Pittsburgh-Munich International Conference: Aging and Lung Disease: Clinical Impact and Cellular and Molecular Pathways; Aging and Lung Repair session; "Endothelial Cell Adaptation to Apoptotic Stress". Pittsburgh, PA
- 02/27/15 "Non-canonical Functions of Alpha 1 antitrypsin". 5th annual Sanford Rare Disease Symposium, Sioux Falls, SD
- 04/09/15 "Animal Models of Emphysema", 2nd Biennial International Research Conference on Alpha-1 Antitrypsin, Barga, Lucca, Italy
- 09/22/16 "The Role of Sphingolipids in Distinct COPD Phenotypes", Molecular Medicine of Sphingolipids International Conference, French Lick, IN
- 04/22/17 "The Updated Topics of COPD", Japanese Respiratory Society, International Symposium Speaker, Tokyo, Japan
- 05/21/17 ATS myth busters: one 'ome' to rule them all: we will find a common prime mover for pulmonary fibrosis; Scientific Symposium Presentation, Washington, DC
- 06/10/17 "Effects of household air pollution in Malawi and HIV status on respiratory symptoms and inflammation, injury and repair serum markers", Aspen Lung Conference, Aspen, CO
- 09/07/17 "Involvement of Cystic Fibrosis Transmembrane Conductance Regulator in Lung Endothelial Cell Barrier Dysfunction and Microvascular Damage from Cigarette Smoke", 2017 Grover Conference, Sedalia, CO
- 02/14/18 "Sphingolipid control of mitophagy and lysosomal degradation in lung cells", Gordon Research Conference, Galveston, TX
- 06/08/18 "Bioactive Lipids in the Pathogenesis of Airway Disease and Emphysema", Aspen Lung Conference, Aspen, CO
- 05/19/19 "Enhancing Grantsmanship: Understanding the Grant Review Process", ATS International Conference, Dallas, TX
- 05/20/19 "The Ceramide/Sphingosine-1-Phosphate Rheostat: Surviving Toxic Insult in the Lung", ATS International Conference, Dallas, TX
- 4/10/20 The Conference on World Affairs, 72nd edition, Our Health Post-Coronavirus: A New Frontier, University of Colorado, Boulder (virtual; [CWA YouTube channel](#))
- 8/5/20 "Introduction to Regenerative Lung Medicine", Symposium: Cellular plasticity and lung tissue bioengineering: novel approaches to advanced respiratory disease. ATS International Conference 2020. Virtual.

Chairing Conference Research Sessions:

- 05/2002 American Thoracic Society International Conference (ATS-IC); Poster Discussion Session Chair; Cell Surface Receptors and Adaptor Proteins in Signal Transduction
- 05/2003 ATS IC; Poster Discussion Session Chair; Lung Injury
- 05/2006 ATS IC; Poster Discussion Session Chair; To live or let die in the lung
- 05/2008 ATS IC; Co-chair Minisymposium; Physiology And Molecular Pathology Of

- 05/2014 Alpha-1 Antitrypsin And Related Serpins
Hidden Players In COPD: Gender, Environment, And Genes. ATS International Conference, San Diego, CA
- 2010 ATS IC; Co-chair Poster Discussion session "Proteinase and their inhibitors in inflammation and injury"
- 2010 ATS IC; Co-chair Poster Discussion session "Autophagy and Apoptosis: twin sons of a different mother?"
- 2011 ATS IC; Co-chair, Sphingolipid in Lung Diseases Symposium, Experimental Biology 2011; Washington DC
- 05/2012 Genomics, Metabolomics, And Epigenetics In Lung Disease: Late Breaking Abstracts; "Joe Rae Wright Scientific Breakthroughs Symposium: Biomarkers for lung disease: the cutting edge", ATS International Conference, San Francisco, CA
- 02/2013 Wells Center Neonatal - Pulmonary Pediatrics Research Retreat. Indianapolis, IN. Moderator.
- 10/2013 International Ceramide Conference. Session Chair "Translational Aspects of Sphingolipid Biology", Long Island, NY
- 05/2014 The Lancet/The Lancet Respiratory Medicine And The American Journal Of Respiratory And Critical Care Medicine. Reports On Recent Research On Asthma, Sepsis And Air Pollution. ATS International Conference, San Diego, CA
- 05/2014 Why So Stressed? Endoplasmic Reticulum, Protein Folding, And Oxidation In Lung Disease. ATS International Conference, San Diego, CA
- 05/2014 Hidden Players in COPD: Gender, Environment, and Genes. ATS International Conference, San Diego, CA
- 04/2017 57th JRS (Japanese Respiratory Society) Annual Meeting, Poster Discussion Session Chair "COPD 1", Tokyo, Japan.
- 05/2017 Moderator for Research Discussion III: Lung Metabolomics/Mitochondria, Flight Attendant Medical Research Institute, COPD Symposium, Miami, FL
- 05/2017 2017 ATS Conference, Scientific Symposium Co-Chair, The lung endothelium pro/con session: the key culprit in chronic lung disease, Washington, DC
- 06/2017 Moderator for the State-of-the-Art Session, "Global Tobacco Use: Old and New Products", Aspen Lung Conference; Aspen, CO
- 08/2017 2017 Lung Development, Injury & Repair Gordon Research Conference, Discussion leader and session chair "Regulating inflammation in the lung", Colby-Sawyer College, New London, NH
- 06/2018 Chair, 61st Annual Meeting, Aspen Lung Conference, "Translating Resilience and Pathogenesis to Personalized Therapy for COPD", Aspen, CO
- 05/2019 Chair of Major Symposium, "Till Death Do Us Part: Cell Fate and Obstructive Lung Disease", ATS International Conference, Dallas, TX

IV. Professional Societies and Honorary Societies

A. Professional Societies

- 1997-present Member, American Thoracic Society (ATS)
2004-2006 American Lung Association
2004-2006 Maryland Thoracic Society
2008-present Member, American Physiological Society

B. Honorary Societies

2012 - Present American Society of Clinical Investigation

V. Committee Participation and Other Service

A. NIH Study Sections

4/2005 NIH, NHLBI, Special Emphasis Panel/Scientific Review Group
2008 Ad-hoc grant review panel; NIH-NHLBI; Member Conflict Applications
2009 Co-chair, Special Emphasis Panel; NIH-NHLBI
2010 Co-chair, Center for Scientific Review; NIH-NHLBI; Special Emphasis Panel
2011; 2012 Ad-hoc grant review panel; NIH-NHLBI; PPG application
2011 Ad-hoc grant review panel; NIH-LIRR study section
2012 Ad-hoc grant review panel; NIH-LCMI study section
2013 Ad-hoc grant review panel; NIH-LIRR study section; UO1 study section.
2014-2020 Member, Lung Injury, Repair and Remodeling Study Section, CSR
2019 Participant, Anonymization Study, NIH, CSR
2020 Ad-hoc reviewer and Co-chair, NIH review panel CVRS-J11 panel for Small Business Innovation Research/Small Business Technology Transfer grants

B. Other Study Sections

2002 - 2003 American Lung Association Grants and Awards Subcommittee
2005 - 2010 James and Esther King Biomedical Research Program (Florida Biomedical Research Program) Review Group
11/06/2006 FAMRI, Flight Attendant Medical Research Institute, Peer Review Panel, Virginia
2007 - 2009 American Heart Association Grant Review Committee: Lung, Respiration Resuscitation
2008 - 2012 Grant Review Panel, ATS Scientific Advisory Committee
2008 Grant Reviewer for Research Training Fellowship, Wellcome Trust, London, UK
2008 Review panelist; FDA Site Visit review of research programs in the Laboratory of Plasma Derivatives
2009 Peer review, US Army Medical Research, DOD grants.
2010 German Research Foundation / Deutsche Forschungsgemeinschaft (DFG) Peer Review Panel
2010 Grant Review Panel for CTSI Review Committee and the Core Pilot Committee
2010 Reviewer for the Icelandic Centre for Research Grants
2010 Co-chair, American Heart Association Grant Review Committee: Lung Basic Science 2
2011 Chair, American Heart Association Grant Review Committee: Lung Basic Science 2
2011 Co-chair, American Heart Association Grant Review Committee: Lung Basic Science
2011; 2013 Italian Cystic Fibrosis Foundation Research Grant Reviewer
2013 -2016 Alpha-One Foundation Grants Advisory Committee Member/Reviewer
2020 - 2023 Scientific Council Member, Parker B. Francis Fellowship Program

C. Committees

Hospital Committees

2002 - 2004 Intern Selection Committee, Johns Hopkins University Bayview Medical Center
2003 - 2004 Educational Committee, Johns Hopkins University Bayview Medical Center

University/Institutional Committees

2004 - 2006 Johns Hopkins University Research Committee, Div. of Pulmonary and Critical Care
2006 - 2012 Pulmonary and Critical Care Fellowship Committee, Indiana University
2007 Health Information and Translational Sciences Committee, Indiana University
2007 - 2009 Member, Faculty Steering Committee, Indiana University School of Medicine
2007 - 2009 Member, Core Oversight Committee, Indiana University School of Medicine
2007 - 2015 Research Committee, IU School of Medicine Biomedical
2009 - 2010 Member, Faculty Search Committee, Department of Pediatric Pulmonology
2009 - 2015 Member, IU MD/PhD Program Steering/Admission Committee
2009 - 2015 Research Executive Committee, Student Research Program in Academic Medicine, Indiana University School of Medicine
2010 - 2015 Member, Department of Medicine Research Committee, Indiana University
2009, 2010 Review Panel, Core Equipment Applications, Indiana University School of Medicine
2010 - 2015 Member, Search Committee for Director of Center for Computational Biology and Bioinformatics, Indiana University School of Medicine
2011 Member, Faculty Development Committee, Indiana University School of Medicine
2011 - 2015 Advisory Board of the Office of the Vice President for Research, Indiana University
2011 - 2015 Grand Rounds Committee, Department of Medicine Indiana University
2011 - 2015 Member, Department of Medicine Executive Committee Indiana University
2012 Chair of the Research Frontiers Trailblazer Award Review Committee (IUPUI)
2012 Member, Transformative Research Initiative Group (School of Medicine)
2012 Promotion and Tenure Committee, Department of Medicine, IU
2012 VAMC Internal Nominating Committee for Research Awards
2012 - 2015 Member, Strategic Research Council, Indiana University School of Medicine/IU Health
2013 - 2016 University Medical Diagnostic Associates (UMDA), Board of Directors
2013 - 2015 Indiana Pediatric Scientist Award Program. Advisory Committee Member
2014 IACUC analysis subcommittee (IU School of Medicine)
2013 - 2015 Tobacco Prevention and Treatment Working Group, Leader
2015 - Present Grant Writing Workshop, National Jewish Health
2015 - Present Board Member, Cohen Asthma Institute, National Jewish Health
2015 - 2016 NIH/NHLBI T32/ F1 Planning Committee Member, University of Colorado
2015 - Present Academic/Research Compensation Plan Committee, National Jewish Health
2016 - Present Faculty Promotions and Tenure Committee, Univ. of Colorado School of Medicine
2016 - Present External Reviewer, Johns Hopkins Multidisciplinary Training Program
2017 - Present Member, Center for Lung Biology External Advisory Committee, Univ. of Washington
2017 - Present External Advisory Board Member, Pulmonary T32, University of Washington
2017 - Present External Advisory Board Member, Pulmonary T32, University of Illinois at Chicago
2017 - 2018 Lung Transplant Director, Search Committee, University of Colorado
2017 - 2019 Research Advisory Committee, Pulmonary T32, University of Colorado
2019 - Present Internal Advisory Committee, Nephrology T32, University of Colorado
2020- Present Chair, Emergency COVID Clinic Operations Subcommittee, National Jewish Health
2020- Present Member, COVID Emergency Operations Center, National Jewish Health
2020- Present Lead, Roll out of COVID Acute Respiratory Clinic, National Jewish Health
2020- Present Lead, Roll out of COVID Respiratory Recovery Clinic, National Jewish Health

National Committees

2001 - 2002 ATS, Training Committee
2001 - 2002 ATS, Pulmonary Circulation Assembly Planning Committee
2004 - 2005 Maryland Thoracic Society, Nominating Committee Member
2004 - 2006 American Lung Association, Research Coordinating Committee Member
2005 - 2006 ATS, Research Strategy Group
2007 - 2012 ATS, Assembly on Respiratory Cell and Molecular Biology Program Committee
2007 - 2009 ATS, Publications Policy Committee

2008 - 2011	ATS, Education Committee
2008 - 2012	ATS, Scientific Advisory Committee
2012	Chair Appointee, ATS International Conference Committee
2013 - 2014	ATS, Awards Committee
2013 - 2015	Chair, ATS International Conference Committee
2016 - 2020	ATS, Assembly on Respiratory Cell and Molecular Biology, Executive Committee
2013 - 2015	ATS Exhibitor Advisory Committee
2013 - 2015	ATS, Board of Directors
2013 - 2014	ATS, Finance Committee
2015 - 2016	ATS, Planning Committee
2015 - Present	Thomas Petty Aspen Lung Conference, Local Steering Committee
2015	Pulmonary Trials Cooperative DSMB Member and NHLBI Program Staff RCAP Panel, NASA
2016 - 2020	ATS, International Conference Committee, IC Advisory Group
2017 - 2020	ATS, Finance Committee
2018 - 2019	ATS, Awards Committee
2018 - 2020	ATS, Nominating Committee
2019 - 2020	Respiratory Innovation Summit, Advisory Board
2019 - 2020	ATS, President Elect, Division Directors Group
2020 - Present/2023	Council Member of Scientific Advisors, Parker B. Francis Fellowship Program
2020 - 2021	Chair, RCMB Planning Committee, ATS
2020 - 2021	Chair, RCMB Science Core, ATS
2020 - 2021	ATS, President, Association of Pulmonary Critical Care and Sleep Division Directors

D. Community Service

2007	Alpha-One Foundation Support Group, Patient education lecture, Indianapolis, IN
2014	American Lung Association, COPD; Alpha-1 antitrypsin patient education
2015	Alpha-One Foundation Support Group, Denver, CO
2017 - Present	Team Phenomenal Hope Athlete

F. Consultantships

2001-2005	Medical Care Ombudsman Program MCMC, Reviewer
2008-Present	Alpha-1 Foundation Tissue Bank Advisory Committee
2011	Biomet Inc, Consultant (paid)
2011 (June)	Glaxo Smith Kline: consultant (paid)
2012	Co-founder Emphymab, Inc
2016	Scientific co-founder: Allinaire, Inc. (former Emphymab)
2020	Ceramedix, Inc., Consultant; Allinaire Consultant

VI. Patents

2008	"Method for Diagnosing and Treating Emphysema", US Patent # 8,486,405 issued on July 16, 2013 (EMAP II-related)
2009	"Materials and Methods for Using Adipose Stem Cells to Treat Lung Disease", IURTC Provisional Patent Application 9995-0127, US 20120100112
2017	"Monoclonal Antibody and Antigens for Diagnosing and Treating Lung Disease and Injury", US Patent # 10,450,371 issued on October 22, 2019

VII. Teaching Activities

A. Coursework and Lecturing

03/2001	Classroom Instructor, Shock Module, Johns Hopkins University School of Medicine
08/2002	CME Instructor, Fourth Annual Update in Pulmonary and Critical Care Medicine, Johns Hopkins University, Baltimore, MD
01/2003	Classroom Instructor, the Physical Examination of the Respiratory System, Johns Hopkins University School of Medicine
12/2003	CME Instructor, Management of the COPD patient: exploring novel treatment approaches. Center for Healthcare Education and Duke University, Newark, NJ
07/2005	CME Instructor, Seventh Annual Update in Pulmonary and Critical Care Medicine. Johns Hopkins University, Baltimore, MD
03/2004	Co-director, COPD Preceptorship at Johns Hopkins University
09/2004	Invited Speaker, Seminar for Career Development at the Division of Intramural Research; National Heart Lung and Blood Institute
10/2008	Panelist for IUSOM Women in Medicine and Science
02/2015	Invited Speaker, Division of PCCM Fellow and Faculty Research Retreat, University of Pittsburgh, UPMC, PA

A. Formal Advisory Role

Summer Students

06/2003-08/2003	Research advisor to Carrie Bellfield, Undergraduate Student; T35 Summer Research program.
05/2004-08/2004	Research advisor to Jarrett Skirball, Undergraduate Student at NYU. Currently MD, Anesthesia
06/2004-08/2004	Research advisor to Raymond Reiser, Undergraduate Student; T35 Summer Research program. Currently MD, Gen Med
05/2008-08/2008	Research mentor to Besem Betek, Medical Student; T35 Summer Research program
06/2008-08/2008	Research mentor to Martin Munoz, Undergraduate student, currently IU medical student
06/2009-08/2009	Research mentor to Dorothy Ndishababandi, Undergraduate student. Cellular Physiology T35 Summer Research program.
06/2009-08/2009	Research mentor to Kevin Wang, Carmel High School graduate. Current MD.
06/2011-08/2011	Research mentor to Steven Chen, Carmel High School graduate. Current MD, PhD
06/2011-08/2011	Research mentor to Maddy Miller, Fishers High School graduate. SEED program
06/2011-08/2011	Research mentor to Tsungai J Chingombe, Bridges to Baccalaureate Program
06/2012-08/2012	Research mentor to Phuong (Wendy) Nguyen, Franklin Central High School senior. SEED program
06/2012-08/2012	Research mentor to Michael Blakely, Purdue University. Current PhD BME.
06/2012-08/2012	Research mentor to Obed Nyarenchi, Medical Student IU, SPRAM Summer Research program
06/2013-08/2013	Research mentor to Milan Patel, Medical Student IU, SPRAM Summer Research program; Recipient of the Dean's Office Medical Student Travel Fund to attend the 11th Annual AMA Research Symposium, Maryland
06/2013-07/2013	Research mentor to Miriam Qureshi. Submitted and presented poster at the 2013 Annual Biomedical Research Conference for Minority Students (ABRCMS), Nov 14 2013
2016-2017	Research mentor for Amar Gill, Undergraduate student enrolled in University of Colorado – Denver, BS/MD program
06/2019-08/2019	Alexandra (Lexi) Ringsby, Undergraduate student, UC Berkeley

Undergraduate and Graduate Students

- 06/2001-06/2002 Research advisor to Sarah Ramirez, Undergraduate Student, who then was accepted as medical student at Ross University; currently MD
- 06/2006-07/2007 Co-research advisor to Carol Hargreaves, Undergraduate Student Indiana University
- 03/2008-05/2008 Peer and Self Assessment Program for Indiana University School of Medicine, MS I – MS II (4/2008 Christopher Muth, MS II, IUSM Peer and Self Assessment Program; 4/2008 Mark Awad, MS I, IUSM Peer and Self Assessment Program; 4/2008 Kimbre Vogel, MSI, IUSM Peer and Self Assessment Program)
- 03/2008-12/2012 Research mentor and Head of Thesis Advisory Committee for Krzysztof Kamocki, PhD graduate student, Department of Biochemistry and Molecular Biology Indiana University; Graduated with PhD. He was then a postdoctoral fellow at IU School of Dentistry.
- 06/2009-09/2010 Research mentor to Osato Ogbeifun, Undergraduate student. School of Sciences Bridges to Baccalaureate Summer Research Program; Indiana University. Received abstract prize at the 2010 Annual Biomedical Research Conference for Minority Students; Accepted to Medical School.
- 2009-12/2012 Research advisor to Jie Xie, Graduate Student, Department of Cellular and Integrative Physiology Indiana University (Mentor: K March); Thesis Advisory Committee member; recipient of AHA predoctoral award 2010. Jie went on to a Postdoctoral fellowship, IUPUI 2009- 2013
- Research advisor to Meng Chen, Graduate Student, Department of Cellular and Integrative Physiology Indiana University (Mentor: Paul Herring), Thesis Advisory Committee member. Meng went for a postdoc at UCSF
- 02/2011-04/2011 Research mentor to Linlin Xu, Biomedical Gateway Program (Research Rotation) Indiana University
- 2010-2011 Research mentor to Kreyl Henderson, IUPUI Life-Health Sciences Internship Program Indiana University
- 10/2011-12/2011 Research mentor to Esther Bolanis, Biomedical Gateway Program (Research Rotation) Indiana University
- 04/2012-05/2013 Thesis Advisory Committee member Cristina Bardita, Rush University, Chicago, IL. Cristina is currently a resident in Internal Medicine at Rush.
- 2012-2013 Research mentor and Head of Thesis Advisory Committee for Matthew J. Justice, MS graduate student, Department of Biochemistry and Molecular Biology. Matt remained in the lab for a PhD degree.
- 2013-2015 Research advisor to Pankita Pandya, Graduate Student, Department of Micro-Immunology Indiana University (Mentor: David Wilkes), Thesis Advisory Committee member. Pankita went on for a postdoc at IU.
- 2013-2015 Advisor to Dr. Hannah Jary, Respiratory Specialty Trainee, Welcome Trust Clinical PhD Fellow.
- 2014-2017 Research mentor and Head of Thesis Advisory Committee for Matthew J. Justice, PhD graduate student, Department of Biochemistry and Molecular Biology, Indiana University. Matt was on a T32 and then received an individual F31 training grant. Currently teaching HS.
- 2014-2019 Research mentor and Head of Thesis Advisory Committee for Kevin Ni, MD-PhD graduate student, Department of Biochemistry and Molecular Biology, Indiana University. Kevin was on a T32 and then received an individual F30 NRSA training grant (NHLBI) for his acute lung injury research. Current MD training.
- 2014-2020 Research mentor and Head of Thesis Advisory Committee for Danting Cao, PhD graduate student, Transferred from the Department of Biochemistry and Molecular Biology at Indiana University to the Pharmacology Graduate Program,

University of Colorado in Denver. Danting received a predoctoral AHA grant and then a University of Colorado award for training in miRNA research.

2019-2020
2020

Peter Huang, Medical Student, Lab research rotation.
Amar Gill, Medical Student, Research rotation mentor.

Residents (Research Electives Supervisor)

09/2007 Research advisor to Jennifer Shuherk-Shaffer, Indiana University Medicine Resident, accepted as pulmonary fellow to Washington University

04/2008-05/2008 Research advisor to Courtney Rowan, Pediatrics Resident Indiana University

07/2008-08/2008 Research advisor to Joud Hajjar, MD IU Medicine Resident. Accepted as Allergy fellow to Virginia University. Currently, faculty in TX.

07/2008-08/2008 Research advisor to Hadi Hatoum, MD, IU Medicine Resident; Winner of the IU Resident's Research Abstract Competition 2009, accepted as Pulmonary fellow to Southwestern Univ, TX. Currently faculty in FL.

05/2009-06/2009 Research advisor to Randy Hunt, MD; IU Medicine resident; Winner of the IU Resident's Research Abstract Competition 2010, accepted as Pulmonary fellow to Emory Univ.

07/2009-06/2010 Faculty advisor to Joseph Davis, MD, IU Medicine Resident;

07/2009-08/2009 Research mentor to Sam Kimani, IU Medicine Resident, accepted as Pulm fellow to Indiana Univ.

08/2009-09/2009 Research mentor to Bilal Safadi, IU Medicine Resident; Finalist of the IU Resident's Research Abstract Competition 2010; accepted as Pulm fellow to Indiana Univ.

10/2010-11/2010 Research mentor to Kelli McCauley, MD, IU Medicine Resident, accepted as ID fellow to Univ. of Cincinnati

11/2010-12/2010 Research mentor to Joshua Smith MD, IU Medicine Resident, accepted as Pulm fellow to Indiana Univ.

12/2010-08/2011 Research mentor to Tom Leece MD, IU Medicine Resident.

08/2011-09/2011 Research mentor to Nathaniel Little, MD, IU Medicine Resident, accepted as Pulm fellow to Univ. of Colorado.

12/2011-01/2012 Research mentor to Houssam Oueini, MD, IU Medicine Resident, accepted as Pulm fellow to Indiana Univ.

02-03/2011 Research mentor to Yazen Beddawi, MD, IU Medicine Resident; Finalist of the IU Resident's Research Abstract Competition 2012 (second place).

08/2012 Research mentor to Sheila Krishnan, MD, IU Medicine Resident (Finalist of the IU Resident's Research Abstract Competition 2013 (3rd place); Presented abstract at ATS Philadelphia May 2013; accepted as Pulm fellow to Indiana Univ.

04-05/2013 Research mentor to Amber Janelle Oberle, MD, IU Medicine Resident, accepted as Pulm fellow to Indiana Univ.

02/2014-07/2014 Research mentor to Ashvini Damodaran, MD, IU Medicine Resident, accepted as Pulm fellow UIC, Chicago.

01/2016-06/2016 Research mentor to Charles Kim, MD, Univ. of Colorado, Internal Medicine Resident

02/2018 Clinical mentor to Marcelo Ferreira Nogueira, MD, UFCSPA / Santa Casa de Misericórdia Hospital, Porto Alegre, Brazil, Pulmonology Resident

Postgraduate

06/2006-06/2008 Primary research advisor/mentor to Julie Noe, MD Clinical Fellow, Indiana University; awarded CFF fellowship award; recruited as Assistant Professor at MCW, Milwaukee

06/2006-06/2010 Primary research advisor/mentor to Daniela Petrusca, PhD Postdoctoral Fellow,

	Indiana University; awarded AHA postdoctoral fellowship; ALA research grant; recruited Associate Research Professor, IU School of Medicine
07/2006-06/2008	Primary research advisor/mentor to Sadaf Sohrab, MD Clinical Fellow, Indiana University; currently in private practice
08/2007-06/2009	Primary research advisor/mentor to Ninotchka Sigua, MD Clinical Fellow, Indiana University; Winner of the IU Fellow's Research Abstract Competition 2009, recruited as Assistant Professor at IU School of Medicine
08/2007-03/2008	Primary research advisor/mentor to Khalil Diab, MD Clinical Fellow, Indiana University; Assistant Professor at IU School of Medicine; currently Clinical Faculty, Beirut University, Lebanon.
10/2008-06/2015	Primary research advisor/mentor to Angelia Lockett, PhD Postdoctoral Fellow, Indiana University; Awarded ATS and EB minority travel awards 2009, Alpha One travel award 2010, T32 and Alpha One postdoctoral grant; awarded NHLBI Diversity Admin supplement; Assistant Research Professor at IU (Dept of Cell and Integrative Physiology), now in the Department of Medicine.
03/2010-06/2011	Primary research advisor/mentor to Mary Beth Brown, PhD Postdoctoral Fellow, Indiana University; Awarded ATS PA proof of concept award; received tenure as Associate Professor, IUPUI, School of Health and Physical Sciences, now Assoc. Prof. at Univ. of Washington
08/2010-06/2012	Primary research advisor/mentor to Jag Reddy, MD Clinical Fellow, Indiana University; currently in private practice, Fort Worth, TX
07/2011-06/2013	Primary research advisor/mentor to Karina Serban, MD Clinical Fellow, Indiana University; Awarded Chest-Alpha One postdoctoral research grant; Assistant Professor IU School of Medicine and then at National Jewish Health, Denver, CO
09/2011-12/2013	Primary research advisor/mentor to Samin Rezania, PhD Postdoctoral Fellow, Indiana University; T32 trainee; Awarded AHA Postdoctoral Fellowship; Assistant Research Professor IU School of Medicine, Dept of Emergency Medicine; currently in Industry/Biomedical Field.
07/2011-06/2013	Primary research advisor/mentor to Charlie McCaslin, MD, Clinical Fellow (Pediatrics; Pulmonary), Indiana University; recipient of a CFF research fellowship award 2012-2013. Private practice, Grand Rapids, MI, currently St. Petersburg, Florida.
08/2015-07/2017	Primary research advisor/mentor to Kengo Koike, MD PhD, Postdoctoral Fellow National Jewish Health and the Univ of Colorado; recipient ALA research award; Currently Assistant Professor NJH.
07/2016-06/2018	Research mentoring committee member for Victor Tseng, MD; Pulmonary Fellow; T32 trainee, Univ of Colorado.
08/2016-10/2017	Research mentoring committee member for Bridget Graney, MD; Pulmonary and Critical Care Fellow, Univ of Colorado.
10/2016-06/2018	Research mentoring committee member for Andrew Levy, MD; Pulmonary and Critical Care Fellow, Univ of Colorado.
12/2017-01/2019	Primary research advisor/mentor to April Scruggs, PhD; Postdoctoral Fellow National Jewish Health. Currently retired.
10/2016-2020	Research mentoring committee member for Joseph Hippensteel, MD; Pulmonary and Critical Care Fellow, Univ of Colorado.
10/2016-Present	Research advisory committee member for Peter K. Moore, MD Pulmonary and Critical Care Fellow, Univ of Colorado.
07/2019-Present	Primary research advisor/mentor to Khushboo Goel, MD, Clinical Fellow; University of Colorado, T32-Fellow

Junior Faculty

2010-2014	Research mentor to Daniela Petrusca, PhD Junior Faculty, Research Associate
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	IU School of Medicine
2009-2015	Research mentor to Tim Lahm, MD, Assistant Professor, IU School of Medicine
2011-2012	Mentoring committee member for Shadia Jalal, MD, Assistant Professor, Hematology Oncology, IU.
2011-2015	Research mentor to Mary Beth Brown, PhD, IUPUI, School of Health Sciences.
2012-2015	Mentoring committee member for Jie Sun, PhD, Assistant Professor, Department of Pediatrics, IU.
2012-2015	Research mentor to Catherine Sears, MD, Assistant Professor, IU School of Medicine
2013-Present	Research mentor to Karina Serban, MD Assistant Professor, IU School of Medicine; Assistant Professor, National Jewish Health
2016-2020	Scientific advisory committee member for Stavros Garantziotis, MD, Medical Director, Clinical Research Unit, National Institute of Environmental Health Sciences
2017-2019	Primary research advisor/mentor to Kengo Koike, MD PhD, Instructor, then Assistant Professor of Medicine, NJH
2018-2020	Research Mentoring Committee Member for Sunad Rangarajan, MD, Assistant Professor, UCD-AMC

C. Clinical Teaching

2000 - 2006	Attending, Sarcoidosis Clinic, Medical Intensive Care Unit, and Pulmonary and Consult Services Johns Hopkins University School of Medicine
2006 - 2015	Supervising Attending, Medical Intensive Care Unit, and Pulmonary and Consult Services, Indiana University School of Medicine

D. Training Grant Participation

07/2008-06/2015	Participating program faculty on the T32 Training Grant in Immunology and Infectious Diseases Indiana University School of Medicine (PI Janice Blum)
01/2009-06/2015	Participating program faculty on the T32 Training Grant in Vascular Diseases Indiana University School of Medicine (PI Keith March)
2009-2014	Co-director and program faculty on the T32 Training Grant in Lung Immunobiology, Indiana University School of Medicine (PI David Wilkes)
03/2012-06/2015	Program faculty and Executive Committee Member on the T35 HL110854-01 Short-term Training Program in Biomedical Sciences Indiana University School of Medicine (PI Nadia Carlesso)
02/2015-06/2015	Director and Program Faculty on the T32 Training Grant in Lung Immunobiology Indiana University School of Medicine (PI Irina Petrache)
01/2016-Present	Program Faculty on the T32 Training Grant in Pulmonary and Critical Care Medicine, University of Colorado, Denver (PIs Marvin Schwartz/ David Schwartz)
01/2018-2019	Member, Research Oversight Committee, T32 Training Grant in Pulmonary and Critical Care Medicine, University of Colorado, Denver (PIs Marvin Schwartz / David Schwartz)
2019-Present	Co-Director T32 Training Grant in Pulmonary and Critical Care Medicine, University of Colorado, Denver (MPIs David Schwartz/Irina Petrache/Peter Henson)

E. Quantitative Assessment

2007-2008	Educational RVU 205.03, Department Average 147.31
2008-2009	Educational RVU 166.30, Department Average 148.75
2009-2010	Educational RVU 152.55, Department Average 143.68
2010-2011	Educational RVU 164.82, Department Average 95.83
2011-2012	Educational RVU 203.58, Department Average 119.85
2012-2013	Educational RVU 233.93, Department Average 114.59

VIII. Research Grant, Fellowships, and Awards

A. Current Support:

2004-2021	2R01 HL077328-12 NHLBI Title: Ceramide-Induced Lung Destruction in Emphysema Role: Principal Investigator
2011-2021	2R01 HL109517-06 NHLBI Title: Hif-1 alpha metabolically reprograms recruited alveolar macrophages to promote lung repair Principal Investigator: Bill Janssen Role: Co- Principal Investigator
2018-2022	1R01HL144396-01 NHLBI Title: Immunosuppressive injurious effects of e-cigarettes on human lung parenchyma Principal Investigators: Hong Wei Chu and Irina Petrache Role: Co- Principal Investigator
2019-2024	NIH 1K08HL141770 Title: Mannose binding lectin-development complement activation in emphysema Principle Investigator: Karina Serban Role: Mentor
1975-2025	T32HL007085-46 Multidisciplinary Research Training in Respiratory Disease Henson/Petrache/Schwartz (Multi-PI) Role: Co- Principal Investigator
2020-2022	American Lung Association ETRA 736704 Title: Novel risk factors for severe COVID-19 lung disease Role: Principal Investigator

B. Previous Funding:

1998-1999	National Research Scientific Award Title: Oxidant Stress-Induced Apoptosis: Role of heme oxygenase PI: Irina Petrache
2000-2005	K08 Mentored Clinician Scientist Award Title: Cytoskeletal Regulation of Endothelial Cell Apoptosis PI: Irina Petrache
2002-2008	Program Project Grant Title: Cytoskeletal Regulation of Lung Endothelial Pathobiology. Project 1- Regulation of lung pathology by endothelial cell MLCK Role Co-Investigator; PI: Joe G. N. Garcia
2003-2005	American Thoracic Society/Alpha-1 Foundation Research Grant Title: Ceramide Upregulation: An Amplifying Mechanism of Lung Apoptosis PI: Irina Petrache
2004-2006	American Lung Association Research Grant

- 2006-2009
Title: The Role of Oxidative Stress in Ceramide-Induced Pulmonary Cell Apoptosis and Emphysema
PI: Irina Petrache
FAMRI Award
- 2007-2008
Title: Smoking Impairs α 1-Antitrypsin's Pro-Survival Effect in the Lung.
PI: Irina Petrache
CF Foundation Clinical Fellowship Grant
- 2007-2009
Title: The Effect of Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) on Programmed Cell Death in Lung Endothelium
Role: Mentor; PI: Julie Noe
Research Grant/Quark Biotech, Inc.
- 2007-2012
Title: The Role of RTP 801 in Ischemia Reperfusion Lung Injury
Role: Co-Investigator; PI: David Wilkes
NIH P50 HL 084945 SCCOR
- 2008-2009
Title: Mechanisms and Treatment of COPD Progression
PI of Project 1: Irina Petrache; Overall PI: Robert Wise
Signature Center Grant/IUPUI-Center for Membrane Biosciences
- 2008-2010
Title: Ceramide Inhibits Apoptotic Cell Clearance by Affecting Cell Membrane Fusion
Role: Co-Principal Investigator; PIs: I. Petrache, H. Petrache, S. Wassal
NIH R03
- 2008-2010
Title: Signaling Sphingolipids in COPD
Role: Co-Investigator; Co-PI: Berdyshev and Petrache
American Heart Association Grant-in-aid (relinquished).
- 2008-2010
Title: Lung Emphysema and Endothelial Cell Apoptosis: Involvement of EMAP II.
Role: Co-Investigator; PI: Matthias Clauss
American Heart Association
- 2008-2010
Title: Effect of Ceramides on Apoptotic Cell Clearance (efferocytosis).
Role: Mentor; PI: Petrusca, Daniela
Signature Center Grant CVBM/CARD
- 2008-2011
Title: Vascular and Cardiac Center for Adult Stem Cell Therapy
Role: Co-Investigator; PI: Keith March
VA Merit, Veterans Affairs
- 2008-2013
Title: Novel protective functions of alpha 1-antitrypsin against emphysema
PI: Irina Petrache
NIH 2-PI RO1 HL090950 (no cost extension)
- 2008-2020
Title: EMAP II, A Molecular Link of Inflammation and Apoptosis in Pulmonary Emphysema
Role: Co-Principal Investigator; PIs: Irina Petrache and Matthias Clauss
NIH 2 T32 HL091816 Training Grant
- 2009-2010
Title: IU Training Program in Molecular Physiology and Clinical Mechanisms of Lung Disease
Role: Principal Investigator/Director; Relinquished in 2015 due to relocation
IUPUI, Multidisciplinary Undergraduate Research Institute (MURI) Grant
- 2009-2010
Title: Interaction of Glycoproteins with Membranes and with Ion Channels
Role: Co-Principal Investigator; Co-PIs: H. Petrache, I. Petrache, S. Wassal
IUPUI, Research Support Funds Grant
- 2009-2011
Title: *In vivo* Determination of the Role of Estrogen receptor Beta in Estradiol-Mediated Protection from Hypoxic Pulmonary Hypertension
Role: Co-Investigator; Principal Investigator: Tim Lahm
VA Young Investigator Award
- 2009-2011
Title: Noncanonical Estrogen Mechanisms to Reverse Hypoxia-Induced Pulmonary Endothelial Cell Activation

- 2010-2012 Role: Collaborator/Mentor; Principal Investigator: Tim Lahm
NIH/NHLBI R21 DA 029249
Title: Molecular Mechanism of Alveolar Injury Caused by Cigarette Smoke
PI: Irina Petrache
- 2010-2012 Alpha-1 Foundation 01-56349
Title: Mechanism of Interaction of Alpha-1 Antitrypsin with Lipid Membranes
PI: Irina Petrache
- 2010-2012 Alpha-1 Foundation
Title: Receptor Mediated Endocytosis of A1AT in Lung Endothelial Cells
Role: Mentor, PI: Fellow, Angelina Lockett, PhD
- 2010-2014 BSF United States-Israel Binational Science Foundation
Title: Role of Ceramide Synthase 2 (CerS2) in Cigarette Smoke-Induced Lung Epithelial Cell Death
Role: Co-Principal Investigator; PIs: Irina Petrache and Anthony Futerman
IUPUI Office of Vice Chancellor Research, Funding Opportunities for Research Commercialization and Economic Success (FORCES)
Title: Demonstrating the Therapeutic Potential of a Humanized Monoclonal Antibody in a Mouse Model of Emphysema
PI: Irina Petrache
- 2012-2013 NHLBI/SBIR R43 HL 110511
Title: Humanization of a Novel Monoclonal Neutralizing Antibody for Treating Emphysema
Role: Co-Investigator/Emphymab co-founder, PI: Petrusca, Daniela
- 2012-2013 Cystic Fibrosis Foundation Fellowship Award
Title: Impact of Biofilm-forming Pseudomonas Aeruginosa on Neutrophil Clearance
Role: Primary Mentor, PI: Charles McCaslin, MD
- 2012-2016 VA Merit, Department of Defense
Title: Optimizing Vascular Protective Effects of Antitrypsin in COPD
Role: PI: Petrache; Relinquished in 2015 due to relocation
- 2014-2016 Harrington Discovery Institute: Harrington Scholar-Innovator Grant
Title: Therapeutic development against emphysema progression.
PI: Irina Petrache
- 2015-2016 National Emphysema Foundation
Title: Non-antibiotic sphingolipid targeted antibacterial approach to reduce airway infection in COPD
PI: Irina Petrache
- 2011-2016 R01 NIH HL 105772-2PI
Title: Direct and Bone-Marrow Mediated Effects of Adipose Stem Cells in Emphysema
- 2014-2016 R56 NIH 1R56 HL 125043
Title: Endothelial mechanisms of impaired lung gas exchange by HIV
Total direct cost: \$ 559,790
Role: Co-Principal Investigator, Co-PIs: Irina Petrache (IU); Kristina Crothers (U of Washington) and Lynn Schnapp (MUSC)
- 2014-2017 Gordon Snider Scholar Award
Title: Endothelial-Monocyte Interactions Modulated by A1AT
Role: Mentor; Principal Investigator: Karina Serban
- 2016-2017 T32HL091816 NIH
IU Training program in molecular physiology and clinical mechanisms of lung disease
Role: Mentor; Principal Investigator: Kevin Ni

- 2018 RHL142192-01
Aspen Lung Conference on COPD: Translating Resilience and Pathogenesis to Personalized Therapy for COPD
PI: Irina Petrache
- 2018 Alpha-1 Foundation Grant
Aspen Lung Conference on COPD: Translating Resilience and Pathogenesis to Personalized Therapy for COPD
PI: Irina Petrache
- 2016-2018 Alpha-1 Fund AAT-Fc
Title: The Effect of AAT-Fc in Experimental Emphysema
Role: Co-Investigator; Principal Investigator: Katsuyuki Takeda
- 2016-2018 6R43 HL127873-02 NHLBI
Title: Development of A Fully Humanized Antibody for Treating Lung Emphysema
Principal Investigator: Clauss
Role: Co-I
- 2017-2018 ALA-Biomedical Research Grant
Title: The role of glycosphingolipid metabolism in determining pulmonary endothelial cell fate
Principal Investigator: Kengo Koike
Role: Mentor
- 2016-2018 16PRES3130015 AHA
Title: Function of Pulmonary Endothelial Exosomal miRNAs Release by Smoking
Role: Mentor; Principal Investigator: Danting Cao
- 2018-2019 NJH Medicine Office of Research Microgrant
Title: Cellular and molecular determinants of pulmonary vascular remodeling in cigarette smokers
Principle Investigators: Bill Janssen and Irina Petrache
Role: Co-PI
- 2018-2019 RHL 142192-01
Aspen Lung Conference on COPD
Translating Resilience and Pathogenesis to Personalized Therapy for COPD
PI: Irina Petrache

IX. Bibliography

A. Peer-Reviewed Scientific Articles

1. **Petrache I**, Chin BY, Choi ME, and Choi AMK. MAPK pathway mediates hyperoxia-induced apoptosis in cultured macrophage cells. *Amer J Physiol (Lung Cell Mol Physiol)* 1999 Sep; 277: L589-95. PMID 10484467
2. Chin BY, **Petrache I**, Choi AMK, and Choi ME. Transforming growth factor beta1 rescues serum deprivation-induced apoptosis via the mitogen-activated protein kinase (MAPK) pathway in macrophages. *Journal of Biological Chemistry* 1999 Apr 16;274(16):11362-8. PMID 10196228
3. **Petrache I**, Otterbein LE, Alam J, Wiegand GW, and Choi AMK. Heme oxygenase-1 inhibits tumor necrosis factor α -induced apoptosis in cultured fibroblasts. *Amer J Physiol (Lung Cell Mol Physiol)* 2000; 278(2): L312-9. PMID 10666115.
4. **Petrache I**, Verin AD, Crow MT, Birukova A, Liu F, and Garcia JGN. Differential effect of MLC kinase in TNF- α -induced endothelial cell apoptosis and barrier dysfunction. 2001. *Amer J Physiol (Lung Cell Mol Physiol)*. Jun; 280(6): L1168-78. PMID 11350795.
5. **Petrache I**, Birukova A, Ramirez SI, Garcia JGN, and Verin AD. The role of the microtubules in TNF- α -induced endothelial cell permeability. 2003. *American Journal of Respiratory Cell and Molecular Biology*. May;28(5):574-81. PMID 12707013.

6. **Petrache I**, Birukov KG, Zaiman AL, Deng H, Crow MT, Wadgaonkar R, Romer LH, Garcia JGN. Caspase-dependent cleavage of myosin light chain kinase (MLCK) is involved in TNF-alpha-mediated bovine pulmonary endothelial cell apoptosis. 2003. *FASEB J*. Mar;17(3):407-16. PMID 12631580.
7. **Petrache I**, Neuss M, Crow MT, and Garcia JGN. 2003. Central involvement of Rho family GTPases in TNF-alpha-mediated bovine pulmonary endothelial cell apoptosis. 2003. *Biochemical and Biophysical Research Communications*. Jun 20;306(1): 244-9. PMID 12788095.
8. Rangasamy T, Cho CY, Thimmulappa RK, Zhen L, Srisuma SS, Kensler T, Yamamoto M, **Petrache I**, Tuder RM, and Biswal S. Genetic ablation of Nrf2 enhances susceptibility to cigarette smoke-induced emphysema in mice. 2004. *Journal of Clinical Investigation*. Nov;114(9):1248-59. PMC524225. PMID 15520857
9. **Petrache I**, Natarajan V, Zhen L, Medler TR, Richter AN, Cho C, Berdyshev, EV, Hubbard WC, and Tuder RM. Ceramide upregulation causes pulmonary cell apoptosis and emphysema. 2005. *Nature Medicine*. May;11(5):491-8. PMC1352344. PMID 15852018.
10. Wagner E, **Petrache I**, Schofield B, and Mitzner W. Pulmonary ischemia induces lung remodeling and angiogenesis. 2006. *Journal of Applied Physiology*. Feb;100(2):587-93. PMID 16210444.
11. **Petrache I**, Fijalkowska I, Zhen L, Medler TR, Brown, E, Cruz P, Choe K-H, Laimute Taraseviciene-Stewart L, Scerbavicius R, Shapiro, L, Zhang B, Song S, Hicklin D, Voelkel N, Flotte T, and Tuder RM. A novel anti-apoptotic role for alpha-1 antitrypsin in the prevention of pulmonary emphysema. 2006. *American Journal of Respiratory and Critical Care Medicine*. Jun 1;173(11):1222-8. PMC2662968. PMID 16514110
12. **Petrache I**, Fijalkowska I, Medler TR, Skirball J, Cruz P, Zhen L, Petrache HI, Flotte T, and Tuder RM. Alpha-1 antitrypsin inhibits caspase-3 activity, preventing lung endothelial cell apoptosis. 2006. *American Journal of Pathology*. Oct;169(4):1155-66. PMC1780181. PMID 17003475.
13. Tuder RM, Yoshida T, Fijalkowska I, Biswal S, **Petrache I**. Role of lung maintenance program in the heterogeneity of lung destruction in emphysema. 2006. The Proceedings of American Thoracic Society. Nov;3(8):673-9. PMC2647653. PMID: 17065372.
14. Tuder RM, Yoshida T, Arap W, Pasqualini R, **Petrache I**. State of the art. Cellular and molecular mechanisms of alveolar destruction in emphysema: an evolutionary perspective. *Proc Am Thorac Soc*. 2006;3(6):503-10. PMC2647641. PMID: 16921129.
15. **Petrache I**, Stephens RS, Diab K, Knox KS, Twigg III HL, Flores S, Tuder RM. HIV- associated pulmonary emphysema. A review of the literature and inquiry into its mechanism. *Thorax*. 2008 May;63(5): 463-9. PMID 18443163.
16. Medler TR, Petrusca DN, Lee PJ, Hubbard WC, Berdyshev EV, Skirball J, Kamocki K, Schuchman E, Tuder RM, **Petrache I**. Apoptotic sphingolipid signaling by ceramides in lung endothelial cells. 2008. *American Journal of Respiratory Cell and Molecular Biology*. Jun;38(6): 639-46. PMC2396244. PMID 18192502.
17. **Petrache I**, Medler TR, Amy T, Richter, Kamocki K, Chukwueke U, Zhen L, Gu Y, Adamowicz J, Schweitzer KS, Hubbard WC, Berdyshev EV, Lungarella G, and Tuder RM. Superoxide dismutase protects against apoptosis and alveolar enlargement induced by ceramide. 2008. *American Journal of Physiology (Lung Cell Mol Physiol)*. Jul;295(1):L44-53. Epub 2008 Apr 25. PMC2494787. PMID: 18441093.
18. Lahdenranta J, Giordano RJ, Zhen L, Chukwueke U, **Petrache I**, Langley RR, Fidler IJ, Arap W, Tuder RM and Pasqualini R. Targeted induction of lung endothelial cell apoptosis causes emphysema-like changes in the mouse. *Journal of Biological Chemistry* 2008 Oct 24;283(43):29447-60. PMC2570855. PMID: 18718906.
19. Cao L, Petrusca DN, Satpathy M, Nakshatri H, **Petrache I**, Matei D. Tissue transglutaminase protects epithelial ovarian cancer cells from cisplatin induced apoptosis by promoting cell survival signaling. *Carcinogenesis* 2008 Oct; 29(10):1893-1900. PMC2556973. PMID: 18667446.
20. Iwata T, Philipovskiy A, Fisher AJ, Presson Jr RG, Chiyo M, Lee J, Mickler E, Smith GN, **Petrache I**, Brand DB, Burlingham W, Gopalakrishnan B, Greenspan DS, Christie JD, Wilkes DS. Anti-type V collagen humoral immunity in lung transplant primary graft dysfunction. *J Immunology*. 2008 Oct 15;181(8):5738-47. PMC2997998. PMID: 18832733.

21. Ndengele NM, Cuzzocrea S, Masini E, Vinvi MC, Esposito E, Muscoli C, Petrusca DN, Mollace V, Mazzon E, Li D, **Petrache I**, Matuschak GM and Salvemini D. Spinal ceramide synthesis: A potential target to prevent antinociceptive tolerance to morphine. *Journal of Pharmacology and Experimental Therapeutics (JPET)*. 2009 Apr;329(1):64-75. doi:10.1124/jpet.108.146290. PMID: 19033555.
22. Noe J, Petrusca D, Rush N, Deng P, Van Demark M, Berdyshev E, Gu Y, Smith P, Schweitzer K, Pilewsky J, Natarajan V, Xu Z, and **Petrache I**. CFTR regulation of intracellular pH and ceramides is required for lung endothelial cell apoptosis. *Amer J Respir Cell and Molecul Biolo* 2009 Sep;41(3): 314-23. PMC2742751. PMID: 19168702.
23. Sohrab S, Petrusca DN, Lockett AD, Schweitzer KS, Rush NI, Gu Y, Kamocki K, Garrison J, **Petrache I**. Mechanism of alpha-1 antitrypsin endocytosis by lung endothelium. *FASEB J* 2009 Sep;23(9):3149-58. PMC2735364. PMID: 19423638.
24. Yamada Y, Sekine Y, Yoshida S, Yasufuku K, **Petrache I**, Benson HL, Brand DD, Yoshino I, Wilkes DS. Type V collagen-induced oral tolerance plus low dose cyclosporine prevents rejection of MHC class I and II incompatible lung allografts. *J Immunology* 2009 Jul 1;183(1): 237-45. PMC2997997. PMID: 19542435.
25. Bryant L, Doyle T, Chen Z, Cuzzocrea S, Masini E, Vinci MC, Esposito E, Mazzon E, Petrusca DN, **Petrache I**, and Salvemini D. Spinal ceramide and neuronal apoptosis in morphine antinociceptive tolerance. *Neuroscience Letters* 2009 Sep 29;463(1):49-53. PMC2754041. PMID: 19631718.
26. Gangaraju R, Mitnacht-Kraus R, Ispe U, Garrison J, Hou Y, Taylor B, **Petrache I**, Vestweber D, Clauss M. A monoclonal rat anti-mouse EMAP II antibody that functionally neutralizes pro- and mature-EMAP II in vitro. *Journal of Immunological Methods* 2009 Oct 31;350(1-2):22-8. PMC2778252. PMID: 19683532.
27. Ndengele MM, Cuzzocrea S, Masini E, Vinci MC, Esposito E, Muscoli C, Petrusca DN, Mollace V, Mazzon E, Li D, **Petrache I**, Matuschak GM, Salvemini D. Spinal ceramide modulates the development of morphine antinociceptive tolerance via peroxynitrite-mediated nitroxidative stress and neuroimmune activation. *J Pharmacol Exp Ther*. 2009;329(1):64-75. PMC2670603. PMID: 19033555.
28. **Petrache I**, Hajjar J, Campos M. Safety and efficacy of alpha-1-antitrypsin augmentation therapy in the treatment of patients with alpha-1-antitrypsin deficiency. *Biologics*. 2009;3:193-204. PMC2726081. PMID: 19707408.
29. Diab KJ, Adamowicz JJ, Kamocki K, Rush NI, Garrison J, Gu Y, Schweitzer KS, Skobeleva A, Rajashekhar G, Hubbard WC, Berdyshev EV, **Petrache I**. Stimulation of sphingosine 1 phosphate signaling as an alveolar cell survival strategy in emphysema. *Amer J Respir and Crit Care Med* 2010 Feb 15;181(4):344-52. PMID: 19965812.
30. Schweitzer KS, Johnstone BH, Garrison J, Rush NI, Cooper S, Traktuev DO, Feng D, Adamowicz J, Van Demark M, Fisher AJ, Kamocki K, Presson RG Jr, Broxmeyer H, March K, **Petrache I**. Protective effects of adipose stem cell treatment in mice attenuates lung and systemic injury induced cigarette smoking. *American Journal of Respiratory and Critical Care Medicine* 2011 Jan 15;183(2):215-25. PMC3040390. PMID: 20709815.
31. Yoshida T, Mett I, Bhunia AK, Bowman J, Perez M, Zhang L, Gandjeva A, Zhen L, Chukwueke U, Mao T, Richter A, Brown E, Ashush H, Notkin N, Gelfand A, Thimmulappa RK, Rangasamy T, Sussan T, Cosgrove G, Mouded M, Shapiro SD, **Petrache I**, Biswal S, Feinstein E, Tudor RM. Rtp801, a suppressor of mTOR signaling, is an essential mediator of cigarette smoke-induced pulmonary injury and emphysema. *Nat Med*. 2010;16(7):767-73. PMC3956129. PMID: 20473305.
32. Petrusca DN, Gu Y, Adamowicz JJ, Rush NI, Hubbard WC, Smith PA, Berdyshev EV, Birukov KG, Lee CH, Tudor RM, Twigg HL, 3rd, Vandivier RW, **Petrache I**. Sphingolipid-mediated inhibition of apoptotic cell clearance by alveolar macrophages. *J Biol Chem*. 2010;285(51):40322-32. PMC3001012. PMID: 20956540.
33. Clauss M, Robert Voswinckel R, Rajashekhar G, Sigua NL, Fehrenbach H, Rush NI, Schweitzer KS, Yildirim AO, Kamocki K, Fisher AJ, Gu Y, Safadi B, Nikam S, Hubbard WC, Tudor RM, Twigg HL, Presson RG Jr, Sethi S, and **Petrache I**. Lung endothelial monocyte activating protein II is a novel therapeutic target in murine emphysema. *Journal of Clinical Investigation* 2011 Jun;121(6):24709. doi:10.1172/JCI43881. PMC3104742. PMID: 21576822.

34. Sehra S, Yao W, Nguyen ET, Ahyi AN, Tuana FM, Ahlfeld SK, Snider P, Tepper RS, **Petrache I**, Conway SJ, Kaplan MH. Periostin Regulates Goblet Cell Metaplasia in a Model of Allergic Airway Inflammation. *The Journal of Immunology* 2011 Apr 15;186(8):4959-66. PMC3074384. PMID: 21402898.
35. Presson RG Jr, Brown MB, Fisher AJ, Sandoval RM, Dunn KW, Lorenz KS, Delp EJ, Salama P, Molitoris BA, and **Petrache I**. Two-photon imaging within the murine thorax without respiratory and cardiac motion artifact. *American Journal of Pathology* 2011 Jul;179(1):75-82. PMC3123791 PMID: 21703395.
36. Schweitzer KS, Hatoum H, Brown MB Gupta M, Justice MJ, Beteck B, Van Demark M, Gu Y. Presson RG Jr Hubbard WC and **Petrache I**. Mechanisms of lung endothelial barrier disruption induced by cigarette smoke: role of oxidative stress and ceramides. *American Journal of Physiology (Lung Cell Mol Physiol)* 2011 Dec;301(6):L836-46. Epub 2011 Aug 26.doi:10.1152/ajplung.00385.2010. PMC3233827. PMID: 21873444.
37. Devlin CM, Lahm T, Hubbard WC, Van Demark M, Wang KC, Wu X, Bielawska A, Obeid LM, Ivan M, **Petrache I**. Dihydroceramide-based response to hypoxia. *J Biol Chem*. 2011;286(44):38069-78. PMC3207482. PMID: 21914808.
38. Petrache I, Petrusca DN, Bowler RP, Kamocki K. Involvement of ceramide in cell death responses in the pulmonary circulation. *Proc Am Thorac Soc*. 2011;8(6):492-6. PMC3359077. PMID: 22052925.
39. Lockett AD, Van Demark M, Gu Y, Schweitzer KS, Sigua N, Kamocki K, Fijalkowska I, Garrison J, Fisher AJ, Serban K, Wise RA, Flotte TR, Mueller C, Presson RG, Jr., Petrache HI, Tudor RM, **Petrache I**. Effect of cigarette smoke exposure and structural modifications on the alpha-1 Antitrypsin interaction with caspases. *Mol Med*. 2012;18:445-54. PMC3356416. PMID: 22245800.
40. Lahm T, Albrecht M, Fisher AJ, Selej M, Patel NG, Brown JA, Justice MJ, Brown MB, Van Demark M, Trulock KM, Dieudonne D, Reddy JG, Presson RG, **Petrache I**. 17beta-Estradiol attenuates hypoxic pulmonary hypertension via estrogen receptor-mediated effects. *Am J Respir Crit Care Med*. 2012;185(9):965-80. PMC3359941. PMID: 22383500.
41. Green LA, Petrusca D, Rajashekhar G, Gianaris T, Schweitzer KS, Wang L, Justice MJ, **Petrache I**, Clauss M. Cigarette smoke-induced CXCR3 receptor up-regulation mediates endothelial apoptosis. *Am J Respir Cell Mol Biol*. 2012;47(6):807-14. PMC3547093. PMID: 22936405.
42. Bardita C, Predescu D, Justice MJ, **Petrache I**, Predescu S. In vivo knockdown of intersectin-1s alters endothelial cell phenotype and causes microvascular remodeling in the mouse lungs. *Apoptosis*. 2013;18(1):57-76. PMC3543613. PMID: 23054079.
43. Kamocki K, Van Demark M, Fisher A, Rush NI, Presson RG, Jr., Hubbard W, Berdyshev EV, Adamsky S, Feinstein E, Gandjeva A, Tudor RM, **Petrache I**. RTP801 is required for ceramide-induced cell-specific death in the murine lung. *Am J Respir Cell Mol Biol*. 2013;48(1):87-93. PMC3547084. PMID: 23024063.
44. Sahu RP, **Petrache I**, Van Demark MJ, Rashid BM, Ocana JA, Tang Y, Yi Q, Turner MJ, Konger RL, Travers JB. Cigarette smoke exposure inhibits contact hypersensitivity via the generation of platelet-activating factor agonists. *J Immunol*. 2013;190(5):2447-54. PMC3577966. PMID: 23355733.
45. **Petrache I**, Kamocki K, Poirier C, Pewzner-Jung Y, Laviad EL, Schweitzer KS, Van Demark M, Justice MJ, Hubbard WC, and Futerman AH. Ceramide Synthases Expression and Role of Ceramide Synthase-2 in the Lung: Insight from Human Lung Cells and Mouse Models. *PLoS One* 2013 May 14;8(5): e62968. PMID: 23690971.
46. Lockett AD, Kimani S, Ddungu G, Wrenger S, Tudor RM, Janciauskiene SM, **Petrache I**. alpha(1)-Antitrypsin modulates lung endothelial cell inflammatory responses to TNF-alpha. *Am J Respir Cell Mol Biol*. 2013;49(1):143-50. PMC3727880. PMID: 23526215.
47. Justice MJ, Petrusca DN, Rogozea AL, Williams JA, Schweitzer KS, **Petrache I**, Wassall SR, Petrache HI. Effects of lipid interactions on model vesicle engulfment by alveolar macrophages. *Biophys J*. 2014;106(3):598-609. PMC3944992. PMID: 24507600.
48. Brown MB, Hunt WR, Noe JE, Rush NI, Schweitzer KS, Leece TC, Moldobaeva A, Wagner EM, Dudek SM, Poirier C, Presson RG, Jr., Gulbins E, **Petrache I**. Loss of cystic fibrosis transmembrane conductance regulator impairs lung endothelial cell barrier function and increases susceptibility to

- microvascular damage from cigarette smoke. *Pulm Circ.* 2014;4(2):260-8. PMC4070785. PMID: 25006445.
49. Hughes G, Cruickshank-Quinn C, Reisdorph R, Lutz S, **Petrache I**, Reisdorph N, Bowler R, Kechris K. MSPrep--summarization, normalization and diagnostics for processing of mass spectrometry-based metabolomic data. *Bioinformatics.* 2014;30(1):133-4. PMC3866554. PMID: 24174567.
 50. Petrusca DN, Van Demark M, Gu Y, Justice MJ, Rogozea A, Hubbard WC, **Petrache I**. Smoking exposure induces human lung endothelial cell adaptation to apoptotic stress. *Am J Respir Cell Mol Biol.* 2014;50(3):513-25. PMC5455468. PMID: 24079644.
 51. Green LA, Yi R, Petrusca D, Wang T, Elghouche A, Gupta SK, **Petrache I**, Clauss M. HIV envelope protein gp120-induced apoptosis in lung microvascular endothelial cells by concerted upregulation of EMAP II and its receptor, CXCR3. *Am J Physiol Lung Cell Mol Physiol.* 2014;306(4):L372-82. PMC3920224. PMID: 24318111.
 52. Toney BM, Fisher AJ, Albrecht M, Lockett AD, Presson RG, **Petrache I**, Lahm T. Selective endothelin-A receptor blockade attenuates endotoxin-induced pulmonary hypertension and pulmonary vascular dysfunction. *Pulm Circ.* 2014;4(2):300-10. PMC4070772. PMID: 25006449.
 53. Lockett AD, Brown MB, Santos-Falcon N, Rush NI, Oueini H, Oberle AJ, Bolanis E, Fragoso MA, Petrusca DN, Serban KA, Schweitzer KS, Presson RG, Jr., Campos M, **Petrache I**. Active trafficking of alpha 1 antitrypsin across the lung endothelium. *PLoS One.* 2014;9(4):e93979. PMC3990572. PMID: 24743137.
 54. Cruickshank-Quinn CI, Mahaffey S, Justice MJ, Hughes G, Armstrong M, Bowler RP, Reisdorph R, **Petrache I**, Reisdorph N. Transient and persistent metabolomic changes in plasma following chronic cigarette smoke exposure in a mouse model. *PLoS One.* 2014;9(7):e101855. PMC4090193. PMID: 25007263.
 55. Voiles L, Lewis DE, Han L, Lupov IP, Lin TL, Robertson MJ, **Petrache I**, Chang HC. Overexpression of type VI collagen in neoplastic lung tissues. *Oncol Rep.* 2014;32(5):1897-904. PMC4203334. PMID: 25176343.
 56. Zhang X, Shan P, Homer R, Zhang Y, **Petrache I**, Mannam P, Lee PJ. Cathepsin E promotes pulmonary emphysema via mitochondrial fission. *Am J Pathol.* 2014;184(10):2730-41. PMC4188869. PMID: 25239563.
 57. Xie J, Broxmeyer HE, Feng D, Schweitzer KS, Yi R, Cook TG, Chitteti BR, Barwinska D, Traktuev DO, Van Demark MJ, Justice MJ, Ou X, Srour EF, Prockop DJ, **Petrache I**, March KL. Human adipose-derived stem cells ameliorate cigarette smoke-induced murine myelosuppression via secretion of TSG-6. *Stem Cells.* 2015;33(2):468-78. PMC4618797. PMID: 25329668.
 58. Janes K, Little JW, Li C, Bryant L, Chen C, Chen Z, Kamocki K, Doyle T, Snider A, Esposito E, Cuzzocrea S, Bieberich E, Obeid L, **Petrache I**, Nicol G, Neumann WL, Salvemini D. The development and maintenance of paclitaxel-induced neuropathic pain require activation of the sphingosine 1-phosphate receptor subtype 1. *J Biol Chem.* 2014;289(30):21082-97. PMC4110312. PMID: 24876379.
 59. McCaslin CA, Petrusca DN, Poirier C, Serban KA, Anderson GG, **Petrache I**. Impact of alginate-producing *Pseudomonas aeruginosa* on alveolar macrophage apoptotic cell clearance. *J Cyst Fibros.* 2015;14(1):70-7. PMC4637177. PMID: 25027418.
 60. Bowler RP, Jacobson S, Cruickshank C, Hughes GJ, Siska C, Ory DS, **Petrache I***, Schaffer JE, Reisdorph N, Kechris K. Plasma sphingolipids associated with chronic obstructive pulmonary disease phenotypes. *Am J Respir Crit Care Med.* 2015;191(3):275-84. PMC4351578. PMID: 25494452.
 61. Christofidou-Solomidou M, Pietrofesa RA, Arguiri E, Schweitzer KS, Berdyshev EV, McCarthy M, Corbitt A, Alwood JS, Yu Y, Globus RK, Solomides CC, Ullrich RL, **Petrache I**. Space radiation-associated lung injury in a murine model. *Am J Physiol Lung Cell Mol Physiol.* 2015;308(5):L416-28. PMC4346772. PMID: 25526737.
 62. Goss KN, Cucci AR, Fisher AJ, Albrecht M, Frump A, Tursunova R, Gao Y, Brown MB, **Petrache I**, Tepper RS, Ahlfeld SK, Lahm T. Neonatal hyperoxic lung injury favorably alters adult right ventricular remodeling response to chronic hypoxia exposure. *Am J Physiol Lung Cell Mol Physiol.* 2015;308(8):L797-806. PMC4398870. PMID: 25659904.

63. Brown MB, Chingombe TJ, Zinn AB, Reddy JG, Novack RA, Cooney SA, Fisher AJ, Presson RG, Lahm T, **Petrache I**. Novel assessment of haemodynamic kinetics with acute exercise in a rat model of pulmonary arterial hypertension. *Exp Physiol*. 2015;100(6):742-54. PMID: 25867528.
64. Lu H, Poirier C, Cook T, Traktuev DO, Merfeld-Clauss S, Lease B, **Petrache I**, March KL, Bogatcheva NV. Conditioned media from adipose stromal cells limit lipopolysaccharide-induced lung injury, endothelial hyperpermeability and apoptosis. *J Transl Med*. 2015;13:67. PMC4358867. PMID: 25889857.
65. Schweitzer KS, Chen SX, Law S, Van Demark M, Poirier C, Justice MJ, Hubbard WC, Kim ES, Lai X, Wang M, Kranz WD, Carroll CJ, Ray BD, Bittman R, Goodpaster J, **Petrache I**. Endothelial disruptive proinflammatory effects of nicotine and e-cigarette vapor exposures. *Am J Physiol Lung Cell Mol Physiol*. 2015;309(2):L175-87. PMC4504977. PMID: 25979079.
66. Lockett AD, Petrusca DN, Justice MJ, Poirier C, Serban KA, Rush NI, Kamocka M, Predescu D, Predescu S, **Petrache I**. Scavenger receptor class B, type I-mediated uptake of A1AT by pulmonary endothelial cells. *Am J Physiol Lung Cell Mol Physiol*. 2015;309(4):L425-34. PMC4538232. PMID: 26092999.
67. Lu H, Cook T, Poirier C, Merfeld-Clauss S, **Petrache I**, March KL, Bogatcheva NV. Pulmonary Retention of Adipose Stromal Cells Following Intravenous Delivery Is Markedly Altered in the Presence of ARDS. *Cell Transplant*. 2016;25(9):1635-43. PMID: 26609693.
68. Crothers K, **Petrache I**, Wongtrakool C, Lee PJ, Schnapp LM, Gharib SA. Widespread activation of immunity and pro-inflammatory programs in peripheral blood leukocytes of HIV-infected patients with impaired lung gas exchange. *Physiol Rep*. 2016;4(8). PMC4848721. PMID: 27117807.
69. Serban KA, Rezania S, Petrusca DN, Poirier C, Cao D, Justice MJ, Patel M, Tsvetkova I, Kamocki K, Mikosz A, Schweitzer KS, Jacobson S, Cardoso A, Carlesso N, Hubbard WC, Kechris K, Dragnea B, Berdyshev EV, McClintock J, **Petrache I**. Structural and functional characterization of endothelial microparticles released by cigarette smoke. *Sci Rep*. 2016;6:31596. PMC4987682. PMID: 27530098.
70. Brown MB, Neves E, Long G, Graber J, Gladish B, Wiseman A, Owens M, Fisher AJ, Presson RG, **Petrache I**, Kline J, Lahm T. High-intensity interval training, but not continuous training, reverses right ventricular hypertrophy and dysfunction in a rat model of pulmonary hypertension. *Am J Physiol Regul Integr Comp Physiol*. 2017;312(2):R197-R210. PMC5504398. PMID: 27784688.
71. Serban KA, Petrusca DN, Mikosz A, Poirier C, Lockett AD, Saint L, Justice MJ, Twigg HL, 3rd, Campos MA, **Petrache I**. Alpha-1 antitrypsin supplementation improves alveolar macrophages efferocytosis and phagocytosis following cigarette smoke exposure. *PLoS One*. 2017;12(4):e0176073. PMC5407578. PMID: 28448535.
72. Miller MA, Danhorn T, Cruickshank-Quinn CI, Leach SM, Jacobson S, Strand MJ, Reisdorph NA, Bowler RP, **Petrache I**, Kechris K. Gene and metabolite time-course response to cigarette smoking in mouse lung and plasma. *PLoS One*. 2017;12(6):e0178281. PMC5456044. PMID: 28575117.
73. Cruickshank-Quinn C, Powell R, Jacobson S, Kechris K, Bowler RP, **Petrache I**, Reisdorph N. Metabolomic similarities between bronchoalveolar lavage fluid and plasma in humans and mice. *Sci Rep*. 2017;7(1):5108. PMC5505974. PMID: 28698669.
74. Ni K, Umair Mukhtar Mian M, Meador C, Gill A, Barwinska D, Cao D, Justice MJ, Jiang D, Schaefer N, Schweitzer KS, Chu HW, March KL, **Petrache I**. Oncostatin M and TNF-alpha Induce Alpha-1 Antitrypsin Production in Undifferentiated Adipose Stromal Cells. *Stem Cells Dev*. 2017;26(20):1468-76. PMC5651966. PMID: 28825379.
75. Sears CR, Zhou H, Justice MJ, Fisher AJ, Saliba J, Lamb I, Wicker J, Schweitzer KS, **Petrache I**. Xeroderma Pigmentosum Group C Deficiency Alters Cigarette Smoke DNA Damage Cell Fate and Accelerates Emphysema Development. *Am J Respir Cell Mol Biol*. 2018;58(3):402-11. PMC5854959. PMID: 29111769.
76. Mizumura K, Justice MJ, Schweitzer KS, Krishnan S, Bronova I, Berdyshev EV, Hubbard WC, Pewzner-Jung Y, Futerman AH, Choi AMK, **Petrache I**. Sphingolipid regulation of lung epithelial cell mitophagy and necroptosis during cigarette smoke exposure. *FASEB J*. 2018;32(4):1880-90. PMC5893175. PMID: 29196503.

77. Stephenson SE, Wilson CL, Crothers K, Attia EF, Wongtrakool C, **Petrache I**, Schnapp LM. Impact of HIV infection on alpha1-antitrypsin in the lung. *Am J Physiol Lung Cell Mol Physiol*. 2018;314(4):L583-L92. PMC5966776. PMID: 29351445.
78. Frump AL, Selej M, Wood JA, Albrecht M, Yakubov B, **Petrache I**, Lahm T. Hypoxia Upregulates Estrogen Receptor beta in Pulmonary Artery Endothelial Cells in a HIF-1alpha-Dependent Manner. *Am J Respir Cell Mol Biol*. 2018;59(1):114-26. PMC6039879. PMID: 29394091.
79. Justice MJ, Bronova I, Schweitzer KS, Poirier C, Blum JS, Berdyshev EV, **Petrache I**. Inhibition of acid sphingomyelinase disrupts LYNUS signaling and triggers autophagy. *J Lipid Res*. 2018;59(4):596-606. PMC5880492. PMID: 29378782.
80. Walmsley S, Cruickshank-Quinn C, Quinn K, Zhang X, **Petrache I**, Bowler RP, Reisdorph R, Reisdorph N. A prototypic small molecule database for bronchoalveolar lavage-based metabolomics. *Sci Data*. 2018;5:180060. PMC5903367. PMID: 29664467.
81. Barwinska D, Traktuev DO, Merfeld-Clauss S, Cook TG, Lu H, **Petrache I**, March KL. Cigarette Smoking Impairs Adipose Stromal Cell Vasculogenic Activity and Abrogates Potency to Ameliorate Ischemia. *Stem Cells*. 2018;36(6):856-67. PMC5992062. PMID: 29589872.
82. Barwinska D, Oueini H, Poirier C, Albrecht ME, Bogatcheva NV, Justice MJ, Saliba J, Schweitzer KS, Broxmeyer HE, March KL, **Petrache I**. AMD3100 ameliorates cigarette smoke-induced emphysema-like manifestations in mice. *Am J Physiol Lung Cell Mol Physiol*. 2018;315(3):L382-L6. PMC6172621. PMID: 29745251.
83. Ni K, Gill A, Tseng V, Mikosz AM, Koike K, Beatman EL, Xu CY, Cao D, Gally F, Mould KJ, Serban KA, Schweitzer KS, March KL, Janssen WJ, Nozik-Grayck E, Garantziotis S, **Petrache I**. Rapid clearance of heavy chain-modified hyaluronan during resolving acute lung injury. *Respir Res*. 2018;19(1):107. PMC5984366. PMID: 29855321.
84. Koike K, Berdyshev EV, Bowler RP, Scruggs AK, Cao D, Schweitzer KS, Serban KA, **Petrache I**. Bioactive Sphingolipids in the pathogenesis of COPD. *Ann Am Thorac Soc*. 2018 Dec;15(Suppl 4):S249-S252. doi: 10.1513/AnnalsATS.201809-592MG. Review. PMID: 30759004
85. Cruickshank-Quinn CI, Jacobson S, Hughes G, Powell RL, **Petrache I**, Kechris K, Bowler R, Reisdorph N. Metabolomics and transcriptomics pathway approach reveals outcome-specific perturbations in COPD. *Scientific Reports* 2018; 8(1):17132. PMID:3045944; PMC6244246.
86. Ni K, Gill A, Cao D, Koike K, Schweitzer KS, Garantziotis S, **Petrache I**. Intravascular heavy chain-modification of hyaluronan during endotoxic shock. *Biochem Biophys Rep*. 2018 17:114-121. PMID: 30623115.
87. Serban KA, Mikosz A, Strange C, Janciauskiene SM, Stolk J, Jonigk D, Sandhaus RA, **Petrache I**. Lectin Complement Pathway in Emphysema. *Am J Respir Crit Care Med*. 2019. 199(5):659-661. PMID: 30557515.
88. Koike K, Beatman EL, Schweitzer KS, Justice MJ, Mikosz AM, Ni K, Clauss MA, **Petrache I**. Subcutaneous administration of neutralizing antibodies to endothelial monocyte-activating protein II attenuates cigarette smoke-induced lung injury in mice. *Am J Physiol Lung Cell Mol Physiol*. 2019; 316(3):L558-L566. PMID: 30628489.
89. Majka SM, Rojas M, **Petrache I**, Foronjy RF. Mesenchymal Regulation of the Microvascular Niche in Chronic Lung Disease. *Comprehensive Physiology*. 2019; 9(4):1431-1441. PMID:31688970.
90. Halper-Stromberg E, Gillenwater L, Cruickshank-Quinn C, O'Neal WK, Reisdorph N, **Petrache I**, Zhuang Y, Labaki WW, Curtis JL, Wells J, Rennard S, Pratte KA, Woodruff P, Stringer KA, Kechris K, Bowler RP. Bronchoalveolar Lavage Fluid From COPD Patients Reveals More Compounds Associated with Disease than Matched Plasma. *Metabolites*. 2019; 9(8). PMID: 31349744.
91. Koike K, Berdyshev EV, Mikosz AM, Bronova IA, Bronoff AS, Jung JP, Beatman EL, Ni K, Cao D, Scruggs AK, Serban KA, **Petrache I**. Role of Glucosylceramide in Lung Endothelial Cell Fate and Emphysema. *Am J Respir Crit Care Med*. 2019. 200(9):1113-1125. PMID: 31265321.
92. Tseng V, Ni K, Allawzi A, Prohaska C, Hernandez-Lagunas L, Elajaili H, Cali V, Midura R, Hascall V, Triggs-Raine B, **Petrache I**, Hart CM, Nozik-Grayck E. Extracellular Superoxide Dismutase Regulates Early Vascular Hyaluronan Remodeling in Hypoxic Pulmonary Hypertension. *Sci Rep*. 10(1):280.
93. Cao D, Mikosz AM, Ringsby AJ, Anderson KC, Beatman EL, Koike K, **Petrache I**. MicroRNA-126-3p Inhibits Angiogenic Function of Human Lung Microvascular Endothelial Cell via LAT1 (L-Type Amino

- Acid Transporter 1)-Mediated mTOR (Mammalian Target of Rapamycin) Signaling. *Arterioscler Thromb Vasc Biol.* 2020 **40**, 1195-1206. PMID: 32212853.
94. Kopf KW, Harral JW, Staker EA, Summers ME, **Petrache I**, Kheifets V, Irwin DC, Majka SM. Optimization of combined measures of airway physiology and cardiovascular hemodynamics in mice. *Pulm Circ.* 2020 Mar 13;10(1):2045894020912937. doi: 10.1177/2045894020912937. eCollection 2020 Jan-Mar. PubMed PMID: 32206308; PubMed Central PMCID: PMC7074541.
95. Tong X, Chaudhry Z, Lee CC, Bone RN, Kanojia S, Maddatu J, Sohn P, Weaver SA, Robertson MA, **Petrache I**, Evans-Molina C, Kono T. Cigarette smoke exposure impairs β -cell function through activation of oxidative stress and ceramide accumulation. *Mol Metab.* 2020, **37**, 100975. PMC7170997
96. Gellatly S, Pavelka N, Crue T, Schweitzer KS, Day BJ, Min E, Numata M, Voelker DR, Scruggs A, **Petrache I***, Chu HW. Nicotine-Free e-Cigarette Vapor Exposure Stimulates IL-6 and Mucin Production in Human Primary Small Airway Epithelial Cells. *J Inflamm Res.* 2020 Apr 16;13:175-185. doi: 10.2147/JIR.S244434. eCollection 2020. PMID: 32368126 * Co-senior author.
97. Schweitzer KS, Jinawath N, Yonescu R, Ni K, Rush N, Charoensawan V, Bronova I, Berdyshev E, Leach SM, Gillenwater LA, Bowler RP, Pearse DB, Griffin CA, **Petrache I**. IGSF3 mutation identified in patient with severe COPD alters cell function and motility. *JCI Insight.* 2020 Jul 23;5(14):138101. doi: 10.1172/jci.insight.138101. PMID: 32573489
98. Do-Umehara, H.C., Chen, C., Zhang, Q., Misharin, A.V., Abdala-Valencia, H., Casalino-Matsuda, S.M., Reyfman, P.A., Anekalla, K.R., Gonzalez-Gonzalez, F.J., Sala, M.A., Peng, C., Wu, P., Wong, C.C.L., Kalhan, R., Bharat, A., Perlman, H., Ridge, K.M., Sznajder, J.I., Sporn, P.H.S., Chandel, N.S., Yu, J., Fu, X., **Petrache, I.**, Tudor, R., Budinger, G.R.S. & Liu, J. Epithelial cell-specific loss of function of Miz1 causes a spontaneous COPD-like phenotype and up-regulates Ace2 expression in mice. *Sci Adv.* 2020 Aug 14;6(33):eabb7238. doi: 10.1126/sciadv.abb7238. eCollection 2020 Aug. PMID: 32851183
99. Summers, M.E., Richmond, B.W., Kropski, J.A., Majka, S.A., Bastarache, J.A., Hatzopoulos, A.K., Bylund, J., Ghosh, M., **Petrache, I.**, Foronjy, R.F., Geraghty, P., Majka, S.M. Balanced Wnt/Dickkopf1 signaling by mesenchymal vascular progenitor cells in the microvascular niche maintains distal lung structure and function. *American journal of physiology.* 2020. *Cell physiology.* 10.1152/ajpcell.00277.2020
100. Liao SY, **Petrache I**, Fingerlin TE, Maier LA. Association of inhaled and systemic corticosteroid use with Coronavirus Disease 2019 (COVID-19) test positivity in patients with chronic pulmonary diseases. *Respir Med.* 2020 Nov 28;176:106275. doi: 10.1016/j.rmed.2020.106275. Online ahead of print. PMID: 33276252
101. Schweitzer KS, Crue T, Nall JM, Foster D, Sajuthi S, Correll KA, Nakamura M, Everman J, Downey GP, Seibold MA, Bridges JP, Serban KA, Chu HW, **Petrache I**. Influenza virus infection increases ACE2 expression and shedding in human small airway epithelial cells. *Eur Respir J.* 2021 Jan 8:2003988. doi: 10.1183/13993003.03988-2020. Online ahead of print. PMID: 33419885
102. Berdyshev EV, Serban KA, Schweitzer KS, Bronova IA, Mikosz A, **Petrache I**. Ceramide and sphingosine-1 phosphate in COPD lungs. *Thorax.* 2021 Jan 29:thoraxjnl-2020-215892. doi: 10.1136/thoraxjnl-2020-215892. Online ahead of print. PMID: 33514670

B. Reviews or Editorials

1. Otterbein LE, Lee PJ, Chin BY, **Petrache I**, Camhi SL, Alam J, and Choi AMK. 1999. Protective effects of heme oxygenase-1 in acute lung injury. *Chest* Jul;116(s Suppl):61S-63S. PMID: 10424595
2. Tudor RM, **Petrache I**, Elias JA, Voelkel NF, and Henson PM. 2003. Apoptosis and Emphysema: The Missing Link. *Am J Respir Cell Mol Biol* May;28(5):551-4. PMID: 12707010
3. **Petrache I**. Pleurodynia. eMedicine: Emergency Medicine [serial online]. 2001, 2005, 2006 Available at: <http://www.emedicine.com/emerg/topic169.htm>
4. **Petrache I**. Asthma in pregnancy. eMedicine Consumer Health: Asthma [serial online] 2004 available at <http://www.emedicinehealth.com/articles/43668-1.asp>
5. **Petrache I**. Asthma. eMedicine Consumer Health: Wilderness Medicine. [serial online]. 2004 available at <http://www.emedicinehealth.com/Articles/26335-1.asp>
6. **Petrache I**, Sigua NL. Pleurodynia. eMedicine from WebMD. Updated October 28, 2008

Available at: <http://www.emedicine.com/med/topic1845.htm>

7. **Petrache I**, Sigua NL. Pleurodynia. eMedicine from WebMD. Updated April 17, 2009. Available at: <http://emedicine.medscape.com/article/300049-overview>
8. **Petrache I**, Sears C. Asthma in pregnancy. eMedicine Consumer Health: Asthma [serial online]. 2010. available at <http://www.emedicinehealth.com/articles/43668-1.asp>
9. **Petrache I**, Serban KA. Pleurodynia. Medscape Reference. Updated March 22, 2013 Available at: <http://emedicine.medscape.com/article/300049-overview>
10. **Petrache I**, Serban KA. Pleurodynia. Medscape Reference. Updated August 13, 2015. Available at <http://emedicine.medscape.com/article/300049-overview>
11. **Petrache I**, Serban KA. Lost in TRANS-IL6-signaling: A11 Cell Death in Emphysema. *American Journal of Respiratory and Critical Care Medicine*. 2016.194(12):1441-1443. PMID: 27976936.
12. **Petrache, I**. Is More Better? Promising Biological Effects of Double-Dose Alpha 1-Antitrypsin Therapy. *Am J Respir Crit Care Med*. 2019; 200(3):270-272. PMID: 31063431.
13. Koslow, M, **Petrache, I**. A finale on EVALI? The abated but not forgotten outbreak of acute respiratory illness in vapers. *JAMA Network Open*. 2020. **3**, e2019366.

C. Invited/Peer-Reviewed Articles

1. Tudor RM, Tashida T, Arap W, Pasqualini R, and **Petrache I**. Cellular and Molecular Mechanisms of Alveolar Destruction in Emphysema: An Evolutionary Perspective. *Proceedings of the American Thoracic Society* 2006; (3):503-511
2. **Petrache I**, Natarajan V, Zhen L, Medler TR, Richter A, Berdyshev EV, and Tudor RM. Ceramide Causes Pulmonary Cell Apoptosis and Emphysema. A Role for Sphingolipid in the Maintenance of Alveolar Cells. *Proceedings of the American Thoracic Society*. 2006 Aug;3(6):503-511
3. **Petrache I**, Fijalkowska I, Zhen L, Medler TR, Skirball J, Flotte T, and Tudor RM. An Antiapoptotic Role for Alpha-1 Antitrypsin in the Prevention of Emphysema. *Proceedings of American Thoracic Society* 2006;(3):549
4. Tudor RM, **Petrache I**. Molecular Multi-Tasking in the Airspace: Alpha-1 Antitrypsin Takes on Thrombin and Plasmin. *Amer J Resp Cell Molecul Biol* 2007;(37):130-134. PMID 17541009
5. **Petrache I**, Hajjar J, Campos M. Safety and Efficacy of Alpha-1 Antitrypsin Augmentation Therapy in the Treatment of Patients with Alpha-1 Antitrypsin Deficiency. *Biologics: Targets & Therapy* 2009:193-204
6. Tudor RM, Janciauskiene SM, **Petrache I**. Lung Disease Associated with Alpha-1 Antitrypsin Deficiency; *Proceedings of the American Thoracic Society* 2010 Nov 7;(6):381-6. PMID 21030517
7. **Petrache I**, Petrusca D, Bowler RP, Kamocki K. Involvement of Ceramide in Cell Death Responses in the Pulmonary Circulation; *Proc Am Thorac Soc* 2011;8:492-496
8. Rubin Tudor and **Irina Petrache**. Pathogenesis of Chronic Obstructive Pulmonary Disease; *J Clin Invest* 2012 Nov;122(11):2749-2755. Doi:10.1172/JCI60324. PMID 22850885
9. Lahm T and **Petrache I**. LC3 as a Potential Therapeutic Target in Hypoxia-Induced Pulmonary Hypertension (Invited Perspective). *Autophagy* 2012 July 1;8(7):1146-7. PMID 22627195
10. Lahm T, Tudor RM, **Petrache I**. Progress in Solving the Sex Hormone Paradox in Pulmonary Hypertension. *Amer J Physiol (Lung Cell Mol Physiol)* 2014 July 1;307(1):L7-26. PMID 24816487
11. Klionsky DJ, **Petrache I**, et al (more than 100 authors). Guidelines for the use and interpretation of assays for monitoring autophagy (3rd edition). *Autophagy*. 2016 Jan 2;12(1):1-222. PMID: 26799652
12. **Petrache I**, Berdyshev EV. Ceramide Signaling and Metabolism in Pathophysiological States of the Lung. *Annu Rev Physiol*. 2016 Feb 10;78:463-80. doi: 10.1146/annurev-physiol-021115-105221. Epub 2015 Nov 30. PMID: 26667073

D. Book Chapters

1. Jacobs KN, **Petrache I**, and Garcia JGN. In vitro regulation of leukocyte diapedesis by the endothelial cell contractile apparatus. In: *Interactions between Blood Elements and Endothelium*. 277-289. (Editors: Weir EK and Reeves JT). Futura Publishing Co., Amronk, New York. 2002.

2. **Petrache I**, Georas S. Common pulmonary problems: hemoptysis, dyspnea, chest pain, and the abnormal chest x-ray. In: Principles of Ambulatory Medicine, 6th edition. Pages: 789-807. (Editors: R Barker, J Burton, P Zieve), Williams & Wilkins, Baltimore, MD. 2002.
3. **Petrache I**, and Moller DR. Manifestation of Sarcoidosis in the Upper and the Lower Airways. In: Upper and Lower Airways Disease. Editors: J Corren, J Bousquet, A Togias. Lung Biology in Health and Disease, 2003. Vol 181, Pages 461-491. Marcel Dekker, Inc.
4. **Petrache I**, and Moller DR. Sarcoidosis. In: Current diagnosis and treatment of rheumatic diseases. Edited by John Imboden, David Hellmann, and John Stone. Section VII. 2003
5. **Petrache I**, and Moller DR. Mechanism of Therapy for Sarcoidosis. In: Sarcoidosis. Editor: RP. Baughman Lung. Marcel Dekker, Inc. 2004.
6. **Petrache I**, Birukova A, and Verin AD. TNF- α -induced pulmonary endothelial permeability: the role of the microtubule cytoskeleton. David Shepro (Editor) 2005 Microvascular Research, Pages 261-264. Elsevier Academic Press
7. Nonas S, **Petrache I**, Garcia JGN. Cigarette Smoke, Emphysema and Lung Endothelium. In: Textbook of Chronic Obstructive Pulmonary Disease. (Ed: Stockley R, Rennard S, Rabe K and Celli B. Editors) Blackwell Publishing Ltd. Malden, Massachusetts. 300-308. 2005.
8. **Petrache I**, Georas S. Common pulmonary problems: hemoptysis, dyspnea, chest pain, and the abnormal chest x-ray. In: Principles of Ambulatory Medicine, 7th edition. (Editors: R Barker, J Burton, P Zieve), Williams & Wilkins, Baltimore, MD. July 2006.
9. **Petrache I** and Petrusca DN. The involvement of sphingolipids in chronic obstructive pulmonary diseases. In: Sphingolipids in Disease. Handbook of Experimental Pharmacology, Vol. 216:247-64. Springer-Verlag GmbH, Heidelberg, Germany. March 2013. PMID: 23563660.
10. Presson Jr RG, **Petrache I**, Brown MB. Intravital microscopy of the lung. In Roberto Weigert, editor. Advances in Intravital Microscopy. From Basic to Clinical Research. Springer Netherlands. 2014 p 221-232
11. **Petrache I.**, and Serban K. Emphysema. In: Linda M. McManus, Richard N. Mitchell, editors. Pathobiology of Human Disease. San Diego: Elsevier; 2014. p. 2609-2624.
12. Serban KA, **Petrache I**. Mouse Models of COPD. Methods Mol Biol. 2018; 1809:379-394. doi: 10.1007/978-1-4939-8570-8_25. PMID: 29987802.

E. Book Editing

1. Sphingolipids: Basic Science and Drug Development. Series: Handbook of Experimental Pharmacology, Vol. 215. Gulbins, Erich; **Petrache, Irina** (Eds.). Springer-Verlag GmbH, Heidelberg, Germany. 2013. ISBN 978-3-7091-1367-7
2. Sphingolipids in Disease. Handbook of Experimental Pharmacology, Vol. 216. Gulbins, Erich; **Petrache, Irina** (Eds.). Springer-Verlag GmbH, Heidelberg, Ger, 2013. ISBN 978-3-7091-1510-7

F. Other Publications

1. **Petrache I** Patel D, Wolf KM, Winer-Muram H. Vertebral erosion, an uncommon complication of tracheal tubes. 2014. *American Journal of Respiratory and Critical Care Medicine*. (Images in Pulmonary Medicine). Jul 2015;190(2):e4. doi: 10.1164/rccm.201309-1610IM. PMID 25025361
2. Kim C, Jary H, Mortimer K, Schweitzer KS, Curran-Everett D, Gordon S, **Petrache I**. Effects of Household Air Pollution in Malawi and Human Immunodeficiency Virus Status on Respiratory Symptoms and Inflammation, Injury, and Repair Markers. *Ann Am Thorac Soc*. 2018;15(Supplement_2):S132-S3. PMC5955040. PMID: 29676635.

G. Selected Abstracts (past 5 years)

1. Brown MB, Chingombe T, Harper R, Weyer J, Bremer B, Cooney S, Fisher A, Cucci A, Presson R, **Petrache I**, Lahm T. Exercise Does Not Attenuate Disease Progression in a Rat Model of Progressive

- Pulmonary Arterial Hypertension. *Med Sci Sports Exerc.* 2015;47(5):688-. PMID: WOS:000415220900415.
2. Cao D, Justice MJ, **Petrache I**, Serban KA. Effect Of Endothelial Cell Microparticles On Macrophage Efferocytosis. *Am J Respir Crit Care Med.* 2015;191:1. PMID: WOS:000377582804516.
 3. Crothers KA, Gharib SA, **Petrache I**, Wongtrakool C, Lee PJ, Schnapp LM. Endothelial Pathway Enrichment In Hiv-Infected Patients With Low Lung Diffusing Capacity (dlco). *Am J Respir Crit Care Med.* 2015;191:1. PMID: WOS:000377582806143.
 4. Cruickshank-Quinn CI, Jacobson S, Kechris K, **Petrache I**, Bowler RP, Reisdorph N, Investigators CO. Identification Of Perturbed Metabolic Pathways In Chronic Obstructive Pulmonary Disease Using Integrated 'omics'. *Am J Respir Crit Care Med.* 2015;191:1. PMID: WOS:000377582801595.
 5. Lahm T, Frump A, Vayl A, Fisher A, Albrecht M, Jones T, Cook T, **Petrache I**, Brown M. Endogenous Sex Hormones Mediate Superior Adaptation Of Right Ventricular Function To Acute Strenuous Exercise In Female Rats With Su5416/hypoxia-Induced Pulmonary Hypertension (suhx-Ph). *Am J Respir Crit Care Med.* 2015;191:1. PMID: WOS:000377582800044.
 6. Landrigan M, Wood J, Justice MJ, Poirier C, Van Demark M, Walker J, Schweitzer K, **Petrache I**. Human Bone Marrow Concentrate Improves Lung Function And Exercise Tolerance In A Mouse Model Of Cigarette Smoke-Induced Emphysema. *Am J Respir Crit Care Med.* 2015;191:1. PMID: WOS:000377582807421.
 7. Miller M, Kechris KJ, Reisdorph N, Poirier C, Bowler RP, **Petrache I**. Kinetics Of Gene Pathway Expression Induced By Cigarette Smoke Exposure In The Mouse Lung. *Am J Respir Crit Care Med.* 2015;191:1. PMID: WOS:000377582800258.
 8. Mizumura K, Justice MJ, Berdyshev E, Choi AMK, **Petrache I**. Involvement Of Sphingolipids In Cigarette Smoke Induced Lung Epithelial Cell Mitophagy And Necroptosis. *Am J Respir Crit Care Med.* 2015;191:1. PMID: WOS:000377582807409.
 9. Schweitzer K, Law S, Poirier C, Lai X, Wang M, Kranz WD, Carroll CJ, Ray BD, Goodpaster J, **Petrache I**. Short Term Biological Effects Of E-Cigarette Vapor Exposures. *Am J Respir Crit Care Med.* 2015;191:1. PMID: WOS:000377582802506.
 10. Sears CR, Sandusky GE, Albrecht M, Poirier C, Justice MJ, **Petrache I**. The Role Of Xpc In Dna Damage, Oxidative Stress And Metaplasia During Chronic Cigarette Smoke Exposure. *Am J Respir Crit Care Med.* 2015;191:1. PMID: WOS:000377582806526.
 11. Serban KA, Petrusca DN, Lockett AD, Justice MJ, Saint L, Twigg HL, Campos MA, **Petrache I**. Alpha-1 Antitrypsin (aat) Enhances Alveolar Macrophages Scavenging During Conditions Simulating COPD Exacerbation. *Am J Respir Crit Care Med.* 2015;191:1. PMID: WOS:000377582804524.
 12. Kevin Ni, Muhammad U. Mukhtar, Catherine Meador, Danting Cao, Matthew J. Justice, Kelly S. Schweitzer, Keith L. March, **Irina Petrache**. Priming adipose stromal cells for enhanced paracrine anti-elastase activity. Gordon Research Conference on Lung Development, Injury & Repair. Proctor Academy, Andover, New Hampshire. 2015.
 13. Beatman E, Poirier C, Serban KA, Berdyshev E, Saliba J, Justice M, Ovarecz T, Zambrowicz DJ, Schweitzer K, **Petrache I**. Targeting Sphingosine-1-Phosphate Lyase To Enhance Lung S1P And Reduce Experimental Cigarette Smoke-Induced Chronic Lung Injury And Remodeling. *Am J Respir Crit Care Med.* 2016;193:1. PMID: WOS:000390749603480.
 14. Brown M, Neves-Netes E, Long G, Novack R, Fisher AJ, Presson R, **Petrache I**. High Intensity Interval Training Is Superior To Continuous Training At Two Different Intensities And Reverses Rv Remodeling And Dysfunction In A Rat Model Of Pulmonary Hypertension. *Am J Respir Crit Care Med.* 2016;193:1. PMID: WOS:000390749601347.
 15. Brown MB, Neves E, Long G, Novack R, Fisher A, Presson R, **Petrache I**, Kline J, Lahm T. High Intensity Interval Training is Superior to Continuous Training in a Pulmonary Hypertension Rat Model. *Med Sci Sports Exerc.* 2016;48(5):204-5. PMID: WOS:000413838800571.
 16. Clauss M, Bednorz M, Green L, Yi R, Seimetz M, **Petrache I**, Lahm T. Amelioration Of Su5416/hypoxia-Induced Pulmonary Hypertension Following Treatment With Emapii-Neutralizing Antibodies. *Am J Respir Crit Care Med.* 2016;193:1. PMID: WOS:000390749602045.
 17. Justice M, Poirier C, Schweitzer K, Saliba J, **Petrache I**. Acid Sphingomyelinase Is A Novel Regulator Of Lynus And Autophagy. *Am J Respir Crit Care Med.* 2016;193:1. PMID: WOS:000390749605449.

18. Koike K, Beatman E, Justice M, Johnstone B, Clauss M, Schweitzer K, **Petrache I**. Preclinical Development Of An Antibody Against Emap II To Treat Cigarette-Smoke-Induced Emphysema. *Am J Respir Crit Care Med*. 2016;193:1. PMID: WOS:000390749607776.
19. Mikosz AM, Maasa RK, Winfree S, Justice M, Dunn K, **Petrache I**, Serban KA. Alpha-1 Antitrypsin Decreases Pro-Inflammatory Monocyte-Endothelial Cells Interactions Via Fractalkine Axis. *Am J Respir Crit Care Med*. 2016;193:1. PMID: WOS:000390749605464.
20. Ni K, Mukhtar MU, Meador C, Cao D, Justice M, Schweitzer K, March KL, **Petrache I**. Priming Adipose Stromal Cells For Enhanced Paracrine Anti-Elastase Activity. *Am J Respir Crit Care Med*. 2016;193:1. PMID: WOS:000390749603511.
21. Schweitzer K, Rush N, Jinawath N, Yonescu R, Panoskaltis-Moratori A, Griffin CA, Pearse DB, **Petrache I**. Identification Of Igsf3, A Previously Uncharacterized Gene Linked To An Unusually Severe Case Of Emphysema That Is Decreased Both In Vivo And In Vitro In Response To Cigarette Smoke. *Am J Respir Crit Care Med*. 2016;193:1. PMID: WOS:000390749603476.
22. Stephenson S, Chow YH, Wilson C, Crothers KA, **Petrache I**, Schnapp LM. Hiv Infection Promotes Lung Cellular Senescence. *Am J Respir Crit Care Med*. 2016;193:1. PMID: WOS:000390749601481.
23. D. Cao, S. Rezanian, K. Kechris, J. McClintick, **I. Petrache**. Characterization of endothelial microparticles released by cigarette smoke. Keystone Conference. Keystone, CO, 2016.
24. Evgeny Berdyshev, Matthew J Justice, Irina Bronova, Kelly S. Schweitzer, and **Irina Petrache**. Identification of Sphingolipid Metabolism Perturbations in Endothelial Cells induced by the Acid Sphingomyelinase Inhibitor Imipramine Using Stable Isotope Labeling and Targeted Lipidomics. Experimental Biology Conference. San Diego, CA. 2016.
25. Sarah E Stephenson, Engi F Attia, Carole L Wilson, Cherry Wongtrakool, Kristina Crothers, **Irina Petrache**, and Lynn M Schnapp. Effect of HIV Infection on Alpha-1 Antitrypsin Function: Role in Emphysema? 2017 Conference on Retroviruses and Opportunistic Infections.
26. Berdyshev E and **Petrache I**. Identification of Sphingolipid Metabolism Perturbations in Endothelial Cells Induced by the Acid Sphingomyelinase Inhibitor Imipramine Using Stable Isotope Labeling and Targeted Lipidomics. *Faseb J*. 2017;31:2. PMID: WOS:000405461402563. The American Society for Biochemistry and Molecular Biology 2017 Annual Meeting, Chicago, IL, April 23, 2017.
27. **Petrache I**. Environment and Global Lung Health: Exposure, Susceptibility, and Intervention. The Thomas L. Petty Aspen Lung Conference, 60th Annual Meeting, Aspen, CO, June 7, 2017.
28. Beatman E, Koike K, Justice MJ, Schweitzer KS, **Petrache I**. Role Of Sphingosine-1-Phosphate (s1p) In Pulmonary Endothelial Cell Autophagy During Cigarette Smoke Exposure. *Am J Respir Crit Care Med*. 2017;195:1. PMID: WOS:000400372507713.
29. Cao D, Serban K, **Petrache I**. Effects Of Mir-126-Enriched Endothelial Microparticles Released During Cigarette Smoke Exposure On Endothelial Cell Migration And Proliferation. *Am J Respir Crit Care Med*. 2017;195:1. PMID: WOS:000400372500217.
30. Chen C, Do-Umehara H, Zhang Q, Matsuda M, Sala M, Misharin AV, Abdala-Valencia H, Reyfman PA, Anekalla KR, Yu J, Gonzalez F, Perlman H, Sporn PH, Ridge KM, Chandel NS, **Petrache I**, Tudor R, Sznajder JI, Budinger GS, Liu J. Loss Of Miz1 Function In The Lung Epithelium Is Sufficient To Induce Emphysema. *Am J Respir Crit Care Med*. 2017;195:1. PMID: WOS:000400372507757.
31. Kim C, Jary H, Schweitzer K, Curran-Everett D, Gordon S, Mortimer K, **Petrache I**. Effect of Household Air Pollution Exposures on Respiratory Symptoms and Systemic Immunoregulatory Cytokines in HIV-Positive Individuals. *Chest*. 2017;152(4):821A-A. PMID: WOS:000418374001517.
32. Koike K, Schweitzer KS, Beatman E, Mikosz AM, Justice MJ, Bronova IA, Berdyshev EV, **Petrache I**, Natl Jewish H. Requirement Of Glucosylceramide Synthase For Human Lung Microvascular Endothelial Cell Survival. *Am J Respir Crit Care Med*. 2017;195:1. PMID: WOS:000400372507143.
33. Liu J, Chen C, Zhang Q, Matsuda M, Sala M, Misharin AV, Abdala-Valencia H, Reyfman PA, Perlman H, Sporn PH, Ridge KM, Chandel NS, **Petrache I**, Tudor R, Sznajder JI, Budinger GS. Loss Of Function Of The Transcription Factor Miz1 Causes Spontaneous Emphysema And Bronchitis In Mice. *Am J Respir Crit Care Med*. 2017;195:1. PMID: WOS:000400372507793.
34. Mikosz AM, Sandhaus RA, Maier LA, Hamzeh NY, **Petrache I**, Serban K. Alpha 1 Antitrypsin (a1at) Increases Macrophages Efferocytosis Via Mannose Binding Lectin (mb1)-Mannose Receptor (mar) Signaling. *Am J Respir Crit Care Med*. 2017;195:1. PMID: WOS:000400372506285.

35. Schweitzer K, Justice MJ, Bronova I, Leach SM, Berdyshev EV, **Petrache I**. Novel function of tetraspanin-interacting protein IGSF3 in the regulation of glycosphingolipid metabolism. *FASEB J*. 2017;31:1. PMID: WOS:000405461403449.
36. Sears CR, Zhou H, Fisher AJ, Justice MJ, Van Demark M, Saliba J, Sandusky GE, **Petrache I**. Dna Repair Protein Xpc Alters Pulmonary Cell Fate Following Cigarette Smoke Exposure And May Play A Role In Emphysema And Lung Cancer Development. *Am J Respir Crit Care Med*. 2017;195:1. PMID: WOS:000400372504596.
37. Kelly S. Schweitzer, Matthew J. Justice, Irina Bronova, Sonia M. Leach, Evgeny V. Berdyshev, and **Irina Petrache**. Novel function of tetraspanin-interacting protein IGSF3 in the regulation of glycosphingolipid metabolism. Experimental Biology Conference. Chicago, IL. 2017.
38. Franziska E Uhl, Barbora Zvarova, Bethany A Ahlers, Catrina M Hood, Bin Deng, Ying Wai Lam, Erica Beatman, Kelly S. Schweitzer, **Irina Petrache**, Daniel J Weiss, Darcy E Wagner. Characterization of decellularized COPD lung matrices using mass spectrometry proteomics. Lung Science Conference, ERS, Estoril, Portugal 2018.
39. Roger Powell, Kevin Quinn, Russell Bowler, **Irina Petrache**, Katerina Kechris, Nichole Reisdorph, Charmion Cruickshank-Quinn. Application of Drift Tube Ion Mobility and Collisional Cross Section Databases to Investigate Lipid Profile Differences in a Mouse Model of Smoking. 4th Australian Lipids Meeting, Camperdown Campus at the University of Sydney in Australia, November 28-30, 2018.
40. Kim C, Jary H, Mortimer K, Schweitzer KS, Curran-Everett D, Gordon S, **Petrache I**. Effects of Household Air Pollution in Malawi and Human Immunodeficiency Virus Status on Respiratory Symptoms and Inflammation, Injury, and Repair Markers. *Ann Am Thoracic Society*. 2018;15:S132-S3. PMID: WOS:000430492200031.
41. Schweitzer K, Ni K, **Petrache I**. Crosstalk Between Tetraspanin-Interacting Protein Igsf3 and Sphingolipid Metabolism. *FASEB J*. 2018;32(1):2. PMID: WOS:000436985001421.
42. Kelly S. Schweitzer, Kevin Ni, and **Irina Petrache**. Crosstalk between tetraspanin-interacting protein Igsf3 and sphingolipid metabolism. Experimental Biology Conference. San Diego, CA. 2018.
43. Charmion Cruickshank-Quinn, Roger Powell, **Irina Petrache**, Nichole Reisdorph. The Aging Lung. Metabolomics Society Conference. World Forum, The Hague, Netherlands. June 2019.