

James Martin Samet

Curriculum Vitae

EDUCATION

- 1994 -1995 *Postdoctoral Fellow*
Center for Environmental Medicine and Lung Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7310
- 1993 *Science Policy Fellow*
American Association for the Advancement of Science/Environmental Protection Agency, Office of Health and Environmental Assessment, U.S. EPA, Washington, DC 20460
- 1992-1994 *Postdoctoral Fellow*
Section on Pulmonary and Critical Care Medicine, Bowman-Gray School of Medicine, Winston-Salem, NC 27517
- 1991-1992 *Postdoctoral Fellow*
Cell and Molecular Biology Section, Health Effects Research Laboratory/U.S. EPA, Chapel Hill, NC 27599-7310
- 1990-1991 *Postdoctoral Fellow*
Center for Environmental Medicine and Lung Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7310
- 1992 *Master of Public Health*
Environmental Sciences, School of Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599
- 1990 *Doctor of Philosophy*
Curriculum in Toxicology, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599
- 1985 *Bachelor of Science*
Microbiology and Cell Science, College of Liberal Arts and Sciences, University of Florida, Gainesville, FL 32612

PROFESSIONAL EMPLOYMENT

- 2007-Present *Senior Principal Investigator Scientist*
Clinical Research Branch, Environmental Public Health Division, National Health Effects and Environmental Research Laboratory, U.S. Environmental Protection Agency, MD-58D, Research Triangle Park, NC 27711.
- 1997-2007 *Research Biologist/Principal Investigator*
Clinical Research Branch, Human Studies Division, National Health Effects and Environmental Research Laboratory, U.S. Environmental Protection Agency, MD-58D, Research Triangle Park, NC 27711.
- 2001-2002 *Acting Chief*

Clinical Research Branch, Human Studies Division, U.S. Environmental Protection Agency, MD-58D, Research Triangle Park, NC 27711.

1995-1997 *Research Associate*
Center for Environmental Medicine and Lung Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7310.

SOCIETIES/PROFESSIONAL CERTIFICATION

1996-Present *Diplomate*, Certified in General Toxicology, The American Board of Toxicology
American Society of Biochemistry and Molecular Biology
American Physiological Society
Society for Redox Biology and Medicine
Society of Toxicology

HONORS

2016 *Bronze Medal for Commendable Service*. Human Research Protection Team
2015 *Scientific and Technological Achievement Award Level 3*. Research Informing How Omega-3 Fatty Acids Can Protect People From Effects of Air Pollution
2014 *Scientific and Technological Achievement Award Level 3*. Implementation of an Advanced Molecular-Imaging Approach to the Study of Environmental Oxidant Stress
2012 *Scientific and Technological Achievement Honorable Mention*. Research Distinguishing the Cardiopulmonary Toxicity of Size-Fractionated Particulate Matter in Mice
2010 *Scientific and Technological Achievement Award Level 2*. Research Determining the Health Effects Associated with Exposure to Coarse and Fine Air Pollution Particle
2006 *Scientific and Technological Achievement Award Level 3*. For Elucidation of the Molecular Mechanism of Toxicity of Zinc in Human Lung Cells
2003 *Gold Medal for Exceptional Service*. For outstanding Achievements by the NHEERL Particulate Matter (PM) Health Research Team in Establishing and Implementing and Integrated Research Program to Define the Potential Health Threat of Ambient PM on the American Public
2002 *Scientific and Technological Achievement Award Level 1 (Highest)*. For Outstanding Research on the Effects of Air Pollution Particles from the Utah Valley on Humans and Animals

RESEARCH INTERESTS

Molecular imaging of toxicological signaling events, perturbation of cell signaling by environmental agents, oxidant stress, pulmonary toxicology, inflammation.

FACULTY APPOINTMENT

- 2012-Present *Adjunct Professor*
Department of Environmental Sciences and Engineering
University of North Carolina at Chapel Hill
- 2006-2012 *Adjunct Associate Professor*
Curriculum in Toxicology, University of North Carolina School of Medicine, University
of North Carolina at Chapel Hill, Chapel Hill, NC.
- 1997-2005 *Adjunct Assistant Professor*
Curriculum in Toxicology, University of North Carolina School of Medicine, and
Department of Environmental Sciences and Engineering, School of Public Health,
University of North Carolina at Chapel Hill, Chapel Hill, NC

STUDY SECTIONS AND Ad Hoc PROGRAM REVIEW PANELS

- 2012-Present Technical Qualifications Review Board, NHEERL, US EPA
- 2006-2009 Southern California Particle Center External Science Advisory Board
- 2005 Israeli Science Foundation. Research Grant Applications
- 2005 U.S. Department of Veterans Affairs. Research Grant Applications.
- 2004 Israeli Science Foundation. Research Grant Applications
- 1997 U.S. Environmental Protection Agency-NCERQA-Research Grants
- 1996-1997 American Association for the Advancement of Science Environmental Fellowships
- 1995-1997 U.S. Environmental Protection Agency, Graduate Fellowships
- 1995 U.S. Air Force, Office of Scientific Research
- 1994 Wellcome Foundation Fellowships
- 1992 U.S. Environmental Protection Agency Postdoctoral Training Grants

VISITING SCIENTISTS

- 2016 Zhen An, PhD. Xinxiang Medical University, Xinxiang, PRC. Training in biochemical toxicology research
- 2015 Xiang Sun, MD, MS. Xinxiang Medical University, Xinxiang, PRC. Training in Clinical Studies
- 2007 Thomas Hoffer, PhD. Inhalation Biology Institute, GSF, Neuherberg, Germany. Fellowship in signal transduction research.
- 2005 Anke G. Lenz, PhD.
Inhalation Biology Institute, GSF, Neuherberg, Germany. Training in signal transduction techniques
- 2004 Ingrid Beck-Speier, PhD
Inhalation Biology Institute, GSF, Neuherberg, Germany, Training in signal transduction techniques
- 2003 Anke G. Lenz, Ph.D.

2001 Inhalation Biology Institute, GSF, Neuherberg, Germany, Training in signal transduction techniques
Anke G. Lenz, Ph.D.
Inhalation Biology Institute, GSF, Neuherberg, Germany, Training in signal transduction techniques

TEACHING ACTIVITY

2002-Present *Chair*, Doctoral Written Examination Committee, Curriculum in Toxicology, University of North Carolina at Chapel Hill
2000-Present *Laboratory Rotation Advisor*, Biological and Biomedical Sciences Program, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC
2012-Present *Member*, Biological and Biomedical Sciences Program, Graduate Admissions, Pathogenesis Committee
2006-2009 *Member*, Executive Committee, Curriculum in Toxicology, University of North Carolina at Chapel Hill
2006-2009 *Member*, Graduate Education Committee, Curriculum in Toxicology, University of North Carolina at Chapel Hill
2000-2003 *Lecturer*, Biochemical Toxicology of the Lung, Biochemical Toxicology TOX 142, Curriculum in Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC.

INVITED SCIENTIFIC PRESENTATIONS (*Denotes Presentations Outside US)

1. 2016. Redox Toxicology: Linking Oxidative Stress to Signaling Dysregulation. Department of Toxicology. North Carolina State University
2. *2014. Mechanisms of Oxidant Stress Induced by Air Pollutants. Chinese Society for Environmental Sciences Conference, International Symposium on Environmental Pollution and Health, Xinxiang, Henan Province, China
3. *2013. Mechanistic Approaches to Investigating the Toxicological Effects of Air Pollutants. School of Public Health, Xinxiang Medical University, Henan Province, China
4. *2012. Zinc Ions as Effectors of Environmental Lung Injury. Society for Free Radical Research International. Imperial College, London, UK
5. *2012. Real-Time Imaging of Oxidative Events Induced by Exposure to Air Pollutants. Environmental Research Group. King's College, London, UK
6. 2010. Mechanisms Of Signal Transduction Activation In Human Airway Epithelial Cells Exposed To Ambient Air Pollutants. Molecular Toxicology Program. North Carolina State University
7. *2009 Molecular Imaging of Oxidative Stress Induced By Environmental Agents. Biennial EPA-HMGU Meeting, Munich, Germany
8. 2008 Mechanisms Of Signal Transduction Activation In Human Airway Epithelial Cells Exposed To Ambient Air Pollutants. Duke University Airway Biology Program

9. *2008 Session Chair, Air Pollution- Challenging Susceptibility and Novel Outcomes. American Thoracic Society Meeting, Toronto, Canada.
10. *2008 Health Effects Of Exposure To Ultrafine Particulate Matter. American Thoracic Society Meeting, Toronto, Canada.
11. 2008 Signaling Effects Of Particulate Matter Exposure In Human Lung Cells. Neurotoxicology Division Seminar Series. NHEERL, RTP, NC.
12. 2007 Systems Biology and Toxicology. Biennial EPA-GSF Collaboration Meeting, Montreat, NC
13. *2007 Effects of Zinc on EGFR Signaling in Human Airway Epithelial Cells. International Conference on Trace Elements in Health: Essentiality and Toxicity. Crete, Greece. October 21-26, 2007.
14. *2006 A Comparison of the Effects of Fine, Coarse And Ultrafine Ambient Particulate Matter in Humans. Airborne PM: Relevance of particle components and size for health effects and risk assessment. 10th International Inhalation Symposium. Hannover, Germany.
15. 2006 Zn²⁺-Induced MAPK and EGFR Activation In Human Airway Epithelial Cells Are Mediated By Phosphatase Inhibition. Annual Meeting of the Society of Toxicology. San Diego, CA.
16. *2006 Mechanisms of EGFR Signaling Initiation by Zn²⁺. 6th International Conference on Zinc Signaling. Sienna, Italy. September 16-21. *[Unable to accept invitation due to lack of travel funds]*.
17. 2005 PM Metals Initiate Signaling Through An Inhibition of Protein Tyrosine Phosphatases. 8th International Conference on Mechanisms of Action of Fibers and Particles. Research Triangle Park, NC.
18. *2004 Effects of Zinc on EGFR Signaling in Human Airway Epithelial Cells. 5th International Conference on Zinc Signaling. Aarhus, Denmark. June 19-23, 2004. *[Unable to accept invitation due to lack of travel funds]*.
19. 2004 Mechanisms of EGFR Signaling Initiation by Zn²⁺: An Update. Center for Environmental Medicine, Asthma and Lung Biology. University of North Carolina, Chapel Hill, NC.
20. *2003 Effects of Zinc on EGFR Signaling in Human Airway Epithelial Cells. 4th International Conference on Zinc Signaling. Grand Cayman Island, May 4-10, 2003. *[Unable to attend due to lack of travel funds. Talk was presented by my UNC collaborator Dr. L.M. Graves]*.
21. 2004 Studies on the Activation of EGFR by Zn²⁺: Lessons Learned. Reproductive Toxicology Division. University of North Carolina, Chapel Hill, NC National Health and Environmental Effects Research Laboratory. Research Triangle Park, NC.
22. 2003 Intracellular Transduction of Stress Signals. Experimental Toxicology Division, National Health and Environmental Effects Research Laboratory. Research Triangle Park, NC.
23. 2002 Early Events in Metal-Induced Signaling. Environmental Pathology Program, Department of Pathology. University of Vermont, Burlington, VT.
24. 2002 Early-Events in Metal-Induced Signaling. Pulmonary Pathobiology Section, National Institute of Environmental Health Sciences, Research Triangle Park, NC.
25. Role of Dietary Antioxidants in Human Responsiveness to Ozone Exposure. Air Progress Review Workshop. US EPA Office of Research and Development. RTP, NC.
26. *2001 Regulation of IL-8 Expression in Human Airway Epithelial Cells Exposed to Carbon Ultrafine Particles. Second NHEERL-GSF Workshop, Garmish, Germany.

27. 2001 Intracellular Signaling Induced by PM Metals: Early Events. 7th International Congress on Combustion By-Products. National Institute of Environmental Health Sciences, Research Triangle Park, NC.
28. PM Metals and Intracellular Signaling. Work in Progress. Pulmonary Toxicology Branch, NHEERL, Research Triangle Park, NC.
29. *2001 Oxidative Stress and Inflammatory Reactions. Session Chair. Second NHEERL-GSF Workshop, Garmish, Germany.
30. *2000 Signaling Mechanisms in Human Airway Epithelial Cells Exposed to Metals. Inhalation Toxicology Institute, GSF, Munich, Germany.
31. 2000 Differential Activation of Mitogen Activated Protein Kinase Pathways and Transcription Factors by Specific Particulate Matter Components. Society of Toxicology Meeting, Philadelphia, PA.
32. 2000 Signal Transduction Mechanisms in Human Lung Cells Exposed to Metals. Department of Pharmacology, University of North Carolina at Chapel Hill, Chapel Hill, NC.
33. 1999 Signaling Mechanisms in Human Airway Epithelial Cells Exposed to Combustion-Derived Metallic Compounds. National Institute of Environmental Health Sciences, Research Triangle Park, NC.
34. Transcription factors and gene expression in environmental and occupational lung disease. Session Chair Mini Symposium. American Thoracic Society/American Lung Association Meeting. San Diego, CA.
35. *1999 Metal-Induced Activation of Signaling Pathways in Human Airway Epithelial Cells. 6th International Conference on Environmental and Occupational Lung Disease. Vancouver, BC, Canada.
36. 1998 Tyrosine Phosphatases as Targets in Metal-Induced Cell Signaling. Work in Progress, Human Studies Division, Human Studies Division, US EPA, Chapel Hill, NC.
37. 1997 Signaling Mechanisms of Particulate-Induced Inflammatory Mediator Expression. Work in Progress, Human Studies Division, US EPA, Chapel Hill, NC
38. 1997 Induction of Cyclooxygenase 2 Expression in Human Airway Epithelial Cells Exposed to Residual Oil fly Ash, Duke University Medical Center, Durham, NC.
39. 1994 Lipid Inflammatory Mediators in the Lung: New Approaches to the Study of the Effects of Air Pollutants. Health Effects Research Laboratory, US EPA, Research Triangle Park, NC.
40. Arachidonic Acid Metabolism in Stem Cell Factor-Differentiated Mast Cells. Southeastern Lipid Research Conference, Cashiers, NC.
41. Risk Assessment of Oxidant Pollutants. International Conference on Oxygen Radicals and Lung Injury, Morgantown, WV.
42. 1993 Oxidant Exposure and Lung Aging. U.S. Environmental Protection Agency, Washington, DC.
43. 1992 Role of Airway Mucus in Pulmonary Toxicology. School of Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC.
44. 1991 Effect of Ozone on Platelet Activating Factor Metabolism, Duke University, Durham, NC.

45. 1990 Effect of Ozone on Platelet Activating Factor Metabolism in Macrophages. Curriculum in Toxicology, University of North Carolina at Chapel Hill Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC.

EXTRAMURAL GRANT SUPPORT (Predates Employment with U.S. EP)

- 1997 Mechanism of Particulate-Induced Mediator Expression in Human Airway Epithelial Cells, **J.M. Samet**, P.I. STAR GRANT. Application for Federal Assistance from the U.S. Environmental Protection Agency NCERQA Extramural Grants Program. Awarded \$324,575 direct costs. Note: Grant was transferred to Co-PI upon my becoming an EPA employee.

INTERNAL FUNDING SUPPORT

- 2016 Pathways to Innovation Project- A Window to the Airway. Stage 2
2015 Pathways to Innovation Project- A Window to the Airway. Stage 1
2004-2007 "Risk Assessment of the Inflammogenic and Mutagenic Effects of Diesel Exhaust Particles: A Systems Biology Approach". Computational Toxicology Start-Up Projects. Funds to support inter-divisional, inter-laboratory and extramural collaborative research on the development of computational methods for toxicological risk assessment.
2007-2008 Postdoctoral Fellow Dr. Thomas Hoffer from GSF-Munich, Germany. Obtained funds to support postdoctoral trainee under auspices of GSF-EPA agreement.
2006 "Spectral Imaging Confocal Microscope". Obtained funds from NHEERL Capital Equipment Committee to purchase Nikon C1 Si Confocal Microscope and establish HSD's Confocal Microcopy Suite.
2006-2007 "Proteomic investigation of differences between airway epithelial cells derived from asthmatics and normal individuals using SILAC". Obtained above-infrastructure PM program funds to support collaborative research with Dr. Lee M. Graves and Dr. Weidong Wu, CEMALB. UNC-Chapel Hill.
2004-2008 Pre-doctoral candidate Tamara Tal. Above-infrastructure funds obtained from PM program to support trainee in the Curriculum in Toxicology. UNC-Chapel Hill. .
2002-2006 Pre-doctoral candidate YuMee Kim. Above-infrastructure funds obtained under auspices of EPA-GSF agreement to support trainee in the Curriculum in Toxicology, School of Medicine, UNC-Chapel Hill.
2000-2002 "Mechanisms of signal transduction activation by PM components". Obtained above-infrastructure funds to support Dr. Weidong Wu, CEMALB-UNC-Chapel Hill.
2001 "Identification of Novel Signaling Targets in PM-Exposed Human Airway Epithelial Cells". PM above-infrastructure intramural competition. Funds to support postdoctoral fellow Jack Wang, MD, Ph.D. through cooperative agreement.
2000 "Mechanisms of PM-Mediated Signal Transduction Activation in Human Lung Cells". PM above infrastructure intramural competition. Funds for BPA contracts to support molecular biology projects for PM research.

- 1999 "Mechanisms of PM-Mediated Signal Transduction Activation in Human Lung Cells" PM above infrastructure intramural competition. Funds to support collaborative PM projects with the University of North Carolina.
- 1998 "Synthesis of Iron-Coated Surrogate PM Particles for Toxicological Studies". PM above infrastructure intramural competition. Funds to support collaborative PM projects with the University of Connecticut.
- 1997 "Mechanisms of Signal Transduction Activation by Human Airway Epithelial Cells Exposed to Ambient PM". PM above-infrastructure intramural competition. Funds to support postdoctoral fellow Weidong Wu, MD, Ph.D. through cooperative agreement.

INTRAMURAL COMMITTEES, WORKSHOPS, SYMPOSIA ORD

- 2006 Participated in NCEA Scientist-to-Scientist Workshop on Oxidant Stress in Risk Assessment.
- 2006 Briefing of ORD Regional Scientist on HSD Clinical Studies Capabilities.
- 2005 Participated in PM Centers Kick-off Meeting.
- 2002 PM Criteria Document Writing Team. Toxicology and synthesis chapters.
- 1998 PM Multi-Year Plan- Worked with PM Program Manager John Vandenberg, Ph.D., on PM Strategy Document.

NHEERL

- 2008-2009 NHEERL Imaging Core Committee.
- 1999-present NHEERL-GSF Collaborative Agreement. Toxicology Coordinator.
- 1999-2004 NHEERL News/NHEERL Report. HSD Representative.
- 2002 NHEERL Goal 8.1 Cell Signaling Breakout Group. Proposal Co-author.
- 2001-2002 NHEERL Genomics and Proteomics Steering Group. HSD Representative.
- 1999-2000 NHEERL Emerging Science Committee. HSD Representative.

HSD

- 1998-2001 Genetic Susceptibility Program Coordinator.
- 2001-2004 Visiting Pulmonary Scholar Lecture Series Representative.
- 1998, 1999 HSD Retreat. Scientific Session speaker.

EXTERNAL

- 2001 Molecular Epidemiologist Search Committee. NIEHS. Research Triangle Park, NC.

CONSULTANT

- 2002 Zn-Induced EGF Receptor Activation and Lung Inflammation. NIH Grant Application. W. Wu, MD, PhD, PI.
- 2001 Mechanisms of Cell Signaling in Human Airway Epithelial Cells Exposed to Zn. STAR GRANT. Lee M. Graves, PhD, PI. AWARDED.

AD HOC JOURNAL REVIEWS

American Journal of Respiratory Cell and Molecular Biology

American Journal of Respiratory and Critical Care Medicine

American Journal of Physiology

Environmental Health Perspectives

Experimental Lung Research

Inhalation Toxicology

Molecular Pharmacology

Nanotoxicology

Environmental Science and Technology

Toxicology and Applied Pharmacology

Particle and Fiber Toxicology

Cell Biology and Toxicology

Toxicology

Toxicological Sciences

Cytometry

TRAINEES

- 2017-present Postdoctoral Studies Committee
Nicole Dover, PhD. Curriculum in Toxicology, University of North Carolina at Chapel Hill
- 2016-present Postdoctoral Research Advisor
Eugene Gibbs-Flournoy, PhD. Oak Ridge Institute for Science and Education
- 2016-present Dissertation Advisor
Elizabeth Corteselli, Graduate Student, Environmental Sciences and Engineering, School of Public Health, University of North Carolina at Chapel Hill
- 2013- present Dissertation Advisor
Katelyn Lavrich, Graduate Student, Curriculum in Toxicology, School of Medicine, University of North Carolina at Chapel Hill
- 2011-2016 Dissertation Advisor
Phillip Wages, Graduate Student, Curriculum in Toxicology, School of Medicine, University of North Carolina at Chapel Hill (Awarded PhD December 2015)
- 2015-present Dissertation Committee Member
Adam Speen, Curriculum in Toxicology, University of North Carolina at Chapel Hill
- 2009-2013 Dissertation Committee Member
Christopher Sproul, Graduate Student, Curriculum in Toxicology, School of Medicine, University of North Carolina at Chapel Hill
- 2009-2012 Dissertation Advisor
Eugene Gibbs-Flournoy, Graduate Student, Curriculum in Toxicology, School of Medicine, University of North Carolina at Chapel Hill, (PhD awarded December 2012, Presently Postdoctoral Fellow, US EPA).
- 2007-2011 Dissertation Advisor
Wan-Yun Cheng, Graduate Student, Department of Environmental Sciences and Engineering, School Of Public Health, University of North Carolina at Chapel Hill (Awarded PhD December 2011, Presently Postdoctoral Fellow, Curriculum in Toxicology, UNC-Chapel Hill).
- 2007-2008 Research Advisor
Thomas Hofer, PhD, Visiting Postdoctoral Fellow, Inhalation Biology Institute, GSF, Neuherberg, Germany.
- 2006-2007 Co-Advisor
Inchio Lou, PhD, Postdoctoral Fellow, Center for Environmental Medicine, Asthma and Lung Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC.
- 2005-2007 Research Advisor
Dongsun Cao, PhD, Postdoctoral Fellow, Center for Environmental Medicine, Asthma and Lung Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC.
- 2004-2008 Dissertation Advisor.
Tamara Tal, Graduate Student, Curriculum in Toxicology, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC. (Awarded PhD June 2008,

- presently Postdoctoral Fellow in Molecular Toxicology Program, Oregon State University).
- 2004-2006 Dissertation Advisor (PhD awarded in 2006, presently Postdoctoral Fellow at Stanford University). Yumee Kim, Graduate Student, Environmental Sciences and Engineering, School of Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC.
- 2005-2008 Dissertation Committee Member. Michelle LaMerril, Graduate Student, Curriculum in Toxicology, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC.
- 2004-2007 Dissertation Committee Member (PhD awarded in 2007)
Brian Dewar, Graduate Student, Curriculum in Toxicology, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC
- 2002-2004 Dissertation Committee Chairman
Olivia Gardner, Graduate Student, Curriculum in Toxicology, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC
- 2002-2003 Research Advisor
Jack Wang, MD, PhD, Postdoctoral Fellow, Center for Environmental Medicine and Lung Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC
- 2002-2004 Thesis Advisor
YuMee Kim, Graduate Student, Environmental Sciences and Engineering, School of Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC
- 2001-2003 Thesis Advisor
Celessia Clemens, Graduate Student, North Carolina Central University, Durham, NC
- 1998-2002 Research Advisor
Weidong Wu, MD, PhD, Postdoctoral Fellow, Center for Environmental Medicine and Lung Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC
- 1997-1999 Research Advisor
Ilona Jaspers, PhD, Postdoctoral Fellow, Center for Environmental Medicine and Lung Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC
- 1997-1999 Dissertation Committee Member
Susan E. Steck, Graduate Student, Department of Nutrition, School of Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC

PEER REVIEWED ARTICLES

1. Lavrich, KS, Wages, PA, Bromberg, PA, Samet, JM (2016). Investigating mitochondrial dysfunction in human lung cells exposed to an environmental electrophile. In Preparation.
2. DeMarini, D, Warren, SH, Lavrich, K, Flen, A, Aurell, J, Mitchell, W, Greenwell, D, Preston, W, Hays, MD, **Samet, JM**, Gullett, B. (2016). Mutagenicity and oxidative damage induced by organic extract of the particulate emissions from a simulation of the *Deepwater Horizon* surface oil burns. In Preparation.
3. Wages, PA, Cheng, W-Y, Gibbs-Flournoy, E, **Samet, JM**. (2016). Live cell imaging approaches for the investigation of xenobiotic-induced oxidant stress. *Bioch. Biophys. Acta. Gen. Subj.* 1860:2802-2815.
4. Yan, Z, Jin, Y, An, Z, Liu, Y, **Samet, JM**, Wu, W. (2016). Inflammatory cells signaling following exposures to particulate matter and ozone. *Bioch. Biophys. Acta. Gen. Subj.* In Press.
5. Feng, F, Ji, Y, Duan, L, Yan, Z, Wang, S, Li, F, Liu, Y, **Samet, JM**, Wu, W. (2015). Regulation of ozone-induced lung inflammation by the epidermal growth factor receptor in mice. *Environ. Toxicol.* DOI: 10.1002/tox.22202.
6. Wages, PA, Lavrich, KS, Zhang, Z, Cheng, W-Y, Corteselli, E, Gold, A, Bromberg, P, Simmons, SO, **Samet, JM**. (2015). Protein sulfenylation: A novel readout of environmental oxidant stress. *Chem. Res. Toxicol.*, 28:2411-2418.
7. Tong, H, Rappold, AG, Caughey, M, Hinderliter, AL, Bassett, M, Montilla, T, Case, M, Berntsen, JH, Bromberg, PA, Cascio, WE, Dias-Sanchez, D, Devlin, RB, **Samet, JM**. (2015). Dietary supplementation with olive oil or fish oil and vascular effects of concentrated ambient particulate matter in human volunteers. *Env. Health. Perspect.* 123:1173-1179.
8. Silbajoris, R, Linak, W, Shenderova, O, Winterrowd, C, Chang, H-C, Zweier, JL, Kota, A, Dailey, LA, Bromberg, PA, **Samet, JM**. (2014). Detonational nanodiamond toxicity in human airway epithelial cells is modulated by air oxidation. *Diam. Relat. Mater.* 58:16-23
9. Wages, PA, Silbajoris, R, Speen, A, Brighton, L, Henriquez, A, Tong, H, Bromberg, PA, Simmons, SO, **Samet, JM** (2014). Role of H₂O₂ in the oxidative effects of zinc exposure in human airway epithelial cells. *Redox Biology.* 3:47-55.
10. Wu, W, Wages, PA, Devlin, R, Diaz-Sanchez, D, Peden, DB, **Samet, JM**. (2014) Src-mediated EGF receptor activation regulates ozone-induced Interleukin-8 expression in human bronchial epithelial cells. *Environ. Health. Perspect.* 123:231-236.
11. Cheng, W-Y, Larson, J, **Samet, JM** (2014). Monitoring Intracellular Oxidative Events Using Dynamic Spectral Unmixing Microscopy. *Methods.* 66:345-352.
12. Wu, W, Bromberg, PA, **Samet, JM** (2013). Zn Ions as Effectors of Environmental Oxidative Lung Injury. *Free Rad. Biol. Med.* 65:57-69.
13. Ghio AJ, Tong H, Soukup JM, Dailey LA, Cheng WY, Samet JM, Kesic MJ, Bromberg PA, Turi JL, Upadhyay D, Budinger GS, Mutlu GM. Sequestration of mitochondrial iron by silica particle initiates a biological effect. *Am J Physiol Lung Cell Mol Physiol* 2013; 201; 305(10):L712-24. doi: 10.1152/ajplung.00099.2013.

14. Phillips, RM, Dailey, LA, Blair, E, **Samet, JM** and Allbritton, NL. (2013). Ex vivo chemical analysis of protein tyrosine phosphatase activity in single human airway epithelial cells. *Analyt. Chem.* 86:1291-1297.
15. Gibbs-Flournoy, E, Simmons, SO, Bromberg, PA, Dick, T, **Samet, JM**. (2013) Monitoring intracellular redox changes in ozone-exposed airway epithelial cells. *Env. Health Persp.* 121:312-319.
16. Cheng WY, Currier J, Bromberg PA, Silbajoris R, Simmons SO, **Samet JM**. (2012) Linking oxidative events to inflammatory and adaptive gene expression induced by exposure to an organic particulate matter component. *Environ Health Perspect* 120(2): 267-274. PMID 3279454
17. Tong, H, Rappold, AG, Diaz-Sanchez, D, Steck, SE, Berntsen, J, Cascio, WE, Devlin, RB and **Samet, JM**. (2012). Omega-3 fatty acid supplementation appears to attenuate the cardiac effects of air pollution exposure in healthy middle aged adult volunteers. *Environ. Health Perspect.* 120:952-958
18. Wu, W, Doreswamy, V, Diaz-Sanchez, D, **Samet, JM**, Kesic, M, Dailey, L, Zhang, W, Jaspers, I, Peden, DB. (2011). GSTM1 modulation of IL-8 expression in human bronchial epithelial cells exposed to ozone. *Free Rad. Biol. Med.* 51:522-529.
19. Silbajoris, RJ, Osornio-Vargas, AR, Simmons, SO, Reed, W, Bromberg, PA, Dailey, LA and **Samet, JM** (2011), Ambient particulate matter induces interleukin-8 expression through an alternative NF-kB (nuclear factor-kappa- B) mechanism in human airway epithelial cells. *Environ. Health Perspect* 119:1379-1383.
20. Gibbs-Flournoy, EA, Bromberg, PA, Hofer, TPJ, **Samet, JM** and Zucker, RM. (2011). Darkfield-confocal microscopy detection of nanoscale particle internalization by human lung cells. *Part. Fibre Toxicol.* 8:2.
21. Cheng, W-Y, Tong, H, Miller, EW, Chang, CJ, Remington, J, Zucker, RM, Bromberg, PA, **Samet, JM** and Hofer, PJ. (2010). An integrated imaging approach to the study of oxidative stress generation by mitochondrial dysfunction in living cells. *Env. Health. Perspect.* 118: 902-908
22. **Samet JM** and Tal TL. (2010). Toxicological disruption of signaling homeostasis: tyrosine phosphatases as targets. *Annu Rev Pharmacol Toxicol* 50: 215-235.
23. Tong, H, Cheng, W-Y, **Samet, JM**, Gilmour, MI and Devlin, RB. (2010). Differential cardiopulmonary effects of size-fractionated ambient particulate matter in mice. *Cardiovasc. Toxicol.* 10:259-267.
24. Wu, W, **Samet, JM**, Peden, DB and Bromberg, PA. (2010). Phosphorylation of p65 is required for zinc oxide nanoparticle-induced interleukin 8 expression in human bronchial epithelial cells. *Environ. Health Perspect.* 118:982-987.
25. **Samet JM**, Rappold A, Graff D, Cascio WE, Berntsen JH, Huang YC, Herbst M, Bassett M, Montilla T, Hazucha MJ, Bromberg PA, and Devlin RB. (2009). Concentrated ambient ultrafine particle exposure induces cardiac changes in young healthy volunteers. *Am J Respir Crit Care Med* 179: 1034-1042.
26. Tal TL, Simmons S, Silbajoris R, Dailey L, Cho SH, Ramabhadran R, Linak W, Reed W, Bromberg PA, and **Samet JM**. (2009) Differential transcriptional regulation of IL-8

- expression by human airway epithelial cells exposed to diesel exhaust particles. *Toxicol Appl Pharmacol.* 243:46-54.
27. Cao D, Bromberg PA, and **Samet JM**. (2009) Diesel particle-induced transcriptional expression of p21 involves activation of EGFR, Src, and Stat3.. *Am J Respir Cell Mol Biol* 42: 88-95.
 28. Silbajoris R, Huang JM, Cheng WY, Dailey L, Tal TL, Jaspers I, Ghio AJ, Bromberg PA, and **Samet JM**. (2009). Nanodiamond particles induce IL-8 expression through a transcript stabilization mechanism in human airway epithelial cells. *Nanotoxicology* 3: 152-160
 29. Tal, T.L., Silbajoris, R.A., Bromberg, P.A., Kim, Y. and **Samet, J.M.** (2008). Epidermal growth factor activation by diesel particles is mediated by tyrosine phosphatase inhibition. *Toxicol. Appl. Pharmacol.* 233:382-388.
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BOOKS/BOOK CHAPTERS/MONOGRAPHS

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