

CURRICULUM VITAE

ROBERT JOHN LAUMBACH MD, MPH, CIH

OFFICE ADDRESS AND CURRENT POSITION:

Assistant Professor, Department of Environmental and
Occupational Medicine
Robert Wood Johnson Medical School
University of Medicine and Dentistry of New Jersey

MAILING ADDRESS: Environmental and Occupational Health Sciences Institute
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CITIZENSHIP: United States of America

EDUCATION:

B.A.	Rutgers University, New Brunswick, NJ. Environmental Science	1984
M.P.H.	Columbia University, New York Occupational and Environmental Health	1992
M.D.	UMDNJ-Robert Wood Johnson, New Jersey	1997

PROFESSIONAL TRAINING:

Resident, Family Medicine, UMDNJ-Robert Wood Johnson Medical School,
New Brunswick, NJ 1997-1999

Chief Resident, Family Medicine, UMDNJ-Robert Wood Johnson Medical School,
New Brunswick, NJ 1999-2000

Fellow, Occupational Medicine, UMDNJ-Robert Wood Johnson Medical School,
New Brunswick, NJ 2000-2001

ACADEMIC APPOINTMENTS:

Assistant Professor, Department of Environmental and Occupational Medicine, UMDNJ-Robert Wood Johnson Medical School	2001-
Assistant Professor (joint), Department of Family Medicine, UMDNJ-Robert Wood Johnson Medical School	2001-
Assistant Professor (joint), UMDNJ-School of Public Health	2001-
Member, Environmental and Occupational Health Sciences Institute, UMDNJ-Robert Wood Johnson Medical School/Rutgers University	2003-
Member, National Institute of Environmental Health Sciences Center for the Environmental Health Sciences	2004-
Faculty, Joint Graduate Program in Toxicology, Rutgers University and UMDNJ	2006-

PROFESSIONAL EXPERIENCE

Corporate Safety, Health and Environmental Manager, Cambrex Corporation, E. Rutherford, NJ	1989-1993
Industrial Hygienist, Lederle Laboratories, Pearl River, NY.	1988-1989
Sanitary Inspector, Manalapan and Matawan Regional Health Departments, NJ	1985-1988

CERTIFICATIONS:

Diplomate, American Board of Industrial Hygiene (Certified Industrial Hygienist, Comprehensive Practice)	1993-
Diplomate, National Board of Medical Examiners	1997-
Diplomate, American Board of Family Practice	2000-
Diplomate, American Board of Preventive Medicine (Occupational Medicine)	2001-

JOURNAL PEER REVIEWER

Ad-hoc Reviewer, Environmental Health Perspectives
 Ad-hoc Reviewer, American Journal of Industrial Medicine
 Ad-hoc Reviewer, Indoor Air
 Ad-hoc Reviewer, Toxicology and Applied Pharmacology

PROFESSIONAL SOCIETIES:

Member, American Thoracic Society (ATS)
 Member, American College of Occupational & Environmental Medicine (ACOEM)
 Member, American Industrial Hygiene Association, NJ Chapter
 Co-President local Alpha Omega Alpha student chapter, 1997
 Vice-Chair, New Jersey Academy of Family Physicians Resident Caucus, 1998-2000

HONORS AND AWARDS:

Tri Beta National Biological Sciences Honor Society	1983
Appleton and Lange Outstanding Medical Student Award	1997
Alpha Omega Alpha Medical Honor Society	1997
Frank C. Snope Excellence Award for Family Medicine Residents	1999
Occupational Physicians Scholarship Fund Award	2000
NIH Mentored Clinical Scientist Career Development Award (K08)	2005

SERVICE ON ROBERT WOOD JOHNSON MEDICAL SCHOOL COMMITTEES:

Academic Standing Committee, UMDNJ-Robert Wood Johnson Medical School 2002-2004

SPONSORSHIP OF POSTDOCTORAL FELLOWS AND STUDENTS:

Multiple Occupational/Environmental Medicine Residents
 UMDNJ-SPH Master of Public Health students:
 Field work supervisor for:
 Damir Mazlagic MD,MPH 2005/2006
 Anthony Grippo MD,MPH 2006/2997
 Christopher Pai 2007/2008
 RWJMS First-year medical student mentor and advisor 2001-

TEACHING RESPONSIBILITIES:

Director, Occupational and Environmental Medicine Lecture Series,
 Robert Wood Johnson Family Medicine Residency 2000-

Co-director, Occupational Health Practices (SPH)	2002- 2004
Lecturer, Advanced Principles of Occupational Health	2000-
Lecturer, Occupational and Environmental Epidemiology (SPH)	2000-
Small group facilitator, Environmental and Community Medicine II	2001-
Small group facilitator, Integrated Cases	2002-
Lecturer, General Toxicology, Joint Graduate Program in Toxicology	2007-

CLINICAL RESPONSIBILITIES:

Physician, Clinical Center of the Environmental & Occupational Health Sciences Institute 2000-

GRANT HISTORY:

Laumbach RJ (PI), Fiedler N., Kipen H. "A Double-blinded, Placebo-controlled Study of Caffeine Sensitivity Among MCS Subjects." 10/2000-10/2002. Funded by Environmental Sensitivities Research Institute (ESRI). \$25,000.

Fiedler N, Liroy PJ, Weisel C, **Laumbach RJ**, Kipen H. "Controlled Human Exposure – Response Study to Environmental Levels of Hydrogen Sulfide in Normal Subjects: Pilot Investigations and Neurobehavioral Study." 8/2001-1/2006. Funded by American Petroleum Institute (API). \$1,027,242.

Laumbach, RJ (PI). "Models of Chemical Sensitivity" 7/2002-6/2004. Funded by American Lung Association of New Jersey (ALANJ). \$35,000.

Laumbach RJ, Gallo M, Robson M, Meeker RJ. "Qualitative Risk Assessment." 10/2002-10/2004. World Trade Center Supplement to NIEHS Center. \$30,002.

Laumbach RJ (PI), Laskin DL, Gardner C. "Pulmonary toxicity of limonene-ozone reaction products." 6/2002-6/2005. Funded by American Lung Association of New Jersey. \$35,000.

Laumbach RJ (PI), Laskin DL, Gardner C. "Heat Shock Protein Expression in Nasal Lavage Cells: A Sensitive Marker of Irritant Exposure?" 6/2003-3/2004. Funded by NIEHS Center. \$14,998.

Fiedler N, **Laumbach RJ**, Kipen H, Liroy P, Zhang J, Lehrer P. "The Effects of Diesel Exhaust and Stress on the Acute Phase Response and Symptoms in the Chemically Intolerant." 1/2003-12/2005. Funded by DOD US Army Medical Research. \$1,519,951.00

Laumbach RJ (PI). “Noninvasive Measures of Oxidative Stress and Inflammatory Responses to Diesel Exhaust in Human Respiratory Epithelium” 12/2004-6/2005 Funded by NIOSH ERC Pilot project. \$10,000.

Laumbach RJ (PI). “Pulmonary and Systemic Responses to Diesel Exhaust in a Susceptible Animal Model. 6/2005-3/2006 Funded by NIEHS \$18,000.

Laumbach RJ (PI). “Systemic Inflammatory Effects of Diesel Exhaust in a Susceptible Murine Model 6/2005-5/2006, Funded by UMDNJ Foundation \$25,000.

Fan Z, Weisel C, **Laumbach RJ**, Lioy P. “Acute Short-Term Exposure to PM2.5 and Cardiopulmonary Effects.” Funded by NIEHS Center. 6/2004-3/2005. \$15,000.

Fan Z, **Laumbach, RJ.** “Association of Health Effects and Elevated Particulate Air Pollution.” 4/1/2004-3/2005. Funded by NIEHS Center Pilot grant. \$15,000.

Zhang J, Ohman-Strickland P, Zhang L, Fiedler N, Lioy P, Kipen H, **Laumbach RJ**, and Stern A “Validation of Diesel Exhaust Biomarkers.” 10/2004-9/2007. Funded by EPA. \$572,497.

Kipen HM, **Laumbach RJ**, Laskin DL, Philipp C, Shindler D. “Responses to Fresh Aerosol in Susceptible Subjects” 9/01/2004 – 8/31/2008 Funded by EPA, \$1,521,398.

Laumbach RJ (PI). “Mechanisms of Responses to Diesel Exhaust and Stress” 9/1/2005-8/31/2010. Mentored Clinical Scientist Career Development Award (K08), NIEHS. \$678,915.

BIBLIOGRAPHY

PUBLICATIONS:

A. REFEREED ORIGINAL ARTICLES IN JOURNALS:

1. J.A. Bukowski, R.J. Lewis, J.F. Gamble, N.C. Wojcik, and **R.J. Laumbach.** Range-finding study of risk factors for childhood asthma development and national asthma prevalence. Human and Ecological Risk Assessment: 8(4):735-765, 2002.
2. **Laumbach RJ**, Kipen HM. Bioaerosols and sick building syndrome: particles, inflammation and allergy. Current Opinion in Allergy and Clinical Immunology: 5(2):135-9. 2005
3. **Laumbach RJ**, Fiedler N, Gardner CR, Laskin DL, Fan ZH, Zhang J, Weschler CJ, Lioy PJ, Devlin RB, Ohman-Strickland P, Kelly-McNeil K, Kipen HM. Nasal effects of a mixture of volatile organic compounds and their ozone oxidation products. Journal of

Occupational and Environmental Medicine. 47:1182-1189. 2005.

4. Fiedler N, **Laumbach RJ**, Kelly-McNeil K, Lioy PJ, Fan ZH, Zhang J, Ottenweller J, Ohman-Strickland P, Kipen HM. Health effects of a mixture of indoor air volatile organics, their ozone oxidation products and stress. Environmental Health Perspectives. 1139(11)1542-8, 2005.
5. Sunil V, **Laumbach RJ**, Patel K, Turpin BJ, Lim HJ, Kipen HM, Laskin J, Laskin DL. Pulmonary Effects of Inhaled Limonene Ozone Reaction Products in Elderly Rats. Toxicology and Applied Pharmacology. 222, 211-220. 2008.
6. Fiedler N, Kipen H, Ohman-Strickland P, Zhang J, Weisel C, **Laumbach RJ**, Kelly-McNeil K, Olejeme K, Lioy P. Sensory and cognitive effects of acute exposure to hydrogen sulfide. Environmental Health Perspectives. 116,1,78-85.2008.
7. Fan Z, Meng Q, Weisel C, **Laumbach R**, Ohman-Strickland P, Shalat S, Hernandez M, Black K. Acute exposure to elevated PM2.5 generated by traffic and cardiopulmonary effects in healthy older adults. Journal of Exposure Science and Environmental Epidemiology. 1-9.2008.
8. **Laumbach R**, Tong J, Zhang L, Ohman-Strickland P, Stern A, Fiedler N, Kipen H, Kelly-McNeil K, Lioy P, Zhang J. Quantification of 1-aminopyrene in human urine after a controlled exposure to diesel exhaust. Journal of Environmental Monitoring. (Accepted for publication). DOI:10.1039/B810039J.
9. **Laumbach RL**, Harris G, Kipen HM, Georgopoulos P, Shade P, Isukapalli S, Galea S, Vlahov D, Wartenberg D. Lack of association between estimated WTC plume intensity and respiratory symptoms among residents outside of lower manhattan. American Journal of Epidemiology. (Accepted for publication)
10. **Laumbach RL**. Air pollution and patient health. American Family Physician. (Accepted for publication)
11. Ming-Wei Chao, John Kozlosky, Iris P. Po, Kathy K. H. Svoboda, Keith Cooper, Robert **Laumbach**; and Marion K. Gordon "Capillary Endothelial Tubes as an in vitro Culture Model to Study the Effects of Diesel Exhaust Particles" (Submitted to Toxicology and Applied Pharmacology).
12. Sunil, VR, Mainelis G, Turpin BJ, Patel KJ, Ridgely S, **Laumbach RJ**, Kipen HM, Velepparambil, M, Gow AJ and Laskin DL Pulmonary Effects of Inhaled Diesel Exhaust in Aged Mice. 2009 (Submitted)
13. **Laumbach RJ**, Rich DQ, Gandhi S, Amorosa L, Schneider S, Zhang J, Ohman-Strickland P, Gong J, Lelyanov O, Kipen HM . Acute changes in heart rate variability in Type II

diabetics following a highway traffic exposure, submitted JOEM, 2009.

B. BOOK CHAPTERS

1. **Laumbach RJ**, Fiedler N, Weschler C, Gardner CR, Zhang J, Liroy P, Fan T, Kelly-McNeil K, Kipen HM. Do MVOCs cause irritation?: Nasal effects of VOCs and VOC oxidation products in controlled human exposures. In Johanning E editor: Bioaerosols, Fungi, Bacteria, Mycotoxins and Human Health: Patho-physiology, Clinical Effects, Exposure Assessment, Prevention and Control in Indoor Environments and Work. 2005.
2. Udasin, IG, Lu H, **Laumbach RJ**, Kipen HM. Symptomatic improvement after cessation of mold exposure: clinical experience in environmental and occupational health. In Johanning E editor: Bioaerosols, Fungi, Bacteria, Mycotoxins and Human Health: Patho-physiology, Clinical Effects, Exposure Assessment, Prevention and Control in Indoor Environments and Work. 2005.
3. **R.J. Laumbach**, H.M. Kipen. Health care services. In Frumkin H Ed. Environment Health: From local to global. Jossey-Bass, San Francisco CA, 2005. Winner of 2005 Association of American Publishers Award for Excellence in Professional and Scholarly Publishing (Allied/Health Sciences Category).
4. D.L. Laskin, V.R. Sunil, **R.J. Laumbach**, H.M. Kipen. Cytokines as mediators of immune-related lung pathology, in Cytokines in human health: Immunotoxicology, pathology and therapeutic applications. R. House and J. Descotes, Eds. Humana Press 2006.
5. **Laumbach RJ**. Sick building syndrome. In Encyclopedia of Public Health. Quah S. and Heggenhougen K, Eds. Academic Press. September, 2008.
6. Kotchian S, **Laumbach R**. Environmental health practice. In Frumkin H Ed. Environment Health: From local to global. 2nd Ed. Jossey-Bass, San Francisco CA, 2009.

C. ABSTRACTS:

1. Y. Tian, **R.J. Laumbach**, M. Gallo. "Regulation of estrogen receptor (ER) mRNA levels in cell lines by 2,3,7,8 tetrachlorodibenzo-p-dioxin." 1995 Annual Workshop on Cancer Research in NJ.
2. **R.J. Laumbach**, R. Carr, P. Lehrer. "Physiological effects of abdominal vs. thoracic breathing in healthy human subjects." 1995 Robert Wood Johnson Summer Research Foundation Abstracts.
3. **R.J. Laumbach**, D. Laskin, C.R. Gardner, N. Fiedler, J. Zhang, P. Liroy, T. Fan, K. Kelly-McNeil and H.M. Kipen. "HSP 60: A biomarker for nasal inflammation?" Presented at American Occupational Health Conference May 6, 2003. Abstract published in JOEM, 45(7)771-774, July 2003.

4. **R.J. Laumbach**, N.Fiedler, C.R.Gardner, J.Zhang, P.Lioy, T.Fan, J.Soukup, R.B.Devlin, K.Kelly-McNeil and H.M.Kipen. "Nasal effects of VOCs and ozone." International Conference of the American Thoracic Society (ATS), May 26-21, 2003.
5. **R.J. Laumbach**, N.Fiedler, C. Weschler , C.R.Gardner, J.Zhang, P.Lioy, T.Fan, K.Kelly-McNeil, and H.M.Kipen. "Do MVOCs cause irritation?: Nasal effects of VOCs and VOC oxidation products in controlled human exposures," 5th International Conference on Bioaerosols, Fungi, Bacteria, Mycotoxins on Human Health, September 10-12, 2003
6. I.Udasin, H.Lu, **R.J. Laumbach**, H.Kipen. "Symptomatic improvement after cessation of mold exposure: clinical experience in environmental and occupational health."5th International Conference on Bioaerosols, Fungi, Bacteria, Mycotoxins on Human Health, September 10-12, 2003 (Accepted for publication in Proceedings, June 2004)
7. **R.J. Laumbach**, D. Laskin, H.J. Lim, B. Turpin, K. Patel, V. Sunil. "Inhalation of limonene oxidation products induces lung injury and macrophage activation in mice." International Conference of the American Thoracic Society (ATS), May 21-26, 2004.
8. **R.J. Laumbach**, N.Fiedler, C.R.Gardner, J.Zhang, P.Lioy, T.Fan, K.Kelly-McNeil, A. Kusnecov, H.M.Kipen. "Inhalation of terpene oxidation products may cause respiratory inflammation in humans." International Conference of the American Thoracic Society (ATS), May 21-26, 2004.
9. **Laumbach RJ**, Gray JP, Kipen HM, Laskin JD, Laskin DL. Oxidative stress and pro-inflammatory responses to diesel exhaust particles in human nasal respiratory epithelium. (abstract) Proceedings of the American Thoracic Society, 2005, 2: p A168.
10. **Laumbach RJ**, Fiedler N, Pham P., Kelly-McNeil K, Gandhi S, Zhang J, Lioy PJ, Laskin DL, Kipen HM. Diesel Exhaust and Psychological Stress: Redistribution of Human Peripheral Blood Leukocytes. Presented at the American Thoracic Society (ATS) 2006 International Conference, San Diego, CA on May 22, 2006.
11. Sunil VR, **Laumbach RJ**, Turpin BJ, Lim HJ, Patel K, Laskin JD, Laskin DL. Pulmonary Effects of Inhaled Limonene Oxidation Products: Role of Aging. Presented at the American Thoracic Society (ATS) 2006 International Conference, San Diego, CA on May 22, 2006.
12. Chao MW, Pettit A, Koslosky JC, Sont R, Gerecke D, **Laumbach RJ**, Gordon MK. The Effects of Diesel Particles on Capillary Endothelial Tubes Grown in Vitro. Society of Toxicology (SOT) Annual Meeting, Charlotte NC, March 25-29, 2007.
13. **Laumbach RJ**, Fiedler N, Kelly-McNeil K, Gandhi S, Pham P, Gong J, Ohman-Strickland P, Zhang J, Lioy PJ, Laskin DL, Kipen HM. Combined effects of diesel exhaust and psychological stress on inflammation and the acute phase response in normal humans.

The Role of Air Pollutants in Cardiovascular Disease, EPA and NIEHS-sponsored meeting at USEPA, RTP, October 12-13, 2006.

14. **Laumbach RJ**, Kipen HM, Kelly-McNeil K, Gandhi S, Pham P, Gong J, Ohman-Strickland P, Zhang J, Lioy PJ, Laskin DL, Fiedler N. Effects of diesel exhaust and stress on systemic inflammation and the acute phase response in humans. Presented at the American Thoracic Society (ATS) 2007 International Conference, San Francisco, CA, May 19-24, 2007
15. Kipen HM, **Laumbach RJ**, Zhang J, Lioy PJ, Phillip C, Shindler D, Gandhi S, McNeil KK, Ohman-Strickland P, Laskin DL. Triggering acute vascular responses to air pollution: endothelial and platelet responses to fresh aerosol inhalation. Presented at the American Thoracic Society (ATS) 2006 International Conference, San Francisco, CA, May 19-24, 2007.
16. **R.J. Laumbach**, J.R. Gray, V.R. Sunil, S. Jamil, M. Mansukhani, G. Mainelis, D.L. Laskin, Ozone Potentiates Diesel Exhaust-Induced Amphiregulin Expression in the Mouse Lung. *AJRCCM*. 2008 177 A427.
17. V.R. Sunil, K.J. Patel, **R.J. Laumbach**, B.J. Turpin, G. Mainelis, D.L. Laskin Effects of Single and Repeated Exposure to Diesel Exhaust Particles in Young and Old Mice. *AJRCCM*. 2008 177 A428.
18. **R.J. Laumbach**, O.Lelyanov, J. Gong, P. Ohman-Strickland, K. Kelly-McNeill, S. Gandhi, Q. Wang, J. Zahang, N. Fiedler, H.M. Kipen Glutathione-S-Transferase M1 and Effects of Diesel Exhaust on Heart Rate Variability in Healthy Humans. *AJRCCM*. 2008 177 A427.
19. Chao M-W, Pettit A, Kozlosky J, Sont R, Gerecke D, **Laumbach R**, Gordon M. The effect of diesel particles on capillary endothelial tubes grown in vitro. Society of Toxicology (SOT) Annual Meeting, March 16-20, 2008.
20. **Robert Laumbach**, David Q. Rich, Sampada Gandhi, Louis Amorosa, Stephen Schneider, Junfeng Zhang, Pamela Ohman-Strickland, Oleksiy Lelyanov, Howard M. Kipen, Acute changes in heart rate variability in Type II diabetics following a highway traffic exposure, Presented at the American Thoracic Society (ATS) 2009 International Conference, San Diego, CA.

INVITED PRESENTATIONS:

“Medically unexplained symptoms in primary care,” 2001 Alumni Conference of the UMDNJ-Robert Wood Johnson Medical School Family Medicine Residency Program, New Brunswick, NJ. June 22, 2001.

“Health Effects of Mold,” Teaneck Police Department, Teaneck, NJ, November 7, 2001

“Methanol, Phenol, and Toluene: Background for Rhodia CAP.” Citizen Advisory Panel, Rhodia, Inc. December 4, 2001.

“Review of Hazardous Site Health Evaluation Program Health Consultation.” Citizen Advisory Panel, Rhodia, Inc. February 5, 2002.

“Occupational Medicine and You.” Robert Wood Johnson Mini Medical School program. April 4, 2002

“Irritants: Irritation, Irritancy, and Irritability,” Spring 2002 Occupational Medicine Lecture Series, EOHSI, June 25, 2002.

“Health Effects of Mold: Relevance to Roebling and Duffy Elementary Schools,” Florence Township Board of Education Meeting, September 3, 2002.

“Health Effects of Mold: Relevance to Mendham Township Schools,” Mendham Township Board of Education Meeting, September 7, 2002.

“Human Exposure Studies: How can we determine acceptable levels of exposure.” Presented at Conference on Ethics, Human Subject Protections, and Science of Experimental Human Exposures to Industrial Chemicals, EOHSI, June 20, 2003.

“Current Occupational Health Research at EOHSI” Presented at the monthly meeting of the New Jersey chapter of the American Industrial Hygiene Association, September 18, 2003

“Asthma and Allergies in Schools” for Woodbridge Township School District, Lynn Crest Elementary School, Colonia, NJ, October 22, 2004.

“Air pollution and your patients’ health” Presented at American Occupational Health Conference, Washington DC, May 2005.

“Health Effects of Nanoparticles” Professional Development Course, Northeastern Regional Conference, American Industrial Hygiene Association, New Brunswick, NJ November 30, 2006.

“Toxicology and Health Effects of Nanoparticles” Mid-Atlantic Biological Safety Association Symposium, Rutgers University, Piscataway, NJ. June 14, 2007

“How do small amounts of particulate matter air pollution kill people?” American Occupational Health Conference, New York, New York, April 14, 2008