

## CURRICULUM VITAE

Jacob D. McDonald, PhD

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### EDUCATION

B.S. (Biology/Environmental Chemistry) 1996, University of La Verne  
Ph.D. (Environmental Chemistry & Toxicology) 2000, University of Nevada

### EMPLOYMENT

- 2/06 - Present     Scientist, Lovelace Respiratory Research Institute, Albuquerque, NM  
Dr. McDonald conducts research that bridges his education and experience in analytical chemistry, aerosol science, and toxicology. He has experience in the aerosolization/vaporization of gases and particles for a wide range of applications. He has an interest in developing laboratory exposures that represent “real-world” conditions, and conducting characterizations of these exposures that allow toxicity results to be placed in context of human exposures to either environmental pollutants or drug products. Dr. McDonald’s work spans from the study of complex mixtures, respiratory drug delivery, animal model development and metabolism in mammals.
- Dr. McDonald serves as Principal Investigator or Study Director on studies utilizing a range of animal species. The environmental research focuses on characterizing hazard of inhaled materials, with a broader scope of characterizing relationships between chemical/physical composition and physiological response.
- Animal model development focuses on research to integrate inhalation technology to enhance animal models of respiratory disease. Dr. McDonald has worked directly on inhalation models for COPD, inflammatory disease, mucous formation and fibrosis. These models are utilized to characterize mechanisms of disease response and to utilize in efficacy studies of candidate therapeutics.
- 2004 - Present     Director of Chemistry and Inhalation Exposure Program, Lovelace Respiratory Research Institute, Albuquerque, NM  
Dr. McDonald oversees development and validation of chemical methods and inhalation exposures that are applied to drug delivery, environmental science, chemical/biological defense, and basic biology (mechanism of disease).
- 2002 - 2006        Director, Environmental Assessment and Exposures Core, New Mexico NIEHS Center, Albuquerque, NM  
As Director of the NIEHS Environmental Assessment Facility Core, Dr. McDonald is involved in several multi-disciplinary studies to assess/link environmental exposures to health effects, including both population studies and laboratory based inhalation exposure studies. Studies range from indoor air assessments to analysis of biomarkers in environmental or occupationally exposed subjects.

- 2001 - 2004 Supervisor, Analytical Chemistry, Lovelace Respiratory Research Institute, Albuquerque, NM  
As Supervisor of the Analytical Chemistry Laboratory at LRRI, Dr. McDonald has been involved in the development and validation (often validated to Regulatory Standards) of analytical methods for the collection and analysis of chemical species in both environmental and biological matrices.
- 2001 - Present Clinical Assistant Professor, College of Pharmacy, University of New Mexico, Albuquerque, NM  
This position held concurrent to Lovelace positions. The adjunct appointment facilitates collaboration between the Lovelace and University campuses.
- 10/00 - 2/06 Associate Scientist, Lovelace Respiratory Research Institute, Albuquerque, NM  
See description for Scientist.
- 2/00 - 9/00 Research Scientist, Lovelace Respiratory Research Institute, Albuquerque, NM  
See description for Scientist.
- 3/99 - 1/00 Environmental Chemist, Organic Analytical Lab, Desert Research Institute, Reno, NV  
Responsible for trace level analysis (part per trillion) of volatile, semi-volatile, and particle bound organic compounds. Position required analytical separation skills for analysis of various media (air, soil, water, other) using microwave, soxhlet, and solid phase extraction techniques. Experience included work with GC/MS (IonTrap (EI,CI), Quadrupole (EI)), GC-FTIR, GC/FID/ECD, and HPLC (UV+Fluorescence) instrumentation. Data analysis involved work with multiple data acquisition (Chem Station, Chrom Perfect, Saturn, etc.) and data handling systems (Excel, Foxpro). Involved with field project organization, undertaking, and at times oversight. Project experience included source sampling of point and local emission sources, ambient monitoring, and personal exposure sampling. Examples of work include refinery stack emission sampling, high alpine (extreme conditions) sampling and meteorology work, tunnel sampling, and exposure assessment for miners working in underground gold mines.
- 9/96 - 2/99 Graduate Research Assistant, Organic Analytical Lab, Desert Research Institute Reno, NV  
Developed comprehensive chemical profiles for wood combustion and meat cooking emissions. Aided in the construction of stationary wood combustion facility for conducting emissions testing. Conducted source tests using dilution sampling system and EPA method 5. Emission rates were developed for over 350 organic compounds and trace elements, including oxygenated species. Much of the work entailed structural identification of organic compounds using GC/FTIR/MS. These profiles were used as input files for the Northern Front Range Air Quality Study source apportionment models.

- 6/95 - 8/95 Analytical Instrument Technician, Chemistry Department, University of La Verne, La Verne, CA  
Responsible for the repair and maintenance of gas and liquid chromatography equipment.
- 2/95 - 5/95 Laboratory Instructor, Developmental Biology, University of La Verne, La Verne, CA  
Lead instructor and lab coordinator.
- 9/93 - 12/94 Laboratory Instructor, General Biology, University of La Verne, La Verne, CA  
Lead instructor and lab coordinator.

### CONTINUING EDUCATION

- Epidemiology for Aerosol Scientists, 2002 American Association for Aerosol Research Annual Meeting, Charlotte, NC
- Basic Neurobiology, 2004 Society of Toxicology Annual Meeting
- Bioanalytical Methods Validation, NIAID Specialty Course, May 2004
- Fundamentals of Nanotechnology: Chemistry, Exposure, Health/Environmental Assessments and Societal Impacts, 2005 Society of Toxicology Annual Meeting
- Immunology for Toxicologists, 2005 Society of Toxicology Annual Meeting
- Assessing Airway Injury and Remodeling Induced by Inhaled Pollutants Using Magnetic Resonance Imaging, Microscopy, and Modeling, 2006 Society of Toxicology Annual Meeting
- Allergy and Allergic Disease: A Primer for Toxicologists, 2007 Society of Toxicology Annual Meeting
- Introduction to Pathology for Toxicologists and Study Directors, 2008 Society of Toxicology Annual Meeting
- Clinical Dose Setting for Biotherapeutics, 2008 Society of Toxicology Annual Meeting

### REVIEW AND ADVISORY APPOINTMENTS

- National Academy of Sciences, NTRC, 2010 NIOSH NORA Peer Review, Centers for Disease Control and Prevention – NIOSH Committee to Review the Army's Enhanced Particulate Matter Surveillance Project Report, April 2009–December 2009
- Ad hoc member of the U.S. Environmental Protection Agency, Federal Insecticide, Fungicide, and Rodenticide Act, Scientific Advisory Panel (FIFRA SAP) to review "Field Volatilization of Conventional Pesticides," December 2009
- National Academy of Sciences, Institute of Medicine Committee on the Long-Term Health Consequences of Exposure to Burn Pits in Iraq and Afghanistan, January 2010–May 2011
- Reviewer, Tobacco-Related Disease Research Program (TRDRP) General Biomedical Science Study Section, March 2009, April 2010

### PROFESSIONAL AFFILIATIONS

- American Association for Aerosol Research  
Society of Toxicology  
American Chemical Society

### AWARDS

- Western Chapter of Air and Waste Management Scholarship, 1998
- First place (Sciences Category): 1998 University of Nevada Graduate Student Association Paper Contest
- Sierra Pacific Power Company Graduate Fellowship, 1998

## AREAS OF RESEARCH

Dr. McDonald's main research emphasis is the implementation of analytical chemistry and aerosol science to address questions of environmental relevance. In particular, Dr. McDonald has interests in composition:response relationships related to lung toxicity of complex mixtures. He has experience in the generation of gases/vapors/aerosols for detailed emission characterizations and controlled laboratory studies, primarily to assess the toxicology of materials. He has an interest in developing laboratory exposures that represent "real-world" conditions, and conducting characterizations of these exposures that allow toxicity results to be placed in context of human exposures to either environmental pollutants or drug products. He has been involved in the evaluation of techniques for associating chemical components to biological effects, including the design of laboratory experiments and the evaluation of multivariate and other statistical approaches to elucidate the harmful component of inhaled mixtures.

Dr. McDonald has interests in exposure assessment. As Director of the NIEHS Environmental Assessment Facility Core, he is involved in several multi-disciplinary studies to assess/link environmental exposures to health effects, including both population studies and laboratory based inhalation exposure studies. Involvement on these studies ranges from indoor air assessments to analysis of biomarkers in environmental or occupationally exposed subjects. As Program Manager of the Analytical Chemistry Laboratory at LRRI, Dr. McDonald has been involved in the development and validation (often validated to Regulatory Standards) of analytical methods for the collection and analysis of chemical species in both environmental and biological matrices.

Dr. McDonald is actively involved in several studies assessing the absorption, disposition, metabolism, and excretion of environmental or pharmaceutical agents exposed by several routes of administration. These studies require measurement of active compounds with and without radiolabels, and also involve identification of unknown metabolites by mass spectrometry and other tools.

Dr. McDonald has served as Principal Investigator or Study Director on several studies, including studies that involve human or animal test subjects. Recent studies include investigations of inflammatory response to engine emissions, acute lethality of diisopropylethylmercaptan, inhalation and metabolite identification/quantification in humans and rodents exposed to butadiene, chemical disposition and enzyme toxicity in rodents after exposure to sodium tungstate, and aerosol characterization of several pharmaceutical compounds.

## PUBLICATIONS

1. Fujita, E. M., J. McDonald, T. Hayes, B. Zielinska, J. Sagebiel, J. Chow and J. G. Watson: Northern Front Range Air Quality Study: Apportionment of Carbonaceous Aerosols. In *1998 National Air and Waste Management Meeting Conference Proceedings*, San Diego, CA, 1998.
2. McDonald, J., B. Zielinska, E. Fujita, J. Chow, J. Watson and J. Sagebiel: The Development of Chemical Emission Profiles for Residential Wood Combustion and Meat Cooking for Use in the Apportionment of Atmospheric Carbonaceous Aerosol. In *1998 PM-2.5: A Fine Particle Standard Conference Proceedings*, Long Beach, CA, 1998.
3. McDonald, J., B. Zielinska, E. Fujita, J. Chow, J. Watson, J. Sagebiel, L. Sheetz and S. Batie: Chemical Speciation of PM<sub>2.5</sub> Emissions from Residential Wood Combustion and Meat Cooking, Paper 98-RP92B.02. In *1998 National Air and Waste Management Meeting Conference Proceedings*, San Diego, CA, 1998.

4. Zielinska, B., E. Uberna, E. M. Fujita, J. McDonald and T. Hayes: Northern Front Range Air Quality Study: The Analysis of Ambient Fine Particulate Organic Matter. In *1998 National Air and Waste Management Meeting Conference Proceedings*, San Diego, CA, 1998.
5. McDonald, J. D., B. Zielinska, E. M. Fujita, J. C. Sagebiel, J. C. Chow and J. G. Watson: Fine Particle and Gaseous Emission Rates from Residential Wood Combustion. *Environ. Sci. Technol.* 34(11): 2080-2091, 2000.
6. McDonald, J. D., J. Costanzo, E. B. Barr, J. L. Mauderly, J. J. Schauer, B. Zielinska, J. C. Sagebiel, J. C. Chow, E. Grosjean and D. Grosjean: Characterization of Laboratory Exposure Atmospheres for Health Effects Studies. In *Proceedings of Air and Waste Management Annual Conference*, Paper No. 281 on CD-ROM for the National Air and Waste Management Meeting, June 2001.
7. Seagrave, J. C., J. D. McDonald and J. L. Mauderly: Alveolar Type II Cells Cultured at an Air-Liquid Interface: Responses to Diesel Exhaust. In *Proceedings of the 2001 Diesel Engine Emissions Reduction Workshop*, Office of Transportation Technologies, U.S. Department of Energy, DOE/EE-DEER2001-CD.
8. Mauderly, J., J. C. Seagrave, J. McDonald, A. Gigliotti, K. Nikula, S. Seilkop and M. Gurevich: Comparative Toxicity of Combined Particle and Semi-Volatile Organic Fractions of Gasoline and Diesel Emissions. In *Proceedings of the 2002 Diesel Engine Emissions Reduction Workshop*, Office of Transportation Technologies, U.S. Department of Energy, DOE/EE-DEER2002-CD.
9. McDonald, J. D., B. Zielinska, J. C. Sagebiel and M. R. McDaniel: Characterization of Fine Particle Material in Ambient Air and Personal Samples from an Underground Mine. *Aerosol Sci. Technol.* 36(11): 1033-1044, 2002.
10. Seagrave, J. C., J. D. McDonald, A. P. Gigliotti, K. J. Nikula, S. K. Seilkop, M. Gurevich and J. L. Mauderly: Mutagenicity and *In Vivo* Toxicity of Combined Particulate and Semivolatile Organic Fractions of Gasoline and Diesel Engine Emissions. *Toxicol. Sci.* 70(2): 212-226, 2002.
11. Tesfaigzi, Y., S. P. Singh, J. E. Foster, J. Kubatko, E. B. Barr, P. M. Fine, J. D. McDonald, F. F. Hahn and J. L. Mauderly: Health Effects of Subchronic Exposure to Low Levels of Wood Smoke in Rats. *Toxicol. Sci.* 65: 115-125, 2002.
12. Arrieta, D. E., C. C. Ontiveros, W.-W. Li, J. H. Garcia, M. S. Denison, J. D. McDonald, S. W. Burchiel and B. S. Washburn: Aryl Hydrocarbon Receptor-Mediated Activity of Particulate Organic Matter from the Paso del Norte Airshed Along the U.S.-Mexico Border. *Environ. Health Perspect.* 111: 1299-1305, 2003. PMID: PMC1241610
13. Campen, M. J., J. D. McDonald, A. P. Gigliotti, S. K. Seilkop, M. D. Reed and J. M. Benson: Cardiovascular Effects of Inhaled Diesel Exhaust in Spontaneously Hypertensive Rats. *Cardiovasc. Toxicol.* 3(4): 353-361, 2003.
14. Harrod, K. S., R. J. Jaramillo, C. L. Rosenberger, S. Z. Wang, J. A. Berger, J. D. McDonald and M. D. Reed: Increased Susceptibility to RSV Infection by Exposure to Inhaled Diesel Engine Emissions. *Am. J. Respir. Cell Mol. Biol.* 28: 451-463, 2003.
15. Knapp, K. T., S. B. Tejada, S. H. Cadle, D. R. Lawson, R. Snow, B. Zielinska, J. C. Sagebiel and J. McDonald: Central Carolina Vehicle Particulate Emissions Study. In *Society of Automotive Engineers International Conference Proceedings*, SAE Paper No. 2003-01-0299, 2003.
16. Mauderly, J. L., J. C. Seagrave, J. McDonald, I. Eide, B. Zielinska and D. Lawson: Relationship Between Composition and Toxicity of Engine Emission Samples. In *Proceedings of the 2003 Diesel Engine Emissions Reduction Workshop*, FreedomCar and Vehicle Technologies Program, U.S. Department of Energy, DOE/EE-DEER/2003-CD.

17. McDonald, J. D., K. S. Harrod, M. D. Reed, J. C. Seagrave and J. L. Mauderly: The Effect of Changes in Diesel Exhaust Composition and After-treatment Technology on Lung Inflammation and Resistance to Viral Infection. In *Proceedings of the 2003 Diesel Engine Emissions Reduction Workshop*, FreedomCar and Vehicle Technologies Program, U.S. Department of Energy, DOE/EE-DEER/2003-CD.
18. McDonald, J. D., B. Zielinska, E. M. Fujita, J. C. Sagebiel, J. C. Chow and J. G. Watson: Emissions from Charbroiling and Grilling of Chicken and Beef. *J. Air Waste Manag. Assoc.* 53: 185-194, 2003.
19. McDonald, J. D., B. Zielinska, J. C. Sagebiel, M. R. McDaniel and P. Mousset-Jones: Source Apportionment of Fine Particulate Material in an Underground Mine. *J. Air Waste Manag. Assoc.* 53: 386-395, 2003.
20. Rogers, C. F., J. Sagebiel, B. Zielinska, W. P. Arnott, J. McDonald, E. Fujita, J. B. Griffin, K. Kelly, D. Overacker, D. Wagner, J. S. Lighty, A. Sarofim and G. Palmer: Characterization of Submicron Exhaust Particles from Engines Operating Without Load on Diesel, Gasoline, and JP-8 Fuels. *Aerosol Sci. Technol.* 37: 355-368, 2003.
21. Benson, J., F. Hahn, T. March, J. McDonald, M. Sopori, J. Seagrave, A. Gomez, A. Bourdelais, J. Naar, J. Zaias, G. Bossart and D. Baden: Inhalation Toxicity of Brevetoxin 3 in Rats Exposed for 5 Days. *J. Toxicol. Environ. Health A* 67(18): 1143-1156, 2004. PMID: PMC2846653
22. Burchiel, S. W., F. T. Lauer, J. D. McDonald and M. D. Reed: Immunotoxicity in AJ Mice Following Six Month Whole Body Inhalation Exposure to Diesel Engine Exhaust. *Toxicol. Appl. Pharmacol.* 196(3): 337-345, 2004.
23. March, T. H., P. Y. Cossey, D. C. Esparza, K. J. Dix, J. D. McDonald and L. E. Bowen: Inhalation Administration of All-*trans*-Retinoic Acid for Treatment of Elastase-Induced Pulmonary Emphysema in Fischer 344 Rats. *Exp. Lung Res.* 30: 383-404, 2004.
24. Mauderly, J. L., E. B. Barr, S. A. Belinsky, M. J. Campen, J. C. Chow, K. K. Divine, A. P. Gigliotti, E. Grosjean, K. S. Harrod, J. D. McDonald, M. D. Reed, J. J. Schauer, J. C. Seagrave, S. K. Seilkop, J. A. Swenberg and B. Zielinska: Assessment of Health Hazards of Repeated Inhalation of Diesel Emissions, with Comparisons to Other Sources. In *Proceedings of 2004 Diesel Engine Emissions Reduction Workshop*, DOE/FCVT, San Diego, CA, September 1, 2004 (also available online at [www.osti.gov/fcvt](http://www.osti.gov/fcvt)).
25. McDonald, J. D., E. B. Barr and R. K. White: Design, Characterization, and Evaluation of a Small-Scale Diesel Exhaust Exposure System. *Aerosol Sci. Technol.* 38: 62-78, 2004.
26. McDonald, J. D., E. B. Barr, R. K. White, J. C. Chow, J. J. Schauer, B. Zielinska and E. Grosjean: Generation and Characterization of Four Dilutions of Diesel Engine Exhaust for a Subchronic Inhalation Study. *Environ. Sci. Technol.* 38(9): 2513-2522, 2004.
27. McDonald, J. D., W. E. Bechtold, J. R. Krone, W. B. Blackwell, D. A. Kracko and R. F. Henderson: Analysis of Butadiene Urinary Metabolites by Liquid Chromatography–Triple Quadrupole Mass Spectrometry. *J. Anal. Toxicol.* 28(3): 168-173, 2004.
28. McDonald, J. D., I. Eide, J. C. Seagrave, B. Zielinska, K. Whitney, D. R. Lawson and J. L. Mauderly: Relationship Between Composition and Toxicity of Motor Vehicle Emission Samples. *Environ. Health Perspect.* 112(15): 1527-1538, 2004. PMID: PMC1247617
29. McDonald, J. D., K. S. Harrod, J. C. Seagrave and J. L. Mauderly: Relationship Between Toxicity and Composition of Inhaled Diesel Exhaust. In *Proceedings of 2004 Diesel Engine Emissions Reduction Workshop*, DOE/FCVT, San Diego, CA, September 1, 2004 (also available online at [www.osti.gov/fcvt](http://www.osti.gov/fcvt)).
30. McDonald, J. D., K. S. Harrod, J. C. Seagrave, S. K. Seilkop and J. L. Mauderly: Effects of Low Sulfur Fuel and a Catalyzed Particle Trap on the Composition and Toxicity of Diesel Emissions. *Environ. Health Perspect.* 112(13): 1307-1312, 2004. PMID: PMC1247521
31. Reed, M. D., A. P. Gigliotti, J. D. McDonald, J. C. Seagrave, S. K. Seilkop and J. L. Mauderly: Health Effects of Subchronic Exposure to Environmental Levels of Diesel Exhaust. *Inhal. Toxicol.* 16: 177-193, 2004.

32. Seagrave, J.C., C. Knall, J. D. McDonald and J. L. Mauderly: Diesel Particulate Material Binds and Concentrates a Proinflammatory Cytokine that Causes Neutrophil Migration. *Inhal. Toxicol.* 16(Suppl. 1): 93-98, 2004.
33. Seagrave, J.C. and J. D. McDonald: Respiratory Toxicity Testing: Alternatives to Inhalation Exposure. In *Proceedings of the International Inhalation Symposium, Effects of Air Contaminants on the Respiratory Tract – Interpretations from Molecules to Meta-analysis*, pp. 205-217, Hannover, Germany, 2004.
34. Zielinska, B., J. Sagebiel, J. D. McDonald, K. Whitney and D. R. Lawson: Emission Rates and Comparative Chemical Composition from Selected In-Use Diesel and Gasoline Fueled Vehicles. *J. Air Waste Manag. Assoc.* 54: 1138-1150, 2004.
35. Benson, J. M., F. F. Hahn, T. H. March, J. D. McDonald, A. P. Gomez, M. J. Sopori, A. J. Bourdelais, J. Naar, J. Zaias, G. D. Bossart, and D. G. Baden: Inhalation Toxicity of Brevetoxin 3 in Rats Exposed for Twenty-two Days. *Environ. Health Perspect.* 113: 626-631, 2005. PMID: PMC1257559
36. Benson, J. M., B. B. Stagner, G. K. Martin, M. Friedman, S. E. Durr, A. Gomez, J. McDonald, L. E. Fleming, L. C. Backer, D. G. Baden, A. Bourdelais, J. Naar and B. L. Lonsbury-Martin: Cochlear Function in Mice Following Inhalation of Brevetoxin-3. *J. Comp. Physiol. A Neuroethol. Sens. Neural Behav. Physiol.* 191(7): 619-626, 2005. PMID: PMC2652728
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38. Campen, M. J., N. S. Babu, G. A. Helms, S. Pett, J. Wernly, R. Mehran and J. D. McDonald: Nonparticulate Components of Diesel Exhaust Promote Constriction in Coronary Arteries from ApoE<sup>-/-</sup> Mice. *Toxicol. Sci.* 88(1): 95-102, 2005.
39. Cheng, Y. S., J. D. McDonald, D. Kracko, C. M. Irvin, Y. Zhou, R. H. Pierce, M. S. Henry, A. Bourdelais, J. Naar and D. G. Baden: Concentration and Particle Size of Airborne Toxic Algae (Brevetoxin) Derived from Ocean Red Tide Events. *Environ. Sci. Technol.* 39(10): 3443-3449, 2005. PMID: PMC2652738
40. Mauderly, J., E. Bedrick, E. Fujita, J. McDonald, J.C. Seagrave, S. Seilkop, B. Zielinska and K. Whitney: Lung Toxicity and Mutagenicity of Emissions from Heavy-Duty Compressed Natural Gas (CNG)-Powered Vehicles: Relationships Between Composition of Particulate and Semi-Volatile Components and Toxicity Among CNG, Diesel, Gasoline and Roadside Samples. In *Proceedings of the 2005 Diesel Engine Emissions Reduction Workshop*, FreedomCar and Vehicle Technologies Program, U.S. Department of Energy, Chicago, IL, August 23, 2005 (also available online at [www.osti.gov/fcvt](http://www.osti.gov/fcvt)).
41. McDonald, J., J.C. Seagrave, M. Reed and J. Mauderly: Diesel and Gasoline Engine Exhaust: Characterization of the Atmospheric Composition and Health Responses to Inhaled Emissions. In *Proceedings of the 2005 Diesel Engine Emissions Reduction Workshop*, FreedomCar and Vehicle Technologies Program, U.S. Department of Energy, Chicago, IL, August 23, 2005 (also available online at [www.osti.gov/fcvt](http://www.osti.gov/fcvt)).
42. Reed, M. D., L. F. Blair, K. Burling, I. Daly, A. P. Gigliotti, R. Gudi, M. D. Mercieca, J. D. McDonald, D. J. Naas, J. P. O'Callaghan, S. K. Seilkop, N. L. Ronsko, V. O. Wagner and R. C. Kraska: Health Effects of Subchronic Exposure to Diesel-Water Emulsion Emissions. *Inhal. Toxicol.* 17(14): 851-870, 2005.
43. Rubin, R. L., T. M. Hermanson, E. J. Bedrick, J. D. McDonald, S. W. Burchiel, M. D. Reed and W. L. Sibbitt, Jr.: Effect of Cigarette Smoke on Autoimmunity in Murine and Human Systemic Lupus Erythematosus. *Toxicol. Sci.* 87(1): 86-96, 2005.
44. Seagrave, J., A. Gigliotti, J. D. McDonald, S. K. Seilkop, K. A. Whitney, B. Zielinska and J. L. Mauderly: Composition, Toxicity, and Mutagenicity of Particulate and Semivolatile Emissions from Heavy-Duty Compressed Natural Gas Vehicles. *Toxicol. Sci.* 87(1): 232-241, 2005.

45. Seagrave, J., J. D. McDonald and J. L. Mauderly: In Vitro Versus In Vivo Exposure to Combustion Emissions. *Exp. Toxicol. Pathol.* 57: 233-238, 2005.
46. Seagrave, J.C., J. D. McDonald, M. D. Reed, S. K. Seilkop and J. L. Mauderly: Responses to Subchronic Inhalation of Low Concentrations of Diesel Exhaust and Hardwood Smoke Measured in Rat Bronchoalveolar Lavage Fluid. *Inhal. Toxicol.* 17: 657-670, 2005.
47. Tesfaigzi, Y., J. D. McDonald, M. D. Reed, S. P. Singh, G. DeSanctis, P. R. Eynott, F. F. Hahn, M. J. Campen and J. L. Mauderly: Low-Level Subchronic Exposure to Wood Smoke Exacerbates Inflammatory Responses in Allergic Rats. *Toxicol. Sci.* 88(2): 505-513, 2005.
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#### ABSTRACTS/PRESENTATIONS

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