

CURRICULUM VITAE

Name: Mark Lee Witten

EDUCATION

1975 B.S.E. in Physical Sciences (Physics, Chemistry, and Earth Sciences)
Emporia State University, Emporia, Kansas.

1983 Ph.D. in Exercise Physiology/Physiology Double Major,
Indiana University, Bloomington, Indiana.

POST-DOCTORAL TRAINING

1983-1988 Research Associate, Department of
Physiology, College of Medicine,
University of Arizona Health Sciences Center,
Tucson, Arizona.

ACADEMIC APPOINTMENTS

1978-1980 Women's Track Coach: Department of
Intercollegiate Athletics, Indiana University,
Bloomington, Indiana.

1988-1990 Assistant Biologist: Pulmonary Unit,
Massachusetts General Hospital,
Boston, Massachusetts.

1988-1990 Instructor in Medicine: Harvard Medical
School, Boston, Massachusetts.

1989-1990 Scientific Investigator: Shriners' Burns
Institute, Boston, Massachusetts.

- 1990-1994 Research Assistant Professor: Department
of Pediatrics, College of Medicine, University
of Arizona Health Sciences Center, Tucson,
Arizona.
- 1992- Member: Graduate Faculty in the
Interdisciplinary Pharmacology-Toxicology
Program at the University of Arizona
Health Sciences Center.
- 1994-1999 Research Associate Professor: Department of
Pediatrics, College of Medicine, University of Arizona Health
Sciences Center, Tucson, Arizona.
- 1998- Director: Lung Injury Laboratory and Arizona
Airborne Particulate Research Center,
University of Arizona Health Sciences Center,
Tucson, Arizona.
- 2000-2010 Research Professor: Department of Pediatrics,
College of Medicine, University of Arizona Health
Sciences Center, Tucson, Arizona.
- 2010- President, Odyssey Research Institute, Tucson, Arizona.

COMMITTEES

- 1989 Grant review committee of the Science Council of
the Province of British Columbia, Canada.
- 1990-93 Member of fellowship executive committee,
Pediatric Pulmonary Medicine Section, Department
of Pediatrics, University of Arizona College of
Medicine, Tucson, Arizona.
- 1990-91 Department of Anesthesiology review committee,
University of Arizona College of Medicine, Tucson,
Arizona.
- 1991- Mentor, National Institutes of Health Minority High
School Students Research Training Program.

- 1992- Grant review committee, United States Air Force Office of Scientific Research, Bolling AFB, D.C.
- 1993 University of Arizona small grants program review committee.
- 1993- NASA consultant for animal portion of the International Space Station, NASA-Ames Research Center, Moffett Field, California.
- 1993-94 Research committee, Department of Pediatrics, University of Arizona College of Medicine, Tucson, Arizona.
- 1993-94 Interviewer, College of Medicine Admissions Committee, University of Arizona College of Medicine, Tucson, Arizona.
- 1993 Invited Participant, Special U.S. Environmental Protection Agency Scientific Meeting, Crystal City, Virginia, September 15.
- 1994 Invited Participant in a “Workshop on Air Toxics and Asthma: Impacts and Endpoints.” Mickey Leland National Urban Air Toxics Research Center, Houston, Texas, February 4.
- 1994-95 Mentor, Tucson-Almaty (KAZAKHSTAN) Health Care Partnership Program for Visiting Physicians under the American International Health Alliance, Washington, D.C.
- 1994 Invited Speaker, Persian Gulf War Syndrome Symposium, The University of Arizona, Tucson, Arizona, August 11.
- 1992 Provost’s Committee to Examine Professional Schools’ Core Curriculum, University of Arizona, Tucson, Arizona.
- 1995- Member, Strategic Avionics Technology Working Group, National Aeronautics and Space Administration.
- 1995- Grant Reviewer, Integrative Animal Biology Study Section, National Science Foundation, Arlington, Virginia.

- 1995 Chairman of Medicine Section, University of Arizona small grants program review committee.
- 1995- Grant Reviewer, American Institute of Biological Sciences, Washington, D.C.
- 1995-2009 Mentor, Southwest Environmental Health Sciences Center Summer Minority Student Research Program.
- 1996 Invited Participant, American Institute of Aeronautics & Astronautics Space Life Sciences Conference, Houston, Texas.
- 1996- Mentor, Undergraduate Biology Research Program, University of Arizona, Tucson, Arizona.
- 1996 Member, Committee for “Science in the 21st Century Symposium”, The University of Arizona, December 6, 1996.
- 1997-98 Chairman, Gravitational Physiology Sessions, Experimental Biology ‘97 Meeting, New Orleans, Louisiana and Experimental Biology ‘98 Meeting, San Francisco, California.
- 1999-2004 Dean’s Research Council, College of Medicine, University of Arizona, Tucson, Arizona.
- 2004-2007 University of Arizona Animal Subjects Committee, University of Arizona, Tucson, Arizona.

REVIEWER FOR SCIENTIFIC JOURNALS

- 1986- International Journal of Sports Medicine
- 1991- American Journal of Physiology
- 1995- Proceedings of the National Academy of Sciences, U.S.A.
- 1995- Journal of Applied Physiology
- 1997- Environmental Research
- 1998- Lung
- 1999- Toxicological Sciences
- 1999- Saudi Journal of Family & Community Medicine
- 2000- The Astrophysics Journal
- 2001- Toxicology & Applied Pharmacology
- 2001- Histology & Histopathology
- 2004- Environmental Science & Technology
- 2004- American Journal of Preventive Medicine
- 2004- American Journal of Pathology
- 2006- Free Radicals in Biology & Medicine
- 2006- Biologica Bratislava
- 2007- Inhalation Toxicology
- 2007- Medicine & Science in Sports & Exercise
- 2007- Environmental Toxicology & Pharmacology
- 2008- Neuropeptides
- 2008- The Open Sports Medicine Journal
- 2009- Toxicology & Industrial Health

EDITORIAL BOARD

- 1998-2003 Aviation, Space, and Environmental Medicine
- 2008- Inhalation Toxicology

PROFESSIONAL SOCIETIES

- 1983- American Physiological Society
- 1984- American Association for the Advancement of Science
- 1990- The New York Academy of Sciences
- 1991- Society of Toxicology
- 1995- American Institute of Aeronautics & Astronautics
- 2008- International Society of Olympic Historians

AWARDS AND HONORS

- (1) Distinguished Alumni Award, Emporia State University, Emporia, Kansas, 1992.
- (2) Who's Who in Science and Engineering, Second Edition, 1994-1995.
- (3) American Men and Women in Science, 1994-95, 1998-99.
- (4) Louis J. Kettel Faculty Mentor Award, University of Arizona College of Medicine, Tucson, Arizona, 1995.
- (5) Who's Who in Science and Engineering, 3rd & 4th Editions, 1996-1999.
- (6) Who's Who in America, 51st-53rd Editions, 1997-1999.
- (7) Emporia High School Hall of Fame, Emporia, Kansas, 2003.

MAJOR RESEARCH INTERESTS

- (1) Acute respiratory distress syndrome.
- (2) Lung chemical mediators and cells involved in lung injury.
- (3) Environmental toxins and their effect on lung function.
- (4) Environmental toxins and the development of cancers.
- (5) Microgravity and its effect(s) on fluid distribution/balance.

TEACHING EXPERIENCE

- 1983-1986 Taught respiration section of physiology course for graduate and undergraduate bioengineering students in the Department of Physiology, Colleges of Medicine and Engineering, University of Arizona, Tucson, Arizona.
- 1985-1987 Devised and directed respiratory laboratory exercises for first-year medical students in the Department of Physiology, College of Medicine, University of Arizona, Tucson, Arizona.
- 1987 Presented respiratory physiology lectures to first-year medical students in the Department of Physiology, College of Medicine, University of Arizona, Tucson, Arizona.
- 1984-1988 Directed the research experience for five pulmonary research fellows in the Department of Pediatrics, College of Medicine, University of Arizona, Tucson, Arizona.

- 1988-1990 Directed the research experience for four pulmonary research fellows in the Pulmonary and Critical Care Unit, Massachusetts General Hospital and Harvard Medical School, Boston, Massachusetts.
- 1990-1994 Directed the research experience for two pulmonary research fellows in the Critical Care Medicine Section, Department of Pediatrics, University of Arizona, Tucson, Arizona.
- 1991-98 Taught enrichment elective entitled, "The Limits of Human Physical Potential" to second-year medical students, College of Medicine, University of Arizona, Tucson, Arizona.
- 1993- Pharmacology/Toxicology Course #586A.
Pharmacology/Toxicology Course #900.
- 1994- Pharmacology/Toxicology Course #610.
"Inhalational Toxicology"
- 1994-97 Physiology Course #195A.
"How the Body Works-Respiratory Section"
- 1995- Department of Aerospace & Mechanical
Engineering Course #424/524. "Space
Technologies-Space Biology Section"
- 1995- Master's Thesis director for two students
who have completed work in the Department
of Pharmacology/Toxicology. Doctoral Thesis
director for one student who has completed
work in the Department of Pharmacology/
Toxicology.
- 1998- Course Coordinator for "Space Physiology:
Man in Space". Departments of Physiology
and Planetary Sciences, University of Arizona.
- 1998- Seminars in Space Biology, Enrichment Elective in College of
Medicine at the University of Arizona.

1998-01

Research mentor for Dr. Jeffrey Burgess' NIOSH
SERCA research grant.

GRANTS/CONTRACTS

- (1) National Research Service Award, National Institutes of Health, 1983-1986.
- (2) Biomedical Research Support Grant, 1984, \$5,000.
- (3) Arizona Lung Association, 1984-1985, \$8,500.
- (4) Biomedical Research Support Grant, 1986, \$5,000.
- (5) United States Army Medical Research & Development Command contract, 6-01-87 to 5-31-89, \$246,470, Principal Investigator.
- (6) National Institutes of Health RO1 HL 36829, \$375,000, 7-01-88 to 1-26-90, Co-investigator.
- (7) Shriners Burns Institute, 1-01-89 to 1-26-90, \$333,179, Co-Principal Investigator.
- (8) National Institutes of Health, SCOR HL 14136, 12-01-86 to 11-30-91, Project 6, \$150,000/year, Co-Investigator.
- (9) Biomedical Research Support Grant, 4-01-90 to 3-31-91, \$5,318, Principal Investigator.
- (10) University of Arizona Office of Vice-President for Research, 6-01-90 to 5-31-91, \$4,818, Principal Investigator.
- (11) United States Air Force Office of Scientific Research, \$392,633 total costs, 4-01-91 to 3-31-94, Principal Investigator.
- (12) National Institutes of Health, SCOR HL 14136, \$14,676,002 total costs, 12-01-91 to 11-30-96, Co-investigator.
- (13) Upjohn Pharmaceutical Company, \$10,540 total costs, 7-01-92 to 6-30-95, Principal Investigator.
- (14) Department of Defense Training Grant, \$131,830 total costs, 6-01-92 to 5-31-95, Principal Investigator.
- (15) University of Arizona International Travel Grant, 1992.
- (16) United States Army Medical Research and Materiel Command, \$490,452 total costs, 11-22-93 to 12-21-96, Principal Investigator.
- (17) U.S. Air Force Office of Scientific Research Grant, \$507,479 total costs, 5-15-94 to 5-14-97, Principal Investigator.
- (18) Center for Toxicology Grant (NIEHS), \$3,500,000 total costs, 4-01-94 to 3-31-99, Co-investigator.
- (19) Optimist's Clubs of Arizona, \$40,000 total costs, 1992-1998.
- (20) University of Arizona/NASA Space Grant, NGT5-40026, 9-01-93 to present, \$5,000/year.
- (21) University of Arizona International Travel Grant, 1995.
- (22) Upjohn Pharmaceutical Company, \$1,500 total costs, 3-01-95 to 2-28-96, Principal Investigator.
- (23) Department of Defense AASERT grant, \$96,368 total costs, 7-01-95 to 6-30-98, Principal Investigator.
- (24) Arizona Disease Control Research Commission, \$378,573 total costs, 7-01-96 to 6-30-99, Co-Investigator.

- (25) Pharmacia-Upjohn Pharmaceutical Company, \$2,500 total costs, 8-15-96 to 8-14-97, Principal Investigator.
- (26) Joint Research Project with Harvard Medical School, \$12,000 total costs, 11-15-96 to 11-14-97, Co-Principal Investigator.
- (27) Air Force Office of Scientific Research Grant, \$688,976 total costs, 5-15-97 to 5-14-00, Principal Investigator.
- (28) NIEHS Toxicology Education Grant, \$184,500 total costs, 9-01-96 to 8-31-00, Co-Investigator.
- (29) Arizona Disease Control Research Commission, \$147,483 total costs, 7-01-97 to 6-30-00, Co-Investigator.
- (30) Air Force Office of Scientific Research Grant, \$792,699 total costs, 11-15-97 to 11-14-00, Co-Principal Investigator.
- (31) Arizona Disease Control Research Commission Grant, \$390,968 total costs, 7-01-98 to 6-30-01, PI.
- (32) Department of Defense Training Grant, \$197,464 total costs, 7-01-98 to 6-30-01, PI.
- (33) Air Force Office of Scientific Research Grant, \$668,511 total costs, 5-01-98 to 4-30-01, Co-Investigator.
- (34) Arizona Lung Association grant, \$25,000 total costs, 7-01-98 to 6-30-99, Co-Investigator.
- (35) Arizona Disease Control Research Commission grant, \$148,945 total costs, 7-01-98 to 6-30-01, Co-Investigator.
- (36) NEDO (Japan) International Joint Research grant, 12-01-98 to 11-30-01, \$89,100,000 Yen total costs, Co-Investigator.
- (37) NIOSH SERCA Award, 10-01-98 to 9-30-01, \$340,875 total costs, Research Mentor.
- (38) Center for Toxicology Grant (NIEHS), \$7,573,971 total costs, 4-01-99 to 3-31-04, Co-Investigator.
- (39) Air Force Office of Scientific Research, \$450,000 total costs, 2-01-99 to 1-31-02, Co-Investigator.
- (40) Air Force Office of Scientific Research, \$550,000 total costs, 5-01-99 to 4-30-02, Co-Investigator.
- (41) NASA, \$597,423 total costs, 7-01-99 to 6-30-02, Co-Principal Investigator.
- (42) Supplemental Equipment Grant to present Air Force Office of Scientific Research grant, \$15,000 total costs, 8-01-99 to 5-14-00, Principal Investigator.
- (43) Combined Air Force Office of Scientific Research and Naval Research Laboratory grant, \$68,421 total costs, 10-01-99 to 9-30-01, Co-Principal Investigator.
- (44) NIOSH SERCA Supplemental grant, \$15,000 total costs, 11-01-99 to 10-31-00, Co-Investigator.
- (45) U.S. Air Force Office of Scientific Research, \$749,257 total

- costs, 5-15-00 to 5-14-03, Principal Investigator.
- (46) Health Effects Institute, \$347,000 total costs, 6-01-01 to 5-31-03, Principal Investigator.
 - (47) U.S. Air Force Office of Scientific Research, \$840,000 total costs, 11-15-00 to 11-14-03, Co-Principal Investigator.

 - (48) U.S. Air Force Office of Scientific Research, \$550,000 total costs, 7-01-01 to 6-30-04, Co-Investigator.
 - (49) United States Center for Disease Control, 2-1-02 to 1-31-03, \$40,070 total costs, Principal Investigator.
 - (50) Dupont Corporation, \$70,000 total costs, 2-1-02 to 1-31-03, Co-Investigator.
 - (51) U.S. Air Force Office of Scientific Research grant supplement, 9-01-02 to 8-31-05, \$114,000 total costs, Principal Investigator.
 - (52) U.S. Air Force Office of Scientific Research, 9-01-02 to 8-31-03, \$87,000 total costs, Principal Investigator.
 - (53) Eli Lilly Pharmaceutical Company, 5-01-03 to 2-01-04, \$66,660 total costs, Principal Investigator.
 - (54) ImmuneRegen Biosciences, Inc., 6-01-03 to 9-30-03, \$30,500 total costs, Principal Investigator.
 - (55) Arizona Disease Control Research Commission, 7-01-03 to 6-30-06, \$487,452 total costs, Co-Investigator.
 - (56) U.S. Air Force Office of Scientific Research, \$859,973 total costs, 1-01-04 to 12-31-06, Principal Investigator.
 - (57) U.S. Air Force Office of Scientific Research, \$600,500 total costs, 1-01-04 to 12-31-06, Co-Principal Investigator.
 - (58) The Gerber Foundation, \$139,983 total costs, 12-01-03 to 11-30-04, Principal Investigator.
 - (59) ImmuneRegen Biosciences, Inc., \$90,000 total costs, 6-01-04 to 5-31-05, Principal Investigator.
 - (60) The Gerber Foundation, \$98,000 total costs, 1-01-05 to 3-31-06, Principal Investigator.
 - (61) ImmuneRegen Biosciences, Inc., \$26,829 total costs, 8-15-05 to 12-31-05, Principal Investigator.
 - (62) Health Effects Institute, \$100,000 total costs, 3-01-06 to 2-28-07, Co-Investigator.
 - (63) ImmuneRegen Biosciences, Inc, 1-01-06 to 4-01-06, \$26,127 total costs, Principal Investigator.
 - (64) U.S. Air Force Office of Scientific Research, 1-01-07 to 5-01-10, \$569,786 total costs, Principal Investigator.
 - (65) Flight Attendant's Medical Research Institute, 8-01-06 to 7-31-09, \$310,543 total costs, Co-Investigator.

- (66) U.S. Environmental Protection Agency Study of Fallon, NV Leukemia Cluster, 4-01-07 to 4-01-10, \$160,000 total costs, Principal Investigator.
- (67) Whitney Trust, 11-20-2008 to 11-19-2009, \$10,000 total costs, Principal Investigator.
- (68) Dunlap Trust, 11-28-08 to 11-27-09, \$15,000 total costs, Principal Investigator.

- (69) Flight Attendant's Medical Research Institute Grant, \$225,000 total costs, 7-01-09 to 6-30-11, Co-Investigator.
- (70) U.S. Army Medical Research & Development Command, \$113,548 total costs, 1-01-10 to 2-1-11, Principal Investigator.

BIBLIOGRAPHY

- (1) Costill DL, Sherman WM, Fink WJ, Maresh C, Witten M, Miller JM: The role of dietary carbohydrates in muscle glycogen resynthesis following strenuous running. *AMERICAN JOURNAL OF CLINICAL NUTRITION*, 1981, 34:1831-1836.
- (2) Witten ML, Lemen RJ, Quan SF, Sobonya RE, Roseberry H, Stevenson JL, Clayton J: Acute cigarette smoke exposure increases alveolar permeability in rabbits. *AMERICAN REVIEW OF RESPIRATORY DISEASE*, 1985, 132:321-325.
- (3) Quan SF, Witten M, Stevenson J, Roseberry H, Lemen RJ: Variability of pulmonary responsiveness to aerosolized histamine in normal rabbits. *RESPIRATION*, 1986, 50:108-116.
- (4) Witten M, Wilkerson JE: An association between aerobic fitness and lung closing volume. *INTERNATIONAL JOURNAL OF SPORTS MEDICINE*, 1986, 7:271-275.
- (5) Cunningham JC, Lemen RJ, Morgan WJ, Witten ML, Magarelli JL, Stevenson JL, Quan SF: Respiratory mechanics by passive exhalation correlates with esophageal balloon data following histamine challenges and acute viral infections in dogs. *AMERICAN REVIEW OF RESPIRATORY DISEASE*, 1987, 136:722-726.
- (6) Witten M, Lemen R, Quan S, Sobonya R, Magarelli J, Bruck D: Acute cigarette smoke exposure causes lung injury in rabbits treated with ibuprofen. *EXPERIMENTAL LUNG RESEARCH*, 1987, 13:113-126.
- (7) Bloom JW, Quan SF, Halonen M, Witten ML, Lemen RJ, Patton DD: Intravenous platelet activating factor does not affect lung epithelial permeability. *RESEARCH COMMUNICATIONS IN CHEMICAL PATHOLOGY AND PHARMACOLOGY*, 1987, 58:405-408.
- (8) Witten M, Quan S, Sobonya R, Lemen R: New developments in the pathogenesis of smoke inhalation-induced pulmonary edema. *WESTERN JOURNAL OF MEDICINE*, 1988, 148:33-36.
- (9) Witten ML, Quan SF, Sobonya RE, Bruck D, Devine L, Lemen RJ:

Acute cigarette smoke exposure alters lung eicosanoid and inflammatory cell concentrations in rabbits. *EXPERIMENTAL LUNG RESEARCH*, 1988, 14:727-742.

- (10) Grad R, Witten ML, Quan SF, McKelvie DH, Lemen RJ: Intravenous chloralose is a safe anesthetic for longitudinal use in beagle puppies. *LABORATORY ANIMAL SCIENCE*, 1988, 38:422-425.
- (11) Witten ML: The role of eicosanoids in a model of smoke-induced lung injury. *PROCEEDINGS OF THE TRI-SERVICE PULMONARY RESEARCH REVIEW AND ANALYSIS*, 1988, pp.79-80.
- (12) Grad R, Witten ML, Quan SF, Smith J, Devine LC, Seaver N, Lemen RJ: Airway responses to inhaled ascaris suum antigen in naturally sensitized beagle dogs. *RESEARCH COMMUNICATIONS IN CHEMICAL PATHOLOGY AND PHARMACOLOGY*, 1989, 63:459-462.
- (13) Witten ML, Quan SF, Sobonya RE, Lemen RJ: New developments in the pathogenesis of smoke inhalation-induced pulmonary edema. In: *YEARBOOK OF CRITICAL CARE MEDICINE*, 1989. Rogers MC, Parrillo JE. eds., Yearbook Medical Publishers, Chicago, IL, 1989, pp. 237-238.
- (14) Lemen RJ, Quan SF, Witten ML, Sobonya RE, Ray CG, Grad R: Canine parainfluenza type 2 bronchiolitis increases histamine responsiveness in beagle puppies. *AMERICAN REVIEW OF RESPIRATORY DISEASE*, 1990, 141:199-207.
- (15) Quan SF, Witten ML, Dambro NN, Grad R, Sobonya RE, Ray CG, Lemen RJ: Acute canine adenovirus 2 infection increases histamine airway reactivity in beagle puppies. *AMERICAN REVIEW OF RESPIRATORY DISEASE*, 1990, 141:414-420.
- (16) Witten ML, Grad R, Quan SF, Sobonya RE, Hubbard AK, Lantz RC, Lentz LA, Devine LC, Lemen RJ: Piriprost pretreatment attenuates the smoke-induced increase in 99mTcDTPA lung clearance. *EXPERIMENTAL LUNG RESEARCH*, 1990, 16:339-353.
- (17) Grad R, Sobonya RE, Witten ML, Quan SF, Ray CG, Devine LC, Lentz LA, Lemen RJ: Localization of inflammation and virions in canine adenovirus type 2 bronchiolitis. *AMERICAN REVIEW OF RESPIRATORY DISEASE*, 1990, 142:691-699.

- (18) Witten ML, Leeman SE, Lantz RC, Joseph PM, Burke CH, Jung WK, Quinn D, Hales CA: Chronic jet fuel exposure increases lung substance P (SP) concentration in rabbits. PROCEEDINGS OF THE SUBSTANCE P AND RELATED PEPTIDES: CELLULAR AND MOLECULAR PHYSIOLOGY INTERNATIONAL SYMPOSIUM, 1990, pp. 29.
- (19) Quan SF, Lemen RJ, Witten ML, Sherrill DL, Grad R, Sobonya RE, Ray CG: Changes in lung mechanics and reactivity with age after viral bronchiolitis in beagle puppies. JOURNAL OF APPLIED PHYSIOLOGY, 1990, 69:2034-2042.
- (20) Stevenson JL, Quan SF, Witten ML, Hall JN, Roseberry HR, McNeill GC, Lemen RJ: Effects of intravenous and aerosolized arachidonic acid on alveolar epithelial permeability in rabbits. RESEARCH COMMUNICATIONS IN CHEMICAL PATHOLOGY AND PHARMACOLOGY, 1991, 72:113-116.
- (21) Quan SF, Witten ML, Grad R, Ray CG, Lemen RJ: Changes in lung mechanics and histamine responsiveness after sequential canine adenovirus 2 and canine parainfluenza 2 infection in beagle puppies. PEDIATRIC PULMONOLOGY, 1991, 10:236-243.
- (22) Quan SF, Witten ML, Dambro NN, Lemen RJ: Canine parainfluenza type 2 and bordetella bronchiseptica infection produces increased bronchoalveolar lavage thromboxane concentrations in beagle puppies. PROSTAGLANDINS, LEUKOTRIENES, and ESSENTIAL FATTY ACIDS, 1991, 44:171-175.
- (23) Witten ML, Lantz RC, Grad R, Seidner S, Hubbard AK, Quan SF, Lemen RJ: Effect of smoke inhalation on immediate changes in lung chemical mediators. RESEARCH COMMUNICATIONS IN CHEMICAL PATHOLOGY AND PHARMACOLOGY, 1991, 74:259-272.
- (24) Hales CA, Musto SW, Janssens S, Jung W, Quinn DA, Witten M: Smoke aldehyde component influences pulmonary edema. JOURNAL OF APPLIED PHYSIOLOGY, 1992, 72:555-561.
- (25) Witten ML, Grad R, Quan SF, Lantz RC, Sobonya RE, Lemen RJ: Effects of respiratory viruses on pulmonary alveolar macrophages. PEDIATRIC PULMONOLOGY, 1992, 12:105-112.

- (26) Dambro NN, Grad R, Witten ML, Quan SF, Sobonya RE, Ray CG, Devine L, Lemen RJ: Bronchoalveolar lavage fluid cytology reflects airways inflammation in beagle puppies with acute bronchiolitis. PEDIATRIC PULMONOLOGY, 1992, 12:213-220.
- (27) Witten ML, Bowers MC, Hall JN, Quan SF, Chen H, Lemen RJ: A rapid analytical method for measuring drug distribution in aerosols. JOURNAL OF NUCLEAR MEDICINE TECHNOLOGY, 1992, 20:155-158.
- (28) Witten ML, Joseph PM, Lantz RC, Lazarus DS, Jung WK, Hales CA: Chronic sidestream cigarette smoke exposure causes lung injury in rabbits. INDOOR ENVIRONMENT, 1992, 1:341-347.
- (29) Witten ML, Pfaff J, Lantz RC, Parton KH, Chen H, Hays A, Kage R, Leeman SE: Capsaicin pretreatment before JP-8 jet fuel exposure causes a large increase in airway sensitivity to histamine in rats. REGULATORY PEPTIDES, 1992, S1:S176.
- (30) Lantz RC, Lemen RJ, Dey RD, Rodd A, Bowers MC, Chen H, Witten ML, Quan SF, Kage R, Leeman SE: Nedocromil sodium preserves neuropeptides in neurons associated with airway smooth muscle and reduces adenovirus-induced airway hyperreactivity. REGULATORY PEPTIDES, 1992, S1:S98.
- (31) Witten ML: Chronic effects of JP-8 jet fuel exposure on the lungs. GOVERNMENT REPORTS, ANNOUNCEMENTS & INDEX, Issue 17, 1992.
- (32) Witten ML, McKee JL, Lantz RC, Hays AM, Quan SF, Sobonya RE, Lemen RJ: Fractal and morphometric analysis of lung structures after canine adenovirus-induced bronchiolitis in beagle puppies. PEDIATRIC PULMONOLOGY, 1993, 16:62-68.
- (33) Lantz RC, Lemen RJ, Dey RD, Rodd A, Bowers MC, Chen H, Witten ML, Quan SF, Kage R, Leeman SE: Nedocromil sodium preserves neuropeptides in neurons associated with airway smooth muscle and reduces

- adenovirus-induced airway hyperreactivity. REGULATORY PEPTIDES, 1993, 46:211-213.
- (34) Lantz RC, Parlman G, Chen GJ, Hays A, Witten M, Carter DE: Effect of arsenic exposure on alveolar macrophage function. PROCEEDINGS OF THE FOURTH INTERNATIONAL INHALATION SYMPOSIUM, "TOXIC AND CARCINOGENIC EFFECTS OF SOLID PARTICLES IN THE RESPIRATORY TRACT", Dungworth DL, Mauderly JL, and Oberdorster G, (eds.), ILSI Press, Washington, D.C., 1994, pp. 529-532.
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- (36) Lantz R, Chen G, Wang S, Witten M: U75412E attenuates tumor necrosis factor but not O₂- in a smoke model. JOURNAL OF FREE RADICALS IN BIOLOGY & MEDICINE, 1994, 9:M:O16.
- (37) Pfaff JK, Parton K, Lantz RC, Chen H, Hays AM, Witten ML: Inhalation exposure to JP-8 jet fuel alters pulmonary function and Substance P levels in Fischer 344 rats. JOURNAL OF APPLIED TOXICOLOGY, 1995, 15:249-256.
- (38) Hays AM, Parlman G, Pfaff JK, Lantz RC, Tinajero J, Tollinger B, Hall J, Witten ML: Changes in lung permeability correlate with lung histology in a chronic exposure model. TOXICOLOGY & INDUSTRIAL HEALTH, 1995, 11:325-336.
- (39) Robledo RF, Breceda V, Tollinger BJ, Wang S, Lantz RC, Leeman SE, Witten ML: Substance P attenuates lung injury caused by chronic hydrocarbon exposure. PROCEEDINGS OF THE TACHYKININS '95 INTERNATIONAL MEETING, Florence, Italy, 1995, pp. 190.
- (40) Witten ML, Robledo RF, Lantz RC, Breceda V: Chronic effects of JP-8 jet fuel exposure. PROCEEDINGS OF THE AIR FORCE OFFICE OF SCIENTIFIC RESEARCH REVIEW, Dayton, Ohio, 1995, pp. 20.
- (41) Pfaff JK, Tollinger B, Lantz RC, Chen H, Hays AM, Witten ML:

- Neutral endopeptidase (NEP) and its role in pathological pulmonary change with inhalation exposure to JP-8 jet fuel. *TOXICOLOGY & INDUSTRIAL HEALTH*, 1996, 12:93-103.
- (42) Joseph PM, Witten ML, Burke CH, Hales CA: The effects of chronic sidestream cigarette smoke exposure on eicosanoid production by tracheal epithelium. *EXPERIMENTAL LUNG RESEARCH*, 1996, 22:317-335.
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- (6) U.S. Patent application 11,794,639 entitled, “Substance P Treatment for the Prevention of Respiratory Infections in Fowl”, filed July 3, 2007.
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- (9) U.S. Patent application 11,795,044 entitled, “Substance P Treatment for Skin Diseases”, filed on July 11, 2007.
- (10) U.S. Patent application 11,587,595 entitled, “Substance P Treatment for Anti-Aging”, filed on October 25, 2006.
- (11) Biosensor PCT patent application filed in October of 2007 in collaboration with the University of Arizona.
- (12) U.S. Patent application on biosensor filed on April 1, 2010 with the U.S. Patent & Trademark Office in collaboration with the University of Arizona.
- (13) Sensor patent filed with the U.S. Patent & Trademark Office on August 2, 2010 with DPPC as the biofilm substrate. This patent was issued on January 14, 2014 for 22 years with a USPTO #8,628,625 B2.
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- (92) Gallegos JR, Fernandez A, Hyde J, Wendt J, Witten ML: An in vitro examination of cellular damage caused by combustion-generated fly particulate exposure in RLE-6TN cells. THE FASEB JOURNAL, 2001, 15:A497.
- (93) Wang S, Sun NN, Deever D, Zhang J, Watson RS, Witten ML: Effects of high dosage of vitamin E on passive cigarette smoke exposure in mice. THE TOXICOLOGIST, 2001, 60:414.
- (94) Sun NN, Wang S, Foster DE, Witten ML: Gene expression of

- pulmonary inflammatory cytokines in rats directly exposed to diesel exhaust particulates. *THE TOXICOLOGIST*, 2001, 60:193.
- (95) Hyde JD, Pettis CR, Bartoletti N, Witten ML: Role of estrogen in fluid distribution in ovariectomized female rats in a model of simulated microgravity. Presented at 2002 Experimental Biology Meeting, April 20-24th, New Orleans, Louisiana.
- (96) Wang S, Sun NN, Witten ML: Neurokinin receptor-1 gene expression in mice subjected to sidestream cigarette smoke. *THE TOXICOLOGIST*, 2002, 66:195.
- (97) Sun NN, Wang S, Witten ML: Reverses of β -chemokine receptor gene expression in C57BL/6 mice exposed to sidestream cigarette smoke. *THE TOXICOLOGIST*, 2002, 66:195-196.
- (98) Vijayalaxmi, Hyde J, Rowland S, Cameron IL, Witten ML: Induction of micronuclei in the blood and bone marrow cells of mice exposed to JP-8 jet fuel. Abstract submitted to the Environmental Mutagen Society Meeting, April 27-May 2, 2002, Anchorage, Alaska.
- (99) Ziegler TL, Lamothel PJ, Sutleyl SJ, Meeker GP, Brownfield IK, Lowers H, Sun NN, Hinkley TK, Plumlee GS, Witten ML: Mineralogical and geochemical variations among asbestos standards. *THE TOXICOLOGIST*, 2002, 66:70.
- (100) Wang S, Sun NN, Keith I, Kweon C, Schauer J, Foster DE, Witten ML: Afferent neural response of lung exposed to diesel exhaust particulates. Abstract presented at the Health Effects Institute Annual Meeting, Seattle, Washington, April 28-30, 2002.
- (101) Collins JF, Drees JB, Witten ML, Xu H, Ghishan FK: Regulation of alveolar type II cell sodium-phosphate cotransporter type Iib gene expression by side-stream cigarette smoke exposure. Abstract presented at 2002 Experimental Biology Meeting,

April 20-24th, New Orleans, Louisiana.

- (102) Fernandez A, Wendt JOL, Hyde JD, Rowland SA, Witten ML: Health effects engineering: Complex relationships between fuel type, composition, and potential respiratory distress caused by combustion exhaust PM. Presented at the American Association for Aerosol Research Meeting, 2002.

- (103) Wong SS, Sun NN, Keith I, Kweon C, Foster DE, Schauer JJ, Witten ML: Tachykinin substance P signaling involved in diesel exhaust (DE)-induced bronchopulmonary neurogenic inflammation in rats. THE TOXICOLOGIST, 2003, 72:290.

- (104) Sun NN, Wong SS, Keith I, Witten ML: Overlapping molecular tachykinergic mechanism in development of sidestream cigarette smoke-induced lung inflammation. THE TOXICOLOGIST, 2003, 72:290.

- (105) Wendt JOL, Fernandez A, JD Hyde, SA Rowland, Witten ML: Health effects engineering of toxic metal particulates. Abstract to be presented at the 8th International Congress of Chemical and Environmental Engineering, 2003.

- (106) Wong SS, Sun NN, Keith I, Kweon C, Foster DE, Schauer JJ, Witten ML: Substance P signaling involved in diesel exhaust (DE)-induced bronchopulmonary neurogenic inflammation in rats. The 5th Congress of Toxicology in Developing Countries, Guilin, China, November 10-13, 2003.

- (107) Hyde JD, Rowland S, Witten ML: JP-8 jet fuel exposure potentiates Hong Kong influenza virus-induced lung injury. THE FASEB JOURNAL, 2003, 17:A89.

- (108) Wong SS, Sun NN, Witten ML: Tachykinergic mechanisms of Acute Respiratory Distress Syndrome following fire smoke inhalation. THE FASEB JOURNAL, 2003, 17:A247.

- (109) Sun NN, Wong SS, Witten ML: Capsaicin silences genetic

- responses of tachykinin substance P and neurokinin-1 receptor in the lungs exposed to fire smoke. THE FASEB JOURNAL, 2003, 17:A248.
- (110) Shih C, Fernandez A, Davis-Gorman G, Hyde J, Witten ML, Wendt J, McDonagh PF: Evidence that inhalation of airborne particulate matter causes chronic low-grade systemic inflammatory response. THE FASEB JOURNAL, 2003, 17:A1366.
- (111) Sheppard P, Witten ML: Dendrochemistry of urban trees in an environmental exposure analysis of childhood leukemia cluster areas. Abstract presented at the 2003 American Geophysical Union Meeting on December 8, 2003 in San Francisco, California.
- (112) "Trees Link Leukaemia Clusters", Nature at the following web site, www.nature.com/nsu/031208/031208-3.html
- (113) Frank K, Campbell J, Witten M, Bartlett M, Fisher J: Analytical characterization of aerosolized jet propellant 8 (JP8) in an exposure chamber atmosphere. Abstract presented at the 2004 Society of Toxicology Meeting on March 23, 2004 in Baltimore, Maryland.
- (114) Ziegler TL, Hyde JD, Meeker GP, Sutley SJ, Lamothe PJ, Brownfield IK, Hoefen TM, Plumlee GS, Witten ML: The chemical, physical, and toxicological properties of amphibole from Libby, MT. Abstract presented at the 2004 Society of Toxicology Meeting on March 23, 2004 in Baltimore, Maryland.
- (115) Wong SS, Keith IM, Sun NN, Kweon C, Schauer JJ, Foster DE, Lantz R, Witten ML: Inhalation of diesel exhaust affects calcitonin gene-related peptide (CGRP) density in F344 rats. Abstract presented at the 2004 Society of Toxicology Meeting on March 24, 2004 in Baltimore, Maryland.
- (116) Van Gosen BS, Lowers HA, Hyde JD, Meeker GP, Bern AM, Sutley SJ, Witten ML, Ziegler TL: Toxicological and

mineralogical analysis of richterite-winchite asbestos.
Abstract presented at the 2004 Society of Toxicology
Meeting on March 25, 2004 in Baltimore, Maryland.

- (117) Fastje CD, Hyde JD, Goot B, Meigs E, Sun NN, Wong SS, Witten ML: Substance P agonist attenuates pulmonary injury induced through exposure to A/Hong Kong/8/68 influenza virus and JP-8 jet fuel. THE FASEB JOURNAL, 2004, A461.
- (118) Wong SS, Sun NN, Hyde J, Ruiz L, Fastje CD, Witten ML: Drotrecogn- α (Activated) attenuates proinflammatory cytokine IL-1 β in smoke-induced acute lung injury. THE FASEB JOURNAL, 2004, A947.
- (119) Sun NN, Fastje CD, Wong SS, Hyde J, Witten ML: Transcriptome changes by metal ores on a human acute lymphoblastic leukemia cell line. THE FASEB JOURNAL, 2004, A1195.
- (120) Sheppard PR, Witten ML, Ridenour G: Heavy metal content in airborne dust of childhood leukemia cluster areas: even small towns have air pollutants. Presented at the 2004 American Geophysical Union Meeting in San Francisco, California on December 13, 2004.
- (121) Wong SS, Sun NN, Hyde J, Lantz RC, Witten ML: Gene expression profiles protected by a neurokinin 1 receptor antagonist in smoke inhalation injury. THE FASEB JOURNAL, 2005, A1534.
- (122) NN Sun, Wong SS, Witten ML: The synergic effects of JP-8 jet fuel on proinflammatory cytokines in alveolar cell culture. THE FASEB JOURNAL, 2005, A1296.
- (123) Wong SS, Sun NN, Lantz RC, Witten ML: Gene microarray analysis in a rat model of smoke inhalation-induced acute lung injury. THE TOXICOLOGIST, 2005, 84:191.
- (124) Sun NN, Nardi C, Wong SS, Witten ML: In vitro inhibition

- of substance P on IL-1 release from alveolar macrophages in response to JP-8 jet fuel. *THE TOXICOLOGIST*, Presented at 2006 Society of Toxicology Meeting in San Diego, California.
- (125) Sheppard PR, Speakman RJ, Ridenour G, Farris C, Witten ML: Spatial patterns of airborne exposures of tungsten and cobalt in Fallon, Nevada, from lichens and surface sediments. Presented at the 2005 American Geophysical Union Meeting at San Francisco, California, December 9, 2005.
- (126) Fastje CD, Cobb J, Witten ML: Genetic analysis of leukemia cluster models. *THE FASEB JOURNAL*, Presented at 2006 Experimental Biology Meeting in San Francisco, California.
- (127) Wong SS, Sun NN, Witten ML: Regulation of substance P on water channel (aquaporin 3) expression. *THE FASEB JOURNAL*, Presented at 2006 Experimental Biology Meeting in San Francisco, California.
- (128) Sun NN, Hersh LB, Witten ML, Wong SS: Diesel exhaust particulates down-regulate transcriptionally respiratory neutral endopeptidase expression. *THE FASEB JOURNAL*, Presented at 2006 Experimental Biology Meeting in San Francisco, California.
- (129) Wong SS, Sun NN, Witten ML: Molecular effects of diesel exhaust particulates on respiratory neutral endopeptidase in carcinogenesis. *HEALTH EFFECTS ANNUAL MEETING*, San Francisco, California, April 2006.
- (130) Sheppard PR, Toepfer P, Schumacher E, Rhodes K, Ridenour G, Witten ML: Determining anthropogenic versus natural sourcing of airborne tungsten particles at the urban-rural interface of Fallon, Nevada, using morphological and chemical micro-analysis. Presented at the 2006 American Geophysical Union Meeting at San Francisco, California, December 2006.
- (131) Wong SS, Sun NN, Witten ML, Lantz RC, Lu B, Gerard C, Hersh LB: Diesel particulate-induced neutral endopeptidase downregulation is associated with cell proliferation. *THE TOXICOLOGIST*, 96:105-

106, 2007.

- (132) Sun NN, Witten ML, Hersh LB, Gerard C, Lantz RC, Wong SS: Importance of neutral endopeptidase in epithelial response to diesel particulate exposure. Presented at the 2007 Experimental Biology Meeting, Washington, DC, April 28, 2007.
- (133) Fastje CD, Lee K, Yemane Y, Sheppard PR, Witten ML: Prenatal exposure to tungsten influences expression of DMBT1, a putative tumor suppressor gene. Presented at the 2007 Experimental Biology Meeting, Washington, DC, April 27, 2007.
- (134) Witzmann FA, Lee K, Wang M, Yemane Y, Witten ML: Pulmonary effects of JP-8 jet fuel exposure- label-free quantitative analysis of protein expression in alveolar type II epithelial cells using LC/MS THE TOXICOLOGIST, 96:102, 2007.
- (135) Mason SB, Clack JW, Ringham HN, Thomas A, Witten ML, Witzmann FA: Lung protein expression following acute formalin exposure- effect of the substance P derivative Sar⁹, Met (O₂)¹¹-substance P. THE TOXICOLOGIST, 96:209, 2007.
- (136) Sheppard PR, Speakman RJ, Ridenour G, Witten ML: Geochemical study of urban environments with excess disease prevalence: Fallon, NV. The Geological Society of America Annual Meeting, Denver, Colorado. October, 2007.
- (137) Witten ML, Sheppard PR, Fastje C: First-Year Report of the Fallon, Nevada Leukemia Study. University of Nevada at Reno, October, 2007.
- (138) McLaughlin M, Vargas J, Camponovo R, Wong SS, Le K, Witten ML: Comparison of lung injury for JP-8 versus S-8 jet fuels at threshold concentrations. Abstract presented at the 2008 Society of Toxicology national meeting in Seattle, Washington.
- (139) Wong SS, Sun NN, Keith I, Lantz RC, Witten ML: Selectivity of neuropeptide release from pulmonary capsaicin-sensitive afferents in relation to diesel exhaust exposure. Abstract presented at the 2008 Society of Toxicology national meeting in Seattle, Washington.

- (140) McLaughlin M, Vargas J, Camponovo R, Wong SS, Le K, Witten ML: Comparison of lung injury for JP-8 versus S-8 jet fuels at threshold concentrations. 2007 Arizona Health Sciences Center Frontiers in Biomedical Research, October 17, 2007, Tucson, Arizona.
- (141) Wong SS, Sun NN, Witten ML: Methylation status of neutral endopeptidase genes down-regulated by diesel engine particulates in human airway epithelium. Presented at the 2008 Experimental Biology Meeting, San Diego, California, April 7, 2008.
- (142) Fastje C, Wong SS, Witten ML: Prenatal exposure to Tungstate/Arsenite may increase susceptibility to childhood leukemia. Presented at the 2008 Experimental Biology Meeting in San Diego, California, April 7, 2008.
- (143) Heys JJ, Winiger CW, Witten ML: Spectral element simulation of pulmonary drug delivery. Presented at the Design of Medical Devices Conference, Minneapolis, Minnesota, April 15-17, 2008.
- (144) Wong SS, Sun NN, Miller HB, Witten ML, Burgess JL: Diesel exhaust particles-induced acute loss of respiratory neutral endopeptidase. Presented at the annual meeting of the Health Effects Institute, April 27-29, 2008, Philadelphia, Pennsylvania.
- (145) Heys JJ, Winiger C, Witten M: Simulation of second-hand smoke deposition in the airways. FAMRI Scientific Symposium, Boston, MA, May of 2008.
- (146) Witten ML: Health effects of exposure to biofuels. Invited symposium to the 2009 Society of Toxicology Meeting, Baltimore, Maryland.
- (147) Sheppard PR, Ridenour G, Witten ML: Spatial patterns of tungsten and cobalt on leaf surfaces of trees in Fallon, Nevada. To be presented at the American Geophysical Union meeting in San Francisco, California, December 2008.
- (148) Fastje C, Harper K, Park YS, Wong SS, Witten ML: The influence of tungstate exposure on immunological response to RSV infection in C57BL/6 mice. Abstract presented at the Experimental Biology 2009 Meeting in New Orleans, Louisiana, April 22, 2009.

- (149) Wong SS, Sun NN, Miller HB, Desmarais TJ, Witten ML, Burgess JL: Diesel exhaust particles-induced acute loss of respiratory neutral endopeptidase. Presented at the Experimental Biology 2009 Meeting in New Orleans, Louisiana, April 19, 2009.
- (150) Wong SS, Thomas A, Lantz RC, Witten ML: An evaluation of the threshold exposure level of inhaled syntroleum S-8 synthetic jet fuel in mice. Abstract presented at the 2009 Society of Toxicology Meeting, Baltimore, Maryland.
- (151) Desmarais TJ, Mosqueda M, Woodward S, Rogers M, Witten ML: The effect of ethanol on cultured type II rat lung epithelial cells. Abstract presented at the inaugural meeting of the Arizona Physiological Society, November of 2008, Tucson, Arizona.
- (152) Fastje CD, Harper K, Park YS, Witten ML: The effect of sodium tungstate exposure on testes in C57BL/6 mice. Abstract presented at the inaugural meeting of the Arizona Physiological Society, November of 2008, Tucson, Arizona.
- (153) Wong SS, Fastje CD, Witten ML, Lu B, Gerard CJ, Burgess JL: Lacking neprilysin exacerbated diesel particles-induced inflammatory lung injury in mice. Abstract presented at the 2009 Annual Health Effects Institute meeting in Portland, Oregon, May 2009.
- (154) Fastje CD, Wong SS, Witten ML: Continued development of a tungsten/respiratory virus dual exposure model to cause leukemia. Abstract to be presented at the 2010 Experimental Biology meeting in Anaheim, California.
- (155) Sheppard PR, Ridenour G, Witten ML: Dendrochemistry of urban trees in an environmental exposure analysis of a childhood leukemia cluster. Abstract to be presented at the 65th Southwest Regional Meeting of the American Chemical Society, El Paso, Texas.
- (156) Wong SS, Fastje CD, Bao L, Burgess JL, Lantz RC, Gerard CJ, Witten ML: Exacerbated inflammatory lung injury in neprilysin null mice following diesel particles exposure. Abstract to be presented at the 2010 Society of Toxicology Meeting in Salt Lake City, Utah.
- (157) Wong SS, Burgess JL, Lantz RC, Witten ML: Down-regulation of neprilysin by DEP induced increased cytokine response in vitro. Abstract to be presented at the 2009 Health Effects Institute annual meeting, Miami, Florida.

- (158) Harper K, Terry C, Fastje CD, Wong SS, Witten ML: Continued development of a tungsten/respiratory virus dual exposure model to cause leukemia.
Abstract to be presented at the 2010 Arizona Physiological Society Meeting, Tucson, Arizona.
- (159) Hobson C, Mohajerin TJ, Johannesson C, Telfeyan K, Tappero R, Witten ML, Sheppard PR, Datta S: Tungsten in the Environment: A geochemical and mineralogical investigation. Abstract to be presented at the 2012 American Geophysical Union Meeting, San Francisco, California.

PRESENTATIONS & SERVICE TO SOCIETY

- (1) June 5, 1990. Appearance on KNST Radio, Tucson, Arizona, about passive smoke and its effect on health.
- (2) September 5 and 6, 1990. Interview on KNST Radio, Tucson, Arizona, about acute smoke inhalation research and its practical benefits for smoke inhalation victims.
- (3) September 7, 1990. Interview on KOLD Television, Channel 13, Tucson, Arizona, about acute smoke inhalation research and its practical benefits for smoke inhalation victims.
- (4) October 15, 1990. Interview on KGUN Television, Channel 9, Tucson, Arizona, in the celebration of the roof-breaking ceremony of the Steele Memorial Children's Research Center.
- (5) November 9, 1990. Interview on Ivanhoe National Medical News Service program, "Today's Breakthroughs, Tomorrow's Cures", about acute smoke inhalation research and its practical benefits for smoke inhalation victims.
- (6) November 20, 1990. Interview on KTSP Television, Channel 10, Phoenix, Arizona, about acute smoke inhalation research and its practical benefits for smoke inhalation victims.
- (7) December 13, 1990. Interview on KFLT Radio, Tucson, Arizona, about acute smoke inhalation research and its practical benefits for smoke inhalation victims.
- (8) May 12, 1991. Editorial in the Arizona Daily Star entitled, "Human Suffering", in defense of the use of animals in biomedical research.
- (9) May 16, 1991. Interview on the University of Arizona News and Information Service about acute smoke inhalation research and its practical benefits for smoke inhalation victims.
- (10) October 30, 1992. Distinguished Alumni Seminar entitled, "A Breakthrough?, A Model of Smoke-Induced Lung Injury", Emporia State University, Emporia, Kansas.

- (11) December 1, 1992. Grand Rounds Seminar entitled, "A Model of Smoke-Induced Lung Injury", for the University of Arizona and Tucson Medical Center Departments of Pediatrics.
- (12) January 7, 1993. Interviews on KVOA, Channel 4, and KOLD, Channel 13, Tucson, Arizona on the effects of sidestream cigarette smoke on lung function and pathology.
- (13) January 7, 1993. Interview on KUAT, Channel 6, Tucson, Arizona on the effects of sidestream cigarette smoke on lung function and pathology.
- (14) July 22, 1993. Interview on KUAT program, "Arizona Illustrated", Channel 6, Tucson, Arizona on the effects of sidestream cigarette smoke exposure in children.
- (15) September 17, 1993. Seminar entitled, "New Developments in the Space Life Sciences", Emporia State University, Emporia, Kansas.
- (16) November 15, 1993. Seminar entitled, "Development of a Space-based Magnetic Resonance Imaging System", NASA-Ames Research Center, Moffett Field, California.
- (17) February 2, 1994. Seminar entitled, "Development of a Space-based Magnetic Resonance Imaging System", NASA-Johnson Space Center, Houston, Texas.
- (18) March 24 & 25, 1994. Presentation entitled, "Development of a Space-based Magnetic Resonance Imaging System", University of Arizona and NASA-Space Engineering Research Center Symposium entitled, "Dual Use of NASA Space Processing Technologies for National Technology Reinvestment", Tucson, Arizona.
- (19) April 8, 1994. Interview on KVOA, Channel 4, Tucson, Arizona on the opening of the Southwest Environmental Health Sciences Center, University of Arizona, Tucson, Arizona.

- (20) May 4, 1994. Presentation entitled, "Space and the Life Sciences", Gale Elementary School, Tucson, Arizona.
- (21) May 11, 1994. Presentation entitled, "Space and the Life Sciences", Pistor Middle School, Tucson, Arizona.
- (22) May 12, 1994. Presentation entitled, "Development of a Miniature Magnetic Resonance Imaging System", Old Pueblo Optimist Club, Tucson, Arizona.
- (23) June 22, 1994. Interview on KGUN Television, Channel 9, Tucson, Arizona, about the effects of high ozone levels in Tucson, Arizona on the respiratory system.
- (24) September 24, 1994. Presentation entitled, "Fractal Analysis of Lung Alveoli", Cardiovascular and Respiratory Mechanics and Transport Workshop, University of Arizona College of Medicine, Tucson, Arizona.
- (25) October 21, 1994. Seminar entitled, "The Use of Magnetic Resonance Imaging and Fractals in Biomedical Research", Emporia State University, Emporia, Kansas.
- (26) October 26, 1994. Seminar entitled, "The Use of Fractals and MRI in Models of Lung Injury", School of Public Health, University of Alabama at Birmingham, Birmingham, Alabama.
- (27) December 13, 1994. Seminar entitled, "Magnetic Resonance Imaging in a Model of Simulated Microgravity", Department of Family and Community Medicine Grand Rounds, Scottsdale Memorial Hospital, Scottsdale, Arizona.
- (28) December 15, 1994. Seminar entitled, "Fun with Fractals", Respiratory Sciences Center, College of Medicine, University of Arizona, Tucson, Arizona.
- (29) Speakers Bureau, Arizona Department of Health Services, Statewide Environmental Health Education Project.
- (30) February 2, 1995. Presentation entitled, "Magnetic Resonance

- Imaging in a Model of Simulated Microgravity”, Phoenix Country Day School, Phoenix, Arizona.
- (31) February 14 and 15, 1995. Chairman and Host of Workshop entitled, “JP-8 Jet Fuel Exposure and Substance P: Implications for the Lungs, Immune and Nervous Systems”, The University of Arizona College of Medicine, Tucson, Arizona and United States Air Force Office of Scientific Research, Bolling Air Force Base, District of Columbia.
 - (32) February 16, 1995. Presentation entitled, “Magnetic Resonance Imaging in a Model of Simulated Microgravity”, Kiwanis Club, Tucson, Arizona.
 - (33) February 21, 1995. Presentation entitled, “Fun with Fractals”, Department of Pediatrics’ Grand Rounds, The University of Arizona College of Medicine, Tucson, Arizona.
 - (34) February 28, 1995. Presentation entitled, “Fun with Fractals”, Vascular Biology Research Conference, The University of Arizona College of Medicine, Tucson, Arizona.
 - (35) May 22, 1995. Presentation entitled, “DOD Research Enhances National Security”, Congressional Institute for the Future, Washington, District of Columbia.
 - (36) June 5, 1995. Presentation entitled, “The Legacy of the Gulf War Pollution”, Saudi Meteorology Environmental Protection Administration, Jeddah, Saudi Arabia.
 - (37) June 7, 1995. Presentation entitled, “The Effects of Pollution on the Pulmonary System”, King Faisal University, College of Medicine, Dammam, Saudi Arabia.
 - (38) November 14, 1995. Presentation entitled, “Air Pollution and Health”, Grand Rounds at Holy Cross Hospital, Nogales, Arizona.
 - (39) November 14, 1995. Presentation entitled, “Air Pollution and

- Health”, Open Public Forum sponsored by the Arizona Department of Health Services, Nogales City Hall, Nogales, Arizona.
- (40) November 17, 1995. Banquet Speaker, “Is it Better to be Lucky?”, Arizona Association of Laboratory Animal Science, Tucson, Arizona.
 - (41) November 29, 1995. Presentation entitled, “Development of a Portable Magnetic Resonance Imaging System”, Optimists Clubs of Yuma, Arizona.
 - (42) December 27, 1995. Copper Bowl Parade Committee, Seventh Annual Copper Bowl Football Classic, Tucson, Arizona.
 - (43) February 1, 1996. University of Arizona Cancer Center Outreach Program, College of Medicine, Presentation entitled, “Smoking and Lung Cancer”, Nogales, Arizona.
 - (44) Space Development Advisor to Dr. Kenneth Cox, Assistant to the Director of Engineering, NASA/Johnson Space Center, Houston, Texas. Member of NASA-Aerospace Technology Committee. March of 1996 to present.
 - (45) March 14 and 15, 1996. Chairman and Host of Workshop entitled, “JP-8 Jet Fuel Exposure: Development of Programs for Human Risk Assessment”, The University of Arizona College of Medicine, Tucson, Arizona and United States Air Force Office of Scientific Research, Bolling Air Force Base, District of Columbia.
 - (46) Invited Participant, United States-Mexico Border Environmental Health Symposium, University of Arizona Udall Center for Studies in Public Policy, March 29 and 30, 1996, Tucson, Arizona.
 - (47) Representative for the University of Arizona, American Association of Universities and Department of Defense Symposium, “DOD Research Enhances National Security and Commercial Competitiveness”, Rayburn Congressional Office Building, May 9, 1996, Washington, District of Columbia.
 - (48) Southwest Environmental Health Science Center, Community Outreach and Education Program, “The Role of Smoke and Particulates in Respiratory Toxicology for High School Teachers

Workshop”, June 3-7, 1996.

- (49) June 11, 1996. Seminar entitled, “The Role of Chemical Mediators in a Model of Smoke-Induced Lung Injury”, Case Western Reserve University School of Medicine, Cleveland, Ohio.
- (50) American Youth Soccer Association, Region 153, Division 7 Committee Chairman, August to November, 1996.
- (51) December 27, 1996. Copper Bowl Parade Committee, Eighth Annual Copper Bowl Football Classic, Tucson, Arizona.
- (52) February 13 and 14, 1997. Chairman and Host of the “Third Annual JP-8 Jet Fuel Toxicology Conference”, University of Arizona College of Medicine, Tucson, Arizona.
- (53) February 25, 1997. Seminar entitled, “Lazaroids and a Model of Smoke-Induced Lung Injury”, United States Army Institute of Surgical Research, Fort Sam Houston, Texas.

- (54) March 3, 1997. Participation in a “Careers in Toxicology Forum” for the Southwestern Environmental Health Sciences Center, University of Arizona, Tucson, Arizona.
- (55) March 24, 1997. Conducted JP-8 jet fuel field exposure trials at the Montana Air National Guard Base, Great Falls, Montana.
- (56) April 28, 1997. Invited Participant, United States Environmental Protection Agency Air Pollution Forum, Stanford University, Palo Alto, California.
- (57) April 29, 1997. Consultation visit to NASA/Ames Research Center, Moffett Field, California. Consultation on life sciences research area for International Space Station Alpha.
- (58) Representative for the University of Arizona, The Association of American Universities & Department of Defense Symposium, “Basic Research in the National Defense”, May 7, 1997, Washington, District of Columbia.

- (59) Southwest Environmental Health Science Center's Community Outreach and Education Program, "The Role of Smoke and Particulates in Respiratory Toxicology for High School Teachers Workshop", June 2-6, 1997.
- (60) July 8, 1997. Conducted JP-8 jet fuel field exposure trials at Davis-Monthan Air Force Base, Tucson, Arizona.
- (61) August 1, 1997. Seminar entitled, "Space Biology: Can Humans Survive a Journey to Mars?", Indiana University, Bloomington, Indiana.
- (62) September 30, 1997. Department of Pediatrics' Grand Rounds Seminar entitled, "High Tech: From the Lab to the Bedside?", The University of Arizona College of Medicine, Tucson, Arizona.
- (63) American Youth Soccer Association, Region 153, Division 7 Coordinator, August to November, 1997.
- (64) Cross-Country Coach, St. Michael's School, Tucson, Arizona, August to October, 1997.
- (65) October 22, 1997. Seminar entitled, "Health Effects of Fuel Emissions", Pima County Association of Governments, Tucson, Arizona.
- (66) December 27, 1997. Parade Committee, Ninth Annual Insight. Com Bowl Football Classic, Tucson, Arizona.
- (67) October 27, 1997. Air Pollution Consultant, Pima County Association of Governments Air Quality Board, Tucson, Arizona.
- (68) Track & Field Coach, St. Michael's School, Tucson, Arizona, February, 1998 to 2002.
- (69) Representative for the University of Arizona, American Association of Universities and Department of Defense Symposium, "Basic Research in the National Defense", Cannon Congressional Office Building, April 29, 1998, Washington, District of Columbia.
- (70) May 18, 1998. Interview on KOLD, Channel 13, Tucson, Arizona on the Tucson air pollution caused by large fires in southern Mexico.

- (71) June 9, 1998. Interview on KHRR, Channel 40, Tucson, Arizona on the effects of vitamin E dietary supplementation and its ability to attenuate cigarette smoke-induced lung injury.
- (72) Cross Country Coach, St. Michael's School, Tucson, Arizona, September, 1998 to 2002.
- (73) Basketball Coach, St. Michael's School, Tucson, Arizona, November, 1998 to 2001.
- (74) December 2-3, 1998. Chairman and Host of the Air Force Office of Scientific Research JP-8 Toxicology Workshop, The University of Arizona, Tucson, Arizona.
- (75) April 12, 1999. Interview on KGUN, Channel 9, Tucson, Arizona, about the health effects of passive cigarette smoke exposure.
- (76) June 21-23, 1999. Invited participant at The Defense Advanced Research Projects Agency Program Review of Tissue Based Biosensors. New Bern, North Carolina.
- (77) January 11-12, 2000. Chairman and Host of Air Force Office of Scientific Research JP-8 Jet Fuel Conference. The University of Arizona, Tucson, Arizona.
- (78) Seminar entitled, "Effect(s) of Short and Long-Term Exposure to Hydrocarbons on Lung Growth and Development and a Biosensor to Measure Volatile Hydrocarbon Exposure", Al Fanateer Hospital, Jubail, Kingdom of Saudi Arabia. October 10, 2000.
- (79) Seminar entitled, "Development of a Lung Biosensor to Measure Volatile Organic Hydrocarbons", King Abdul Aziz City of Science and Technology, Riyadh, Kingdom of Saudi Arabia. October 12, 2000.
- (80) Grand Rounds Seminar entitled, "Global Air Pollution: A

- Growing Menace for the 21st Century”. Cook Children’s Hospital, Fort Worth, Texas, April 24, 2001.
- (81) June 18, 2001. Presentation entitled, “JP-8 Jet Fuel and Pulmonary Function”, to Subcommittee on Jet Propulsion Fuel 8, National Research Council of the National Academy of Science, Washington, District of Columbia.
 - (82) January 9, 2002. Appearance on Sixty Minutes II television show about the Fallon, Nevada leukemia cluster.
 - (83) May, 2002. Appearance on KTVN, Channel 2, Reno, Nevada three-part series on the childhood leukemia clusters in Fallon, Nevada and Sierra Vista, Arizona.
 - (84) Seminar entitled, “Global Air Pollution: A Growing Menace for the 21st Century”. Purdue University, West Lafayette, Indiana, May 6, 2002.
 - (85) May 15-17, 2002. Chairman and Host of Air Force Office of Scientific Research JP-8 Jet Fuel Toxicology Conference, The University of Arizona, Tucson, Arizona.
 - (86) Grand Rounds Seminar entitled, “Fallon, Nevada and Sierra Vista, Arizona Leukemia Cluster Investigation”, October 24, 2002, Fort Huachuca Army Hospital, Sierra Vista, Arizona.
 - (87) Southern Arizona Health Forum, Cochise Community College, Sierra Vista, Arizona. Seminar entitled, “Fallon, Nevada and Sierra Vista, Arizona Leukemia Cluster Investigation”, December 12, 2002.
 - (88) Granted membership in the United States Olympic Committee’s “Sixth Ring”, December, 2004, United States Olympic Committee, Colorado Springs, Colorado.
 - (89) Emporia, Kansas High School Hall of Fame Induction, January 17, 2003, Emporia, Kansas.
 - (90) Elected Vice-Chairman of the Pima County, Arizona Environmental Quality Advisory Board, February 19, 2003.

- (91) Assistant Track Coach, Tucson High Magnet School, Tucson, Arizona, 2004-2008.
- (92) Invited Speaker, "Investigation of Two Simultaneous Childhood Leukemia Clusters in the Western United States", 2003 Toxicology and Risk Assessment Conference, Dayton, Ohio.
- (93) Seminar entitled, "Tungsten's Role in the Development of Four Leukemia-Associated Areas in the Western United States", Emporia State University, Emporia, Kansas, September 24, 2003.
- (94) Member of Organizing Committee for the 9th International Congress on Combustion By-Products and Their Health Effects, The University of Arizona, Tucson, Arizona, U.S.A., June 12-15, 2005.
- (95) Seminar entitled, "A Model of Smoke-Induced Lung Injury: Implications from SARS to the War on Terrorism", Johns Hopkins University, Baltimore Maryland, April 12, 2004.
- (96) United States Army Medical Research & Materiel Command Grant Review Committee, May of 2004, Washington, D.C.
- (97) National Aeronautics & Space Administration Grant Review Committee, November 8-9th, 2004, Washington, D.C.
- (98) Flight Attendant's Medical Research Institute Grant Review Committee, November 17-18th, 2004, Washington, D.C.
- (99) Seminar entitled, "Sar⁹, Met (O₂)¹¹-substance P (Homspera™) Use as a Countermeasure Against Acute Radiation Syndrome", Massachusetts General Hospital and Harvard Medical School, Boston, Massachusetts, July 22, 2005.
- (99) Invited Participant, National Institute of Environmental Health Sciences, "Workshop on Integrated Earth Observations: Application to Air Quality and Human Health", Research Triangle Park, North Carolina, August 1-2, 2005.
- (100) Invited Speaker, U.S. Department of Veteran's Affairs, Special Committee to Investigate Causes of Gulf War Illnesses Syndrome, Washington, D.C., September 19-21, 2005.

- (101) Seminar entitled, "Homspera's Development as a Universal Protectant for Homeland Security", Emporia State University, Emporia, Kansas, October 14, 2005.
- (102) Flight Attendant's Medical Research Institute Grant Review Committee, November 29-30, 2005, Washington, D.C.
- (103) Chairman and Host, JP-8 Jet Fuel Toxicology Conference, November 30-December 2, 2005, Tucson, Arizona.
- (104) Chairman and Host, JP-8 Jet Fuel Toxicology Conference, 2006, Tucson, Arizona.
- (105) Flight Attendant's Medical Research Institute Grant Review Committee, 2006, Washington, D.C.
- (106) Chairman and Host, JP-8 Jet Fuel Toxicology Conference, January 17-19, 2007, Tucson, Arizona.
- (107) Seminar entitled, "Role of Tungsten in the Development of Childhood Leukemia Clusters in the Western United States", Emerging Contaminants Workshop, University of Arizona Department of Hydrology, Phoenix, Arizona, March 2, 2007.
- (108) Seminar entitled, "Role of Metals in the Formation of Childhood Leukemia Clusters in the Western United States", University of Nevada at Reno, May 7, 2007.
- (109) Seminar entitled, "Development of a Biosensor for Anti-Terrorism Utilization" Emporia State University, Emporia, Kansas, October 5, 2007.
- (110) Seminar entitled, "Development of an Animal Model of Tungsten/Cobalt to Simulate Environmental Conditions in Fallon, Nevada. Fallon Leukemia Cluster Symposium, University of Nevada at Reno, October 15, 2007.
- (111) Flight Attendant's Medical Research Institute Grant Review Committee, 2007, Washington, D.C.
- (112) Seminar entitled, "Development of a Nano-Sensor". Video seminar broadcast on the Northwestern University National NanoTechnology Network, June 5, 2008.

- (113) National Institutes of Health Special Review Panel on Ionizing Radiation and Lung Injury, June 17-18, 2008. Bethesda, Maryland.

- (114) Seminar entitled, "Recent Developments of Tungsten Exposure in a Mouse Model", University of Nevada at Reno, October 10, 2008.

- (115) Flight Attendant's Medical Research Institute Grant Review Committee, Section II Chairman, October of 2008, Washington, D.C.

- (116) Development of a Biosensor for Use as a Countermeasure to Bioterrorism, Presentation in London, England. January 2009.

- (117) Invited Talk, 2009 Society of Toxicology Meeting in Baltimore, Maryland, "Health Effects of Synthetic Biofuels", March 2009.

- (118) Flight Attendant's Medical Research Institute Grant Review Committee, October of 2009, Washington, D.C.

- (119) Seminar entitled, "The Development of a Leukemia Mouse Model Based on Tungsten/Respiratory Syncytial Virus Exposure. October 2010, Emporia State University, Emporia, Kansas.

- (120) Flight Attendant's Medical Research Institute Grant Review Committee, November of 2010, Washington, D.C. Section Chairman.

- (121) Reviewer, Health Canada Report on Heavy Oil Distillates and Fuels: Possible Human Health Effects, January of 2011.

- (122) Flight Attendant's Medical Research Institute Grant Review Committee, November of 2011, Washington, D.C. Section Vice-Chairman.