

CURRICULUM VITAE

Name: Phyllis J. Mullenix

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Date of Birth: November 11, 1949

State of Birth: Missouri

Education:

1970 B.S., Truman State University (Zoology-magna cum laude)

1975 Ph.D., University of Kansas Medical Center (Pharmacology)

Postdoctoral Training:

1975-1977 Research Fellow, Department of Environmental Medicine, The Johns Hopkins School of Hygiene and Public Health, Baltimore, Maryland

Academic Appointments:

1977-1981 Research Associate, Psychiatry Department, Children's Hospital Medical Center, Boston, MA

1977-1981 Instructor, Neuropathology Department, Harvard School of Medicine, Boston, MA

1982-1984 Instructor, Psychiatry Department, Harvard School of Medicine, Boston, MA

1982-1983 Staff Associate, Pharmacology Department, Forsyth Research Institute, Boston, MA

1983-1994 Staff Associate, Head of Toxicology Department, Forsyth Research Institute, Boston, MA

1985-1993 Adjunct Associate Professor of Pharmacology, Northeastern University, Boston, MA

1993-1996 Lecturer, Radiation Oncology Department, Harvard School of Medicine, Boston, MA

1996-2003 Research Associate, Psychiatry Department, Children's Hospital Medical Center, Boston, MA

Other Professional Positions:

- 1976-1986 Toxicology Consultant on Ozone and Nitrogen Oxides, Regulatory Litigation Department, American Petroleum Institute, Washington, D.C.
- 1978 Toxicology Consultant on Ozone Advisory Committee, Houston Area Oxidant Study, Houston, TX
- 1981 Toxicology Consultant on Ozone, Minneapolis Assoc. for Commerce and Industry, St. Paul, MN
- 1981 Toxicology Consultant on Ozone, Department of Transportation, Philadelphia, PA
- 1981-1987 Toxicology Consultant on Ozone, 3M Company, St. Paul, MN
- 1982-1983 Toxicology Consultant on Aromatic Hydrocarbons, Williams Brothers Pipeline, Tulsa, OK
- 1982-1984 Toxicology Consultant on Polynuclear Aromatic Hydrocarbons, Boise Cascade, Boise, ID.
- 1982 Toxicology Consultant on Ozone, Monsanto, St. Louis, MO.
- 1982-1986 Toxicology Consultant on Ozone, Medicine and Biological Science Department, American Petroleum Institute, Washington, D.C.
- 1982-1986 Toxicology Consultant on Behavioral Methodology, Bioassay Systems Corp., Woburn, MA
- 1983-1984 Ad Hoc Reviewer, Photochemical Oxidant Criteria Document, U.S. Environmental Protection Agency
- 1984 Ad Hoc Reviewer, Toxicology Study Section, National Institutes of Health, Washington, D.C.
- 1987-1992 Toxicology Consultant on Air Toxics, 3M Company, St. Paul, MN
- 1987-1992 Toxicology Consultant on Behavioral Methodology, NutraSweet Company, Deerfield, IL
- 1988-1993 Advisory Board Member, Jaw Joints and Allied Musculo-Skeletal Disorders Foundation, Inc., Boston, MA
- 1989 Toxicology Consultant on Behavioral Methodology, EG & G Mason Research Institute, Worcester, MA
- 1990-1992 Toxicology Consultant on Nicotine Addiction, DynaGen, Inc., Cambridge, MA
- 1991 Panel Member, National Institutes of Health Technology Assessment Conference on Effects and Side Effects of Dental Restorative Materials, Bethesda, MD
- 2003-2014 Research Director, FTRC, Second Look, Worcester, MA

Awards and Honors:

- 1974 Sigma Xi
- 1970-1974 National Science Foundation Fellowship
- 2007 Integrity in Science Award, Weston A. Price Foundation

Major Committee Assignments:

- 1989-1994 Safety Committee, Member, Forsyth Research Inst., Boston, MA
- 1992-1994 I.A.C.U.C., Member, Forsyth Research Inst., Boston, MA

Editorial Boards:

- 1984-1994 Section Editor on Neurotoxicology, Toxicology and Industrial Health (Princeton)
- 1991-1992 Ad Hoc Reviewer, Radiation Research

Memberships in Professional Societies:

- 1975-1983 American Association for the Advancement of Science
- 1975-2000 Society for Neuroscience
- 1984-2000 Behavioral Teratology Society
- 1985-2000 Teratology Society
- 1985-1994 Society of Toxicology
- 1992-1998 American Association for Cancer Research
- 1997- International Society for Fluoride Research
- 1997- International Academy for Oral Medicine and Toxicology

Major Research Interests:

1. Development of a computer pattern recognition system for identification of individual motor acts in animals
2. Identification of long-term behavioral patterns subsequent to perinatal exposure to drugs
3. Influence of environmental pollutants on long-term behavioral outcome
4. Interpretation of changes in motor patterns in relation to recognized clinical disorders

Teaching Experience and Conferences:

- 1973-1975 Lectures in Laboratory Pharmacology and Toxicology, University of Kansas Medical School, Kansas City, KS
- 1976 Conference Leader and Speaker on Air Quality Standards, Graduate Course on The Lung and the Environment, The Johns Hopkins Medical Institutions School of Hygiene and Public Health, Baltimore, MD
- 1979 Conference Leader and Speaker, The Clean Air Act-Are the Standards Valid? National Air Quality Conference, San Francisco, CA.
- 1979-1980 Lectures in Behavioral Toxicology, Graduate course in Toxicology at University of Rhode Island, RI
- 1980 Lectures on air pollution and behavioral toxicology, Northeastern University, Boston, MA
- 1981 Conference Leader for Oxidants, Nitrogen Oxides and Hydrocarbons, The Clean Air Act Conference, National Council for Environmental Balance, Hartford, CT

- 1985 Invited Participant, An International Workshop on Biocompatibility, Toxicity and Hypersensitivity to Alloy Systems Used in Dentistry, Ann Arbor, MI, June 27-28, 1985
- 1986 Colloquium Director, Screening for Neurobehavioral Toxicity: Current State of the Art and Demonstration of a New Method, Forsyth Research Institute, Boston, MA, June, 1986
- 1987 Conference Director, Testing Programs for Behavioral Toxicity: Test Guidelines, Methodologies and Interpretation of Data, Forsyth Research Institute, Boston, MA, November 4-5, 1987
- 1989 Invited Participant, U.S. Environmental Protection Agency and National Institute for Drug Abuse Workshop on Quantitative and Qualitative Comparability of Human and Animal Developmental Neurotoxicity, Williamsburg, VA, April 11-13, 1989
- 1993 Invited Speaker, From Animal Model to the Clinic- Investigation of the Neurotoxicity of Childhood Leukemia Therapy, 82nd MARTA Meeting, 25th Year (1968-1993), Lambertville, NJ, October 14-15, 1993
- 1993 Invited Speaker, Neurotoxicity of Treatments for Childhood Leukemia, MD Anderson Cancer Center, Houston, TX
- 1993 Invited Speaker, Anatomy of a Neurotoxicity Investigation, Continuing Medical Education Course (CME) for Physicians, Centers for Disease Control (CDC) and The Agency for Toxic Substances and Disease Registry (ATSDR)
- 1996 Invited Speaker, The Neurotoxicity of Fluoride, Clark University Speakers Forum, October 24, 1996
- 1997 Invited Speaker, Fluoride Toxicity, CME course, International Academy of Oral Medicine and Toxicology, March 15, 1997
- 1998 Guest Lecturer, Neurotoxicity of Fluoride, Boston University School of Public Health, Environmental Health Doctoral Seminars, February 20, 1998
- 1998 Invited Speaker, Fluoride Neurotoxicity, CME course for Physicians, University of California San Diego School of Medicine and California Poison Control System
- 1999 Invited Speaker, Synergistic Effect of Low Level Contaminants in Water, 37th Annual Yankee Conference, Massachusetts Environmental Health Association, September 23, 1999
- 1999 Invited Speaker, Water Fluoridation: The Changing Risk-Benefit Balance, Pediatric Grand Rounds, Cambridge and Mount Auburn Hospitals, Cambridge, MA, November 4, 1999
- 2001 Invited Speaker, Fluoridation-Safe and Effective? American College of Toxicology Symposium, Washington, D.C., November 6, 2001
- 2001-2002 Invited Speaker and Organizer, Seminar Series, Fluoride Effects on Health, Akwesasne Task Force for the Environment, St. Regis Reserve, Akwesasne, NY

- 2003 Invited Speaker, Neurotoxicity of Fluoride, CME course for Physicians and Dentists, International Academy of Oral Medicine and Toxicology, September 11-13, 2003
- 2004 Invited Speaker, Fluoride Effects on Health of Water Treatment Operators, Water Watch of Utah, October, 2004
- 2005 Invited Speaker (Rutgers, State University of New Jersey), Concerns About Fluoride Levels in Soils: The Twisted Path to an Age of Reason in the United States, 2005 American Society of Agronomy, Crop Science Society of America and Soil Science Society of America International Annual Meetings, Salt Lake City, UT
- 2007 Invited Speaker, CME course for health professionals, The Toxic Consequences of Childhood Exposure to Fluoride. 2007 Wise Traditions Conference sponsored by The Weston A. Price Foundation, November 11, 2007.
- 2008 Invited Speaker, Category 1 CME Credit (Harvard Medical School). Fluoride Poisoning: A Potential Receptor Malfunction Disease. Sponsored by VA Boston Healthcare System, Pathology and Laboratory Medicine Grand Rounds. Boston, February 1, 2008.
- 2009 Invited Speaker, 3.0 TCH's NJDEP Water and Wastewater. Pharmaceutical Contaminants in the Water Treatment Industry. Sponsored by The North Jersey District Water Supply Commission. Wanaque Academic Center, Wanaque, New Jersey, July 14, 2009.
- 2009 Invited Speaker, CME course for physicians and dentists, Diagnosis and Treatment of Chronic Fluoride Poisoning: A Receptor Malfunction Disease. International Academy of Oral Medicine and Toxicology, September, 2009.
- 2012 Speaker, CME course for physicians, Psychiatric Consequences of Fluoride Overexposure. American Academy of Environmental Medicine, October, 2012.

BIBLIOGRAPHY:

Medical Journals

1. Bunag, R and Mullenix (Lewis), P. Augmentation of drug-induced blood pressure increases in rats by amobarbital. *Brit. J. Pharmacol.* 46: 511-513, 1972.
2. Norton, S., Culver, B. and Mullenix, P. Measurement of the effects of drugs on activity of permanent groups of rats. *Psychopharmacol. Comm.* 1: 131-138, 1975.
3. Norton, S., Culver, B. and Mullenix, P. Development of nocturnal behavior in albino rats. *Behav. Biol.* 15: 317-331, 1975.

4. Mullenix, P., Norton, S. and Culver, B. Locomotor damage in rats after x-irradiation In Utero. *Exp. Neurol.* 48: 310-324, 1975.
5. Norton, S., Mullenix, P. and Culver, B. Comparison of the structure of hyperactive behavior in rats after brain damage from x-irradiation, carbon monoxide and pallidal lesions. *Brain Res.* 116: 49-67, 1976.
6. Mullenix, P. Structure analysis of spontaneous behavior during the estrous cycle of the rat. *Physiol. Behav.* 27: 723-726, 1981.
7. Mullenix, P., Tassinari, S. and Keith, D. Behavioral outcome after prenatal exposure to phenytoin in rats. *Teratology* 27: 149-157, 1983.
8. Mullenix, P., Moore, P. A. and Tassinari, M. Behavioral toxicity of nitrous oxide in rats following prenatal exposure. *Toxicol. Industr. Health* 2: 273-287, 1986.
9. Tassinari, M., Mullenix, P. and Moore, P. A. The effects of nitrous oxide after exposure during middle and late gestation. *Toxicol. Industr. Health* 2: 261-272, 1986.
10. Kernan, W. J. Jr., Mullenix, P. J. and Hopper, D. L. Pattern recognition of rat behavior. *Pharmacol. Biochem. Behav.* 27: 559-564, 1987.
11. Mullenix, P., Kernan, W. J., Tassinari, M. S. and Schunior, A. Generation of a dose-response data using activity measures. *J. Am. Coll. Toxicol.* 8: 185-197, 1989.
12. Kernan, W. J., Mullenix, P. J., Kent, R., Hopper, D. L. and Cressie, N. A. C. Analysis of the time distribution and time sequence of behavioral acts. *Int. J. Neurosci.* 43: 35-51, 1988.
13. Mullenix, P. and Kernan, W. J. Extension of the analysis of the time structure of behavioral acts. *Int. J. Neurosci.* 44: 251-262, 1989.
14. Mullenix, P. Evolution of motor activity tests into a screening reality. *Toxicol. Industr. Health* 5: 203-219, 1989.
15. Kernan, W. J., Mullenix, P. and Hopper, D. L. Time structure analysis of behavioral acts using a computer pattern recognition system. *Pharmacol. Biochem. Behav.* 34: 863-869, 1989.
16. Schunior, A., Zengel, E., Mullenix, P. J., Tarbell, N., Howes, A. and Tassinari, M. S. An animal model to study toxicity of CNS therapy for childhood acute lymphoblastic leukemia. Effects on growth and craniofacial proportion. *Cancer Res.* 50: 6455-6460, 1990.

17. Mullenix, P. J., Kernan, W. J., Tassinari, M. S., Schunior, A., Waber, D., Howes, A. and Tarbell, N. An animal model to study toxicity of CNS therapy for childhood acute lymphoblastic leukemia. Effects on behavior. *Cancer Res.* 50: 6461-6465, 1990.
18. Mullenix, P. J., Tassinari, M. S., Schunior, A. and Kernan, W. J. No change in spontaneous behavior of rats after acute oral doses of aspartame, phenylalanine and tyrosine. *Fundam. Appl. Toxicol.* 16: 495-505, 1991.
19. Kernan, W. J. and Mullenix, P. J. Stability and reproducibility of the analysis of time structure in spontaneous motor activity of male rats. *Pharmacol. Biochem. Behav.* 39: 747-754, 1991.
20. Norton, S., Kimler, B. F. and Mullenix, P. J. Progressive behavioral changes in rats after exposure to low levels of ionizing radiation in utero. *Neurotoxicol. Teratol.* 13: 181-188, 1991.
21. Mullenix, P. J., Kernan, W. J., Schunior, A., Howes, A., Waber, D. P., Sallan, S. E. and Tarbell, N. J. Interactions of steroid, methotrexate and radiation determine neurotoxicity in an animal model to study therapy for childhood leukemia. *Pediatr. Res.* 35:171-178, 1994.
22. Schunior, A., Mullenix, P., Zengel, A., Landy, H., Howes, A. and Tarbell, N. J. Radiation effects on growth are altered in rats by prednisolone and methotrexate. *Pediatr. Res.* 35: 416-423, 1994.
23. Mullenix, P. J., DenBesten, P. K., Schunior, A. and Kernan, W. J. Neurotoxicity of sodium fluoride in rats. *Neurotoxicol. Teratol.* 17: 169-177, 1995.
24. Mullenix P. J., Mulkern, R., Schunior, A., Kernan, W. J., Howes, A., Waber, D. P., Sallan, S. E. and Tarbell, N. J. Protection by pre-irradiation methotrexate in rats. In preparation.
25. Waber, D. P., Carpentieri, S. C., Klar, N., Silverman, L. B., Schwenn, M., Hurwitz, C. A., Mullenix, P. J. and Sallan, S. E. Cognitive sequelae in children treated for acute lymphoblastic leukemia with dexamethasone or prednisone. *J. Pediatr. Hemat. Oncol.* 22: 206-213, 2000.
26. Mullenix, P. J. Fluoride poisoning: A puzzle with hidden pieces. *Int. J. Occup. Environ. Health* 11: 404-414, 2005.
27. Mullenix, P. A new perspective on metals and other contaminants in fluoridation chemicals. *Int. J. Occup. Environ. Health* 20: 157-166, 2014.

Books and Monographs

1. Amdur, M. O. The Effects of Photochemical Oxidants on Pulmonary Functions in Animals. Mullenix, P. (ed.). American Petroleum Institute, Washington, D.C., 1977.
2. Bills, R. F. The Morphological Effects of Ozone and Other Photochemical Oxidants. Mullenix, P. (ed.). American Petroleum Institute, Washington, D.C., 1977.
3. Carroll, R. E. Photochemical Oxidants and Human Health: Evaluation of Epidemiologic Evidence. Mullenix, P. (ed.). American Petroleum Institute, Washington, D.C., 1977.
4. Gittelsohn, A. Evaluation of Hockey Stick Functions Used to Establish Pollution Health Effect Thresholds. Mullenix, P. (ed.). American Petroleum Institute, Washington, D.C., 1977.
5. Goldstein, B. D. The Biochemical Toxicology of Ozone. Mullenix, P. (ed.). American Petroleum Institute, Washington, D.C., 1977.
6. Van Ordstrand, H. S. Effects of Photochemical Oxidants on Human Lungs. Mullenix, P. (ed.). American Petroleum Institute, Washington, D.C., 1977.
7. Mullenix, P. Health Effects of Photochemical Oxidants. Medical Bulletin, Exxon USA, New York, 1979.
8. Mullenix, P. Effects of Nitrogen Oxides on Behavior and Reproductive Functions. American Petroleum Institute, Washington, D.C., 1979.
9. Mullenix, P. Toxicology of Nitrogen Oxides. American Petroleum Institute, Washington, D.C., 1979.
10. Mullenix, P. Testing Programs for Behavioral Toxicity: Test Guidelines, Methodologies, and Interpretation of Data. Toxicol. Industr. Health, Vol. 5, Princeton Scientific Publishing Co., Princeton, NJ, 1989.
11. Mullenix, P. et al. Fluoride Illness: A Guide to Identification and Treatment. In preparation.

Chapters

1. Mullenix, P. Altered behavioral patterning in rats postnatally exposed to lead. The use of time-lapse photographic analysis. In: Behavioral Toxicology: An Emerging Discipline. Zenick, H. and Reiter, L. (eds.) U. S. Government Printing Office, 1977.

2. Mullenix, P. The effect of lead on spontaneous behavior. In: Clinical Implications of Low Level Lead Exposure. Needleman, H. (ed.), Raven Press, 1980.
3. Mullenix, P. Can safe lead levels in drinking water be deduced from current scientific evidence? In: Regulating the Safety of Drinking Water. Gilbert, C. E. and Calabrese, E. J. (eds.), Lewis Publishers, Chelsea, MI, 1991.
4. Mullenix, P. The computer pattern recognition system for study of spontaneous behavior of rats: a diagnostic tool for damage in the central nervous system? In: Motor Activity and Movement Disorders. Research Issues and Applications. Sanberg, P. R., Ossenkopp, K. P. and Kavaliers, M. (eds.), pp. 243-268, Humana Press, NJ, 1995.
5. Mullenix, P. Radiation protection in the developing central nervous system: investigation of a biological approach. In: Radioprotectors: Chemical, Biological and Clinical Perspective. Bump, E. A. and Malaker, K. (eds.), CRC Press, Inc., Boca Raton, FL, 1997.
6. Waber, D. P. and Mullenix, P. J. Neuropsychological sequelae in childhood acute lymphoblastic leukemia (ALL). In: Pediatric Neuropsychology: Research, Theory and Practice. Yeates, K. O., Rio, M. D. and Taylor, H. G. (eds.), Guilford Press, NY, 2000.

Letters to the Editor

1. Mullenix, P. Reply. Neurotox. Teratol. 17: 687-688, 1995.
2. Mullenix, P. Reply. Int. J. Occup. Environ. 12: 187-190, 2006.

Abstracts

1. Mullenix (Lewis), P. and Bunag, R. Potentiation of pressor responsiveness by amobarbital. Fed. Proc. 31: 1675, 1972.
2. Mullenix, P. and Norton, S. Behavioral damage in rats exposed to x-irradiation In Utero. Fed. Proc. 33: 248, 1974.
3. Mullenix, P. and Norton, S. Hippocampal damage and behavior in old rats after exposure to x-irradiation in utero. Pharmacology 16: 252, 1974.
4. Mullenix, P. and Norton, S. Effects of prenatal irradiation on behavior in the young rat. Trans. Kans. Academy Sci. 76: 306, 1974.
5. Mullenix, P. Time-lapse analysis of lead effects on behavior and responses to amphetamine. 85th Annual Convention of the American Psychological Assoc., Aug. 26,

1977.

6. Mullenix, P. Lead at low-dose and sequential behavior. Symposium on Low Level Lead Exposure During Childhood: The Clinical Implications of Current Research, June, 1979.
7. Mullenix, P. Prenatal x-ray and postnatal lead induced maturational behavior disorders. Winter Conference on Brain Research, Sun Valley, ID, January, 1979.
8. Mullenix, P. The Clean Air Act-are the standards valid? National Air Quality Conference, San Francisco, CA, January 16, 1979.
9. Mullenix, P. Oxidants, nitrogen oxides and hydrocarbons. Clean Air Act Conference, Hartford, CT, June 30, 1981.
10. Moore, P. A. and Mullenix, P. Behavioral toxicology of N₂O administered prenatally to rats. *J. Dent. Res.* 64A: 707, 1983.
11. Mullenix, P. and Moore, P. A. Behavioral toxicity of nitrous oxide following prenatal exposure of rats. *Teratology* 31: 5B, 1985.
12. Tassinari, M. S., Moore, P. A., Lee, H. and Mullenix, P. Assessment of prenatal nitrous oxide exposure in fetal rats. *Teratology* 31: 58A, 1985.
13. Zengel, E., Tassinari, M. S., Mullenix, P. and Keith, D. Perinatal methimazole exposure and catch-up growth in rats. *J. Dent. Res.* 66 (Spec. Issue): 985, 1986.
14. Mullenix, P., Tassinari, M. S. and Kernan, W. J. Phenylalanine and spontaneous behavior in the rat: analysis using computer pattern recognition. *Neuroscience* 13: 14.8, 1987.
15. Mullenix, P. and Moore, P. Behavioral outcome subsequent to prenatal lidocaine exposure in rats. *IADR*, 1988.
16. Mullenix, P., Tassinari, M. and Kernan, W. J. Large oral doses of aspartame do not alter spontaneous rat behavior. *FASEB*, 1988.
17. Mullenix, P. Can safe lead levels in drinking water be deduced from current scientific evidence? Conference on Drinking Water and Public Health. Northeast Regional Environmental Public Health Center School of Public Health, Univ. of Massachusetts, Amherst, May 1, 1990.
18. Mullenix, P. J., Schunior, A., Kernan, W. J., Waber, D. P., Howes, A. and Tarbell, N. J. Neurotoxicity of central nervous system therapy for childhood acute lymphoblastic leukemia. *Soc. For Neuroscience Abstr.* 17: 285.2, 1991.

19. Mullenix, P. J., Schunior, A., Cook, C. and Mulkern, R. V. In vivo ^1H MR spectroscopy of rats for the detection of neurotoxicity from leukemia therapy agents. Soc. Magnetic Resonance Med. Abstr. 241, 1993.
20. Mullenix, P. J., DenBesten, P. K., Schunior, A. and Kernan, W. J. Neurotoxicity of sodium fluoride in rats. Neurotoxicol. Teratol. 16: 325, 1994.
21. Mullenix, P. J. Fluoride and the brain: hidden “halo” effects. XXII Conference of the Int. Soc. For Fluoride Res., 1998.
22. Mullenix, P. Concerns about fluoride levels in soil: the twisted path to an Age of Reason in the United States. 97th ASA-CSSA-SSSA Int. Annual Meeting, 2005