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CURRICULUM VITAE

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EDUCATION AND TRAINING

Postdoctoral Training

1990-1992 Roswell Park Cancer Institute, Buffalo, NY, Molecular Immunology

Ph.D./1990 State University of New York at Buffalo, Buffalo, NY, Pharmacology and Toxicology

M.S./1983 East Tennessee State University, Johnson City, TN, Environmental Health

B.S./1981 Cornell University, Ithaca, NY, Biology with Honor

PROFESSIONAL EXPERIENCE

10/13 to present Vice-Chair, Department of Molecular Biosciences
University of California School of Veterinary Medicine, Davis, CA

09/10 to 08/2016 Chair, Pharmacology and Toxicology Graduate Group
University of California, Davis, CA

07/10 to present Professor of Neurotoxicology, Department of Molecular Biosciences
University of California School of Veterinary Medicine, Davis, CA

12/08 to 06/10 Associate Professor of Neurotoxicology, Department of Molecular Biosciences
University of California School of Veterinary Medicine, Davis, CA

9/03 to 11/08 Scientist (Associate Professor equivalent), CROET
Oregon Health & Science University, Portland, OR

07/99 to 09/03 Assistant Professor, Environmental Health Sciences/Toxicology
Johns Hopkins University, Bloomberg School of Public Health, Baltimore, MD

08/93 to 06/99 Assistant Professor, Biology, Canisius College, Buffalo, NY

08/93 to 06/99 Adjunct Assistant Professor, Pharmacology and Toxicology
University at Buffalo School of Medicine & Biomedical Sciences, Buffalo, NY

03/92 to 05/93 Environmental Health Analyst, Dames and Moore
West Valley Nuclear Services Co., Inc., West Valley, NY

09/90 to 03/92 Postdoctoral Fellow, Molecular Immunology
Roswell Park Cancer Institute, Buffalo, NY

08/85 to 09/90 Predoctoral Fellow, Pharmacology and Toxicology
School of Medicine, State University of New York at Buffalo, Buffalo, NY

08/83 to 08/85 Research Associate, Medicine, Division of Gastroenterology
Buffalo General Hospital, Buffalo, NY

01/82 to 07/83 Graduate Assistant, Environmental Health
East Tennessee State University, Johnson City, TN

01/81 to 08/81 Laboratory Technician, Physiology, New York State College of Veterinary
Medicine, Cornell University, Ithaca, NY

AWARDS

- x 2015 Zoetis Award for Veterinary Research Excellence, UC Davis School of Veterinary Medicine
- x Dean's Grant, Arts and Sciences, Canisius College, \$2500 per year, 1995, 1996
- x National Science Foundation Research Opportunity Award, \$10,000, 1994
- x NIH NCI National Research Service Award, *Cell biology of human TILs engrafted into SCID mice* (1 F32 CA09177-01), 1991
- x March of Dimes Predoctoral Fellowship, 1987 to 1990

PROFESSIONAL ACTIVITIES

Professional Society Membership

- x Society of Toxicology (SOT)
- x International Neurotoxicology Association (INA)
- x Neurobehavioral Teratology Society (NBTS)
- x Society for Neuroscience (SFN)

Participation on Advisory Panels

- x USEPA IRIS Assessment of PCBs, Expert Author, 2016-2017
- x External Advisory Committee, NIEHS T32 Training Program, University of Illinois at Urbana-Champaign, 2016-present
- x Endowment Fund Steward, Society of Toxicology, Neurotoxicology Specialty Section, 2015-present
- x Scientific Advisory Board, U.S. Food and Drug Administration, National Center for Toxicological Research, Member, 2014-2016; Chair, 2017-2019
- x Autism Research Institute Think Tank, April 2014
- x Councilor, International Neurotoxicology Association, 2013-2017
- x Society of Toxicology, Northern California Regional Chapter, Vice-President, 2013-2014, President, 2014-2015, Past-President, 2015-2016
- x External Advisory Panel NIEHS Core Center of Excellence at the University of Rochester, Rochester, NY, 2011-present
- x Steering Committee, NIH NINDS CounterACT Program, 2011-present
- x Society of Toxicology, Neurotoxicology Specialty Section, Councilor, 2005-2007, Vice-President-Elect, 2010-2011, Vice-President, 2011-2012, President, 2012-2013, Past-President, 2013-2014
- x Center for Alternatives to Animal Testing (CAAT), Johns Hopkins University, 2000-2014
- x European Centre for the Validation of Alternative Methods, Developmental Neurotoxicity Testing, Ispra, Italy, April 2005, March 2007
- x Scientific Advisory Panel on Dimethoate, U.S. Environmental Protection Agency, 2004-2005
- x Committee on Developmental Neurotoxicity Testing, OECD, 2001-2002
- x Urban Environmental Health Research Council, NIEHS Center in Urban Environmental Health, Johns Hopkins University Bloomberg School of Public Health, 2000-2003

Program or Project Development

- x The 10th Annual CounterACT Conference, Chair, June 2016
- x The 21st International Symposium on Microsomes and Drug Oxidations (MDO), October 2-6, 2016, Co-Chair, 2015-2016.
- x Neuroprotection Workshop, NINDS CounterACT Program, Co-Chair, 2013-2014
- x TestSmart: Developmental Neurotoxicity Testing IV, Center for Alternatives to Animal Testing, The Johns Hopkins University, Steering Committee Member, 2012-2014
- x Environmentally –Triggered Neurodevelopmental Disorders: Focus on Endocrine Disruption and Sex Differences in Autism, ADHD and Schizophrenia, 27th International Neurotoxicology Conference, Conference Co-Chair, October 2011
- x Biological Basis for Endocrine Disruption and Sex Differences in Susceptibility to Neuro-Developmental Disorders, 27th International Neurotoxicology Conference, Session Chair, October 2011
- x Human Pluripotent Stem Cells and Neural Progenitors as Models of Gene-Environment Interactions in Neurological Diseases, Society of Toxicology, 50th Annual Meeting, Session Chair, March 2011
- x Neuroscience session: Alternatives in DNT, World Congress 7, Session Chair, September 2009
- x Animal Models of Autism, 25th International Neurotoxicology Conference, Session Co-Chair, October 2008
- x Models of Neuroprotectant Screening for Chemically-Induced Neurodegeneration, 25th International Neurotoxicology Conference, Session Co-Chair, October 2008
- x Fetal Basis of Adult Onset Disease, 24th International Neurotoxicology Conference, Session Co-Chair, November 2007
- x TestSmart: Developmental Neurotoxicity Testing III, Joint Research Council, European Commission, Steering Committee Member, 2009-2011
- x TestSmart: Developmental Neurotoxicity Testing II, Johns Hopkins University Center for Alternatives to Animal Testing (CAAT), Steering Committee Member, 2006-2009
- x TestSmart: Developmental Neurotoxicity Testing I, Johns Hopkins University Center for Alternatives to Animal Testing (CAAT), Steering Committee Member, 2003-2006
- x TestSmart: Endocrine Disruptors, Johns Hopkins University Center for Alternatives to Animal Testing (CAAT), Workshop II, Feb 2002, Workshop Coordinator, 2001-2002
- x TestSmart - Endocrine Disruptors, Johns Hopkins University Center for Alternatives to Animal Testing (CAAT), Workshop I, Feb 2001, Workshop Coordinator, 2000-2001
- x Incorporation of imaging techniques into undergraduate cell and molecular laboratories, Biology Dept, Canisius College, P.I., 1998-1999
- x Laboratory revision in genetics and improvements in cell and molecular courses, Biology Dept, Canisius College, Co-P.I., 1997-1999
- x Howard Hughes Medical Institute Program for Undergraduate Science Education, School of Arts and Sciences, Canisius College, Co-P.I., 1996-1999
- x Curricular reform, Introductory Biology Core, Biology Dept, Canisius College, 1993-1995

Consultations

- x Consultant to McLarens Young International, Global Claims Services, 2010-2011
- x Technical consultant to emGene, Inc., Columbia, MD, 2002-2003
- x Consultant to Law Offices of Kysor & Della Posta, Gowanda, NY representing Andrew V Rupp in the State of New York Worker's Compensation Board in regard to Andrew V Rupp, WCB Case #8930-4882, 1998

EDITORIAL ACTIVITIES

Editorial Board Membership

- x International Journal of Molecular Sciences, Molecular Toxicology Section, Associate Editor, 2014-present
- x Neurotoxicology and Teratology, Associate Editor, 2013-present
- x Toxics, 2013-present
- x Current Neurobiology, Associate Editor, 2009-2016
- x Neurotoxicology, Editorial Board, 2007 – 2009; Associate Editor, 2009-present
- x Toxicology and Applied Pharmacology, Editorial Board, 2007 – 2011, Associate Editor 2012-present
- x Toxicological Sciences, Editorial Board, 2011-present
- x Journal of Toxicology, Editorial Board, 2007-2010
- x Toxicology Letters, Editorial Board, 2001-2004

Peer Review Activities

Brain Research ♦ Chemical Research in Toxicology ♦ Chemico-Biological Interactions ♦ Chemosphere ♦ Developmental Biology ♦ Environmental Health Perspectives ♦ FASEB J ♦ International J Toxicology ♦ J Cell Biology ♦ J Neurobiology ♦ J Neurochemistry ♦ J Neuroinflammation ♦ J Neuroscience ♦ J Neuroscience Methods ♦ J Neuroscience Research ♦ J Pharm & Experimental Therapeutics ♦ Molecular Neurobiology ♦ Neurochemical Research ♦ Neuroscience Letters ♦ Neurotherapeutics ♦ Neurotoxicology ♦ Neurotoxicology and Teratology ♦ The Veterinary Journal ♦ Toxicology Letters ♦ Toxicology and Applied Pharmacology ♦ Toxicological Sciences

Review of Proposals

- x *Ad hoc*, NIH Study Section, ZRG1 MDCN-B (55) CounterACT Exploratory Grants, July 8, 2016
- x *Ad hoc*, NIH Study Section, ZES1 LKB-J, Summer Research Training and Development, June 14, 2016
- x *Ad hoc*, NIH Study Section, NAL, Neurotoxicology and Alcohol, June 13, 2016
- x *Ad hoc*, Agence Nationale de la Recherche (ANR), French National Research Agency, May 2015
- x *Ad hoc*, NIH study section, ZRG1 DKUS-C (54), Environmental Contributors to Autism Spectrum Disorders (R01s), April 2015
- x Pilot project review, NIEHS Core Center of Excellence, Texas A&M, College Station, TX, August 2014
- x *Ad hoc*, NIH study section, ZES1 LWJ-K, Neurodegenerative Disorders, March 2014
- x *Ad hoc*, NIH study section, ZES1 LKB-J, Career Training in Environmental Health Sciences, March 2014
- x Standing Member, NIH, study section, Environmental Health Sciences Review Committee (EHSRC), the NIEHS chartered review committee, Sept 2011-August 2015
- x Center for Alternatives to Animal Testing (CAAT), 2001-2004, 2009-2014
- x Pilot project review, UC Davis Alzheimer's Disease Center, University of California, Davis, CA, April 2012
- x Pilot project review, NIEHS Center for Environmental Health, Columbia University, New York, NY, April 2012

- x *Ad hoc*, NIH study section, ZRG1 IFCN-A02, Neurotoxicology Special Emphasis Panel, March 2012
- x *Ad hoc*, NIH study section, EHSRC, Environmental Health Sciences Review Committee, The NIEHS chartered review committee, Nov 2010, April 2011
- x Standing Member, NIH study section, NAL, Neurotoxicology and Alcoholism, Oct 2007-Sept 2011
- x *Ad hoc*, NIH study section, ZRG1 BDCN-N, Neurotransmitters and Neuroplasticity, Apr 2007
- x *Ad hoc*, NIH study section, NAL, Neurotoxicology and Alcoholism, Oct 2006
- x *Ad hoc*, NIH study section, NIGMS, Minority Biomedical Research Support (MBRS) Support of Continuous Research Excellence (SCORE) in Neuroscience, 2006
- x *Ad hoc*, NIH study section, NIEHS, Conference Grant Applications (R13), 2002-2005
- x Chair, NIH study section, NIEHS, Special Emphasis Panel, 2002
- x Member, NSF Integrative Organismal Biology/Developmental Systems Cluster, 2005-2007
- x *Ad hoc*, NSF, Developmental Neuroscience Program, 1999-2002, 2004-2006
- x *Ad hoc*, NSF, Research Experience for Undergraduates Program, 2001
- x The Davidson Institute for Talent Development, Davidson Fellows Submission Review, 2004
- x Johns Hopkins Center in Urban Environmental Health, 2001, 2004, 2009

PUBLICATIONS

Refereed Journal Articles

1. Pancorbo OC, **Lein PJ**, Blevins RD (1987) Mutagenic activity of surface waters adjacent to a nuclear fuel processing facility. *Arch Environ Contamin Toxicol* 16:531-537. PMID: 3632040
2. Kung MP, Nickerson PA, Sansone FM, Olson JR, Kostyniak PJ, Adolf MA, **Lein PJ**, Roth JA (1988) Effect of short-term exposure to hexachlorophene on rat brain cell specific marker enzymes. *Fund Appl Toxicol* 11:519-527. PMID: 2906023
3. **Lein PJ**, Higgins D (1989) Laminin and a basement membrane extract have different effects on axonal and dendritic outgrowth from embryonic rat sympathetic neurons in vitro. *Dev Biol* 136:330-345. PMID: 2479584
4. Bruckenstein DA, **Lein PJ**, Higgins, Fremereau RT (1990) Distinct spatial localization of mRNA's in cultured sympathetic neurons. *Neuron* 5:809-819. PMID: 2148487
5. **Lein PJ**, Higgins D, Turner DC, Flier LA, Terranova VP (1991) The NC1 domain of type IV collagen promotes axonal growth in sympathetic neurons through interaction with the D₁E₁ integrin. *J Cell Biol* 113:417-428. PMC2288935
6. **Lein PJ**, Higgins D (1991) Protein synthesis is required for the initiation of dendritic growth in embryonic rat sympathetic neurons in vitro. *Dev Brain Res* 60:187-196. PMID: 1716531
7. **Lein PJ**, Banker GA, Higgins D (1992) Laminin selectively enhances axonal growth and accelerates the development of polarity by hippocampal neurons in culture. *Dev Brain Res* 69:191-197. PMID: 1424096
8. Craig DK, Davis JS, Lee LG, **Lein PJ**, Hoffman PW (April 1993) Toxic Chemical Risk Acceptance Guidelines for Use in DOE Facilities. *WSRC-MS-92-206-Rev 1*.
9. **Lein PJ**, Johnson M, Guo X, Rueger D, Higgins D (1995) Osteogenic protein-1 (OP-1) induces dendritic growth in rat sympathetic neurons. *Neuron* 15:597-605. PMID: 7546739
10. **Lein PJ**, Higgins D (1996) Antibodies to E₁ integrins inhibit dendritic growth in rat sympathetic neurons. *Biomedical Res* 7:101-112.

11. **Lein P**, Guo X, Hedges AM, Rueger D, Johnson M, Higgins D (1996) The effects of extracellular matrix and osteogenic protein-1 on the morphological differentiation of rat sympathetic neurons. *Intl J Develop Neurosci* 14:203-215. PMID: 8842799
12. Guo X, Metzler-Northrup J, **Lein P**, Rueger D, Higgins D (1997) Leukemia inhibitory factor and ciliary neurotrophic factor regulate dendritic growth in cultures of rat sympathetic neurons. *Dev Brain Res* 104:101-110. PMID: 9466712
13. Higgins D, Burack M, **Lein P**, Banker G (1997) Mechanisms of neuronal polarity. *Curr Opinion Neurobiol* 7:599-604. PMID: 9384542
14. Gadiant RA, **Lein P**, Higgins D, Patterson PH (1998) Effect of leukemia inhibitory factor (LIF) on morphology and survival of hippocampal neurons and glia cells. *Brain Res* 798:140-146. PMID: 9666105
15. Guo X, Chandrasekaran V, **Lein P**, Kaplan PL, Higgins D (1999) Leukemia inhibitory factor and ciliary neurotrophic factor cause dendritic retraction in cultured rat sympathetic neurons. *J Neurosci* 19:2113-2121. PMID: 10066264
16. **Lein P**, Gallagher PJ, Amodeo J, Howie H, Roth JA (2000) Manganese induces neurite outgrowth in PC12 cells via upregulation of Dv integrins. *Brain Res* 885:220-230. PMID: 11102576
17. Guo X, Lin Y, Horbinski C, Drahushuk K, Kim I-J, Kaplan PL, **Lein P**, Wang T, Higgins D (2001) Dendritic growth induced by BMP-7 requires Smad1 and proteasome activity. *J Neurobiol* 48:120-130. PMID: 11438941
18. Dattatreyamurty B, Roux E, Kaplan PL, Robak LA, Horbinski C, **Lein P**, Higgins D, Chandrasekaran V (2001) Cerebrospinal fluid contains biologically active bone morphogenetic protein-7. *Exp Neurol* 172:273-281. PMID: 11716552
19. Beck HN, Drahushuk K, Jacoby DB, Higgins D, **Lein PJ** (2001) Bone morphogenetic protein-5 (BMP-5) promotes dendritic growth in cultured sympathetic neurons. *BMC Neurosci* 2:12. PMC56999
20. Roth JA, Horbinski C, Higgins D, **Lein P**, Garrick MD (2002) Mechanisms of manganese-induced rat pheochromocytoma (PC12) cell death and cell differentiation. *Neurotoxicol* 23:147-157. PMID: 12224755
21. Kim IJ, Beck HN, **Lein PJ**, Higgins D (2002) Interferon J induces retrograde dendritic retraction and inhibits synapse formation. *J Neurosci* 22:4530-4539. PMID: 12040060
22. Schuh RA, **Lein PJ**, Beckles RA, Jett DA (2002) Non-cholinesterase mechanisms of chlorpyrifos neurotoxicity: altered phosphorylation of Ca²⁺/cAMP response element binding protein (CREB) in cultured neurons. *Toxicol Appl Pharmacol* 182:176-185. PMID: 12140181
23. **Lein P**, Beck HN, Chandrasekaran V, Gallagher PJ, Lin Y, Guo X, Hedges AM, Kaplan PL, Tiedge H, Higgins D (2002) Glia induce dendritic growth in cultured sympathetic neurons by modulating the balance between BMPs and BMP antagonists. *J Neurosci* 22:10377-10387. PMID: 12451137
24. Chang CF, Lin SZ, Chiang YH, Morales M, Chou J, **Lein P**, Chen HL, Hoffer BJ, Wang Y (2003) Intravenous administration of bone morphogenetic protein-7 after ischemia improves motor function in stroke rats. *Stroke* 34:558-564. PMID: 12574575
25. Howard AS, Fitzpatrick R, Pessah I, Kostyniak P, **Lein P** (2003) PCBs induce caspase-dependent cell death in cultured embryonic rat hippocampal but not cortical neurons via activation of the ryanodine receptor. *Toxicol Appl Pharmacol* 190:72-86. PMID: 12831785
26. Chen HL, **Lein PJ**, Wang, JY, Gash D, Hoffer BJ, Chiang YH (2003) Expression of bone morphogenetic proteins in the brain during normal aging and in 6-hydroxydopamine-lesioned animals. *Brain Res* 994:81-90. PMID: 14642451

27. Fryer AD, **Lein PJ**, Howard AS, Yost B, Beckles RA, Jett DA (2004) Mechanisms of organophosphate insecticide-induced airway hyperreactivity. *Am J Physiol Lung Cell Mol Physiol* 286:L963-L969. PMID: 14704222
28. Kim IJ, Drahushuk KM, Kim WY, **Lein P**, Andres DA, Higgins D (2004) Extracellular signal-regulated kinases regulate dendritic growth in rat sympathetic neurons. *J Neurosci* 24:3304-3312. PMID: 15056710
29. Shen W, Finnegan S, **Lein P**, Sullivan S, Slaughter M, Higgins D (2004) Bone morphogenetic proteins regulate ionotropic glutamate receptors in human retina. *Eur J Neurosci* 20:2031-2037. PMID: 15450082
30. **Lein PJ**, Fryer AD (2005) Organophosphorus insecticides induce airway hyperreactivity by decreasing neuronal M2 muscarinic receptor function independent of acetylcholinesterase inhibition. *Toxicol Sci* 83:166-176. PMID: 15470232
31. **Lein P**, Goldberg A, Locke P, Silbergeld E (2005) In vitro and alternative approaches to developmental neurotoxicity testing (DNT). *Environ Toxicol Appl Physiol* 19:735-744. PMID: 21783550
32. Howard AS, Bucelli R, Jett DA, Bruun D, Yang D, **Lein PJ** (2005) Chlorpyrifos exerts opposing effects on axonal and dendritic growth in primary neuronal cultures. *Toxicol Appl Pharmacol* 207:112-124. PMID: 16102564
33. Pin S, Chen HL, **Lein PJ**, Wang MM (2006) Nucleic acid binding agents exert local toxic effects on neurites via a non-nuclear mechanism *J Neurochem* 96:1253-1266. PMID: 16441515
34. **Lein PJ**, Mervis RF, Bachstetter AD, Yang D, Tilson HA, Harry GJ, Kodavanti PRS (2007) Ontogenetic alterations in the molecular and structural correlates of dendritic growth following developmental exposure to polychlorinated biphenyls. *Environ Health Perspect* 115:556-563. PMC1852648
35. **Lein PJ**, Guo X, Shi GX, Moholt-Siebert M, Bruun D, Andres DA (2007) The novel GTPase Rit differentially regulates axonal and dendritic growth. *J Neurosci* 27(17): 4725-4736. PMC3495986
36. **Lein P**, Locke P, Goldberg A (2007) Meeting Report: Alternatives for developmental neurotoxicity testing – TestSmart Developmental Neurotoxicology. *Environ Health Perspect* 115:764-768. PMC1867989
37. Coecke S, Goldberg AM, Allen S, Buzanska L, Calamandrei G, Crofton K, Hareng L, Hartung T, Knaut H, Honegger P, Jacobs M, **Lein P**, Li A, Mundy W, Owen D, Schneider S, Silbergeld E, Reum T, Trnovec T, Monnet-Tschudi F, Bal-Price A (2007) Incorporating *in vitro* alternative methods for developmental neurotoxicity into international hazard and risk assessment strategies. *Environ Health Perspect* 115:924-931. PMC1892131
38. **Lein PJ**, Yang D, Bachstetter AD, Tilson HA, Harry GJ, Mervis RF, Kodavanti PRS (2007) Ontogenetic alterations in molecular and structural correlates of dendritic growth following developmental exposure to polychlorinated biphenyls. *Organohalogen Compounds* 69:417-420.
39. Bucelli RC, Gonsiorek EA, Kim W-Y, Bruun D, Rabin RA, Higgins D, **Lein PJ**. (2008) Statins decrease expression of the proinflammatory neuropeptides calcitonin gene-related peptide and substance P in sensory neurons. *J Pharmacol Exp Therap* 324(3): 1172-1180. PMID: 18079356
40. Proskocil BJ, Bruun DA, Lorton JK, Blensly KA, Jacoby DB, **Lein PJ**, Fryer AD (2008) Antigen sensitization influences organophosphorus pesticide-induced airway hyperreactivity. *Environ Health Perspect* 116(3): 381-388. PMC2265045
41. Yang D, Howard A, Bruun D, Ajua-Alemanj M, Pickart C, **Lein PJ** (2008) Chlorpyrifos and chlorpyrifos-oxon inhibit axon outgrowth by disrupting the morphogenic activity of acetylcholinesterase. *Toxicol Appl Pharmacol* 228: 32-41. PMC2408880

42. Dziennis S, Yang D, Cheng J, Anderson K, Alkayed NJ, Hurn PD, **Lein PJ** (2008) Developmental exposure to polychlorinated biphenyls influences stroke outcome in adult rats. *Environ Health Perspect* 116(4): 474-480. PMC2291013
43. Boswell B, **Lein P**, Musil L (2008) Cross-talk between FGF and BMPs regulates gap junction-mediated intercellular communication in lens cells. *Mol Biol Cell* 19:2631-2641. PMC2397318
44. Pessah IN, Seegal RF, Lein PJ, LaSalle J, Yee BK, Van De Water J, Berman RF (2008) Immunologic and neurodevelopmental susceptibilities of autism. *Neurotoxicol* 29:532-545. PMC2475601
45. Andres DA, Shi GX, Bruun D, Barnhart C, Lein PJ (2008) Rit Signaling Contributes to Interferon- γ -Induced Dendritic Retraction via p38 MAP Kinase Activation. *J Neurochem* 107:1436-1447. PMC2857931
46. Kim WY, Gonsiorek EA, Barnhart C, Davare MA, Engebose AJ, Lauridsen H, Bruun D, Lesiak A, Wayman G, Bucelli RC, Higgins D, **Lein PJ** (2009) Statins decrease dendritic arborization in rat sympathetic neurons by blocking RhoA activation. *J. Neurochem* 108:1057-1071. PMC4277848
47. Yang D, Kim KH, Phimister A, Bachstetter AD, Ward TR, Stackman RW, Mervis RF, Wisniewski AB, Klein SL, Kodavanti PRS, Anderson KA, Wayman G, Pessah IN, **Lein PJ** (2009) Developmental exposure to PCBs interferes with experience-dependent dendritic plasticity and ryanodine receptor expression in weanling rats. *Environ Health Perspect* 117:426-435. PMC2661913
48. Halladay A, Amaral D, Aschner M, Bolivar V, Bowman A, DiCicco-Bloom E, Hyman S, Keller F, **Lein P**, Pessah I, Restifo L, Threadgill DW (2009) Animal models of autism spectrum disorders: Information for toxicologists. *Neurotoxicol* 30:811-821. PMC3014989.
49. Pessah IN, Cherednichenko G, **Lein PJ** (2010) Minding the calcium store: Ryanodine receptor activation as a convergent mechanism of PCB toxicity. *Pharmacol Therap* 125(2):260-285. PMC2823855
50. Yang D, **Lein PJ** (2010) Polychlorinated biphenyls increase apoptosis in the developing rat brain. *Curr Neurobiol* 1 (1): 69-76. PMC3775291
51. Farahat FM, Olson JR, Fenske RA, Galvin K, Bonner MR, Rohlman DS, **Lein PJ**, Anger WK (2010) Chlorpyrifos exposures in Egyptian cotton field workers. *Neurotoxicol* 31:297-304. PMC3580798
52. Proskocil BJ, Bruun DA, Thompson CM, Fryer AD, **Lein PJ** (2010) Organophosphorus pesticides decrease M2 muscarinic receptor function in guinea pig airway nerves via indirect mechanisms. *PLoS ONE* 5(5): e10562. Doi:10.1371/journal.pone.0010562. PMC2866713
53. Yang D, Bruun DA, Andres DA, **Lein PJ** (2010) Method for shipping live adherent cultures of dissociated rat hippocampal neurons. *Current Neurobiol* 1(2): 95-98. PMC3775285
54. Crofton KM, Mundy WR, **Lein PJ**, Price-Bal A, Coecke S, Seiler A, Knaut H, Buzanska L, Goldberg A (2011) Recommendations for Developing Alternative Test Methods for Screening and Prioritization of Chemicals for Developmental Neurotoxicity. *ALTEX* 28(1): 9-15. PubMed PMID: 21311847
55. Rohlman DS, Anger WK, **Lein PJ** (2011) Correlating neurobehavioral performance with biomarkers of organophosphorus pesticide exposure. *Neurotoxicol* 32:268-276. PMC3057226
56. Grodzki ACG, Ghogha A, Mangini L, Fryer AD, **Lein PJ** (2011) J-Interferon increases M2 muscarinic receptor expression in cultured sympathetic neurons. *Current Neurobiol* 2(1): 23-29. PMC3515643
57. Kim KH, Bose D, Ghogha A, Riehl J, Zhang R, Barnhart CD, **Lein PJ**, Pessah IN (2011) *Para*- and *ortho*-substitutions are key determinants of brominated diphenyl ether activity

- toward ryanodine receptors and neurotoxicity. *Environ Health Perspect* 119:519-526. PMC3080935
58. Abdu E, Bruun DA, Yang D, Yang J, Inceoglu B, Hammock BD, Alkayed N, **Lein PJ** (2011) Epoxyeicosatrienoic acids enhance axonal growth in primary sensory and cortical neuronal cell cultures. *J Neurochem* 117:632-642. PMC3081369
 59. Yang D, Lauridsen H, Buels K, Chi L-H, La Du J, Bruun DA, Olson JR, Tanguay RL, **Lein PJ** (2011) Chlorpyrifos-oxon disrupts zebrafish axonal growth and motor behavior. *Toxicol Sci* 121:46-59. PMC3080187
 60. Farahat FM, Ellison CA, Bonner MR, McGarrigle B, Crane AL, Fenske RA, Lasarev M, Rohlman DS, Anger WK, **Lein PJ**, Olson JR (2011) Biomarkers of chlorpyrifos exposure and effect in Egyptian cotton field workers. *Environ Health Perspect* 119:801-806. PMC3114814
 61. Li Y*, **Lein PJ***, Liu C, Bruun D, Tewolde T, Ford G, Ford BD (2011) Spatiotemporal pattern of neuronal injury induced by DFP in rats: A model for delayed neuronal cell death following acute OP intoxication. *Toxicol Appl Pharmacol* 253:261-269. PMC3108263 * *These authors contributed equally to this work.*
 62. Garred MM, Wang MM, Guo X, Harrington CA and **Lein PJ** (2011) Transcriptional responses of cultured rat sympathetic neuron during BMP-7-induced dendritic growth. *PLoS ONE* 6(7): e21754. doi:10.1371/journal.pone.0021754. PMC3135585
 63. Ellison CA, Smith JN, **Lein PJ**, Olson JR (2011) Pharmacokinetics and pharmacodynamics of chlorpyrifos in adult male Long-Evans rats following repeated subcutaneous exposure to chlorpyrifos. *Toxicol* 287:137-144. PMC3176336
 64. **Lein PJ**, Barnhart CD, Pessah IN (2011) Acute hippocampal slice preparation and hippocampal slice cultures. *Methods Mol Biol* 758:115-34. PMC3499947
 65. Ellison CA, Abou El-Ella SS, Tawfik M, **Lein PJ**, Olson JR (2012) Allele and genotype frequencies of CYP2B6 and CYP2C19 polymorphisms in Egyptian agricultural workers. *J Toxicol Environ Health, Part A* 75:232-241. PMC3500531
 66. Ghogha A, Bruun DA, **Lein PJ** (2012) BMP-induced dendritic growth in cultured sympathetic neurons. *J Vis Exp* Mar 21 (61) pii: 3546. doi: 10.3791/3546. PMC3460579
 67. Zolkowska D, Banks CN, Dhir A, Inceoglu B, Sanborn JR, McCoy MR, Bruun DA, Hammock BD, **Lein PJ**, Rogawski MA (2012) Characterization of seizures induced by acute and repeated exposure to tetramethylenedisulfotetramine. *J Pharmacol Exp Therap* 341(2):435-46. PMC3336809
 68. Bal-Price AK, Coecke S, Costa L, Crofton KM, Fritsche E, Goldberg A, Grandjean P, **Lein PJ**, Li A, Lucchini R, Mundy WR, Padilla S, Persico AM, Seiler AEM, Kreysa J (2012) Conference report: Advancing the science of Developmental Neurotoxicity (DNT) testing for better safety evaluation. *ALTEX* 29:202-215. PMID: 22892558
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RESEARCH GRANT PARTICIPATION

Active

R21 ES025570 (Silverman)

07/01/15-06/30/17

NIH/NIEHS

Functional Outcomes of Interactions between an ASD-Relevant Gene and Air Pollution

The goal of this project is to test the hypothesis that developmental exposure to traffic-related pollution impairs behavioral phenotypes relevant to ASD coincident with neuroinflammation and/or altered neuronal connectivity. The objectives are to analyze the effects of traffic-related air pollution alone and in combination with one gene strongly implicated in ASD, ProSAP2/Shank3, in male and female rats exposed to inhaled traffic-related pollution during gestation and lactation. **Role:** Co-Investigator

U54 NS079202 (Lein)

09/01/12-08/30/17

NIH NINDS CounterACT Program

Novel anticonvulsant and neuroprotective therapies for TETS and OP intoxication

The unifying goal of the UC Davis CounterACT Center of Excellence is to identify improved medical countermeasures for treating acute intoxication with seizure-inducing chemical threat agents.

Role on project: Center Director and PI of Project 2 of the Center

R21 ES026515 (Lein)

04/01/16-03/31/18

NIH NIEHS

Does air pollution increase risk of AD in a genetically susceptible animal model?

The goal is to test the hypothesis that chronic exposure to traffic-related air pollution triggers inflammatory responses in the brain to initiate or accelerate the progression of Alzheimer's disease-like pathology and cognitive dysfunction in a novel transgenic rat expressing AD susceptibility genes.

P01 ES011269 (Van de Water)

06/01/13-05/31/18

NIH NIEHS/USEPA

The UC Davis Center for Children's Environmental Health and Disease Prevention

Project 4: Calcium Signaling Defects in Autism (Pessah and Lein, Co-Leaders)

Project 4 will test the hypothesis that CGG trinucleotide repeats in the FMR1 gene, the most prevalent single gene disorder contributing to autism risk, influence susceptibility to non-dioxin-like (NDL) persistent organic pollutants (POPs) identified in Core 3 and pro-inflammatory cytokine profiles identified in Project 3 to predominate in plasma of women participating in the MARBLES study during pregnancy. **Role on project:** Co-Leader of Project 4

U54 HD079125 (Abbeduto)

09/01/13-08/31/18

NIH/NICHD

MIND Institute Intellectual and Developmental Disabilities Research Center (IDDRC)

The goal is to support a translational science agenda focused on intellectual and developmental delays (IDD). The IDDRC will integrate research from multiple disciplines and bridge basic and clinical science to arrive at treatments for IDD conditions. The range of IDD conditions include autism spectrum disorder, fragile X syndrome, Down syndrome, ADHD, chromosome 22q11.2 deletion syndrome, and many others. **Roles:** Core C Co-Director; Project 1 Co-Investigator

R01 ES014901 (Lein [Contact] and Pessah, MPI)

12/01/08-1/30/19

NIH NIEHS

Molecular and Cellular Basis of PCB Developmental Neurotoxicity

The main objective of this grant is to test the hypothesis that non-coplanar PCBs disrupt neuronal connectivity via ryanodine receptor (RyR)-mediated mechanisms that modulate Ca²⁺-dependent signaling pathways linked to activity-dependent dendritic growth and plasticity.

P30 ES023513 (Hertz-Picciotto)

05/05/15-03/31/20

NIH/NIEHS

UC Davis Environmental Health Science Core Center

The overarching goal of the UC Davis Environmental Health Sciences Core Center is to expand the scope, innovation, and impact of EHS research so as to improve environmental public health in northern California, the Central Valley, and across the globe.

Role: Leader, Career Development Program

R01 ES024946 (La Merrill)

03/01/16-02/28/21

Perinatal DDT exposure causes insulin resistance in mice through impaired thermogenesis

The overall objective of this proposal is to identify mechanism(s) by which environmentally relevant exposure to DDT during development increases risk of T2D in adulthood. Our central hypothesis is that developmental DDT exposure alters the epigenetic programming and/or sympathetic nervous system regulation of thermogenesis during early development, resulting in impaired thermogenesis throughout the life course. **Role:** Co-Investigator

Completed

RD835550 (Lein)

11/01/13-10/31/16

USEPA

Identification and scientific validation of AOPs involving genomic and nongenomic intracellular thyroid hormone signaling in neurodevelopment

Goal: (1) Identify neurodevelopmental processes regulated by thyroid hormone (TH) and determine whether these differ significantly between species; (2) Elucidate genomic and/or non-genomic intracellular signaling pathways that mediate TH effects on neurodevelopment; (3) Identify 'pathways of toxicity' by which chemicals interfere with TH-mediated neurodevelopment; and (4) Link pathways of toxicity with adverse neurodevelopmental outcomes in an in vivo model.

R01 ES017425 (Lehmler (Contact), Lein, Pessah, MPI)

12/1/09-11/30/15

NIH/NIEHS

Enantioselective Metabolism Influences PCB Developmental Neurotoxicity.

The primary goal of the project is to explore whether the PCB atropisomers have differential potency and efficacy towards ryanodine receptors.

- R01 ES017592 (Lein(Contact) and Fryer, MPI)** 07/1/10-06/30/15
NIH NIEHS
Role of Macrophages in Organophosphorus Pesticide-Induced Airway Hyperreactivity.
The main goal is to test the hypothesis that airway macrophages mediate organophosphorus pesticide-induced airway hyperreactivity in non-atopic hosts.
- R21 NS072094 (Lein (Contact) and Rogawski, MPI)** 09/30/10-08/31/13
NIH NINDS
Identification of novel therapeutic approaches to TETS and OP intoxication
The goal is to obtain preliminary data in support of our hypothesis that AMPA receptor (AMPA-R) antagonists and/or inhibitors of soluble epoxide hydrolases (sEH) will significantly improve clinical management of acute TETS and parathion intoxication by extending the therapeutic window, enhancing neuroprotection and providing therapeutic efficacy against diverse chemical threat agents.
- R01 ES 016308 (Anger [Contact] and Lein, MPI)** 06/01/08-04/30/13
NIH NIEHS
Biomarkers of Organophosphorus Pesticide-Induced Neurotoxicity.
The main objective of this project is to test the hypotheses that OP-induced neurobehavioral deficits in humans are dose-related and that biomarkers of oxidative stress and inflammation are better predictors of neurobehavioral deficits than cholinesterase inhibition.
- U01 NS 057993 (Ford)** 09/27/06-05/31/11
NIH NINDS
Neuroprotective Roles for Neuregulins in Neurotoxin-Mediated Neuronal Injury.
The major goal of this project is to test the hypothesis that neuregulins will be neuroprotective against CNS damage caused by OPs. (**Role on project:** PI on subcontract)
- UC Davis M.I.N.D. Institute Pilot Project (Lein)** 07/01/09-6/30/10
University of California, Davis
Potential Gene-Environment Interactions in ASD: Disruption of neuroligin-mediated synaptogenesis by organophosphorus pesticides.
The major goal of this project is to test the hypothesis that organophosphorus pesticides interfere with neuroligin-mediated synapse formation in cultured hippocampal neurons.
- R01 ES014601 (Fryer)** 12/01/06-11/30/11
NIH/NIEHS
Asthma exacerbation by organophosphate pesticides
The goal of this project is to test the hypothesis that sensitized animals will be more sensitive to organophosphorus pesticides than non-sensitized animals and that organophosphorus pesticides will interact with eosinophils to further exacerbate airway hyperreactivity in this susceptible population.
Role on grant: Co-Investigator
- R01 NS046649 (Lein)** 07/01/03-04/30/08
NIH/NINDS
Retrograde dystrophic influence of IFN-gamma on neurons
The main grant objective was to test the hypothesis that the pro-inflammatory cytokine gamma interferon contributes to inflammation-associated neuropathology by acting directly on neurons to induce dendrite retraction and synapse loss.

R56 ES014901 (Lein)

07/01/07-06/30/08

NIH NIEHS

Molecular and Cellular Basis of PCB Developmental Neurotoxicity

The main grant objective was to test the hypothesis that non-coplanar PCBs disrupt neuronal connectivity via ryanodine receptor (RyR)-mediated mechanisms that modulate Ca²⁺-dependent signaling pathways linked to activity-dependent dendritic growth and plasticity.

Project #2007-27 (Lein and Tanguay)

01/01/06-02/01/08

Johns Hopkins University Center for Alternatives to Animal Testing (CAAT)

Zebrafish as an In Vivo Model System for Identifying Developmental Neurotoxicants

The overall goal of this project is to evaluate zebrafish as an alternative model for developmental neurotoxicity testing.

R21 NS45037 (Lein)

01/01/04-12/31/06

NIH NINDS

Molecular regulation of primary dendritogenesis

The main grant objective was to identify genes that control the growth of primary dendrites in mammalian neurons by using subtractive hybridization techniques to isolate genes that are differentially regulated in sympathetic neurons during BMP-induced dendritic growth.

MRF Seed grant (Lein)

12/01/05-11/30/06

Medical Research Foundation of Oregon

Mechanisms of organophosphate-induced neuronal M2 receptor dysfunction

The goal of this project is to address the question of how organophosphorus pesticides inhibit M2 receptors in parasympathetic nerves that innervate the airways.

R21 ES11771 (Lein)

04/30/02-07/31/05

NIH NIEHS

Mechanism of organophosphate developmental toxicity

The goal was to test the hypothesis that organophosphate insecticides disrupt axonal growth in the developing nervous system by interfering with the morphogenic activity of AChE.

PR012236 (Fryer)

01/31/02-03/31/05

United States Department of Defense

Mechanistic studies investigating the role of organophosphate insecticide exposure in the development and exacerbation of asthma The goal was to test the hypothesis that organophosphate insecticides alter airway responsiveness by altering cholinergic neurotransmission in the lung.

Role on grant: Co-Investigator

R03 HD40936 (Lein)

03/01/02-08/31/04

NIH NICHD

Do PCBs alter developing brain structure and cognition? The goal was to test the hypothesis that PCBs alter cognitive behavior in juveniles via effects on dendritic morphogenesis.

P30 ES03819 (Groopman)

04/01/01-03/31/08

NIH NIEHS *Johns Hopkins Center in Urban Environmental Health*

The major goal of this project is to identify environmental chemical exposures and susceptibility factors that alone or together increase risk of disease for people living in urban environments.

Role on grant: Director, Facility Core for Cell and Tissue Analysis, Apr 01 to Aug 03

Pilot grant (Lein)

05/01/01-04/30/02

The Thomas and Carol McCann Innovative Research Fund for Asthma and Respiratory Disease
Modulation of muscarinic receptor expression on sympathetic neurons by pro- and anti-inflammatory agents associated with asthma The goal was to test the hypothesis that pro- and anti-inflammatory agents (IFN-J and dexamethasone) modulate M2 receptor expression in sympathetic neurons.

Pilot project proposal 00-12 (Lein)

04/01/00-03/31/01

NIEHS, Johns Hopkins University Center in Urban Environmental Health
Effects of polychlorinated biphenyls on estrogen metabolism in the developing hippocampus
The purpose of the proposed pilot study is to test the hypothesis that perinatal exposure to PCBs causes neural deficits by altering estrogen metabolism in neural structures critical to cognitive function, such as the hippocampus.

Pilot project (Lein)

05/01/00-04/30/02

Johns Hopkins University Bloomberg School of Public Health
Regulation of dendritic growth by target-derived bone morphogenetic proteins
The specific aims of this pilot grant are to test the hypothesis that BMPs derived from target tissues regulate dendritic growth in sympathetic neurons. The long-term objective is to develop testable hypotheses regarding molecular mechanism(s) by which neurotoxins disrupt neuronal morphogenesis.

Pilot Project Proposal 99-12 (Lein)

07/01/99-06/30/00

NIEHS, Johns Hopkins University Center in Urban Environmental Health
Assessment of dendritic growth as a targeted process in the developmental neurotoxicity of polychlorinated biphenyls (PCBs) The hypothesis being tested in this pilot project is that PCBs alter dendritic growth in primary neuronal cultures.

AREA NS/OD36401 (Lein)

04/01/97-08/31/99

NIH NINDS
Regulation of dendritic growth by osteogenic protein-1
The goal was to characterize effects of OP-1 on dendritic growth in cultured sympathetic neurons, and determine whether the spatial and temporal distribution of OP-1 in sympathetic ganglia and target tissues supported with their proposed role in regulating dendritic development in sympathetic neurons.

Pilot project (Lein)

01/01/91-12/31/91

American Cancer Society, Roswell Park Cancer Institute
Cell biology of human TILs engrafted into SCID mice The goal was to compare the integrin expression profile on tumor infiltrating lymphocytes versus peripheral blood lymphocytes.

TRAINING GRANT PARTICIPATION

Active

T32 ES007059 (Lein)

07/01/10-06/30/18

NIH NIEHS
Advanced Training in Environmental Health Sciences
The objective of this grant is to support pre- and postdoctoral trainees in the area of environmental health sciences research.

Completed

P42 ES04699 (Hammock) 04/01/10-03/31/15

NIH NIEHS Superfund Research Program

Biomarkers of exposure to hazardous substances, Training Core C of the program project
The Training Core aims to produce doctoral level engineers and scientists with the interdisciplinary educational experience necessary to address complex research problems posed by hazardous waste sites. **Role on project:** PI of Training Core C

T35 ES07308 (Lein) 04/01/03-03/31/04

NIH NIEHS

Short Term Research Training for Minority Students The main objective was to provide opportunities for qualified undergraduate under-represented students to participate in research on the mechanisms of the adverse effects of environmental agents on human health.

DUE-9850762 (Lein) 1998-1999

NSF

Incorporation of imaging techniques into undergraduate cell and molecular laboratories
Provided funding to set up confocal imaging lab in the Department of Biology, Canisius College

Howard Hughes Medical Institute Program for Undergraduate Science Education

Awarded to Canisius College, 1996-1999

Role on project: Co-Investigator

Grass Fellowship Exchange, The Grass Foundation (Lein) 1994-97

Provided funds supplies and travel for Dr. Pamela Lein to teach an undergraduate laboratory in primary neuronal cell culture and immunocytochemistry at Hamilton College and for Dr. Douglas Weldon to teach an undergraduate laboratory in electrophysiology in the cockroach at Canisius College.

TEACHING and MENTORING

Advisees

Junior Faculty Mentees

University of California, Davis

- x Colin Reardon, Asst Professor, Physiology and Cell Biology, SVM, 2014-2015
- x Jill Silverman, Asst Professor, Psychiatry, SOM, 2014 – present
- x Michele La Merrill, Asst Professor, Environmental Toxicology, CAES, 2014 – 2016
- x James Angelastro, Asst Professor, Molecular Biosciences, SVM, 2015 – present
- x Heather Knych, Asst Professor, Molecular Bioscience, SVM, 2015 – present
- x Melanie Gareau, Asst Professor, Anatomy, Physiology and Cell Biology, SVM, 2016-present
- x Lillian Cruz-Orengo, Asst Professor, Anatomy, Physiology and Cell Biology, SVM, 2016-present
- x Benjamin Moeller, Asst Professor, Molecular Biosciences, SVM, 2016-present
- x Luke Wittenburg, Asst Professor, Surgical and Radiological Sciences, SVM, 2016-present

Project Scientist/Staff Scientist Mentor

University of California, Davis

- x Ana Cristina Goncalves Grodzki, 2010 – present
- x Dongren Yang, 2009 – 2012

Oregon Health & Science University

- x Dongren Yang, 2006 – 2009

Postdoctoral advisor

University of California, Davis

- x Martin Schmuck, January 2017-present
- x Katharina Dach, January 2017-present
- x Suangsuda Supasai, January 2016-present
- x Suren Bandara, June 2015-present
- x Kimberly Keil, January 2015-present
- x Kiran Dhakal, June 2014-July 2015
- x Keri Hayakawa, Oct 2013-Dec 2016
- x Brenna Flannery, Jan 2013-August 2014
- x Galen W. Miller, Sept 2012-May 2017
- x Karin Streifel, Sept 2012-2015
- x Paula Goines, 2011-2013
- x Christopher Banks, 2010-2011
- x Ana Cristina Goncalves Grodzki, 2009-2010

Oregon Health & Science University

- x Lauren Courter, 2007-2009
- x Veronica Ledoux, 2007-2008
- x Dongren Yang, 2003-2007

Johns Hopkins University

- x Xin Guo, 2002-2003

Ph.D. Thesis Mentor

University of California, Davis

- x Ariga (Bianca) Yaghoobi, Pharmacology and Toxicology, 2017-present
- x Kelley Patten, Pharmacology and Toxicology, 2017-present
- x Jonas Calsbeek, Pharmacology and Toxicology, 2017-present
- x Yi-Hua Tsai, Molecular, Cellular and Integrative Physiology, 2015-present
- x Sunjay Sethi, Pharmacology and Toxicology, 2015-present
- x Michelle Guignet, Pharmacology and Toxicology, 2015-present
- x Casey Boosalis, Molecular, Cellular and Integrative Physiology, 2014-present
- x Frances Shaffo, Pharmacology and Toxicology, 2013-present
- x Brad Hobson, Pharmacology and Toxicology, 2013-present
- x Hao Chen, Pharmacology and Toxicology, 2016
- x Marianna Stamou, Pharmacology and Toxicology, 2015
- x Christopher Barnhart, Pharmacology and Toxicology, 2015

Johns Hopkins University

- x Hui-Ling Chen, Ph.D., Neuroscience, 2003
- x Angela Howard, Ph.D., Environmental Health Sciences, 2003

Ph.D. Thesis Committee Member

University of California, Davis

- x Anna Kreutz, Neuroscience, 2015-present
- x Kyla Walter, Pharmacology and Toxicology, 2015-present
- x Lauren Matelski, Immunology, 2014-present
- x Keith Dunaway, Genetics, 2014-present
- x Christopher Chapman, Bioengineering, 2014-present
- x Beth Fox, Immunology, 2016
- x Carly Moore, Pharmacology and Toxicology, 2016
- x Suangsuda Supasai, Nutrition, 2015
- x Myka Estes, Neuroscience, 2015
- x Emir Leon, Pharmacology and Toxicology, 2014
- x Yassaman Niknam, Pharmacology and Toxicology, 2014
- x Shannon Murphy, Pharmacology and Toxicology, 2013
- x Claire Koenig, Pharmacology and Toxicology, 2012

Oregon Health & Science University

- x Christina Lorentz, Ph.D., Physiology and Pharmacology, 2010
- x Jill Wentzel, Ph.D., Neuroscience Graduate Program, 2010
- x Linda Ruggiero, Ph.D., Neuroscience Graduate Program, 2008
- x Norah Verbout, Ph.D., Physiology and Pharmacology, 2008
- x Lavakumar Ranganathan, Ph.D., Biomedical Engineering, 2007

SUNY at Buffalo

- x Eugene Gonsiorek, Ph.D., Pharmacology and Toxicology, 2006

Johns Hopkins University

- x Anne Sullivan, Ph.D., Environmental Health Sciences, 2005
- x Lilian Morena, Ph.D., Environmental Health Sciences, 2003

M.S. Thesis Mentor

University of California, Davis

- x Christine Shieh, Pharmacology and Toxicology, 2016-present
- x Janice Ott, M.S. Pharmacology and Toxicology, 2016-present
- x Lauryn Brown, M.S., Pharmacology and Toxicology, 2017
- x Alexa Rindy, M.S., Forensic Sciences, 2016
- x Ashneel Krishna, Pharmacology and Toxicology, 2015
- x Suzanne Levoe, M.S., Forensic Sciences, 2014

M.S. Thesis Committee Member

University of California, Davis

- x Sichong Peng, M.S. Forensic Sciences, 2016-present
- x Grace Lau, Forensic Sciences, 2016
- x Stephen Vito, M.S. Pharmacology and Toxicology, 2014

Johns Hopkins University

- x Rosemary Schuh, M.Sc., Environmental Health Sciences, 2001

Undergraduate Honors Thesis Advisor

University of California, Davis

- x Ji Won Kim, 2015-2016
- x Tiani Calip, 2013-2014; 2014-2016
- x Linley Mangini, 2010-2011; 2011-2012

Canisius College, Buffalo, NY

- x Danielle Dorsaneo, Hiroko Nagasawa, Laurie Robak, 1999
- x Patrick J. Gallagher, Christopher Lang, Rachelle Toman, 1998
- x Ann Marie Hedges, 1997
- x Jeffrey Amodeo, 1996

Classroom Instruction

University of California, Davis

Biological Effects of Toxic Agents, ETX 103A, Winter quarter, 2016-present

- *Neurotoxicology* (1 hour)

Principles of Pharmacology and Toxicology, PTX 201, Fall quarter, 2010-present

- *How to review a scientific article* (1 hour)
- *Adverse drug reactions (ADRs)* (1 hour)

Principles of Pharmacology and Toxicology, PTX 203, Spring quarter, 2009-2013

- *Autonomic innervation of the airways and asthma* (2 hours)

Principles of Pharmacology and Toxicology, PTX 203, Spring quarter, 2014-present

- *Autonomic pharmacology and toxicology* (3 hours)

Neurotoxicology, VMB/ETX 234, Spring 2010-present, Instructor of Record and Lecturer (12 hours)

Respiratory Toxicology, VMB 254, Winter 2012-present

- *Innervation of the Lung* (1 hour)

Foundations, VET 401, Fall quarter, 2014

- *Neurotransmission* (1 hour)

Neuroscience Block, VET 404, Spring quarter 2012 – present

- *ANS Pharmacology* (3 hours)
- *ANS Toxicology* (2 hours)

Nutrition/Toxicology Block, VET 406, Spring quarter 2012-2014

- *Metals Toxicology* (3 hours)

Nutrition/Toxicology Block, VET 406, Fall quarter 2014-present

- *Metals Toxicology* (3 hours)
- *Overview of Neurochemistry/Neuropharmacology* (1 hour)

Cardiorespiratory Block, VET408, Fall quarter 2012

- *Cardiovascular Pharmacology* (1 hour)
- *Lung Pharmacology* (1 hour)

Veterinary Toxicology, VMD 414C, Spring quarter, 2009-2012

- *Metals* (2 hours)

UC Davis M.I.N.D. Institute, Autism Research Training Program

Neurochemistry/Psychopharmacology, Spring 2009, Summer 2011

- *Overview of Neurochemistry* (one 90 minute lecture)

Neurotoxicology, Summer 2009, Spring 2011, Spring 2013, Spring 2015

- Course coordinator, 2013, 2015
- *Overview of Developmental Neurotoxicology* (1.5 hours)
- *OPs as Environmental Risk Factors for Autism* (1.5 hours)

ACADEMIC SERVICE

University of California at Davis

Department

Chair, VMB Departmental Resources Committee, 2014-present

Vice-Chair, 2013-2018

Member, Department Personnel Committee, 2009-2014

School of Veterinary Medicine

Member, Recruitment Committee for the Asst/Assoc/Full Professor of Clinical Equine Analytical Chemistry, 2015-2016

Member, Recruitment Committee for the Asst/Assoc/Full Professor of Oncologic Drug Discovery/Cancer Therapeutics, 2015-2016

Chair, Recruitment Advisory Committee for Director of the VSTP, 2015

Member, Organizing Council for the 2015 Meril NIH STAR Symposium, 2014-2015

Member, Mentoring Team for Assistant Professor Heather Knych, SVM, 2015-2016

Member, Mentoring Team for Associate Professor James Angelastro, SVM, 2015-2016

Member, Launch Committee for Assistant Professor Colin Reardon, SVM, 2014-2015

Member, SVM Graduate Student Support Program, 2013-present

Member, Recruitment Committee for the Neuroimmunology Faculty Position in the SVM Department of Anatomy, Physiology and Cell Biology, 2013

Member, Strategic Planning Implementation Team, 2012-2013

Member, Faculty Mentor Program 2012-2015

Member, Student Affairs Committee, 2010-2012

Member, Recruitment Committee for the Toxicology Faculty Position in the Davis California Animal Health and Food Safety Laboratory (CAHFS), 2009-2011

Member, Curriculum Development Committee, Neurology/Senses/Behavior, 2009-2011

Member, Curriculum Development Committee, Pharm/Tox/Nutrition, 2009-2011

University

Academic Senate Representative, Panel with UCOP regarding UC Davis Chancellor Search, 2016

Chair, Program Review Committee, Graduate Council, Sept 1, 2016 – Aug 31, 2017

Chair, Program Review Closure Committee, Graduate Council, Sept 1, 2016 – Aug 31, 2017

Member, Recruitment Committee for Open Rank Faculty Position in Multiple Sclerosis/Neuroimmunity in the Department of Neurology, SOM, 2016

Advisory Committee, Center for Molecular and Genomic Imaging, 2016-2021

UC Davis Chancellor's Innovation Awards Selection Committee, 2016

Review Committee, Environmental Toxicology Undergraduate Instruction Programmatic Review, April 2016

Graduate Council, 2015-2017

Faculty Research Lecture Committee, 2014-2016, Committee Chair, 2015-2017

Member, Mentoring Team for Assistant Professor Jill Silverman, SOM, 2014-2017

Member, Recruitment Committee for the Chair of Physiology, SOM, 2014

Member, Recruitment Committee for Associate/Full Professor in Airway Biology and Medicine in the SOM Department of Internal Medicine, 2013

Member, Executive Committee and Action Group, Pharmacology Training: Bench to Bedside (T32-GM099608), 2012-present

Member, Executive Committee, The Marion Miller Endowment Fund, 2011-present

Member, Review Team, UC Davis Animal Biology Graduate Group Review, December 2011

Judge, UC Davis Interdisciplinary Graduate and Professional Student Symposium, 2011, 2012

Chair, Pharmacology and Toxicology (PTX) Graduate Group, 2010-2016
PI, NIEHS Training Grant, Advanced Training in Environmental Toxicology, 2010-present
Member, Chemical and Laboratory Safety Committee, 2010-2013
Interviewer for student recruitment, Neuroscience Graduate Group, 2010-present
Member, Executive Committee, PTX Graduate Group, 2009-2016
Member, Admissions Committee, PTX Graduate Group, 2009-2010
Fellowship Reviewer, Graduate Council, Support & Welfare Committee, 2009-2010
Member, Executive Committee, NIEHS Training Grant, Advanced Training in Environmental Toxicology, 2009-present

Oregon Health & Sciences University

CROET

Chair, Faculty Budget Committee, 2008
Member, Search Committee for Faculty in Occupational Safety and Health, 2004, 2005

Program in Molecular and Cellular Biology (PMCB)

Member, Graduate Admissions Committee, 2004-2007
Member, PMCB Comprehensive Exam Committee, 2007-2008
Chair, PMCB Comprehensive Exam Committee, 2008-2009

University

Member, SOM Graduate Program Awards Committee, April 2006-April 2009
Member, Institutional Animal Care and Use Committee, Nov 2005-June 2008

Community

Judge, Intel International Science and Engineering Fair, Portland, OR, May 2004
Steering Committee Member, Workshop on the Medical Impacts of Childhood Hunger, Oregon Food Bank, Portland, OR, November 2004

Johns Hopkins University

Division and/or Department

Division Representative to Departmental Seminar Committee, 2003
Director, Minority Summer Internship in Environmental Health Sciences, 2003
Coordinator, Toxicological Sciences Comprehensive Preliminary Exam, 2002, 2003
Search Committee for Assistant Professor in Toxicological Sciences, 2001, 2002, 2003
Coordinator, Divisional Journal Club in Neurotoxicology, 2000-2001

School

Reviewer, MPH Integrating Experience Projects 2000-2002
Director, Faculty Core, Johns Hopkins Center in Urban Environmental Health, 2001-2003
Member, Johns Hopkins Center in Urban Environmental Health Research Council, 2002- 2003
Faculty Senator, 2002 - 2003

University

Voting Member, Institutional Animal Care and Use Committee, 2001-2003
Member, Rodent Advisory Committee, 2002-2003

Community

Judge, 8th Annual Undergraduate & Graduate Science Research Symposium Program, Morgan State University, Baltimore, MD, 1999, 2003
Speaker, "Women Serious about Science" program, Baltimore Polytechnic Institute, 2002

PRESENTATIONS

Scientific Meetings

Society of Toxicology, March 2016, New Orleans, LA

- x Bandara SB, Feldman DH, Miller GW, Lossin C, Lein PJ, *Larval zebrafish as a model for discovering therapeutics for chemical threat agent-induced seizures.*
- x Boosalis C, Zolkowska D, Bruun DA, Silverman JL, Rogawski MA, Lein PJ, *Characterization of a mouse model of tetramethylenedisulfotetramine (TETS)-induced status epilepticus.*
- x Bruun DA, Levoe SN, Streifel K, Flannery B, Lein PJ, *The antioxidant Trolox prevents learning and memory deficits in a rat model of subchronic chlorpyrifos (CPF) exposure.*
- x Chen H, Bautista A, Hayakawa K, Lein PJ, *BDE-47 and BDE-49 inhibition of axon outgrowth in cultured hippocampal neurons is reversed with triiodothyronine or antioxidant co-treatment.*
- x Guignet M, Dhakal K, Hobson B, Bruun D, Streifel K, Silverman JL, Lein PJ, *Characterization of long-term persistent behavioral deficits, neuroinflammation and oxidative stress in rat model of acute diisopropylfluorophosphate (DFP) intoxication.*
- x Hayakawa KA, Walter KM, Lein PJ, *Neurodevelopmental endpoints modulated by thyroid hormone in primary rat neuron-glia co-cultures.*
- x Hobson B, Rowland D, Dhakal K, Bruun D, Tancredi D, Cherry S, Garbow J, Lein PJ, *Quantitative magnetic resonance imaging (MRI) of brain lesions predicts cognitive impairment following acute organophosphate (OP) intoxication in rats.*
- x Keil KP, Sethi S, Lein PJ, *DNA methylation as a mediator of 2,2',3,5',6-hexchlorobiphenyl (PCB 95)- induced dendritic arborization.*
- x Miller GW, Keil K, Chen H, Dhakal K, Sethi S, Kim JW, Lein PJ, *PCB 95-induced dendritic growth in primary cultures of rat hippocampal neurons is dependent on mTOR activation.*
- x Sunjay S, Keil K, Hayakawa Keri, Chen H, Wei F, Dong Y, Li X, Pessah I, Lehmler HJ, Lein PJ, *3,3'-dichlorobiphenyl (PCB 11) and its metabolites increase dendritic arborization in primary rat cortical and hippocampal neurons.*
- x Shaffo F, Grodzki AC, Schelegle E, Lein P, *Chlorpyrifos induces airway hyperreactivity in rats.*
- x Stamou N, Grodzki AC, Lein PJ, *Fc gamma receptors are expressed in the developing rat brain and activate downstream signaling upon cross-linking with immune complex.*
- x Walter KM, Miller GW, Hayakawa K, Chen X, Puschner B, Lein PJ, *Identification of molecular, cellular and behavioral endpoints associated with developmental hyperthyroidism and hypothyroidism in larval zebrafish.*

9th Annual CounterACT meeting, June 2015, New York City, NY

- x Zolkowska D, Bruun DA, Boosalis CA, Hammock BD, Lein PJ, Rogawski MA, *Diazepam and midazolam effectively terminate tetramethylenedisulfotetramine-induced status epilepticus and enhance survival in mice.*
- x Hobson B, Rowland D, Dhakal K, Wahab A, Bruun D, Silverman J, Rogawski M, Tancredi D, Cherry S, Garbow J, Lein P, *Comparative efficacy of diazepam versus midazolam in mitigating persistent neuropathology in a rat model of acute OP intoxication.*
- x Inceoglu B, Hwang SH, Lee KSS, Yang J, Barnych B, Vasylieva N, Kodani S, Singh V, Vito S, Bruun D, Hulsizer S, Pessah I, Lein P, Wulff H, Hammock B, *Potent inhibitor of the soluble epoxide hydrolase synergizes the efficacy of diazepam while reducing its adverse effects through independent mechanisms.*

Society of Toxicology, March 2015, San Diego, CA

- x Bruun DA, Zolkowska D, Boosalis C, Rogawski MA, Lein PJ, *Persistent neuroinflammation in a mouse model of tetramethylenedisulfotetramine (TETS)-induced status epilepticus.*
- x Hayakawa KA, Walter K, Miller GW, Lein PJ, *Gene expression of thyroid hormone signaling pathways during neurodevelopment.*
- x Hobson BA, Siso S, Rowland D, Bruun D, Tancredi D, Cherry S, Garbow J, Lein P, *Brain lesions detected by 7T magnetic resonance imaging (MRI) are highly correlated with histological indices of neuronal necrosis in a rat model of acute organophosphate intoxication.*
- x Dhakal K, Flannery B, Hobson BA, Bruun DA, Lein PJ, *Characterization of a rat model of acute diisopropylfluorophosphate (DFP) intoxication.*
- x Walter KM, Miller GW, Chang Y, Hayakawa K, Draper B, Lein PJ, *Development of a zebrafish model to identify adverse outcome pathways linking thyroid hormone disruption to developmental neurotoxicity.*
- x Shaffo F, Grodzki AC, Walby W, Schelegle E, Lein PJ, *Effects of organophosphorus pesticides (OPs) on airway physiology.*
- x Stamou M and Lein PJ, *Chlorpyrifos oxon (CPFPO) and 2,2',3,5',6-pentachlorobiphenyl (PCB 95) modulate Fcγ receptor (FcγR) expression in developing neurons.*
- x Streifel KM, Harrill JA, Chen H, Mundy WR, Lein PJ, *High content imaging of excitatory and inhibitory synapses in primary cultures of rat hippocampal and cortical neurons.*

Society for Neuroscience, 2014, Washington D.C.

- x Jones KL, Streifel KM, Heuer L, Boosalis C, Lein PJ, Van de Water J, *Influence of a postnatal peripheral immune challenge on neuroimmune response in the developing rat brain.*
- x Zolkowska D, Wulff H, Hammock B, Lein PJ, Rogawski MA, *Mouse model of tetramethylene-disulfotetramine (TETS)-induced status epilepticus.*

Society of Toxicology, 2014, Phoenix, AZ

- x Barnhart C, Feng W, Dong Y, Pessah IN, Lein PJ, *Dioxin-like and non-dioxin-like polychlorinated biphenyls (PCBs) modulate basal and activity-dependent dendritic arborization in primary neuronal cell cultures.*
- x Bruun DA, Cao Z, Hulsizer S, Inceoglu AB, Vito S, Pessah IN, Lein PJ, *Combined therapy with allopregnanolone and diazepam mitigates TETS-triggered hyperexcitability of neuronal networks in vitro and rescues mice from TETS-induced seizures and death.*
- x Chen H, Yang D, Lein PJ, *BDE-47 and BDE-49 selectively disrupt axonal outgrowth in cultured hippocampal neurons.*
- x Flannery BM, Silverman JL, Bruun DA, Crawley JN, Lein PJ, *Behavioral assessments in NIH swiss mice acutely intoxicated with tetramethylenedisulfotetramine (TETS).*
- x Miller GW, Lein PJ, *Zebrafish model of PCB developmental neurotoxicity.*
- x Hobson BA, Siso S, Rowland D, Bruun DA, Garbow J, Lein PJ, *High resolution 7T magnetic resonance imaging (MRI) of brain damage in a rat model of acute organophosphate intoxication.*
- x Korwel I, Barnhart C, Truong KM, Lein PJ, Lehmler HJ, *Enantioselective disposition of 2,2',3,5',6-hexachlorobiphenyl 95 (PCB 95) and its metabolites in mouse dams dosed during pregnancy.*
- x Levoe SN, Brignolo L, Imai DM, Bruun DA, Lein PJ, *Factors influencing adverse skin responses in rats receiving repeated subcutaneous injections and impact on behavior.*
- x Stamou M, Lein PJ, *Ontogeny of Fcγ receptors (FcγR) in the developing rat brain.*
- x Streifel KM, Jones KL, Van de Water J, and Lein PJ, *Cumulative vaccination alters immune responses in the developing brain.*

7th Annual CounterACT meeting, 2013, Bethesda, MD

- x Lein PJ, *UC Davis CounterACT Center of Excellence: Improving medical countermeasures for acute intoxication with seizurogenic chemical threat agents.*
- x Flannery B, Bruun D, Rowland D, Banks C, Silverman J, Lein P, *Spatiotemporal patterns of neuroinflammation and persistent behavioral deficits in a rat model of acute DFP intoxication.*
- x Hulsizer S, Cao Z, Bruun DA, Lein PJ, Pessah IN, *Mitigation of TETS-triggered hyperexcitability of neuronal networks in vitro identifies novel therapeutic strategies for treating TETS seizures in vivo.*
- x Vito S, Banks C, Inceoglu B, Bruun D, Zolkowska D, McCoy M, Rogawski M, Hammock B, Lein P, *Post-exposure administration of diazepam blocks TETS-induced tonic seizures and death but does not prevent neuroinflammation.*

Society of Toxicology, 2013, San Antonio, TX

- x Anger WK, Farahat FM, Lein PJ, Olson JR, Lasarev M, Rohlman DS, *Dose-dependent behavioral deficits in Egyptian workers with chronic organophosphorus pesticide (OP) exposures.*
- x Barnhart C, Yang D, Chen H, Qi L, Lein PJ, *Developmental PCB 95 exposure affects spatial memory in weanling mice.*
- x Bruun DA, Vito ST, Inceoglu AB, Hammock BD, Lein PJ, *Post-exposure administration of diazepam blocks TETS-induced seizures and death but does not prevent neuroinflammation.*
- x Chen H, Lesiak A, Zhu M, Appleyard SM, Impey S, Bruun DA, Wayman GA, Lein PJ, *PCB 95 stimulates synaptogenesis via ryanodine receptor-mediated miR132 upregulation.*
- x Goines PE and Lein PJ, *PCB 95 and IFN γ exert opposing effects on dendritic growth in cultured rat sympathetic neurons.*
- x Grodzki ACG and Lein PJ, *Organophosphorus pesticides activate mast cells ex vivo and in vivo.* x Leveo SN, Bruun DA, Song GY, Napoli E, Milatovic D, Giulivi C, Aschner M, Lattal KM, Lein PJ, *Oxidative stress: a mechanism-based biomarker of organophosphorus pesticide-induced neurotoxicity?*

Society of Toxicology, 2012, San Francisco, CA

- x Banks CN, Zolkowska D, Dhir A, Inceoglu AB, Sanborn JR, McCoy MR, Bruun DA, Hammock BD, Rogawski MA, Lein PJ, *Characterization of tetramethylenedisulfotetramine (TETS) toxicity in mice.*
- x Barnhart CD, Yang D, Chen H, Truong K, Bose D, Pessah IN, Lein PJ, *Developmental PCB 95 exposure interferes with spatial memory in weanling mice.*
- x Bruun DA, Li Y, Ford BD, Lein PJ, *Neuregulin-1 is neuroprotective against delayed neuronal injury following acute organophosphate intoxication.*
- x Chen H, Bose DD, Maxwell SC, Lein PJ, Pessah IN, *Ryanodine receptor-1 mutation potentiates PCB 95 effects on calcium oscillations in primary cortical neurons.*
- x Korwel I, Barnhart CD, Truong KM, Lein PJ, Lehmler HJ, *Enantioselective formation of hydroxylated metabolites of PCB95 in female mice.*
- x Lein PJ, Wayman GA, Bose DD, Yang D, Lesiak A, Bruun D, Pessah IN, *Ryanodine receptors are required for basal and PCB-modified activity-dependent dendritic growth.*
- x Stamou M, Wu X, Korwel I, Lehmler HJ, Lein PJ, *Cytochrome P450 enzyme expression in the rodent brain.*
- x Yang D, Chen H, Mangini L, Pessah IN, Lein PJ, *BDE-47 and BDE-49 influence morphologic determinants of neuronal connectivity in primary cultures of hippocampal neurons.*

Society of Toxicology, 2011, Washington, D.C.

- x Bruun D, Rowland D, Li Y, Ford B, Lein P. *PET imaging of translocator protein 18 kDa (TSPO) reveals delayed neuroinflammation coincident with persistent behavioral deficits in rats acutely intoxicated with DFP.*
- x Yang D, Kania-Korwel I, Bose D, Ghogha A, Pessah I, Lehmler HJ, Lein P. *Enantioselective effects of PCB136 on dendritic growth are ryanodine receptor-dependent.*
- x Bose DD, Yang D, Wayman GA, Lesiak A, Bruun DA, Pessah IN, Lein PJ. *Non-dioxin-like polychlorinated biphenyls (PCBs) enhance dendritic growth in cultured hippocampal neurons via ryanodine receptor (RyR)-dependent activation of calcium-dependent signaling pathways.*
- x Niknam Y, Ghogha A, Lein P, Pessah I. *Chlorpyrifos and chlorpyrifos oxon alter ryanodine receptor function.*
- x Anger WK, Farahat FM, Lein PJ, Olson JR, Rohlman DS. *Behavioral deficits in Egyptian application teams with chronic organophosphorus pesticide exposures.*
- x Ellison CA, Knaak JB, McDougall R, Lein PJ, Farahat FM, Anger WK, Olson JR. *Construction and validation of a human PBPK/PD model for dermal chlorpyrifos exposure utilizing human biomarker data.*
- x Hussainzada N, Jackson D, Bruun D, Milatovic D, Lewis J, Banks C, Aschner M, Browne R, Olson JR, Lein P. *Biomarkers of neurotoxicity in a rat model of occupational chlorpyrifos (CPF) exposure.*

Neurotoxicology 26, 2010, Portland, OR

- x Bose DD, Kaplan ES, Lein PJ, Pessah IN. *Non-coplanar PCBs increase spontaneous synchronized Ca²⁺ oscillations in primary hippocampal neurons.*
- x Kim KH, Bose DD, Riehl J, Padilla IT, Barnhart CD, Lein PJ, Pessah IN. *Para-substitution is a key determinant of brominated diphenyl ether activity towards ryanodine receptors.*
- x Yang D and Lein P, *Chlorpyrifos disrupts neuroligin-mediated synapse formation.*

Society of Toxicology, 2010, Salt Lake City

- x Bose DD, Kaplan ES, Lein PJ, Pessah IN. *Non-coplanar PCBs increase spontaneous synchronized Ca²⁺ oscillations in primary hippocampal neurons.*
- x Crane AL, Browne RW, Knaak JB, Bonner MR, Fenske RA, Farahat FM, Anger WK, Lein PJ, Olson JR. *Inhibition of acetylcholinesterase (AChE) and butyrylcholinesterase (BChE) in human blood following in vitro and in vivo exposure to chlorpyrifos.*
- x Crofton K, Buzanska L, Coecke S, Knaut H, Lein P, Mundy W, Price A, Seiler A, Goldberg A. *Recommendations for developing alternative test methods for developmental neurotoxicity.*
- x Ellison CA, Lein PJ, Knaak JB, Fenske RA, Farahat FM, Bonner MR, Anger WK, Olson JR. *Exposure estimates and PBPK modeling of chlorpyrifos in rats and humans.*
- x Farahat FM, Olson JR, McGarrigle BP, Bonner MR, Ellison CA, Fenske RA, Galvin K, Rohlman DR, Anger WK, Lein PJ. *Biomarkers of chlorpyrifos exposure and effect in Egyptian cotton field workers.*
- x Lein PJ, Farahat FM, Olson JR, Rohlman DR, Bonner MR, Lattal M, Fenske RA, Galvin K, Lasarev M, Anger WK. *Biomarkers of Organophosphorus Pesticide-Induced Neurotoxicity.*
- x Lattal M, Yang D, Bruun D, Anger WK, Lein PJ. *Subchronic chlorpyrifos exposure alters appetitive behavior and contextual fear conditioning in rats.*
- x Olson JR, Lasarev M, Bruun D, Milatovic D, Aschner M, Lein PJ. *Strain- and dose-related effects of subchronic chlorpyrifos (CPF) exposure on biomarkers of exposure and oxidative stress in rats.*
- x Yang D and Lein P, *Chlorpyrifos disrupts neuroligin-mediated synapse formation.*

International Conference on Occupational Health, 2009

x Anger WK, Rohlman DS and Lein PJ. *Neurotoxicity of pesticides in old and young generations. Annual CounterAct meeting, 2009, Washington, D.C.*

x Ford BD and Lein PJ. *Neuroprotective role for neuregulins in neurotoxin-mediated neuronal injury.*

Society of Toxicology, 2009, Baltimore, MD

x Barnhart C, Lauridsen H, Bruun D and Lein PJ. *Neuregulin-1 protects against paraoxon-induced apoptosis in hippocampal slice cultures.*

x Courter LA, Gonsiorek EA, Garred M, Bruun D, Fryer AD, Higgins D and Lein PJ. *Interferon-gamma causes dendrite retraction in sympathetic neurons in vivo.*

Neurotoxicology 25, 2008, Rochester, NY

x Ford BD, Lein PJ, Yonggang L and Bruun D (Invited), *Neuregulin-1 protects against organophosphorus pesticide-induced neurotoxicity.*

x Yang D, Ladu J, Buels K, Lauridsen H, Tanguay R and Lein P, *Chlorpyrifos-oxon disrupts motor behavior and axonal growth in embryonic zebrafish.*

x Courter LA, Garred M, Bruun D and Lein PJ, *Interferon-gamma by peripheral inflammation causes dendritic retraction in distant neuronal loci.*

x Lein PJ (Invited), *Using in vitro models to study gene-environment interactions in autism.*

Pacific Northwest Association of Toxicologists (PANWAT) 25th Annual Meeting, 2008, Corvallis, OR

x Lein PJ (Invited presentation), *Polychlorinated biphenyls (PCBs) modulate neuronal connectivity in the developing brain.*

The Fifth PCB Workshop, 2008, Iowa City, IA

x Lein PJ (Invited presentation), *Non-coplanar polychlorinated biphenyls (PCBs) modulate the development of neuronal connectivity via effects on the ryanodine receptor.*

Society of Toxicology, 2008, Seattle, WA

x Bruun D, Proskocil B, Fryer AD and Lein PJ, *Organophosphorus pesticides (OPs) do not interact directly with airway nerves to cause neuronal M2 receptor dysfunction.*

x Ledoux VA, Wayman GA, Pessah IN, Lein PJ, *Polychlorinated biphenyls (PCBs) influence dendritic growth in cultured hippocampal neurons via ryanodine receptor (RyR)-dependent activation of CaM kinase I.*

x Yang D, Ladu J, Buels K, Lauridsen H, Tanguay R and Lein PJ, *Chlorpyrifos-oxon interferes with axonogenesis in embryonic zebrafish.*

Neurotoxicology 24, 2007, San Antonio, TX

x Lein PJ (Invited presentation), *Exposure of the developing brain to polychlorinated biphenyls influences susceptibility of the adult brain to stress.*

2007 Dioxin Meetings, 2007, Tokyo, Japan

x Lein PJ (Invited presentation), *Ontogenetic alterations in molecular and structural correlates of dendritic growth following developmental exposure to polychlorinated biphenyls (PCBs).*

The 33rd Annual Summer Meeting of The Toxicology Forum, 2007, Aspen, CO

x Lein PJ (Invited presentation), *Emerging models in developmental neurotoxicity testing: In vitro.*

The 11th Meeting of the International Neurotoxicology Association, 2007, Pacific Grove, CA

x Lein PJ (Invited presentation), *Polychlorinated biphenyls (PCBs) modulate the development of neuronal connectivity.*

Society of Toxicology, 2007, Charlotte, NC

x Lein PJ (Invited presentation) *Cell and molecular mechanisms of neurodevelopment: clues for identifying environmental risk factors for autism?*

x Yang D, Dziennis S, Alkayed N, Hurn P, Lein PJ, *Developmental exposure to polychlorinated biphenyls reduces infarct size in the adult rat following ischemic stroke.*

Society for Neuroscience, 2006, San Diego, CA

x Lein PJ, D Yang, TR Soderling, IN Pessah and GA Wayman, *Polychlorinated biphenyls enhance dendritic growth via ryanodine receptor-dependent Cam Kinase I activation and CREB-mediated transcription of Wnt.*

x Dziennis SE, D Yang, PJ Lein, NJ Alkayed and PD Hurn, *Developmental exposure to polychlorinated biphenyls reduces infarct size in the adult rat following ischemic stroke.*

Society of Toxicology, 2006, San Diego, CA

x Lein PJ, D Yang, A Howard and D Bruun, *Chlorpyrifos inhibits axon outgrowth via disruption of the morphogenic activity of acetylcholinesterase.*

x Yang D, KH Kim, A Phimister, IN Pessah, and PJ Lein, *Developmental exposure to Aroclor 1254 impairs dendritic plasticity and functional expression of ryanodine receptors in weanling rats.*

NIEHS, Genotype to Phenotype Correlations in Health and Disease, 2005, Mount Hood, OR

x Lein PJ, D Yang, AS Howard and D Bruun, *The acetylcholinesterase (AChE) knock-out mouse as a model for mechanistic studies of organophosphorus pesticide developmental neurotoxicity.*

Society for Neuroscience, 2005, Washington, D.C.

x Lein PJ, X Guo, GX Shi, M Moholt-Siebert and DA Andres, *The small GTPase Rit differentially regulates axonal and dendritic growth in sympathetic and hippocampal neurons.*

x Gonsiorek E, M Garred, D Higgins and PJ Lein, *J-Interferon (IFN γ) causes dendritic retraction in sympathetic neurons in vivo.*

x Gonsiorek EA, D Higgins and PJ Lein, *Bone morphogenetic proteins regulate dendritic outgrowth in rat sympathetic neurons in vivo.*

22nd International Neurotoxicology Conference, 2005, Research Triangle Park, NC

x Lein P, E Gonsiorek, M Garred and D Higgins, *Gamma-interferon causes dendritic retraction in sympathetic neurons in vivo.*

Society of Toxicology, 2005, New Orleans, LA

x Yang D and P Lein, *Altered cognitive function and dendritic growth in weanling rats exposed developmentally to Aroclor 1254* (abstract 1084).

Peer-Reviewed Medical Research Program (PRMRP) Military Health Research Forum, 2004, Puerto Rico

x Fryer AD and P Lein, *Mechanisms of organophosphate insecticide-induced airway hyperreactivity.*

Society of Toxicology, 2004, Baltimore, MD

x Lein P and AD Fryer, *Mechanisms of organophosphate insecticide-induced airway hyperreactivity.*

21st International Neurotoxicology Conference, 2004, Honolulu, Hawaii

x Howard AS and PJ Lein, *Polychlorinated biphenyls induce caspase-dependent cell death in cultured embryonic rat hippocampal but not cortical neurons via activation of the ryanodine receptor.*

International Neurotoxicology Association, 2003, Dresden, Germany

x Lein PJ, A Goldberg, P Locke and E Silbergeld, *In vitro and alternative approaches to developmental neurotoxicity testing (DNT).*

Society of Toxicology, 2003, Salt Lake City, UT

- x Howard AS, R Bucelli, DA Jett and PJ Lein, *Chlorpyrifos inhibits axon outgrowth in primary cultures of peripheral neurons through inhibition of the morphogenic activity of acetylcholinesterase.*

American Society for Cell Biology, 2002, Washington, D.C.

- x Chen HL, HN Beck, BJ Hoffer and PJ Lein, *Regulation of dendritic growth by target-derived BMPs.*

Society of Toxicology, 2002, Nashville, TN

- x Howard AS and PJ Lein, *PCBs alter apoptosis in primary cultures of hippocampal but not cortical neurons.*
- x Lein PJ, AS Howard, RA Schuh, R Bucelli and DA Jett, *Organophosphate pesticides differentially alter axonal and dendritic growth in cultured sympathetic neurons.*

Society for Neuroscience, 2001, San Diego, CA

- x Beck HN, HL Chen and P Lein, *Regulation of dendritic growth by target-derived BMPs.*

CAAT's 20th Anniversary Celebration, 2001, Baltimore, MD

- x Lein P, RA Schuh, R Bucelli and D Jett, *Cultured sympathetic neurons as a model system for investigating the developmental neurotoxicity of organophosphate pesticides.*

Society of Toxicology, 2001, San Francisco, CA

- x Lein P, R Schuh, R Bucelli and D Jett (2001) *Chlorpyrifos inhibits axonal outgrowth in sympathetic neurons at concentrations that have no effect on the enzymatic activity of acetylcholinesterase.* The Toxicologist. 60:243.

Alternative Toxicological Methods for the New Millennium: Science and Application, 2000

- x Lein PJ, RA Schuh, R Bucelli and DA Jett, *Cultured sympathetic neurons as a model system for investigating the developmental neurotoxicity of organophosphate pesticides.*

American Society of Neurochemistry, 1999, New Orleans, LA

- x Lein PJ, D Dorsaneo, H Nagasawa, PL Kaplan and D Higgins (1999) *Target tissues influence dendritic growth in sympathetic neurons via osteogenic protein-1.* J Neurochem 72(Suppl):S35C.

First European Conference on Bone Morphogenetic Proteins, 1998

- x Charette M, D Rueger, G Withers, G Banker, P Lein and D Higgins. *Neurotrophic activities of bone morphogenetic proteins.*

15th International Neurotoxicology Conference, Manganese, 1997

- x Lin W, P Lein, D Higgins and JA Roth. *Manganese-induced toxicity and process outgrowth in rat PC12 cells.*

Society for Neuroscience, 1997

- x Gallagher PJ, PJ Lein, V Chandrasekaran, AM Hedges, D Rueger and D Higgins. *Glia regulate dendritic growth in rat sympathetic neurons via bone morphogenetic proteins.* Society for Neuroscience Abstr 23:885.
- x Dorsaneo D, AM Hedges, D Rueger, D Higgins and PJ Lein. *Target tissues influence dendritic growth in sympathetic neurons via osteogenic protein-1 (OP-1).* Society for Neuroscience Abstr 23:885.

American Society for Cell Biology, 1996

- x Gallagher PJ, J Amodeo, H Howie, JA Roth and PJ Lein. *Integrins mediate manganese-induced neuronal differentiation in PC12 cells.* Molec Biol Cell Abstr 21:97a.

American Society for Cell Biology, 1995

- x Chandrasekaran V, AM Hedges, D Rueger, PJ Lein. *Glial induction of dendritic growth in rat sympathetic neurons involves osteogenic protein-1 (OP-1).* Molec Biol Cell Abstr 6:99a.

Society of Toxicology, 1994

- x Craig DK, JS Davis, PW Hoffman, LG Lee and PJ Lein. *Toxic chemical risk acceptance guidelines for use in DOE facilities*. The Toxicologist 14:1151.

Society for Neuroscience, 1994

- x Lein PJ, M Johnson, X Guo, D Rueger and D Higgins. *Osteogenic protein-1 (OP-1) induces dendritic growth in cultured sympathetic neurons*. Society for Neuroscience Abstracts 20:680.

Invited Seminars

- x March 2017, *A tale of two threat agents: OPs and TETS*, Chemical & Biological Terrorism Defense, Gordon Research Conference, Ventura, CA, March 6, 2017.
- x February 2017, *Pesticide risk assessment*, 4 hour presentation on methods for assessing pesticide neurotoxicity and recent developments in assessing risks of pesticides to a delegation from the Chinese Ministry of Agriculture, Division of Agrochemicals, University of California, Davis, February 21, 2017.
- x January 2017, *Environmental toxins and autism spectrum disorder*, Autism Spectrum Disorders: Research and Medical Treatment Implications Part 2, Complimentary CME-certified webcast series, Autism Research Institute Online Education, January 25, 2017
- x November 2016, *NIH workshop: Long-term effects following acute exposure to organophosphorus nerve agents*. American College of Toxicology, 37th Annual Meeting, Baltimore, MD, November 9, 2016
- x October 2016, *Developmental neurotoxicity of polychlorinated biphenyls (PCBs) and their metabolites*. The 21st International Symposium on Microsomes and Drug Oxidations (MDO 2016), Davis, CA, October 6, 2016
- x June 2016, *UC Davis CounterACT Center of Excellence: Improving medical countermeasures for acute intoxication with seizurogenic chemical threat agents*. 10th Annual CounterACT meeting, Davis, CA, June 15, 2016
- x April 2016, *Environmental risk factors for autism: The case for PCBs*. Research Rocks, University of California, Davis, April 5, 2016
- x January 2016, *Environmental risk factors for autism: The case for PCBs*. Purdue University Health Sciences Seminar Course, Lafayette, IN, January 19, 2016
- x December 2015, *Neuronal connectivity: an in vitro endpoint of relevance to in vivo developmental neurotoxicity*, DENAMIC (Developmental neurotoxicity assessment of mixtures in children) Workshop, Amsterdam, Netherlands, December 7, 2015
- x December 2015, *Applying the adverse outcome pathway (AOP) concept to PCB developmental neurotoxicity*, Toxicology seminar series, Swiss Federal Institute of Technology (ETH), Zurich, Switzerland, December 4, 2015
- x October 2015, *Does air pollution increase risk of Alzheimer's disease in a genetically susceptible animal model?* Air Resources Board, California Environmental Protection Agency, Sacramento, CA, October 20, 2015
- x September 2015, *Using in vitro and in vivo models to inform studies of developmental neurotoxicity*. September 2015 NIEHS/EPA Children's Environmental Health Centers Webinar on Interdisciplinary Approaches to Neurodevelopment, September 9, 2015.
- x July 2015, *Peripheral inflammation alters the structure and function of the rat sympathetic nervous system*. 16th Annual Merial-NIH Veterinary Scholars STAR Symposium, Davis, CA, July 31, 2015.
- x June 2015, *Adverse outcome pathway for the developmental neurotoxicity of non-dioxin-like PCBs: Sensitization of ryanodine receptors alters neuronal connectivity leading to cognitive deficits*. International Neurotoxicology Association, Montreal, Quebec, CANADA, June 29, 2015

- x June 2015, *Strategy for applying mechanistic data to identify gene-environment interactions of relevance to DNT*. Elucidating Environmental Dimensions of Neurological Disorders and Diseases: Understanding New Tools from Federal Chemical Testing Programs. A meeting organized by the Environmental Defense Fund, Davis, CA, June 19, 2015
- x June 2015, *UC Davis CounterACT Center of Excellence: Improving medical countermeasures for acute intoxication with seizurogenic chemical threat agents*. Annual CounterACT meeting, New York City, NY, June 16, 2015
- x April 2015, *Gene editing: Perspective of a consumer not producer of the technology*. Campus wide discussion on gene editing sponsored by the UC Davis Basic Health Sciences Council, Davis, CA, April 28, 2015.
- x April 2015, *What search committees are seeking in candidates for faculty positions in academia*. Society of Toxicology Postdoctoral Assembly Webinar, Maximizing your Postdoc to Land the Ideal Permanent Position: What Search Committees are Seeking Across Employment Sectors, April 22, 2015.
- x February 2015, *Cell and molecular mechanisms of PCB developmental neurotoxicity*. University of Illinois at Urbana-Champaign Neuroscience Seminar Program, Urbana, IL, February 3, 2015
- x December 2014, *Cell and molecular mechanisms of PCB developmental neurotoxicity*. University of California, Davis NIEHS T32 Seminar Series, Davis, CA, December 11, 2014
- x December 2014, *Cell and molecular mechanisms of PCB developmental neurotoxicity*. University of Wisconsin-Madison School of Pharmacy seminar series, Madison, WI, December 4, 2014
- x June 2014, *UC Davis CounterACT Center of Excellence: Improving medical countermeasures for acute intoxication with seizurogenic chemical threat agents*. Annual CounterACT meeting, Denver, CO, June 18, 2014
- x March 2014, *Environmental risk factors for autism: The case for PCBs*, Sitlington Lecture in Toxicology, Oklahoma State University, Stillwater, OK, March 7, 2014
- x February 2014, *Modeling human occupational exposure to chlorpyrifos to identify biomarkers and mechanisms of OP-induced neurotoxicity*, Human Toxicology and Environmental Health Sciences Research Center (EHSRC) Research Seminar, The University of Iowa, Iowa City, IA, February 7, 2014
- x January 2014, *Cellular and molecular mechanisms of the developmental neurotoxicity of organophosphorus pesticides*, Environmental Toxicology Seminar Series, University of California, Riverside, Riverside, CA, January 29, 2014
- x October 2013, *Environmental risk factors for autism: The case for organophosphorus pesticides*, Family Medicine Seminar Series, University of Texas Health Science Center at San Antonio, San Antonio, TX, October 4, 2013
- x October 2013, *Environmental risk factors for autism spectrum disorders*, Pediatrics Grand Rounds, University of Texas Health Science Center at San Antonio, San Antonio, TX, October 4, 2013
- x July 2013, *IFN γ causes dendrite retraction and synapse loss in rat sympathetic neurons in vivo*, Symposium on Sympathetic Ganglionic Remodeling and Cardiovascular Disease, International Society for Autonomic Neuroscience, Giessen, Germany, July 31, 2013
- x June 2013, *UC Davis CounterACT Center of Excellence: Improving medical countermeasures for acute intoxication with seizurogenic chemical threat agents*, Annual CounterACT meeting, Bethesda, MD, June 26, 2013
- x June 2013, *Environmental risk factors for autism: The case for organophosphorus pesticides (OPs)*, Autism Research Institute webinar series, June 19, 2013
- x June 2013, *Perinatal PCB exposure disrupts neuronal connectivity in the developing brain*, Symposium on Synaptic Development and Degeneration following Early Neurotoxicant or Stress

- Exposure, International Neurotoxicology Association, Egmond aan Zee, Netherlands, June 10, 2013
- x June 2013, *Polychlorinated biphenyls (PCBs): Environmental risk factors for ASD*, Parent/Provider Workshop: Immunological Factors, Genes and the Environment in Autism: from Research to Treatment, cosponsored by Autism Research Institute, Autism Speaks and UC Davis MIND Institute, Sacramento, CA, June 1, 2013
 - x May 2013, *The UC Davis CounterACT Center of Excellence: Improving medical countermeasures for acute intoxication with seizurogenic chemical threat agents*, The Department of Environmental Medicine Toxicology Training Program Annual Retreat, University of Rochester, Rochester, NY
 - x April 2013, *UC Davis CounterACT Center of Excellence*, Spring Symposium, Northern California Chapter of Society of Toxicology (SOT), San Francisco, CA
 - x April 2013, *Environmental risk factors for autism spectrum disorders and asthma*, Arizona Center for Biology of Complex Diseases, University of Arizona, Tucson, AZ
 - x March 2013, *Environmental risk factors for autism spectrum disorders*, Dorothy Westerman Herrmann Autism Symposium, Northern Kentucky University, Highland Heights, KY
 - x October 2012, *Insights into molecular aspects of chronic neurotoxicity*, Leibniz Research Institute for Environmental Medicine and Molecular Toxicology, Dusseldorf, Germany
 - x October 2012, *Environmental Risk Factors for Autism Spectrum Disorders*, The HELP Group Summit 2012, Los Angeles, CA
 - x October 2012, *Organophosphorus pesticides: Environmental risk factors for autism?* Autism Research Institute (ARI) Conference, Garden Grove, CA
 - x June 2012, *In vitro approaches for developmental neurotoxicity testing*, 10th International Conference on Early Toxicity Screening, Seattle, WA
 - x May 2012, *PCBs modulate neuronal connectivity via ryanodine receptor-mediated mechanisms*. 7th PCB Workshop, Arcachon, France
 - x March 2012, *Parallel animal and human research identify neurotoxic effects of occupational exposures to the organophosphorus pesticide chlorpyrifos*. Neurotoxicological effects of exposure to organophosphate compounds symposium, 51st Annual Meeting of the Society of Toxicology, San Francisco, CA
 - x January 2012, *Cell and Molecular Mechanisms of PCB Developmental Neurotoxicity*, Departmental seminar series, Microbiology and Environmental Toxicology, University of California, Santa Cruz, CA
 - x October 2011, *Influence of the immune system on neurodevelopment*, 27th International Neurotoxicology Conference, Research Triangle Park, NC
 - x June 2011, *Identification of novel therapeutic approaches for TETS and OP intoxication*, 5th Annual CounterACT Network Research Symposium, Washington, D.C.
 - x June 2011, *In vitro endpoints of relevance to organophosphorus pesticide-induced neurobehavioral deficits*, International Neurotoxicology Association, Xi'an, China
 - x April 2011, *Atopic Status Determines Inflammatory Cell Mediators in Organophosphorus Pesticide-Induced Airway Hyperreactivity*, Lung Research Day Symposium, University of California, Davis, CA
 - x March 2011, *Novel Neuroprotectants in OP-Induced Neurotoxicity*, National SAVMA (Student Chapter of the American Veterinary Medical Association) Symposium, University of California, Davis, CA
 - x February 2011, *Polychlorinated Biphenyls (PCBs) Modulate Neuronal Connectivity via Ryanodine Receptor-Dependent Mechanisms*, Research Seminar Series, Washington State University School of Veterinary Medicine, Pullman, WA

- x January 2011, *Organophosphorus Pesticides: Environmental Risk Factors for Autism Spectrum Disorders*, Research Seminar Series, UC Davis M.I.N.D. Institute, Sacramento, CA
- x November, 2010, *Organophosphorus Pesticides and Neurodevelopmental Disorders*, Pharmacology and Toxicology departmental seminar series, SUNY at Buffalo, Buffalo, NY
- x May 2010, *Cellular and molecular mechanisms of organophosphorus pesticide-induced airway hyperreactivity*, Center for Comparative Respiratory Biology and Medicine, UC Davis, CA
- x April, 2010, *Cellular and molecular mechanisms of organophosphorus pesticide-induced airway hyperreactivity*, Molecular Microbiology and Immunology seminar, UC Davis, CA
- x March, 2010, *In vitro and other methods for identifying developmental neurotoxicants*, Human Health Hazard Indicators Workshop, California Environmental Protection Agency, Sacramento, CA
- x January, 2010, *Organophosphorus Pesticides and Neurodevelopmental Disorders*, Molecular Pharmacology and Experimental Therapeutics seminar series, Mayo Clinic College of Medicine, Rochester, MN
- x December, 2009, *The yin and yang of dendritic growth: bone morphogenetic proteins and proinflammatory cytokines*, Center for Neuroscience Research at the Children's National Medical Center, Washington, D.C.
- x November, 2009, *In vitro toxicity testing: perspective of an academic scientist*, Toxicity Testing in the 21st Century: Can We Make the Business Case for Alternatives? University of Chicago Law School, Chicago, IL
- x November, 2009, *Interference of neuronal morphogenesis by organophosphorus pesticides: potential relevance to autism spectrum disorders*, Interdisciplinary Faculty of Toxicology seminar series, Texas A&M, College Station, TX
- x October, 2009, *Regulation of dendritic growth by cytokines*, Neuroscience & Physiology Program, SUNY at Syracuse, Syracuse, NY
- x September, 2009, *Overview of Developmental Neurotoxicity Testing (DNT): problems and approaches for minimizing animal use and maximizing data collection*, World Congress 7, Rome Italy.
- x August, 2009, *Novel neuroprotectants in OP-induced neurotoxicity*. Annual Force Health Protection Conference, Albuquerque, NM.
- x March 2009, *Developmental neurotoxicity of organophosphorus pesticides: neuronal morphogenesis as a target*, Integrated Toxicology and Environmental Health Program, Duke University, Durham, NC
- x March 2009, *Polychlorinated biphenyls (PCBs) modulate neuronal connectivity*, Center in Molecular Toxicology, Vanderbilt University School of Medicine, Nashville, TN
- x November 2008, *Alternative systems-based models for developmental neurotoxicity testing*, DNT2 Workshop, Reston, VA
- x October 2008, *Metabolism and oxidative stress as modulators and mediators of PCB developmental neurotoxicity*, Human Toxicology and EHSRC Research Seminar, University of Iowa, Iowa City, IA
- x October 2008, *Using in vitro models to study gene-environment interactions in autism*, 25th Neurotoxicology Conference, Rochester, NY.
- x September 2008, *Polychlorinated biphenyls (PCBs) modulate neuronal connectivity in the developing brain*, Pacific Northwest Association of Toxicologists (PANWAT) 25th Annual Meeting, Corvallis, OR
- x May 2008, *Non-coplanar polychlorinated biphenyls (PCBs) modulate the development of neuronal connectivity via effects on the ryanodine receptor*, The Fifth PCB Workshop, Iowa City, IA

- x January 2008, *Control of dendritic growth by growth factors and cytokines*, Neurological Sciences Institute, Oregon Health & Science University, Portland, OR
- x January 2008, *Alternatives to developmental neurotoxicity testing*, Alternative Models for Animal Research, UCLA, Los Angeles, CA
- x January 2008, PMCB Research Colloquium, Program in Molecular and Cellular Biology, Oregon Health & Science University, Portland, OR
- x December 2007, *Potential cell-based models for detecting endocrine disruption in the developing brain*. GE Program on Alternative Methods, Center for Alternatives to Animal Testing, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD
- x December 2007, *Early brain development and environmental exposures*. Children's Development and Rehabilitation Center (CDRC) Grand Rounds, Oregon Health & Science University, Portland, OR
- x November 2007, *Exposure of the developing brain to polychlorinated biphenyls influences susceptibility of the adult brain to stress*. Neurotoxicology 24, San Antonio, TX
- x September 2007, *Ontogenetic alterations in molecular and structural correlate of dendritic growth following developmental exposure to polychlorinated biphenyls (PCBs)*. Dioxin 2007, Tokyo, Japan.
- x July 2007, *Emerging models in developmental neurotoxicity testing: In vitro*. The 33rd Annual Summer Meeting of the Toxicology Forum, Aspen, CO
- x June 2007, *Polychlorinated biphenyls (PCBs) modulate the development of neuronal connectivity*. Workshop on Immunologic and Neurodevelopmental Susceptibilities in Autism, The 11th Meeting of the International Neuroscience Association (INA-11), Pacific Grove, CA
- x March 2007, *Cell and molecular mechanisms of neurodevelopment: clues for identifying environmental risk factors for autism?* Workshop on Environmental Risk Factors for Autism, Annual Meeting of the Society of Toxicology, Charlotte, NC
- x January 2007, *In vitro approaches to developmental neurotoxicity testing (DNT)*, The First Indian Congress on Alternatives to the Use of Animals in Research, Testing and Education, Sri Ramachandra Medical College & Research Institute (Deemed University), Chennai, India
- x November 2006, *Control of dendritic growth by growth factors and cytokines*, Neuroscience Graduate Program, University of Michigan, Ann Arbor, MI
- x March 2006, *Neuronal morphogenesis as an endpoint for in vitro developmental neurotoxicity testing*, TestSmart DNT (sponsored by the Johns Hopkins University Center for Alternatives to Animal Testing, USEPA, NIEHS, Rohm and Haas, RIFM, Shell Oil), Reston, VA
- x January 2006, *Organophosphate-induced delayed neuropathy*, Neurology Grand Rounds, Oregon Health & Science University, Portland, OR
- x November 2005, *Interferon-gamma and dendrite retraction*, Department of Anesthesiology, Oregon Health & Science University, Portland, OR
- x October 2005, *Cytokine control of dendritic growth*, Cell and Developmental Biology, Oregon Health & Science University, Portland, OR
- x October 2004, *Mechanisms of Organophosphate Developmental Neurotoxicity*, Department of Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR
- x August 2004, *Keynote Address: Physiological Evidence of a Link Between Organophosphorus Insecticides and Asthma*, Sixth Annual UC Davis Conference for Environmental Health Scientists, Napa, California.
- x March 2004, *Mechanism of Organophosphate Developmental Neurotoxicity*, Department of Pharmacology and Toxicology, SUNY at Buffalo School of Medicine and Biomedical Sciences, Buffalo, NY

- x March 2004, *Mechanism of Organophosphate Developmental Neurotoxicity*, Joint NIEHS/ACC Developmental Toxicology RFA and Fetal Basis of Adult Disease PAR Grantee Meeting, Research Triangle Park, North Carolina
- x January 2004, *Cell and Molecular Mechanisms of Developmental Neurotoxicity*, Department of Environmental and Biomolecular Systems, OGI School of Science & Engineering, Oregon Health & Science University, Portland, OR
- x December 2003, *Regulation of Neuronal Morphogenesis*, Cell and Developmental Biology, Oregon Health & Science University, Portland, OR
- x October 2003, *Modulation of Dendritic Growth by Bone Morphogenetic Proteins*, Department of Pharmacology, National Defense Medical Center, Taipei, Taiwan, ROC
- x June 2003, *In Vitro and Alternative Approaches to Developmental Neurotoxicity Testing*, The 9th meeting of the International Neurotoxicology Association, Dresden, Germany
- x February 2003, *The case of chlorpyrifos: AChE inhibition and beyond*, Toxic Damage to Developmental Signals Symposium, Duke University Integrated Toxicology Program, Duke University, Durham, NC
- x January 2003, *Regulation of dendritic growth by BMPs*, Biochemistry and Molecular Biology Open Seminar Series, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD
- x November 2002, *Non-cholinergic mechanisms of organophosphate developmental neurotoxicity*, CROET, Oregon Health Sciences University, Portland, OR
- x April 2002, *BMPs in regulation of dendritic growth*, CROET, Oregon Health Sciences University, Portland, OR
- x March 2002, *Regulation of dendritic growth by bone morphogenetic proteins*, Biology Dept, Indiana University Purdue University at Indianapolis (IUPUI), Indianapolis, IN
- x February 2002, *Extrinsic factors that influence neuronal morphogenesis*, USEPA, Neurotoxicology Division, Research Triangle Park, NC
- x January 2002, *Regulation of dendritic growth by bone morphogenetic proteins (BMPs)*, Kennedy Krieger Institute, Baltimore, MD
- x August 2001, *Mechanisms by which endocrine disruptors disrupt neuronal development in mammalian systems*, EDICOR Site Visit, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD
- x July 2001, *Regulation of dendritic growth by bone morphogenetic proteins (BMPs)*, Dept Anatomy and Neurobiology, University of Kentucky School of Medicine, Lexington, KY
- x December 2000, *Assessment of Dendritic Growth as a Targeted Process in the Developmental Neurotoxicity of PCBs*, Johns Hopkins NIEHS Center in Urban Environmental Health, External Advisory Committee Meeting, Johns Hopkins University, Baltimore, MD
- x November 2000, *Regulation of Dendritic Growth by Bone Morphogenetic Proteins (BMPs)*, Biomedical Research Seminars Series, Morgan State University, Baltimore, MD
- x April 2000, *Environmental Toxins: Hackers that Target the Hardware of the Neural Network*, Environmental Health Science Faculty Meeting with Dean Sommer, Johns Hopkins University School of Public Health, Baltimore, MD
- x April 2000, *Positive and negative regulation of dendritic growth*, Institute for Cognitive and Computational Sciences, Georgetown University Medical Center, Washington, DC
- x February 2000, *Regulation of dendritic growth in sympathetic neurons*, Neurovirology Seminar Series, Department of Molecular Microbiology and Immunology, Johns Hopkins University School of Public Health, Baltimore, MD

- x October 1999, *Cell and molecular mechanisms underlying dendritic growth in sympathetic neurons*, Department of Environmental Health Sciences, Division of Physiology, Johns Hopkins University School of Public Health, Baltimore, MD
- x November 1997, *Regulation of neuronal morphogenesis by osteogenic protein-1*, Alpha Theta chapter of Tri Beta, Canisius College, Buffalo, NY
- x October 1997, *Regulation of neuronal morphogenesis by osteogenic protein-1*, Biochemical Pharmacology, SUNY at Buffalo, School of Pharmacy, Buffalo, NY
- x May 1997, *Bone morphogenetic proteins (BMPs) regulate neuronal differentiation*, Toxicology Research Center, Environmental Health Sciences Graduate Group, SUNY at Buffalo School of Medicine and Biomedical Sciences, Buffalo, NY
- x March 1997, *Adhesion molecules: more than cellular glue*, Department of Biology, Niagara University, Niagara Falls, NY
- x November 1996, *The human genome project*, American Council on Education, National Identification Program, Canisius College, Buffalo, NY
- x November 1996, *Bone morphogenetic proteins (BMPs) regulate neuronal differentiation*, Alpha Theta chapter of Tri Beta, Canisius College, Buffalo, NY
- x January 1996, *Osteogenic protein-1 specifically induces dendritic growth in sympathetic neurons in culture*, Lung Biology Research Program, Buffalo General Hospital, Buffalo, NY
- x September 1995, *Regulation of dendritic growth in sympathetic neurons*. Departments of Psychology and Biology, Hamilton College, Clinton, NY
- x August 1995, *Environmental specification of neuronal morphology: role of BMP-7 in dendritic growth*, Dept Neurology, University of Tubingen, Tubingen, Germany
- x June 1994, *Extracellular matrix molecules as determinants of neuronal morphology*, Lung Biology Research Program, Buffalo General Hospital, Buffalo, NY

ADDITIONAL INFORMATION

Personal statement of research and research objectives

Our goal is to determine how environmental stressors interact with genetic susceptibilities to influence the risk and severity of neurodevelopmental disorders and neurodegeneration. Altered patterns of connectivity are associated with neurological deficits; therefore, we are investigating how environmental contaminants, chemical convulsants and inflammation perturb neuronal connectivity as determined using biochemical, morphogenic and electrophysiological endpoints. We are also developing biomarkers of OP neurotoxicity and testing novel therapeutic approaches for protecting against the neurodegenerative effects associated with neurotoxic pro-convulsants.