Curriculum Vitae - Michelle L. Block, Ph.D.

PERSONAL INFORMATION:

Name: Michelle L. Block, Ph.D.
Title: Associate Professor

Contact Information:
Department of Anatomy & Cell Biology
Indiana University School of Medicine
The Stark Neuroscience Research Institute
Neuroscience Research Building 214D
320 West 15th Street
Indianapolis, IN 46202
Office: (317) 274-7810
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PROFESSIONAL SUMMARY:

Primary Departmental Program Area: Neuroscience

Areas of Expertise and Interest: Microglia Biology, Neuroinflammation, Redox Signaling, Inflammation-mediated Neurodegeneration, Environmental Neurotoxicology, Gulf War Illness, Parkinson's disease, & Alzheimer's disease

EDUCATION:

Postgraduate:

8/03 - 8/07	Postdoctoral IRTA Fellow, Laboratory of Pharmacology and Chemistry, NIEHS/NIH, Research Triangle Park, NC
8/02 - 7/03	Postdoctoral Scientist, EPA & NIEHS, Laboratory of Pharmacology and Chemistry, Research Triangle Park, NC

Graduate:

9/95 - 8/02	Ph.D. in Genetics – August 2002, The Pennsylvania State University

Undergraduate:

1994	B.S. in Psychology - Iowa State University

ACADEMIC APPOINTMENT HISTORY:

Dates	Title & Rank	Institution
8/14 – Present	Associate Professor With tenure	Department of Anatomy and Cell Biology, Indiana University School of Medicine, Stark Neuroscience Research Institute
7/13 – 7/14	Associate Professor With tenure	Department of Anatomy and Neurobiology, Virginia Commonwealth University
8/07 – 6/13	Assistant Professor Tenure track	Department of Anatomy and Neurobiology, Virginia Commonwealth University

EMPLOYMENT HISTORY INCLUDING SIGNIFICANT WORK EXPERIENCE:

8/14 – Present	Associate Professor, Department of Anatomy and Cell Biology, Indiana University School of Medicine, Stark Neuroscience Research Institute
7/13 – 7/14	Associate Professor, Department of Anatomy and Neurobiology, Virginia Commonwealth University
8/07 - 6/13	Assistant Professor, Department of Anatomy and Neurobiology, Virginia Commonwealth University
8/03 - 8/07	Postdoctoral IRTA Fellow, Laboratory of Pharmacology and Chemistry, NIEHS/NIH
8/02 - 8/03	Postdoctoral Scientist, NIEHS/NIH and EPA
9/95 - 8/02	Graduate Student, The Pennsylvania State University

SPECIAL AWARDS & HONORS:

2009 - 2016	Outstanding New Environmental Scientist (ONES) Award NIEHS/NIH
2007 - 2010	Pathway to Independence Award, NIH
2007	Fellow's Award for Research Excellence (FARE), NIH
2006	Presidents Award for Postdoctoral Research, North Carolina Society of Toxicology
2006	Fellow's Award for Research Excellence (FARE), NIH
2005	Presidents Award for Postdoctoral Research, North Carolina Society of Toxicology
2005	Fellow's Award for Research Excellence (FARE), NIH
2005	Young Investigator Award, The Winter Neuropeptide Conference, Breckenridge, CO
2005	Best Poster Presentation Award, NIEHS/NIH Science Day
2003 - 2007	Intramural Research Training Award Fellowship, NIEHS/NIH
2001	Gamma Sigma Delta, Agricultural Honors Society, The Pennsylvania State University
2000	The Siegel Research Award, The Pennsylvania State University
1994	Psi Chi, Psychology Honors Society, Iowa State University

MEMBERSHIP IN SCIENTIFIC OR PROFESSIONAL SOCIETIES:

2013 - Current	The International Neurotoxicology Association
2010 - Current	The Society of Toxicology
2010 - Current	The Society for Free Radical Biology & Medicine
2005 - 2007	The North Carolina Society of Toxicology
2005 - 2007	The National Postdoctoral Association
2003 - Current	The Society for Neuroscience
2000 - Current	The American Association for the Advancement of Science

PUBLICATIONS:

Manuscripts Published in Peer Reviewed Journals:

1. Mumaw CL, Levesque S, McGraw C, Robertson S, Lucas S, Stafflinger JE, Campen MJ, Hall P, Norenberg JP, Anderson T, Lund A, McDonald JD, Otts AK, & **Block ML**. Microglial Priming through the Lung-Brain Axis: The Role of Air Pollution-induced Circulating Factors. FASEB J. 2016.

2. Zaichick, Baig, Mao, de Abreu, Bakhshi, Hart, Saqib, Deng, Chatterjee, **Block ML**, Vogel,Malik, Consolaro, Christman, Minshall, Gantner, M G Bonini. NOS1-derived nitric oxide promotes NFκB transcriptional activity through inhibition of Suppressor of Cytokine Signaling (SOCS-1). The Journal of Experimental Medicine. in press.

3. Taetzsch T, Levesque S, McGraw C, Brookins S, Luqa R, Bonini MG, Mason RP, Oh U, **Block ML** Redox regulation of NF-kappaB p50 and M1 polarization in microglia. 2015. Glia. doi:10.1002/glia.2276.

4. Dallas S, **Block ML**, Thompson DM, Dembla-Rajpal N, Bonini M, Ronaldson P, Bendayan R, and Miller DS. Microglial activation decreases retention of the protease inhibitor saquinavir: implications for HIV treatment. Journal of Neuroinflammation. 2013. May 4;10:58. doi: 10.1186/1742-2094-10-58.

5. Levesque S, Taetzsch T, Lull ME, Johnson JA, McGraw C, & **Block ML**. The role of MAC1 in diesel exhaust particle-induced microglial activation and loss of dopaminergic neuron function. Journal of Neurochemistry. 2013. 125(5), 756-65.

6. Calderon-Garciduenas L, Kavanaugh M, **Block ML**, D'Angiulli A, Delgado-Chavez R, Torres-Jardon R, Gonzalez-Maciel A, Reynoso-Robles R, Osnaya N, Villarreal-Calderon R, Guo R, Hua Z, Zhu H, Perry G, Diaz P. Neuroinflammation, hyperphosphorylated tau, diffuse amyloid plaques, and down-regulation of the cellular prion protein in air pollution exposed children and young adults. J Alzheimers Dis 2012 Jan;28(1):93-107.

7. Lull ME, Levesque S, Surace MJ, **Block ML**. Chronic apocynin treatment attenuates beta amyloid plaque size and microglial number in hAPP(751)(SL) mice. PLoS One 2011;6(5):e20153.

8. Levesque S, Taetzsch T, Lull ME, Kodavanti U, Stadler K, Wagner A, Johnson JA, Duke L, Kodavanti P, Surace MJ**, Block ML**. Diesel exhaust activates and primes microglia: air pollution, neuroinflammation, and regulation of dopaminergic neurotoxicity. Environ Health Perspect 2011 Aug;119(8):1149-55.

9. Levesque S, Surace MJ, McDonald J, **Block ML**. Air pollution & the brain: Subchronic diesel exhaust exposure causes neuroinflammation and elevates early markers of neurodegenerative disease. J Neuroinflammation 2011;8:105.

10. Levesque S, Wilson B, Gregoria V, Thorpe LB, Dallas S, Polikov VS, Hong JS, **Block ML**. Reactive microgliosis: extracellular micro-calpain and microglia-mediated dopaminergic neurotoxicity. Brain 2010 Mar;133(Pt 3):808-21.

11. Hahn YK, Vo P, Fitting S, **Block ML**, Hauser KF, Knapp PE. beta-Chemokine production by neural and glial progenitor cells is enhanced by HIV-1 Tat: effects on microglial migration. J Neurochem 2010 Jul;114(1):97-109.

12. Yang S, Zhang D, Yang Z, Hu X, Qian S, Liu J, Wilson B, **Block ML**, Hong JS. Curcumin protects dopaminergic neuron against LPS induced neurotoxicity in primary rat neuron/glia culture. Neurochem Res 2008 Oct;33(10):2044-53.

13. Wu X, Chen PS, Dallas S, Wilson B, **Block ML**, Wang CC, Kinyamu H, Lu N, Gao X, Leng Y, Chuang DM, Zhang W, Lu RB, Hong JS. Histone deacetylase inhibitors up-regulate astrocyte GDNF and BDNF gene transcription and protect dopaminergic neurons. Int J Neuropsychopharmacol 2008 Dec;11(8):1123-34.

14. Hu X, Zhang D, Pang H, Caudle WM, Li Y, Gao H, Liu Y, Qian L, Wilson B, Di Monte DA, Ali SF, Zhang J, **Block ML**, Hong JS. Macrophage antigen complex-1 mediates reactive microgliosis and progressive dopaminergic neurodegeneration in the MPTP model of Parkinson's disease. J Immunol 2008 Nov 15;181(10):7194-204.

15. Hartz AM, Bauer B, **Block ML**, Hong JS, Miller DS. Diesel exhaust particles induce oxidative stress, proinflammatory signaling, and P-glycoprotein up-regulation at the blood-brain barrier. FASEB J 2008 Aug;22(8):2723-33.

16. Gao X, Hu X, Qian L, Yang S, Zhang W, Zhang D, Wu X, Fraser A, Wilson B, Flood PM, **Block ML**, Hong JS. Formyl-methionyl-leucyl-phenylalanine-induced dopaminergic neurotoxicity via microglial activation: a mediator between peripheral infection and neurodegeneration? Environ Health Perspect 2008 May;116(5):593-8.

17. Ding Y, Qiao A, Wang Z, Goodwin JS, Lee ES, **Block ML**, Allsbrook M, McDonald MP, Fan GH. Retinoic acid attenuates beta-amyloid deposition and rescues memory deficits in an Alzheimer's disease transgenic mouse model. J Neurosci 2008 Nov 5;28(45):11622-34.

18. Qin L, Wu X, **Block ML**, Liu Y, Breese GR, Hong JS, Knapp DJ, Crews FT. Systemic LPS causes chronic neuroinflammation and progressive neurodegeneration. Glia 2007 Apr 1;55(5):453-62.

19. Pei Z, Pang H, Qian L, Yang S, Wang T, Zhang W, Wu X, Dallas S, Wilson B, Reece JM, Miller DS, Hong JS, **Block ML**. MAC1 mediates LPS-induced production of superoxide by microglia: the role of pattern recognition receptors in dopaminergic neurotoxicity. Glia 2007 Oct;55(13):1362-73.

20. Kim YS, Choi DH, **Block ML**, Lorenzl S, Yang L, Kim YJ, Sugama S, Cho BP, Hwang O, Browne SE, Kim SY, Hong JS, Beal MF, Joh TH. A pivotal role of matrix metalloproteinase-3 activity in dopaminergic neuronal degeneration via microglial activation. FASEB J2007 Jan;21(1):179-87.

21. Qian L, Gao X, Pei Z, Wu X, **Block ML**, Wilson B, Hong JS, Flood PM. NADPH oxidase inhibitor DPI is neuroprotective at femtomolar concentrations through inhibition of microglia over-activation. Parkinsonism Relat Disord 2007;13 Suppl 3:S316-20.

22. Yang S, Yang J, Yang Z, Chen P, Fraser A, Zhang W, Pang H, Gao X, Wilson B, Hong JS, **Block ML**. Pituitary adenylate cyclase-activating polypeptide (PACAP) 38 and PACAP4-6 are neuroprotective through inhibition of NADPH oxidase: potent regulators of microglia-mediated oxidative stress. J Pharmacol Exp Ther 2006 Nov;319(2):595-603.

23. Wang T, Zhang W, Pei Z, **Block ML**, Wilson B, Reece JM, Miller DS, Hong JS. Reactive microgliosis participates in MPP+-induced dopaminergic neurodegeneration: role of 67 kDa laminin receptor. FASEB J 2006 May;20(7):906-15.

24. Qian L, **Block ML**, Wei SJ, Lin CF, Reece J, Pang H, Wilson B, Hong JS, Flood PM. Interleukin-10 protects lipopolysaccharide-induced neurotoxicity in primary midbrain cultures by inhibiting the function of NADPH oxidase. J Pharmacol Exp Ther 2006 Oct;319(1):44-52.

25. Polikov VS, **Block ML**, Fellous JM, Hong JS, Reichert WM. In vitro model of glial scarring around neuroelectrodes chronically implanted in the CNS. Biomaterials 2006 Nov;27(31):5368-76.

26. **Block ML**, Li G, Qin L, Wu X, Pei Z, Wang T, Wilson B, Yang J, Hong JS. Potent regulation of microglia-derived oxidative stress and dopaminergic neuron survival: substance P vs. dynorphin. FASEB J 2006 Feb;20(2):251-8.

27. Zhang W, Wang T, Pei Z, Miller DS, Wu X, **Block ML**, Wilson B, Zhou Y, Hong JS, Zhang J. Aggregated alpha-synuclein activates microglia: a process leading to disease progression in Parkinson's disease. FASEB J 2005 Apr;19(6):533-42.

28. Wu XF, **Block ML**, Zhang W, Qin L, Wilson B, Zhang WQ, Veronesi B, Hong JS. The role of microglia in paraquat-induced dopaminergic neurotoxicity. Antioxid Redox Signal 2005 May-Jun;7(5-6):654-61.

29. Qin L, Liu Y, Qian X, Hong JS, **Block ML**. Microglial NADPH oxidase mediates leucine enkephalin dopaminergic neuroprotection. Ann N Y Acad Sci 2005 Aug;1053:107-20.

30. Qin L, Li G, Qian X, Liu Y, Wu X, Liu B, Hong JS, **Block ML**. Interactive role of the toll-like receptor 4 and reactive oxygen species in LPS-induced microglia activation. Glia 2005 Oct;52(1):78-84.

31. Qin L, **Block ML**, Liu Y, Bienstock RJ, Pei Z, Zhang W, Wu X, Wilson B, Burka T, Hong JS. Microglial NADPH oxidase is a novel target for femtomolar neuroprotection against oxidative stress. FASEB J 2005 Apr;19(6):550-7.

32. Li G, Liu Y, Tzeng NS, Cui G, **Block ML**, Wilson B, Qin L, Wang T, Liu B, Liu J, Hong JS. Protective effect of dextromethorphan against endotoxic shock in mice. Biochem Pharmacol 2005 Jan 15;69(2):233-40.

33. Li G, Cui G, Tzeng NS, Wei SJ, Wang T, **Block ML**, Hong JS. Femtomolar concentrations of dextromethorphan protect mesencephalic dopaminergic neurons from inflammatory damage. FASEB J 2005 Apr;19(6):489-96.

34. He YY, Huang JL, **Block ML**, Hong JS, Chignell CF. Role of phagocyte oxidase in UVA-induced oxidative stress and apoptosis in keratinocytes. J Invest Dermatol 2005 Sep;125(3):560-6.

35. Qin L, Liu Y, Wang T, Wei SJ, **Block ML**, Wilson B, Liu B, Hong JS. NADPH oxidase mediates lipopolysaccharide-induced neurotoxicity and proinflammatory gene expression in activated microglia. J Biol Chem 2004 Jan 9;279(2):1415-21.

36. **Block ML**, Wu X, Pei Z, Li G, Wang T, Qin L, Wilson B, Yang J, Hong JS, Veronesi B. Nanometer size diesel exhaust particles are selectively toxic to dopaminergic neurons: the role of microglia, phagocytosis, and NADPH oxidase. FASEB J 2004 Oct;18(13):1618-20.

37. Granger DA, Hood KE, Ikeda SC, Reed CR, Jones BC, **Block ML**. Effects of peripheral immune activation on social behavior and adrenocortical activity in aggressive mice: Genotype-environment interactions. Aggressive Behavior 1997;23:93-105.

38. Granger DA, Hood KE, Ikeda SC, Reed CL, **Block ML**. Neonatal endotoxin exposure alters the development of social behavior and the hypothalamic-pituitary-adrenal axis in selectively bred mice. Brain Behav Immun 1996 Sep;10(3):249-59.

Editorials, Reviews, & Book Chapters:

39. **Block ML**. Neuroinflammation: Modulating mighty microglia. Nature Chemical Biology. 2014. 10 (12):988-989. doi:10.1038/nchembio.169.

40. **Block ML** & Biber K. Microglia responses: neuroprotection vs. neurotoxicity. Microglia in health & disease. Eds. Temblay M and Sierra A. 2014; Chapter 7.

41. Taetzsch T. & **Block ML**. Pesticides, microglial NOX2, and Parkinson's disease. The Journal of Biochemical and Molecular Toxicology 2013. doi: 10.1002/jbt.21464.

42. **Block ML**, Elder A, Auten RL, Bilbo SD, Chen H, Chen J, Cory-Slechta D, Costa D, Diaz-Sanchez D, Doorman D, , Gold D, Gray K, Jeng HA, Kaufman JD, Kleinman MT, Kirshner A, Lawler C, Miller DS, Nadadur S, Ritz B, Tonelli L, Veronesi B, Wright RO, and Wright R. *2012*. The Air Pollution and Brain Health Workshop. Neurotoxicology Oct;33(5):972-84. doi: 10.1016/j.neuro.2012.08.014.

43. Surace MJ, **Block ML**. Targeting microglia-mediated neurotoxicity: the potential of NOX2 inhibitors. Cell Mol Life Sci 2012 Jul;69(14):2409-27.

44. Lull ME, **Block ML**. Microglial activation and chronic neurodegeneration. Neurotherapeutics 2010 Oct;7(4):354-65.

45. Luo L, Rodriguez E, Jerbi K, Lachaux JP, Martinerie J, Corbetta M, Shulman GL, Piomelli D, Turrigiano GG, Nelson SB, Joels M, de Kloet ER, Holsboer F, Amodio DM, Frith CD, **Block ML**, Zecca L, Hong JS, Dantzer R, Kelley KW, Craig AD. Ten years of Nature Reviews Neuroscience: insights from the highly cited. Nat Rev Neurosci 2010 Oct;11(10):718-26.

46. **Block ML**, Calderon-Garciduenas L. Air pollution: mechanisms of neuroinflammation and CNS disease. Trends Neurosci 2009 Sep;32(9):506-16.

47. **Block ML**. NADPH oxidase as a therapeutic target in Alzheimer's disease. BMC Neurosci 2008;9 Suppl 2:S8.

48. Povlikov V, **Block ML**, Zhang C., W.M. R, Hong JS. Indwelling neural inplants-stratagies for contending with wih the in vivo environment. A paradigm for studying tissues-materials interactions in the brain. Ed. Reichart M. 2008;Chapter 4.

49. MohanKumar SM, Campbell A, **Block ML**, Veronesi B. Particulate matter, oxidative stress and neurotoxicity. Neurotoxicology 2008 May;29(3):479-88.

50. **Block** ML, Zecca L, Hong JS. Microglia-mediated neurotoxicity: uncovering the molecular mechanisms. Nat Rev Neurosci 2007 Jan;8(1):57-69. (Citations- 1303)

51. **Block ML**, Hong JS. Chronic microglial activation and progressive dopaminergic neurotoxicity. Biochem Soc Trans 2007 Nov;35(Pt 5):1127-32.

52. **Block ML**, Hong JS. Microglia and inflammation-mediated neurodegeneration: multiple triggers with a common mechanism. Prog Neurobiol 2005 Jun;76(2):77-98.

53. Zhang W, Hong JS, Kim HC, **Block ML**. Morphinan neuroprotection: new insight into the therapy of neurodegeneration. Crit Rev Neurobiol 2004;16(4):271-302.

54. Mumaw CL, Surace M, Levesque S, Kodavanti U, Kodavanti PRS. Royland JE, & Block ML. AtypicalMicroglial Response to Biodiesel Exhaust in Healthy and Hypertensive Rats. Neurotoxicology. (Accepted).

In Review:

Taetzsch T, Brookins S, Luqa R, Levesque S, Duke L, and **Block ML.** Loss of NF-κB p50 function synergistically augments microglial priming in the aged brain. Glia (in review).

SCIENTIFIC & SCHOLARLY ACTIVITY:

Grants & Contracts Active:

Grant ID: GW120068
PI: **Block ML**
Gulf War Illness Research Program, Investigator Initiated Research Award
Awarding Institute: The Department of Defense
Funding Period: 09/13- 12/17
Title: The Role of Protein Radicals in Chronic Neuroimmune Dysfunction and Neuropathology in Response to a Multiple-hit Model of Gulf War Exposures
Major Goal: To define the role of NOX2 and NFκB p50 in Gulf War-like exposures

Grants & Contracts Pending:

Grant ID: 1I01BX003290
PI: Michelle L. Block
Funding Period: 04/01/2017 - 03/31/2022
Title: The Lung-Brain Axis: Mechanisms of Ozone's Impact in Alzheimer's Neuropathology
Major Goal: To define the role of circulating factors inn how air pollution impacts AD.

Grant ID: 1R01ES028104
PI: Block ML
Funding Period: 04/01/2017 - 03/31/2022
Title: The Neuroimmune Hypothesis of Paraquat: Connecting the Periphery and Brain
Major Goal: To define the circulating factors released with paraquat exposure that impact the brain.

Grants & Contracts Past:

Grant ID: 1R01ES016951
PI: **Block ML**
Outstanding New Environmental Scientist (ONES) Award (RO1)
Awarding Institute: NIEHS/NIH
Funding Period: 8/09 – 8/
Title: Protein Radicals in Microglia: Environmental Mechanisms of Chronic Neurotoxicity
Major Goal: To define the role of environmentally-derived protein radicals in chronic microglial activation and progressive dopaminergic neurotoxicity

Grant ID: R00ES015409
PI: **Block ML**
NIH Pathway to Independence Award (R00)
Awarding Institute: NIEHS/NIH
Funding Period: 02/08 - 12/10
Title: Reactive Microgliosis and Progressive Dopaminergic Neurotoxicity
Major Goal: To define the role of soluble neuron-injury factors in deleterious microglial activation and progressive dopaminergic neurotoxicity

Grant ID: 280301
PI: **Block ML**
Research grant
Awarding Institute: The Institute for the Study of Aging & the Alzheimer's Drug Discovery Foundation
NADPH Oxidase as a Therapeutic Target in Alzheimer's Disease
Funding Period: 5/08 - 4/09
Major Goal: To complete a preclinical proof of concept study for the neuroprotective utility of dextromethorphan and NADPH oxidase in a mouse model of Alzheimer's disease

Patents, Inventions, & Copyrights:

Jau-Shyong Hong, Liya Qin, Guorong Li, **Michelle L. Block**, Wei Zhang, Po-see Chen, & Giia-Shuen Peng. (2005). PCT Patent Application Number: PCT/US2005/016691. Methods Related to the Treatment of Inflammatory Conditions

Expert Services:

- (September 2016) NIEHS/NIH Member of the P42 Superfund Research Program Review Committee
- (August 2016) 2016 NIEHS/NIH Member of the P42 Superfund Research Program IAG Review Committee
- (July 2016- present) NIH Review Panel Member, Neurotoxicology and Alcohol (NAL)
- (June 2016) NIH Reviewer, Systemic Injury by Environmental Exposure.
- (February 2016) NIH Special Emphasis Panel Member, Systemic Injury by Environmental Exposure (SIEE).
- (January 2016) Reviewer, DoD Congressionally Directed Medical Research Programs, Gulf War Illness Research Program
- (October 2015) Reviewer, Neurotoxicology and Alcohol Study Section (NAL)
- (July 2015) Reviewer, NIEHS/NIH, Outstanding New Environmental Scientist (ONES) Award (R01)
- (May 2015) Reviewer, NIEHS/NIH Centers for Children's Environmental Health and Disease Prevention Research
- (April 2015) Reviewer, NIEHS/NIH ZRG1 DKUS C 50, reviewer, Special Emphasis Panel member Environmental Contributors to Autism Spectrum Disorders
- (March 2015) Reviewer, Indiana Spinal Cord and Brain Injury Research Fund, CTSI.
- (February 2015) NIH Special Emphasis Panel Member, Systemic Injury by Environmental Exposure.
- (December 2014) NIH Special Emphasis Panel Member, ZRG1 MDCN-G(03), Pathologies in the Nervous System.
- (October 2014) Reviewer, NIH Special Emphasis Panel Member, Systemic Injury by Environmental Exposure

- (December 2013) Reviewer, DoD Congressionally Directed Medical Research Programs, Gulf War Illness Research Program, Investigator-Initiated Research Award

- (November 2012) Reviewer, NIEHS/NIH Special Emphasis Panel Member, Environmental Influences on Children's Health

- (October 2011) Reviewer, NIEHS/NIH Special Emphasis Panel Member, Dietary Influence on the Human Health Effects of Environmental Exposures

- (April 2011 - present) Reviewer for Alzheimer's Research UK (ARUK)

- (May 2011 - present) Reviewer for the TOP grants of the Netherlands Organization for Scientific Research

- (February 2011-present) Reviewer, National Medical Research Council, Singapore

- (January 2010 - present) PLOS One - Academic Editor

- (2010 - present) Reviewer for the Alzheimer's Drug Discovery Foundation, United States

- (2009) Special Emphasis Panel Member, Scientific Review Group 2009/08 ZAA1 CC, The effects of alcohol on glial cells. National Institute on Alcohol Abuse and Alcoholism, NIH

- (2008 - present) Reviewer for the Parkinson's Disease Society, London, England

- (2007 - present) Reviewed manuscripts for: Journal of Experimental Pharmacology and Therapeutics, Trends in Neurosciences, Glia, the Journal of Neuroinflammation, the Journal of Immunology, Neurotoxicology; Brain Research; Biochemical Pharmacology, Environmental Research, Journal Neuropharmacology, Current Medicinal Chemistry, Neuroscience Letters, Brain, Journal of Neurotrauma, PLoS ONE, TAAP, Progress in Neurobiology, Neurobiology of Disease, Environmental Health Perspectives, JAMA Psychiatry, Nature Chemical Biology, FASEB J, Nature Communications, Science Translational Medicine.

Research Advising & Mentoring:
Mentored in the Laboratory: 4 Undergraduate students, 5 technicians, 1 laboratory manager, 3 Neuroscience Ph.D. Students, 5 Postdoctoral Scientists

Significant Mentee Accomplishments: Thomas Taetzsch, 2010 CC Clayton Award, Phi Kappa Phi Award; Ph.D. Awarded 2014; Laura Duke, Nurse Practitioner Program at VCU 2011-current; Dr. Melinda Lull: Assistant Professor at St. John Fisher College, NY 2010 –current

Ph.D./Masters Committees:

Name	Degree	Advisor
Elizabeth Runge	Ph.D.	Dr. Kathryn Jones
Deborah Setter	Ph.D.	Dr. Kathryn Jones
Sreeparna Majumdar	Ph.D.	Dr. William Truit
Alex Stafford	Ph.D.	Dr. Darlene Brunzell
Laura O'Brien	Ph.D.	Dr. James Bennet
Kareem Clark	Ph.D.	Dr. Jeff Dupree
Kendall Hancock	MS	Dr. Scott Ramsey
Tuoxin Cao	Ph.D.	Dr. Scott Ramsey
Henna Ayub	MS	Dr. Dong Sun
Sung Hoon Park	Ph.D.	Dr. Clive Baumgarten
Kim Samano	Ph.D., 2014	Dr. Kurt Hauser
Julie Chan	Ph.D, 2013.	Dr. Linda Phillips
Yun Kyung Hahn	Ph.D., 2012	Dr. Pamela Knapp
Ashley Harvin	MS, 2012	Dr. Dong Sun
Wen Chen	MS, 2011	Dr. Pamela Knapp
Chris Shin	MS, 2010	Dr. Dong Sun
Matt Allsbrook	MS, 2009	Dr. Guo-Huang Fan

EXTRAMURAL PRESENTATIONS:

Invited Speaker:

Local:

Block ML. (March 2016) Microglia as Central Nervous System Sentinels and the Lung-Brain Axis". Invited Speaker for the Indianapolis Chapter of the Society for Neuroscience, Indianapolis, IN.

Block ML. (April 2015) Microglia and Progressive Neuron Damage. Invited Speaker for the Neurosurgery Resident Research Symposium, Indianapolis, IN.

Block ML. (April 2015) Redox Regulation of the M1/M2 Shift in Microglia: Programing the Deleterious Phenotype. Invited Speaker for the SCBIRG Research Forum. Indianapolis, IN.

Block ML. (April 2015) Redox Regulation of the M1/M2 Shift in Microglia: Programing the Deleterious Phenotype. Invited Speaker for the Motor Neuron Club. Indianapolis, IN.

Block ML. (March 2015) Microglia and Progressive Neuron Damage. Invited Speaker for the Indianapolis Neuroscience Club, Brain Awareness Week. Indianapolis, IN.

Block ML. (December 2012). The role of NF-κB p50 in neurotoxic microglia. Speaker for the Physiology & Biophysics seminar series at Virginia Commonwealth University, Richmond, VA.

Block ML. (September 2012). Polluting the brain: the role of microglia in air pollution-induced CNS effects. Speaker for the MD/Ph.D. seminar series at Virginia Commonwealth University, Richmond, VA.

Block ML. (April, 2010). Air pollution, microglial activation, & dopaminergic neuron damage. Speaker for seminar series in the Department of Anatomy & Neurobiology at Virginia Commonwealth University, Richmond, VA.

Block ML. (November, 2008). Microglia and progressive neuron damage: μ calpain as a soluble neuron-injury factor. Invited speaker for the seminar series in the Department of Biochemistry at Virginia Commonwealth University, Richmond, VA.

Block ML. (December, 2007). Microglia and progressive dopaminergic neurotoxicity, Invited speaker for the Parkinson's Disease Research, Education and Clinical Center (PDRECC), Department of Veterans Affairs, Richmond, VA.

Block ML. (October, 2006). Microglia activation and progressive dopaminergic neurodegeneration: multiple triggers with a common mechanism. Invited seminar speaker for the Department of Anatomy and Neurobiology at the Virginia Commonwealth University, Richmond, VA.

Block ML. (August, 2005). Femtomolar mediation of microglial-derived oxidative stress and dopaminergic neuron survival: Substance P vs. dynorphin. Speaker for the Laboratory of Pharmacology & Chemistry seminar series, NIEHS/NIH, RTP, NC.

Block ML. (August, 2004). DEP is selectively toxic to dopaminergic neurons through microglia & NADPH Oxidase. Seminar speaker. Laboratory of Pharmacology & Chemistry, NIEHS/NIH, RTP, NC.

Regional:

Block ML. (February 2016) Microglia as Sentinels and the Detection of Urban Air Pollution: Implications for CNS Health. Invited Speaker for the School of Health Sciences, Perdue University, West Lafayette, IN.

Block ML. (December, 2015). Microglial Redox Signaling in the Aged Brain. Invited Speaker for the Division of Medicinal and Natural Products Chemistry, The College of Pharmacy, The University of Iowa, Iowa City, IA.

Block ML. (June 2015). Microglia as central nervous system sentinels and the detection of air pollution. Seminar Speaker. Nationwide Children's Hospital, Center for Perinatal Research Seminar Series, Columbus, Ohio.

Block ML. (January, 2014). Microglia as central nervous system sentinels and the detection of air pollution. Speaker for the Department of Environmental and Occupational Medicine, Environmental and Occupational Health Sciences Institute, Rutgers, Piscataway, NJ.

Block ML. (May 2013). Redox regulation of NF-κB p50 and M1 polarization in microglia, Invited Speaker for the annual ONES Seminar Series, NIEHS/NIH, RTP, NC.

Block ML. (November 2012). Microglia as central nervous system sentinels and the detection of air pollution. Speaker for the Department of Environmental Medicine, NIEHS Environmental Health Sciences Center, University of Rochester, Rochester, NY.

Block ML. (July 2012). Microglial protein radicals in progressive dopaminergic neurotoxicity. Invited speaker for the annual ONES Seminar Series, NIEHS/NIH, RTP, NC.

Block ML. (October 2011). Microglia & Progressive Dopaminergic Neurotoxicity. Invited speaker for a seminar series at the University of Nebraska. Lincoln, NE.

Block ML. (July 2011). Microglial protein radicals in progressive dopaminergic neurotoxicity. Invited speaker for the annual ONES Seminar Series, NIEHS/NIH, RTP, NC.

Block ML. (June 2011). Microglia and progressive neuron damage: μ calpain as a soluble neuron-injury factor. Invited speaker for the UMSOM Center for Shock, Trauma, and Anesthesiology Research. University of Maryland, School of Medicine, Baltimore, MD.

Block ML. (January 2010). Microglial protein radicals in progressive dopaminergic neurotoxicity. Invited speaker for the ONES Award Seminar, NIEHS/NIH, RTP, NC.

Block ML. (May 2009). Microglial protein radicals in progressive dopaminergic neurotoxicity. Invited speaker for the ONES Award interview. NIEHS/NIH, RTP, NC.

Block ML. (March 2007). Microglia and progressive neuron damage: μ calpain as a soluble neuron-injury factor. Invited speaker for the meeting of the North Carolina Society of Toxicology in Research Triangle Park, NC. Recipient of the 2006 PARC Award.

Block ML. (March, 2006). Microglia mediate DEP-induced Neurotoxicity: the role of MAC1. Invited speaker for the meeting of the North Carolina Society of Toxicology in Research Triangle Park, NC. Recipient of the 2005 PARC Award.

National:

Block ML. (April 2016). Redox Regulation of the M1/M2 Shift in Microglia: Programming the Deleterious Phenotype. Experimental Biology Conference, Invited Speaker, San Diego, CA.

Block ML. (May, 2016). Microglia as central nervous system sentinels and the detection of air pollution. Invited Speaker at the Graduate School of Public Health at University of Pittsburgh, Pittsburgh, PA.

Block ML. (November, 2015). Microglial Redox Signaling in the Aged Brain. Invited Speaker for Science Day at NIEHS/NIH, RTP, NC.

Block ML. (November, 2015). Microglia as central nervous system sentinels and the detection of air pollution. Invited Speaker at the EPA, RTP, NC.

Block ML. (March, 2015). Microglia as central nervous system sentinels and the detection of air pollution. Invited Speaker for the ASIP 2015 Annual Meeting at Experimental Biology 2015, Boston, MA.

Block ML. (October, 2014). Microglia as central nervous system sentinels and the detection of air pollution. Invited Speaker for the Department of Pharmacology & Toxicology, University of Texas, Austin TX.

Block ML. (April, 2014). Invited Speaker for the Research Advisory Committee on Gulf War Veterans' Illnesses Meeting, Washington, DC.

Block ML. (March 2014). Programming the Deleterious Microglia Phenotype: Redox Regulation of NF-κB p50 and Disruption of the M1/M2 Activation Balance. Speaker for the Department of Anatomy and Cell Biology, Indiana University School of Medicine, Indianapolis, IN.

Block ML. (February 2014). Microglia and the effects of the peripheral immune response in diesel exhaust-induced neuropathology. Co-chair and Speaker for the "Air Pollution As a Risk Factor for Central Nervous System Diseases and Disorders" symposium at the American Association for the Advancement of Science meeting, Chicago, IL.

Block ML. (November, 2013). Redox regulation of NF-κB p50 and M1 polarization in microglia, Invited Speaker for the Department of Neurobiology & Anatomical Sciences, the University of Mississippi Medical Center, Jackson, MS.

Block ML. (October 2013). Redox regulation of NF-κB p50 and M1 polarization in microglia, Invited Speaker for the Department of Neurology, Vanderbilt, Nashville, TN.

Block ML. (September 2013). Redox regulation of NF-κB p50 and M1 polarization in microglia, Invited Speaker for the Grand Challenges in Parkinson's Disease Conference, Van Andel Institute, Grand Rapids, MI.

Block ML. (May 2013). Microglia as central nervous system sentinels and the detection of air pollution. Speaker for the AirPoll Brain Group, the Department of Neuroscience, University of Southern California, Los Angeles, CA.

Block ML. (March 2013). The effect of criteria pollutants in the brain. Invited Speaker for the "Inhaled Mixtures: A Mode-of-Action Framework Applied to the Criteria Air Pollutants" workshop at the Society of Toxicology Meeting in San Antonio, TX.

Block ML. (March 2013). Microglia and the effects of the peripheral immune response in diesel exhaust-induced neuropathology. Co-chair and Speaker for the "Role of Air Pollution As a Risk Factor for Central Nervous System Diseases and Disorder" workshop at the Society of Toxicology Meeting in San Antonio, TX.

Block ML. (June 2012). NOX2 in microglial neurotoxicity: Implications for Parkinson's disease. Invited speaker for the 2012 NOX Gordon Research Conference on NOX Family NADPH Oxidases. NOX enzymes in the nervous system: neurodegenerative, psychiatric disorders and vascular regulation. Waterville Valley, NH.

Block ML. (December 2011). Air pollution, microglial activation, & neuropathology. Invited speaker for seminar series at the LoveLace Respiratory Research Institute, the National environmental respiratory center, Albuquerque, NM.

Block ML. (March 2009). NADPH oxidase as a therapeutic target in Alzheimer's disease. Invited Speaker for the 237th National American Chemical Society Meeting in Salt Lake City, UT.

Block ML. (June 2008). Inflammation and its role in neurodegenerative diseases. Invited Speaker for The Neural Interfaces Conference in Cleveland, Ohio.

Block ML. (June, 2007). Microglia mediate DEP-induced neurotoxicity: the role of MAC1. Invited speaker for the workshop on Air Pollution, Oxidative Stress, and Neurodegeneration, the National Society of Toxicology Meeting, Charlotte, NC.

Block ML. (November, 2006). Microglia activation and progressive dopaminergic neurodegeneration: multiple triggers with a common mechanism. Invited seminar speaker for the Department of Neuroscience and Experimental Therapeutics at the Texas A&M System University Health Science Center, College Station, TX.

Block ML. (December 2006). Microglia-derived oxidative stress and progressive dopaminergic neurotoxicity. Invited seminar speaker for the Cellular and Molecular Toxicology Branch, Neurotoxicology Division at the United States Environmental Protection Agency in Research Triangle Park, NC.

Block ML. (January, 2005). Femtomolar mediation of microglial-derived oxidative stress and dopaminergic neuron survival: Substance P vs. dynorphin. Invited speaker at the meeting of the Winter Neuropeptide Conference, Breckenridge, CO. Received Young Investigator Award.

International:

Block ML. (June, 2015). Microglia as central nervous system sentinels and the detection of air pollution. Invited Speaker for the International Neurotoxicology Association, Montreal, Canada.

Block ML. (June 2013). Microglial mechanisms of air pollution-induced neurotoxicity. Invited speaker for the 14th International Neurotoxicology Association meeting on the Neurodevelopmental Basis of Health and Disease, Symposium 9- Neurotoxicological consequences of exposure to urban air pollution. Egmond aan Zee, the Netherlands.

Block ML. (November 2010). Microglial NADPH oxidase as a therapeutic target in neurogenerative diseases. Invited speaker for the Ernst Klenk Symposium in Molecular Medicine on NOX Family NADPH oxidases as therapeutic targets. Cologne, Germany.

Block ML. (October 2010). Glia and Neurodegeneration. Invited speaker for the annual meeting of the International Society for anesthetic pharmacology. San Diego, CA.

Block ML. (October, 2008). NADPH oxidase as a therapeutic target in Alzheimer's disease. Invited speaker for the 8th International Conference on Alzheimer's Disease Drug Discovery, sponsored by the Alzheimer's drug discovery foundation. New York, NY.

Block ML. (September 2008). Microglia-derived oxidative stress and progressive dopaminergic neurotoxicity. Invited speaker for the International Conference on Free Radicals and Oxidative Stress, sponsored by VCU and the Messina School of Pharmacology, Messina Italy.

Block ML. (October, 2007). NADPH oxidase as a therapeutic target in Alzheimer's disease. Invited speaker for the 8th International Conference on Alzheimer's Disease Drug Discovery, sponsored by the Alzheimer's drug discovery foundation. New York, NY.

Block ML. (July, 2007). Microglial activation and progressive dopaminergic neurotoxicity. Invited speaker for the symposium on Inflammatory Neurodegeneration at the joint meeting for the Biochemical Society, the British Pharmacological Society, and the Physiological Society, Life Sciences 2007 Conference, in Glasgow, Scotland.

Block ML. (July, 2007). Women in science: What I wish I would have known. Invited speaker and panel member at the joint meeting for the Biochemical Society, the British Pharmacological Society, and the Physiological Society, Life Sciences 2007 Conference, in Glasgow, Scotland.

Block ML. (May, 2007). How is it possible to limit the actions of microglia on neurons? Invited speaker for The Psychoneuroimmunology Research Society at the Satellite Cytokine Congress, Bordeaux France.

Block ML. (May, 2007). How do microglia damage neurons? Invited speaker for a short course at the Psychoneuroimmunology Research Society, Archachon, France.

Block ML. (September, 2006). Microglia and progressive neuron damage: μ calpain as a soluble neuron-injury factor. Invited speaker for the meeting of the 8th International Conference on Neuroprotective Agents, Mackinac Island, MI.

TEACHING, ADVISING, & MENTORING:

Trainees Mentored:

Graduate Students:

Name	Date	Current Position	Contact Hr/Yyr
Madison Harris	05/15 – present	Undergrad Student	100

International Graduate Student Scholar:

Name	Date	Current Position	Contact Hr/Yr
Cinara Ludwig	11/15 - present	Ph.D. Student	261

IPREP Fellow:

Name	Date	Current Position	Contact Hr/Yyr
Elaine Sioly Koume	06/15 – 6/16 IPREP	Fellow	261

Ph.D. Students:

Name	Date	Current Position	Contact Hr/Yr
Thomas Taetzch, Neuroscience *2010 CC Clayton Award	08/09 – 12/14	PostDoc	261
Savannah Brookins	09/12- 8/14	Ph.D.Student	261

Postdoctoral Scientists:

Name	Date	Current Position	Contact Hr/Yr
Melinda Lull, Ph.D.	10/09 – 6/10	Assistant Professor St. John Fisher College	261
Allison Wagner, Ph.D.	05/10 - 5/11	Post Doc	261
Michael Surace, Ph.D.	08/10 - 03/12	Post Doc	261
Richard Jayaraj, Ph.D.	02/16- present	Post doc	261
Eric Rodriguez, Ph.D.	07/16 – present	Post doc	261

Didactic Teaching - Courses:

- 2016 Lecturer for G748 Principals of Toxicology I. 2 Contact hours
- (2012 - 2014) Lecturer for ANAT 502 - Dental Histology. 6 Contact hours
- (2010 - 2014) Course Director for ANAT 690 - Research Seminar. 1 Contact hour per week, spring and fall semesters
- (2007 - 2014) NEUS 609 - Cellular and Molecular Neuroscience. 2 Contact hours
- (2009 - 2014) ANAT 611 - Histology. 6 Contact hours
- (2008 - 2014) ANAT 610 - Systems Neuroscience. 1 Contact hour
- (2008- 2014) ANAT 617 - Developmental Neurobiology. 4 Contact hours
- (2007) The consequences of microglial activation on neurons. Invited lecturer for a shortcourse at the Psychoneuroimmunology Research Society Conference in Arcachon, France
- (8/96 - 12/96) Teaching Assistant for BBH 301, Research Methods and Design at Penn State University (course design, lecture, test design, & grading)

SERVICE ACTIVITIES:

Service to the Profession:

- (February 2016 – President) Vice President Elect for the Neurotoxicology Specialty Section, Society of Toxicology
- (February 2014 – February 2016) Councilor for the Neurotoxicology Specialty Section, Society of Toxicology
- (February 2011) Panel member at the Air Pollution & Brain Health Workshop at NIEHS/NIH. Research Triangle Park, NC
- (February 2011) Panel member at the NIEHS meeting on Disease investigation through specialized clinically oriented ventures in environmental research (DISCOVER) Program. Research Triangle Park, NC
- (January 2010) Panel Member at the 13th Annual NIEHS/NIH Biomedical Career Fair, Research Triangle Park, NC

Service to the Community:

- (2016 May) Invited speaker/consultant for the Group Against Smog and Air Pollution (GASP), Pittsburgh, PA. “The impact of urban air pollution on the brain’s immune cells.”
- (2007) Consulting: Invited speaker/consultant for Targeted Genetics Corporation, Seattle, Washington. “Parkinson’s disease and Alzheimer’s disease: current approaches and future directions.”

Service to the Medical School:

- (2016-present) IUSM Grant Peer Review Mentoring Committee
- (2015-present) MedNeuro Graduate Student Training and Advisory Committee
- (2015-present) The Indiana University-Perdue University Indianapolis Post-Baccalaureate Research Education Program (IPREP) Training and Advisory Committee
- (2015- present) Postdoctoral Training and Advisory Committee

Chaired Oral Examinations (i.e. Dean's Representative):

- Bou Chebel, Najib J. MS-PIO
- Ha, Junghoon MS-PIO
- Kim, Sun H. MS-GEN
- Van, Danielle N. PHD-BIC
- Sennett, Kristyn MS-GEN
- Van, Danielle N. PHD-BIC
- Paranjape, Anuya R. MS- MICR

Service to the Department:

- (2014) Department of Anatomy & Neurobiology Faculty Search Committee
- (2013) Department of Anatomy & Neurobiology Faculty Search Committee
- (2009) Department of Anatomy & Neurobiology Faculty Search Committee 2
- (2009) Department of Anatomy & Neurobiology Faculty Search Committee 1
- (2008) Department of Anatomy & Neurobiology Website Committee