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https://scholar.google.com/citations?user=d0lrLcYAAAAJ&hl=en

EDUCATION

Postdoctoral Fellow, Baylor College of Medicine, Mentor - Dr. Huda Y. Zoghbi, M.D., 2003-2006
Postdoctoral Fellow, Princeton University, Mentor - Dr. Shirley M. Tilghman, 2000–2003
Ph.D. Biomedical Sciences. University of California San Diego (UCSD). Dissertation title "Genetic and functional analysis of microtubule-dependent intracellular transport: *roadblocks* and *sunday drivers* on the microtubule highway." Mentor - Dr. Lawrence S. B. Goldstein, Ph.D., 2000
B.S. Microbiology, minor in Chemistry. Brigham Young University (BYU), College of Life Sciences, 1995

ACADEMIC APPOINTMENTS

Interim Dean, College of Health and Human Sciences, Nov. 2023–**present**
Professor and Head, School of Health Sciences, Purdue University, 2018-2023
External Associate, Vanderbilt Institute for Integrative Biosystems Research and Education, 2020-2023
Adjunct Associate Professor, Pediatrics, Vanderbilt University Medical Center, 2018–2022
Adjunct Associate Professor, Neurology, Vanderbilt University Medical Center, 2018–2022
Adjunct Associate Professor, Biochemistry, Vanderbilt University School of Medicine, 2018–2021
Director, Vanderbilt Training Program in Environmental Toxicology, 2015–2018
Deputy Director, Vanderbilt Center for Molecular Toxicology, 2015–2016
Associate Professor with Tenure, Primary Appointment, Department of Pediatric, Division Pediatric Neurology, Vanderbilt University Medical Center, 2016–2018
Associate Professor, Secondary Appointment, Department of Neurology, Division Movement Disorders, Vanderbilt University Medical Center, 2016-2018
Associate Professor, Secondary Appointment, Department of Biochemistry, School of Medicine, Vanderbilt University, 2015–2018
Associate Professor with Tenure, Primary Appointment, Department of Neurology, Division Movement Disorders, Vanderbilt University Medical Center, 2015–2016
Assistant Professor, Department of Pediatrics, Division Pediatric Neurology, Vanderbilt University Medical Center, 2014–2015
Assistant Professor, Department of Pediatrics, Division Pediatric Toxicology, Vanderbilt University Medical Center, 2010–2014
Member, Vanderbilt Center for Stem Cell Biology, 2009-2018
Investigator, Vanderbilt Center in Molecular Toxicology, 2008–2018
Investigator, Vanderbilt Brain Institute (VBI), 2006–2020
Investigator, Vanderbilt Kennedy Center for Research on Human Development (VKC), 2006–2018
Assistant Professor, Department of Neurology, Division Movement Disorders, Vanderbilt University Medical Center, 2006–2015

PROFESSIONAL ORGANIZATIONS

Society for Pediatric Research (SPR), Elected Member, 2016–2020
Society of Toxicology, Stem Cells Specialty Section, Member, 2011–**present**
Society of Toxicology, Metals Specialty Section, Member, 2010–**present**
Society of Toxicology, Neurotoxicology Specialty Section, Member, 2009–**present**
Society of Toxicology, Member, 2009–**present**
American Society of Human Genetics, Member, 2008–**present**
National Parkinson Foundation Scientific Advisory Board, Ad hoc member, 2008
Middle Tennessee Chapter Society for Neuroscience, Member. 2007–**present**
American Society for Cell Biology, Member, 2007–**present**

Society for Neuroscience, Member, 2006–**present**

SPECIAL AWARDS AND RECOGNITION

Outstanding New Environmental Scientist (ONES) Award NIEHS, 2008–2013
Hereditary Disease Foundation Postdoctoral Fellowship, 2003–2006
Life Sciences Research Foundation (LSRF) Postdoctoral Fellowship, 2001–2003
Lucille P. Markey Fellow in Biomedical Sciences (University of California-San Diego), 1995–2000
BYU (Brigham Young University) Microbiology Department Full-Tuition Scholarship, 1994–1995
BYU Trustees Academic Full-Tuition Scholarship, 1990–1994

EXTRAMURAL SCIENTIFIC LEADERSHIP, ORGANIZATION AND ADVISORY BOARDS

Academic and Professional Scientific Societies:

International Neurotoxicology Association, Vice-President Elect, 2023-**present**
Stem Cells Specialty Section of SOT, Elected Secretary/treasurer, 2022–2024
International Neurotoxicology Association, Session Chair, "Next generation in vitro neurotoxicity testing: human induced pluripotent stem cell derived neuronal models". INA-17, Dusseldorf, Germany, 2019
Society of Toxicology (SOT), Elected member, SOT Awards Committee, 2019-2021
SOT, Appointed member, Education and Career Development Committee, 2019-2020
SOT, Appointed member, Scientific Program Committee, 2018-2022
SOT, Co-chair of symposium session, featuring all scientific talks by trainees. "Mechanisms of Autophagic Function and Dysfunction in Neurotoxicity and Neurodegeneration". SOT Annual Meeting, 2018
Member of the Federation of American Societies for Experimental Biology (FASEB) Training and Career Opportunities Subcommittee of the Science Policy Committee, SOT Appointed Representative, 2017-**present**
Society for Pediatric Research (SPR), Committee member, SPR Student Research and House Officer Awards Selection Committee, 2017-2020
SOT 2017 Annual Meeting, Continuing Education Session Chair, "AM07 - Technologies and Applications of Stem Cells for Use in Toxicology", 2017. Baltimore, MD.
SOT, Appointed Chair, Graduate Education Subcommittee, 2016-2018
Stem Cells Specialty Section of SOT, Elected Senior Councilor, 2016–2018
SOT 2016 Annual Meeting, Symposium Chair, "Patient-Specific Stem Cells as Models for Gene, Drug, and Environment Interactions in Disease." 2016. New Orlean, LA.
SOT 2016 Annual Meeting, Symposium Chair, "Mitochondrial Dysfunction as a Pathogenic Mechanism and Therapeutic Target for Neurodegenerative Diseases." 2016.New Orleans, LA.
SOT Education Committee, undergraduate subcommittee liaison, Pfizer undergraduate travel award co-lead, and domestic ToxScholar co-lead, 2015-2016
SOT Education Committee Member, Appointment, 2015 –2018
Neurotoxicology Specialty Section (NTSS) of SOT, Elected Past-President, 2015–2016
SOT 2015 Annual Meeting, Symposium Chair, "Adult Neurogenesis in Chemical- Induced Neurotoxicities: A New Frontier in Toxicological Mechanistic Investigations, Biomarker Research, and Therapeutic Targeting." 2015. San Diego, CA.
SOT 2015 Annual Meeting, Poster Session Chair, "Neurotoxicology, Metals – Manganese", 2015
Neurotoxicology Specialty Section (NTSS) of SOT, Elected President, 2014–2015
SOT Specialty Section Collaboration and Communication Group, Elected Member, 2014-2016
Society of Toxicology 2013 Annual Meeting, CE and CME course Chair, "The practice and Implementation of Neural Stem Cell-Based Approaches to Neurotoxicology" (AM06). 2013. San Antonio, TX.
Neurotoxicology Specialty Section of SOT, Elected Vice-President, 2013–2014
Stem Cells Specialty Section of SOT, Elected Senior Councilor, 2012–2013
Neurotoxicology Specialty Section of the Society of Toxicology, Elected Vice-President Elect, 2012–2013
SOT 50th Anniversary Annual Meeting, Symposium Chair, "Human Pluripotent Stem Cells and Neural Progenitors as Models of Gene-Environment Interaction in Neurological Disease", 2011.
Neurotoxicology 27th International Conference, NC, Trainee Travel Award Judge, panel member awarding seven awards to pre-doctoral, post-doctoral trainees presenting posters for conference, 2011.
Middle Tennessee Chapter Society for Neuroscience (MTNCSfN) Leadership Council. Activities and accomplishments include winning $2000 grant from SfN to start a summer research program, increased

membership by using online dues payments, organize chapter meetings, annual progress reports and nomination of trainee travel awards. Secretary/Treasurer 2009-2011, Leadership Council 2011-2012.

Scientific and Program Advisory Board and Panels:

United States Department of Labor, Advisory Board on Toxic Substances and Worker Health for the Energy Employees Occupational Illness Compensation Program, Special Government Employee and Advisory Board Member of the Scientific Community, 2020-2024
American Regent Inc, Tralement Manganese Safety Study Advisory Board, Member, 2020-2021
University of Central Florida, Department of Health Sciences, External Academic Program Reviewer, 2020
TEVA Pharmaceuticals Inc., Rasagiline Pre-Clinical Advisory Board Meeting, 2012

Editorial appointments:

Toxicological Sciences, Editorial Board Member, 2023-**present**
Frontiers in Neurogenomics, Review Editor of the Editorial Board, 2018-2020
Toxicology and Applied Pharmacology, Associate Editor, 2018-**present**
Toxicological Sciences, Associate Editor, 2017-2023
Frontiers in Toxicogenomics, Associate Editor, 2017–2020
NeuroToxicology, Associate Editor, 2016 – **present**
Scientific Reports, Nature Publishing Group, Editorial Board Member/Handling Editor, Neuroscience Section, 2015 – 2018
BMC Pharmacology and Toxicology, Editorial Board Member, 2012–2019
NeuroToxicology, Editorial Board Member, 2011–2015
Frontier in Toxicogenomics, Editorial Board Member, 2011 –2015
The Journal of Environment and Development, Managing Editor, 1998–1999

Editorial Ad Hoc Peer Review (since 2007):

AAAS Science Signaling
ACS Chemical Neuroscience
Annals of Neurology
Antioxidants
Antioxidants and Redox Signaling
Archives of Toxicology
BMC Public Health
BMC Pharmacology and Toxicology
Brain Research
Cell Reports
Chemosphere
Cytotherapy
Developmental Cell
Environmental Health Perspectives
Environment International
Environmental Research
Experimental Neurology
FASEB Journal
FEBS Journal
Frontiers Journals – Genetics, Toxicogenomics
Food and Chemical Toxicology
Glia
Histochemistry and Cell Biology
Human Molecular Genetics
International Union of Pure and Applied Chemistry
Journal of Antioxidants and Redox Signaling
Journal of Biological Chemistry
Journal of Biochemical and Molecular Toxicology
Journal of Cell Biology

Journal of Clinical Investigation
Journal of Huntington's Disease
Journal of Neurochemistry
Journal of Neuroinflammation
Journal of Neuroscience
Journal of Neuroscience Research
Journal of Pharmacology and Experimental Therapeutics
Journal of Trace Elements in Medicine and Biology
Lancet Neurology
Life Sciences
Metabolism
Metallomics
Mitochondrion
Molecular Neurobiology
Molecular Pharmacology
Movement Disorders
Nature
Nature Communications
Nature Genetics
Neurobiology of Disease
Neurochemistry International
Neuropharmacology
Neuropsychopharmacology
Neurotoxicology
Neurotoxicology and Teratology
NPJ (Nature Partner Journal) Schizophrenia
Nutritional Neuroscience
PLoS ONE
Proceedings of the National Academy of Sciences
Scientific Reports, Nature Publishing
Stem Cells
Toxicology (Elsevier)
Toxicology and Applied Pharmacology
Toxicology In Vitro
Toxicological Sciences

Granting Agencies Study Section Membership and Chairship (Public and Private):
NIH/NIEHS, ES-18-007 ViCTER Review Panel, **Co-Chair,** 2019
NIH/CSR, Neurotoxicology and Alcohol (NAL) Study Section, **Standing Member**, 2016-2022
Veterans Affairs, Merit Review **Subcommittee Chair** for Neurobiology-E, Spring 2016

Granting Agency Ad hoc Peer Review (Public and Private):
NIH/NIEHS, ZES1 LWJ-S (R1) 1, RIVER Program, *Ad hoc* peer review, 2022
NIH/NIEHS, Env. Health Sci. Review Committee, T32 NRSA Training Grant, *Ad hoc* peer review, 2022
CDMRP/U.S. Dept. of Defense, Amyotrophic Lateral Scler. Res. Prog (ALSRP), *Ad hoc* peer review, 2022
CDMRP/U.S. Dept. of Defense, Gulf War Illness Research Program Peer Review, *Ad hoc* peer review, 2021
CDMRP/U.S. Dept. of Defense, Gulf War Illness Research Program Peer Review, *Ad hoc* peer review, 2020
NIH/NIEHS, ES-18-007 ViCTER Review Panel, *Ad hoc* peer review**,** 2020
NIH/NIEHS, K99/R00 Review, 2020/05 ZES1 LAT-K (K9) 1, 2020
NIH, NINDS, SEP for RFA NS19-027, 2019/08 ZRG1 MDCN-A (50) R, 2019
Huntington Society of Canada, Navigator Research Program Peer Review, *Ad hoc* peer review, 2018
CDMRP/U.S. Dept. of Defense, Parkinson's Research Program Peer Review, *Ad hoc* peer review, 2017
Medical Research Council (MRC), London, UK, Unit Report Reviewer, 2017
Indiana Alzheimer Disease Center (IADC) Pilot Project Award Program, Invited reviewer, 2017
NIH, NIEHS, SEP ONES RO1 awards, ZES1-JAB-D (R1), 2017

NIH, NINDS, SEP Cell & Molec. Mechanisms of Neurodeg and Injury, ZRG1 MDCN-Q (03) M, 2016
NIH, NIEHS, SEP ONES RO1 awards, ZES1-JAB-D (R1), 2016
Veterans Affairs, Merit Review Subcommittee for Neurobiology-E, Fall 2015
National Science Centre (Poland), Research Proposal Review, 2015
NIH, Member Conflict SEP: Alcohol, Drugs and Heavy Metals, ZRG1 IFCN-C (03) M, 2015
NIH, SRG, 2016/01 NAL study section, *Ad hoc* peer review, 2015
NIH, NIEHS, SEP ViCTER awards, ZRG1 DKUS-C (50) S, 2015
NIH, NIEHS, SEP ONES RO1 awards, ZES1-JAB-J (RO)1, 2015
Veterans Affairs, Merit Review Subcommittee for Neurobiology-E, Spring 2015
NIH, NIEHS, SEP Alcohol, Drugs and Heavy Metals, ZRG1 IFCN-C (02) M, 2014
NIH, NIEHS, SEP Env Expos. & Neurodeg. Diseases, ZES1 LWJ-K-R1, 2014
NIH, NIEHS, SEP ONES RO1 awards, ZES1-JAB-D-1R, 2014
NIH, SEP Nutrigenomics and Nurtrigenetics, ZRG1 EMNR-Q-50, 2014
CDMRP/U.S. Dept. of Defense, Gulf War Illness Research Program Peer Review, *Ad hoc* peer review, 2013
NYSTEM, NY state generic/AIBS IIRP IDEA Scientific Peer Review panelist, 2013
Columbia University Toxicology Center Pilot Project, *Ad hoc* peer review, 2012
NIH, NIDA, CEBRA Grant, *Ad hoc* peer review, Spring 2012
NIH, NIDA, CEBRA Grant, *Ad hoc* peer review, Fall 2012
The Michael J. Fox Foundation for Parkinson's Research, *Ad hoc* peer review, 2011
Gulf War Illness Research Program Peer Review, *Ad hoc* peer review, 2011
Ataxia UK, *Ad hoc* Grant Reviewer, 2009
NIH/CSR, Challenge Grant Mail Reviewer, 2009
National Parkinson Foundation Scientific Advisory Board, *Ad hoc* member, 2008

INTRAMURAL SCIENTIFIC LEADERSHIP, ORGANIZATION AND ADVISORY BOARDS

Purdue Intramural Committees and Service
Purdue Institute of Inflammation, Immun. & Infect. Disease (PI4D) Faculty Leadership, 2022-2023
Provost External Faculty Award Advising Committee, 2021-2023
Nutrition Head Search Committee, Chair, 2019-2020
Neurodegeneration team, PIIN Life Science Engineering Grand Challenge Workshop, Team Lead, 2019

Vanderbilt Intramural Committees and Service:
Vanderbilt Kennedy Center, Membership Committee, September 2017- July 2018
Vanderbilt Kennedy Center Science Day, Planning Committee Cellular & Molec. Neuroscience, 2017–2018
Vanderbilt Technology Review Committee, 2016-2019
VICTR Studio (Gama), 2017
Co-leader, Pediatric Dept. Hazinski Society for Faculty Development – Tenure-Track Group (2016-present)
VICTR Studio (McDonell), 2016
Vanderbilt Kennedy Center, Science Day Poster Judge, 2013
Vanderbilt Brain Institute Website Redesign Committee Member, 2012
Community Forum - Vanderbilt Center for Molecular Toxicology, "Parkinson's Disease: Environmental Factors and Risk". Invited Panelist, 2012
Vanderbilt Kennedy Center and DSAMT (Down Syndrome Association of Middle Tennessee Cocktail Supper and Research Sharing on Down Syndrome at DSAMT Conference, presenter, 2011
Vanderbilt Kennedy Center Down Syndrome Research Panel for Patient Families, Invited Panelist, 2010
Vanderbilt Kennedy Center Science Day, Chair of Cellular & Molecular Neuroscience, 2009–2010
VBI Retreat Poster Judge, 2009
Vanderbilt Postdoctoral Symposia Judge, 2009
Neurology Resident Selection Committee, 2009–2010
CMN (Center for Molecular Neuroscience) Website Committee, 2008
Neuroscience Graduate Program Retreat, Student Invited Speaker, 2008
Vanderbilt Kennedy Center Science Day, Chair of VKC planning committee, 2008–2009
Vanderbilt Postdoctoral Research Symposium, Poster Judge, 2008–2009

Vanderbilt Kennedy Center Strategic Planning Membership committee, 2007–2008
Basic Science Planning Graduate and Postdoctoral Education committee member, 2007–2008
Vanderbilt Neurology Basic Science Research Forum Chair, 2007–2012
ABSTRACT Graduate/Medical Student Newsletter, Faculty advisor, 2007–2010
Vanderbilt Kennedy Center Science Day, Chair of Cellular & Molecular Neuroscience, 2007
Vanderbilt Kennedy Center Lecture Committee for 2008-09 academic year, 2007

OTHER PROFESSIONAL ACTIVITIES

Charitable and Community Organizations:
LIVEWELL Fitness and Rehab Parkinson's Support Group, West Lafayette, IN, Presentation entitled "Stem cells, genes and exposures in the causes and future treatment of PD", 2019
Parkinson's Symposium for patients and caregivers, sponsored by the University of Tennessee Medical Center, Lenoir City, TN, Invited Speaker "Stem cell and gene therapy in Parkinson's", 2019
Huntington's Disease Society of America (HDSA) Tennessee Affiliate, Newsletter contributor and author, "Why should you care about a bunch of cells growing in plastic dishes", 2015
HDSA Tennessee Affiliate, Newsletter contributor and author, "Huntington's Disease (HD) – it's not all in your genes!", 2014
HDSA Local HD Patient Support Group, Speaker, "An update on HD research", Nashville, TN, 2013
HDSA Hope Walk Fundraiser, Nashville Chapter, HD Patient Support Group, Speaker, 2012
PK Hope is Alive, Parkinsons Disease Support Group of East TN, Speaker, 2012
HDSA Local HD Patient Support Group, "The future of basic research into Huntington's disease – and how it can help us fight HD", Nashville, TN, Speaker, 2011
Parkinson's Disease Support Group, NPF Center of Excellence, Nashville, TN, Speaker, 2011
Peterson Foundation for Parkinsons, Annual Golf Tournament and Fundraiser, Featured Scientist, 2011
Hendersonville Parkinson's Disease Support Group, Speaker, 2010
Peterson Foundation for Parkinsons, Annual Golf Tournament and Fundraiser, Speaker, 2010
HDSA 2nd Annual Trey Gray Tee Off for a Cure - Fund Raiser, Speaker, 2009
HDSA TN Education Event, "Living with HD: A Guide for Families", Speaker, 2009
Peterson Foundation for Parkinsons, Annual Golf Tournament and Fundraiser, Speaker, 2009
HDSA Trey Gray Tee Off for a Cure Fund Raiser, Speaker, 2008

TEACHING ACTIVITIES

Director/co-Director Graduate School Courses:
HSCI 613: Professionalism and Prof. Develop. in Health Sci., Purdue Univ., Co-director, 2021-**present**
Bchm 8336: Biochemical and Molecular Toxicology, Course Director, Vanderbilt Univ., 2015–2018
Nuro 8345: Cellular and Molecular Neuroscience, Course Co-Director, Vanderbilt Univ., 2014–2018
Nuro 366: Neurobiology of Disease, Course Director, Vanderbilt University, 2012–2013
CBIO310: Journal club, 1 lecture, Vanderbilt University, 2011.
Nuro 350: Independent Study – Ubiquitin-proteasome system, Vanderbilt University, 2007

Lecturer Graduate and Medical School Courses:
HSCI 575: Environmental Health, 1 lecture, Purdue University, 2019
Pharmacology Graduate Program: NRSA fellowship application development course, 2018 (1 student)
Nuro 8346: Advanced Molecular Neurobiology, 3 lectures annually, Vanderbilt University, 2009–2018
Nuro 8365: Neurobiology of Disease, 1 lecture annually, Vanderbilt University, 2015–2017
Nuro 325: Neuroscience Discussions, 2 lectures annually, Vanderbilt University, 2009–2015
Biochm 336: Biochemical Toxicology and Carcinogenesis, 3 lectures annually, Vanderbilt Univ. 2012-2015
Brain and Behavior VMS hybrid II: Fatal insomnia and prion diseases lecture, Vanderbilt Univ., 2013
IGP module: Parkinson's disease, 2 lectures annually, Vanderbilt University, 2011–2013
Nuro 345: Cellular and Molecular Neuroscience, 3 lectures annually, Vanderbilt University, 2007–2012

Nuro 366: Neurobiology of Disease, 2 lecture annually, Vanderbilt University, 2008–2011
Nuro 340: Systems Neuroscience, 2 to 3 lecture annually, Vanderbilt University, 2007–2011
Nuro 350: Independent Study – Mitochondria in Neurodegeneration, Vanderbilt University, 2010
Neurology Residents Basic Science Training Course, Vanderbilt University, 2007
CBMS (Cellular, Biochem. and Mol. Sciences) Journal Club, Lecturer, Vanderbilt University, 2006

Continuing Medical Education:
Neurology Spring Research Dinner, Invited Speaker, CME, 2014
VKC NIH Down Syndrome Research Plan Forum, Invited Panelist, CME, 2008
Neurology Fall Research Dinner, Invited Speaker, CME, 2007
Kennedy Center Developmental Disabilities Grand Rounds, Invited Speaker, CME, 2007
Neurology Grand Rounds, Invited Speaker, CME, 2007

Director Undergraduate Courses:
HSCI 360: Poisoning in Everyday Life, Purdue Univ., 2021-**present**
HSCI X95/X96: Health Sciences Honors Research Program, Purdue Univ. 2021-**present**
HSCI 492: Professional Experiences in Health Sciences, Purdue Univ. 2020 (1 student), 2021 (1 student)
Nsc 235 "Biological Basis of Mental Disorders", Guest Lecturer, 2015
Bme 280, special lecture on “iPS technology for regeneration”, 2012
Bsci 286, Independent study, cumulative 2 students, 2010–2011, and 2016-2018
Nsc 291, Directed study, 2009–2018
Nsc 292, Independent study, 2008–2018

TRAINEE AND FACULTY MENTORSHIP AND ACCOMPLISHMENTS OF TRAINEES

Faculty Mentoring Committee
Margaret Adgent, Vanderbilt Univ. Medical Center, Department of Pediatrics, 2017-2018
Cary Fu, Vanderbilt Univ. Medical Center, Department of Pediatrics, 2016-2017

Postdoctoral and non-tenure track faculty:
Anke Tukker, Purdue University, Postdoctoral fellow, 2020-**present**
Lisa Prince, Purdue University, Postdoctoral fellow, 2018-2021
Rekha Balachandran, Purdue University, Postdoctoral fellow, 2018-2020
Anna Pfalzer, Vanderbilt University Medical Center, Postdoctoral fellow, 2016-2019
Asad Al Aboud, Vanderbilt University, Postdoctoral fellow, 2010–2014
Diana Neely, Vanderbilt University, Research Associate Professor, 2009–2018
Michal Wegrzynowicz, Vanderbilt University, Postdoctoral fellow, 2008–2011

Doctoral students (Primary Mentor/Major Professor):
Xueqi Tang, Purdue University, PULSe Program, Neuroscience and HSCI Toxicology, 2020-**present**
Hyunjin Kim, Purdue University, PULSe Program, Neuroscience and HSCI Toxicology, 2019-**present**
Jordyn Wilcox, Vanderbilt University, Neuroscience, 2017-2021
Rachana Nitin, Vanderbilt University, Neuroscience, 2016-2018 (transferred to Reyna Gordon lab, upon my move to Purdue University)
Piyush Joshi, Vanderbilt University, Neuroscience, 2016-2018 (transferred to Vivian Gama lab, upon my move to Purdue University)
Miles Bryan, Vanderbilt University, Neuroscience, 2013–2019
Kyle Horning, Vanderbilt University, Neuroscience, 2013–2021
Kevin Kumar, Vanderbilt University, Neuroscience MSTP program, 2011–2014
TerryJo Bichell, Vanderbilt University, Neuroscience, 2011–2016
Jennifer Madison, Vanderbilt University, Pharmacology (co-mentor), 2009–2011
Andrew Tidball, Vanderbilt University, Neuroscience, 2009–2014
Gunnar Kwakye, Vanderbilt University, Neuroscience, 2008–2011
Blairanne Williams, Vanderbilt University, Neuroscience, 2006–2010

Masters students and Post-Baccalaureate Interns:
Bingying Han, Vanderbilt University, Masters in Laboratory Investigation Program, 2011-2017
Kimberli (Grace) Tipps, Grinnell College, research internship Vanderbilt, 2014-2016
Michael Uhouse, Vanderbilt University, Neuroscience, 2014–2015

Undergraduate thesis, independent study and internship students:
Isabella (Bella) Doss, Purdue University, HSCI Honors, 2023-**present**
Aarushi Gupta, Purdue University, HSCI Honors, 2023-**present**
Yuchen Zhang, Purdue University, HSCI Honors, 2023-**present**
Joliene (Jolie) Munson, Purdue University, HSCI Honors, 2023-**present**
Serena Shughoury, Purdue University, 2023-**present**
Mia Fleisher-De Korzan, Purdue University, 2022-**present**
Priyanka Ranja, Purdue University, 2022-**present**
Madeleine Strom, Purdue University, HSCI Honors, 2021-**present**
Adam Barmash, Purdue University, HSCI Honors, 2020-**present**
Nathalie Benice, Purdue University, HSCI Honors, 2020-2022
Lily Yoos, Purdue University, 2020-2022
Kaitlin Joy Stone, Purdue University, HSCI Honors, 2020-**present**
Caroline Puch, Purdue University, HSCI Honors, 2020-2022
Mitzi Miramontes, Purdue University, 2019
David Yi, Purdue University, 2019-2022
Lunden Friberg, Purdue University, 2019-2022
Madeline Henley, Purdue University, HSCI Honors, 2019-2021
Kiara Smith, Purdue University, HSCI Honors, 2019-2021
Frankie Yanko, Purdue University, 2018-2021
Chloe Rivers, Purdue University, 2018-2019
Bianca Gardner, Vanderbilt University, Neuroscience, 2018-2018
Jessica Klein, Vanderbilt University, Neuroscience, 2018-2018
Jane Yao, Vanderbilt University, Neuroscience, 2018-2018
Caroline Bodnya, Vanderbilt University, Neuroscience, 2017-2018
Nathan Iyer, Vanderbilt University, Neuroscience, 2017-2018
Michael O'Brien, Vanderbilt University, 2016-2018
Jordy Sepluveda, VSSA BP-ENDURE summer student, Hunter College CUNY, NY, 2017
Sarah Magee, VSSA STTP summer program, Pennsylvania State University, 2017
Jessica Jimenez, VSSA BP-ENDURE summer student, Oberlin College, OH, 2016
Gerald Nwosu, MARC summer student, TN State University, TN, 2016
Ilyana Lievab, VSSA summer student, Belmont University, TN, 2016
Iyana Gray, SyBBURE summer student, 2016
Yuthika Gundamaraju, Vanderbilt University, Arts and Sciences, 2016-2017
Arielle Glass, Vanderbilt University, Biology and Medicine, Health and Society, 2016-2017
Kevin Yang, Vanderbilt University, Biological Sciences, 2016-2018
Monica Moran, Aspiranaut program, 2015-2016S
Sheuli Chowdhury, Vanderbilt University, Neuroscience, 2015-2017
Kristen Nordham, Vanderbilt University, Neuroscience, 2015-2018
Daniel Rose, Vanderbilt University, Neuroscience, 2015-2018
Preethi Umashanker, Vanderbilt University, Neuroscience, 2015-2018
Timothy Halbesma, Vanderbilt University, Chemistry, 2015-2018
Atalay Ata, Üsküdar University, Vanderbilt International Scholars Program (VISP), 2015
Idine Mousavi, Boston University, summer internship Vanderbilt, 2014
Emma Bradley, Vanderbilt University, Neuroscience, 2013-2015
Jack Feist, Vanderbilt University, Neuroscience, 2013-2014
Michael Uhouse, Vanderbilt University, Neuroscience, 2012–2014
Molly Overmyer, Brigham Young University, Neuroscience, Summer 2012.
Xiangru "John John" Sun, Vanderbilt University, Neuroscience, 2012–2015

Mihir Odak, Vanderbilt University, Neuroscience, 2012–2015
Keegan Zuk, Vanderbilt University, 2010
Brandon Goodman, Vanderbilt University, 2010
Evan McClure, Vanderbilt University, 2010
M. Scott Cardone, Vanderbilt University, Neuroscience, 2010–2013
Andrew Stubbs, Vanderbilt University, Neuroscience, 2010–2012
Olympia Kabobel, Vanderbilt University, Neuroscience, 2010–2011
Michael Litt, Vanderbilt University, Neuroscience, 2010–2012
Hunter Holt, Vanderbilt University, Neuroscience, 2009–2012
Gary Li, Vanderbilt University, Biological Science, 2009–2012
Bhavin Vadodaria, Vanderbilt University, Neuroscience, 2008–2010
Daphne Li, Vanderbilt University, Neuroscience, 2008–2010

Notable accomplishments of trainees and non-tenure track faculty under my direct mentorship

Recognition and honors received by my undergraduate, graduate and postdoctoral trainees:
Hyunjin Kim, STEP award from Soc. of Toxicology, 2022
Rekha Balachandran, National Academy of Sciences Christine Mirzayan Science and Technology Policy Graduate Fellowship Program, 2020
Frank Yanko, 2020 Purdue Undergraduate Research Award, 2019
Miles Bryan, 2018 SOT Graduate Student Travel Award Stipend, 2018
Rachana Nitin, Vanderbilt Clinical Neuroscience Scholar, Vanderbilt Univ., 2017
Miles Bryan, First Place, Manganese 2016 Neurotoxicology Meeting, New York, 2016
Kevin Kumar, Awarded the John G. Coniglio Prize in Biochemistry, Vanderbilt University, 2016
Miles Bryan, Second Place, Toshio Narahashi Predoctoral Poster Competition, SOT 2015
Miles Bryan, Best Presentation Award, Korean Toxicologists Association of America, SOT 2015
Miles Bryan, Vanderbilt Clinical Neuroscience Scholar, Vanderbilt University, 2015
Andrew Tidball, First Place, SOT Stem Cell Specialty Section Poster Competition, 2014

Grants awarded to trainees and non-tenure track faculty under my mentorship, excluding awards for which I am a PI/PD:
Shreesh Sammi, NIH/NIEHS K99 Pathway to Independence Award, Co-mentor, 2022
Miles Bryan, NIH/NIEHS F31 NRSA Predoctoral Fellowship, 2018-2020
Diana Neely, MPI, NIH/NCATS, Wikswo (PI), 205UH3TR000491, 2012-2018
Diana Neely, co-investigator, NIH/NCATS, Wikswo (PI), 205UH3TR000491-05S1, 2015-2016
Andrew Tidball, NIH/NINDS F31 NRSA Predoctoral Fellowship, 2012-2014

THESIS, ADVISORY AND QUALIFYING EXAM COMMITTEES

Postdoctoral Scholar Mentoring Committee Member:
Mark Grier, Vanderbilt University Medical Center, Dr. Robert Carson mentor, 2017-2017

Graduate Student Thesis Committee Chair (not primary mentor):
Sarah Poliquin, Vanderbilt University, Neuroscience, 2017-2018
Haley Boyd-Clay, Vanderbilt University, Neuroscience, Committee Chair, 2013–2016
Brad Kraemer, Vanderbilt University, Neuroscience, Committee Chair, 2011–2014

Graduate Student Ph.D. Thesis Committee Member:
Kyle Wettschurack, Purdue University, Chemical Engineering, 2022-**present**
James Nolan, Purdue University, Biomedical Engineering, 2022-**present**
Mahfuzur Rahman Miah, Albert Einstein College of Medicine, Thesis Defense, *planned 2023*
Meredith Ziliak, Purdue University, PULSe Program, Neuroscience, 2022-**present**
Yueyi Chen, Purdue University, PULSe Program, Basic Medical Science, 2021-**present**
Gianna Nossa, Purdue University, PULSe program, Neuroscience, 2021-**present**

Magaly Guzman Sosa, Purdue University PULSe program, Neuroscience, 2020-**present**
Jennifer J Lee, Purdue University, Biological Sciences, Committee Member, 2019-**present**
Luqing Liu, Purdue University, Health Sciences – Toxicology, Committee Member, 2019-**present**
Maria Olivero-Acosta, Purdue University, Medicinal Chem. Molec. Pharmacology program, 2019-**present**
Ola Wasel, Purdue University, Health Sciences – Toxicology, Committee Member, 2018-**present**
Benjamin Kesler, Vanderbilt University, Molec. Phys. and Biophysics, Committee Member, 2017-2018
Jacob Ruden, Vanderbilt University, Neuroscience, Committee M ember, 2017–2018
Natalya Ortolano, Vanderbilt University, Cell and Developmental Biology, 2017-**present**
Nicole Fisher, Vanderbilt University, Pharmacology, Committee Member, 2016–2018
John Snow, Vanderbilt University, Cell and Developmental Biology, Committee Member, 2016–**present**
Shilpy Dixit, Vanderbilt University, Neuroscience, Committee Member, 2014–2017
Lillian Juttukonda, Vanderbilt University, Pathology, Microbio. and Immun., Cmt. Member, 2014-2017
Daniel Balikov, Vanderbilt University, Biomedical Engineering, Committee Member, 2014-2016
Laura Armstrong, Vanderbilt University, Cell and Dev. Biology, Committee Member, 2013–2017
Emily Warren, Vanderbilt University, Pharmacology, Committee Member, 2013–2018
Sudipta Chakraborty, Vanderbilt University, Neuroscience, Committee Member, 2011–2015
Haley Boyd-Clay, Vanderbilt University, Neuroscience, Committee Member, 2011–2013
Amanda Mitchell, Vanderbilt University, Neuroscience, Committee Member, 2010–2012
Jeff Bylund, Vanderbilt University, Pharmacology, Committee Member, 2010–2017
Mallory Hacker, Vanderbilt University, Cell and Dev. Biology, Committee Member, 2009–2013
Jared Godar, Vanderbilt University, Molecular Physiology and Biophysics, 2009–2010
Peter Vollbrecht, Vanderbilt University, Neuroscience, Committee Member, 2009–2014
Mingwei Ni, Vanderbilt University, Pharmacology, Committee Member, 2008–2012
Thomas Bridges, Vanderbilt University, Pharmacology, Committee Member, 2008–2012
Yonatan Carl, Vanderbilt University, Pharmacology, Committee Member, 2008–2013

Graduate Student Qualifying Examination Board Member:
Salma Akhter, Purdue University, Occupational and Environmental Health Sciences, 2022 (Chair of exam cmt)
Magaly Guzman Sosa, Purdue University PULSe program, Neuroscience, 2021 (Chair of exam committee)
Saeed Alqahtani, Purdue University, Health Sciences – Toxicology, Written and Oral Examiner, 2020
Luqing Liu, Purdue University, Health Sciences – Toxicology, Written and Oral Examiner, 2020
Ola Wasel, Purdue University, Health Sciences – Toxicology, Written and Oral Examiner, 2019
Arryn Blaine, Purdue University, Purdue University, PULSe Integrative Neuroscience Program, 2019
Bridget Collin, Vanderbilt University, Neuroscience and Medical Science Training Program, 2018
Sarah Poliquin, Vanderbilt University, Neuroscience, 2017
Jacob Ruden, Vanderbilt University, Neuroscience, 2017
Natalya Ortolano, Vanderbilt University, Cell and Developmental Biology, 2017
Rose Follis, Vanderbilt University, Pharmacology, 2014
Laura Armstrong, Vanderbilt University, Developmental Biology, 2013
Britney Lizama, Vanderbilt University, Neuroscience, 2013
Victoria Cavener, Vanderbilt University, Neuroscience, 2013
Emily Mason, Vanderbilt University, Neuroscience, 2013
Cody Wenthur, Vanderbilt University, Pharmacology, 2013
Tyne Miller, Vanderbilt University, Neuroscience, 2012
Nicholas Ward, Vanderbilt University, Neuroscience, 2011
Amy Kleman Palubinsky, Vanderbilt University, Neuroscience, 2011
Bradley Kraemer, Vanderbilt University, Neuroscience, 2010
Nicole Weston, Vanderbilt University, Neuroscience, 2010
Andrew Hardaway, Vanderbilt University, Neuroscience, 2009
Stephanie Bronson, Vanderbilt University, Neuroscience, 2008
Caleb Doll, Vanderbilt University, Neuroscience, 2008

Undergraduate Honors Thesis Committees:
Michael O'Brien (**highest honors**), Vanderbilt University Neuroscience, Committee Chair, 2017-2018
Kristen Nordham, Vanderbilt University Neuroscience, Committee Chair, 2017-2018

Preethi Umashanker, Vanderbilt University Neuroscience, Committee Chair, 2017-2018
Vignesh Ravi, Vanderbilt University Neuroscience, Committee Member, 2017-2018
Emma Bradley (**highest honors**), Vanderbilt University Neuroscience, Committee Chair, 2015–2016
Jin Vivian Lee, Vanderbilt University Neuroscience, Committee Member, 2014–2015
John Snow, Vanderbilt University Neuroscience, Committee Member, 2012–2013
Michael Litt, Vanderbilt University Neuroscience, Committee Chair, 2011–2012

RESEARCH PROGRAM

MAJOR AWARDS (PI, MPI, co-PI only)
inverse chronology by end date

R01 AG080917 (**Bowman, Yuan and Zhang, MPI**), 9/15/2022–5/31/2027
NIH/NIA (R01)
Total Costs (awarded, periods 1 thru 5): $3,737,946
Modeling functional genomics of susceptibility to the persistent effects of environmental toxins in an elderly rural Indiana neurodegenerative cohort
This R01 study aims to (1) identify subject by toxicant interactions using subject derived cells, (2) identify genetic pathways associated with persistent effects, and (3) validate mechanisms in in vivo model systems.

RO1 ES07331-21 (**Aschner and Bowman, MPI**), 2/15/2012 – 11/30/2026
NIH/NIEHS (RO1)
Bowman Sub-Award Annual Total Costs (awarded, period 1 of 5): $279,000
Total Costs (awarded, periods 1 thru 5): $3,015,551
Mechanisms of Methylmercury-Induced Neuronal Toxicity
Here we seek to identify and understand persistent and latent effects of MeHg toxicity on biological pathways impacted by MeHg toxicity.

IIRA E01 W81XQH2211025 (**Cannon, PI; Wells and Bowman, co-PI**), 9/30/2022-9/29/2025
DOD/ USAMRAA
Total Award: $1,199,999
Role of military relevant chlorpyrifos exposure in Parkinson's disease relevant dopaminergic neurotoxicity
Assess if PD is associated with organophosphate exposure in US military vets, and if chlorpyrifos produces selective dopaminergic neurotoxicity in translational models.

R01 ES031401; (**Bowman and Harrison, MPI**), 2/1/2020– 10/31/2024
NIH/NIEHS (RO1)
Bowman Sub-Award Annual Total Costs (awarded, period 1): $255,718
Total Costs (awarded, periods 1 thru 5): $2,660,600
Manganese exposure susceptibility as a modifier of excitotoxicity in Alzheimer's Disease
To test the central hypothesis is that chronic elevated manganese (Mn) exposure drives cognitive decline through impaired glutamate homeostasis. Our long-term objectives are to isolate the direct link(s) between Mn and cognitive decline by demonstrating how chronic Mn exposure affects altered glutamate clearance and other pathologies to a greater extent in mouse and human stem cell models of AD than in controls

31310021M0032 (**Harris and Bowman, MPI**), 4/1/2021-3/31/2024
US Nuclear Regulatory Commission
Total Award: $600,000
Purdue University Health Physics Faculty Development Plan
To create a new faculty position in Health Physics by leveraging US NRC and matching funds from Purdue University

R01 ES010563-17; (**Aschner and Bowman, MPI**), 4/1/2018 – 3/31/2024 (NCE)
NIH/NIEHS (RO1)
Bowman Sub-Award Annual Total Costs (awarded, period 1): $290,163

Total Costs (awarded, periods 1 thru 5): $2,943,649
Mechanisms of Manganese Toxicity
In the third competitive renewal, this program is testing the hypothesis that threshold-level Mn neurotoxicity occurs via alteration of Mn-dependent/-activated biological functions such as insulin/insulin-like growth factor and related metabolic signaling pathways and dopamine neuronal function in worms and mammalian systems.

RO1 ES07331-21 (**Aschner and Bowman, MPI**), 6/1/2016 – 5/31/2021
NIH/NIEHS (RO1)
Bowman Sub-Award Annual Total Costs (awarded, period 2 of 5): $274,648
Total Costs (awarded, periods 1 thru 5): $2,858,795
Mechanisms of Methylmercury-Induced Neuronal Toxicity
This study aims to (1) identify genetic modifiers of MeHg-induced neurotoxicity in *C. elegans*, (2) compare and contrast MeHg developmental neurotoxicological outcomes in human nigral versus cortical neural lineages, and (3) evaluate mechanisms by which genetic pathways modify MeHg developmental neurotoxicity.

Research Grant; (**Bowman, PI**), 9/1/2018 – 8/30/2020
International Manganese Institute (iMni)
Bowman Lab Award Total Costs: $14,589
Hair Manganese accumulation as a novel biomarker for external Mn exposure
Test the hypothesis that hair Mn concentrations accurately and reliably reflect blood and tissue Mn levels, and by inference that Mn in hair does not represent external contamination, but rather its direct deposition in hair via the systemic circulation.

RO1 ES016931-12S1; (**Bowman , PI**), 8/29/2018 – 2/28/2020 (NCE)
NIH/NIA
Total costs (Awarded, periods 5-NCE): $318,584
Gene-Neurotoxicant Interactions in Huntington Disease
NOT-AG-18-008 administrative supplement to NIH/NIEHS RO1 ES016931 to examine potential mechanistic links between manganese neurotoxicity and Alzheimer's disease using rodent and primary culture models.

RO1 ES016931-6 (**Bowman, PI**), 5/07/14 – 2/28/20 (NCE)
NIH/NIEHS (RO1)
Current Annual Direct Costs: $225,000
Total Direct Costs (anticipated): $1,125,000 (per NOGA 5/7/2014)
Gene-Neurotoxicant Interactions in Huntington Disease
The goal of this project is to define the cellular processes underlying modulation of Huntington Disease (HD) by environmental factors. We are testing the hypothesis that mutant *HTT* dysregulates specific environmental stress response pathways (e.g. p53 and AKT/mTOR signaling) that protect vulnerable neurons from specific classes of environmental stressors (e.g. Mn, Fe and metabolic inhibitors).

UG3 TR002097-01 (**Wikswo, Bowman and Ess, MPI**), 7/21/2017 – 6/30/2019 (stepped down as PI effective 8/1/2018 with move to Purdue University; Role: 7/01/2018-6/30/2020 co-investigator.
NIH/NCATS (UG3/UH3), subsequent 3-year UH3 awarded (7/1/2019-6/30/2020)
Bowman Sub-Award Annual Total Costs awarded to Purdue (UG3 2018 UG3): $6,902
Bowman Sub-Award Annual Total Costs awarded to Purdue (UH3 2019): $7,625
Bowman Sub-Award Annual Total Costs awarded to VUMC (awarded 2018, period 1): $417,768
Total Annual Costs including Subawards to all institutions (UG3, 2017, 2018): $1,146,280 and $1,180,185
Total Annual Costs including Subawards to all institutions (UH3, 2019, 2020, 2021): $1,156,801 per year
Drug development for tuberous sclerosis complex and other pediatric epileptogenic diseases using neurovascular and cardiac microphysiological models.
This research will develop *in vitro* tissue chip models of the neurological disorder tuberous sclerosis complex and other pediatric epileptogenic diseases. The microphysiological platform uses of human induced pluripotent stem cells derived from patients to create neural and cardiac tissue models that will more faithfully replicate actual human disease and drug response than those currently in use.

T15 LM007450-16 (Gadd, Malin, Jackson, MPI; **Role: Bowman, Director E3 track**), 7/1/2017 – 6/30/2022, (stepped down as Director E3 track effective 8/1/2018 with move to Purdue University)
NIH/NLM (T15)
Vanderbilt Biomedical Informatics Training Program
The objective of the Vanderbilt Biomedical Informatics Training Program is to thoroughly prepare the future leaders of the field through rigorous research training and career development for pre-doctoral and post-doctoral trainees. My role is to Direct the Environmental Exposures Emphasis (E3) Track for the T15 pre-doctoral training program to facilitate interactions of T15 trainees with the Vanderbilt Training Program in Environmental Toxicology and oversee the required coursework in toxicology.

UH3 TR000491-05S1 (Corresponding MPI - Wikswo; **Role: Bowman, investigator**), 8/1/2016 – 6/30/2018
NIH/NCATS (UH3 rare disease supplement)
Bowman Sub-Award Annual Total Costs (awarded, all periods): $60,374
Neurovascular Unit on a Chip: Regional Chemical Communication, Drug and Toxin Responses
The parent grant seeks to develop a microphysiological model of the blood-brain barrier (BBB). The objective of this supplement is to create an *in vitro* neurovascular unit (NVU) model of tuberous sclerosis complex (TSC) that replicates the pathology of the disease in the brain and its response to mTOR inhibitors.

2 T32 ES007028-40; (**Bowman, PI**), 7/1/2014 – 6/30/2019, (stepped down as PI effective 8/1/2018 with move to Purdue University after submission of competitive renewal as MPI, the renewal was funded)
NIH/NIEHS (T32)
Current Annual Direct Costs: $662,120
Training Program in Environmental Toxicology
Provides support for 7 predoctoral (PhD candidates) and six postdoctoral trainees of the Vanderbilt University Training Program in Environmental Toxicology. This interdisciplinary program provides research career training in molecular aspects of toxicology related to environmental health.

RO1 ES010563-12 and ES010563-13S1 (**Aschner and Bowman, MPI**), 12/1/12 – 3/31/18 (NCE)
NIH/NIEHS (RO1 and ViCTER Competing Revision RO1)
Sub-Award Current Annual Direct Costs: $279,367 combined award (for period ending 10/31/15)
Total Direct Costs (requested): $2,154,744 RO1, and $826,434 ViCTER
Mechanisms of Manganese Toxicity (Parent Award)
The goal of this multi-PI project is to identify fundamental mechanisms of neuronal regulation of manganese by identifying small molecule modifiers and genetic modifiers of neuronal manganese status.
ViCTER (Supplement Award, competing revision RO1)
The goal of this project is to test the hypothesis that Restless Legs Syndrome (RLS) is associated with alterations in systemic and neuronal Mn status. Our groups of investigators (across 3 institutions, Einstein College of Medicine, Vanderbilt University, and Penn State University) will explore links between RLS genetic risk factors and Mn biology and evaluate small molecule modifiers of Mn status identified under ES010563 in human subjects, human stem cell derived neurons and the *C. elegans* model system.

RO1 ES07331-16 through -20, (Aschner, PI; **Role: Bowman, co-investigator**), 7/01/10 – 6/30/15
NIH/NIEHS (RO1)
Final Year Annual Subcontract Direct Costs: $5,077
Mechanisms of Methylmercury-Induced Neuronal Toxicity
Examine the hypothesis that SKN1 and FOXO along with LAT1 mediate MeHg-induced toxicity in a C. elegans model of dopaminergic neurodegeneration.

Research Award, (**Bowman, PI**), 10/25/12 – 10/24/14
TEVA pharmaceuticals
Total Direct Costs: $75,000
Evaluation of the Efficacy of Rasagiline To Protect and Rescue Patient-Specific Dopaminergic Neural Precursors Subjected to Rotenone
The major goal of this project is develop a patient-based model system to evaluate therapeutic efficacy

RO1 ES016931 (**Bowman, PI**), 8/15/08 – 5/31/14 (includes no cost extension)
NIH/NIEHS Outstanding New Environmental Scientist Award (ONES)
Total Direct Costs: $1,585,452
Total Award: $2,332,348 (per NOGA 8/15/2008)
Gene-environment interactions between manganese exposure and Huntington disease
The goals of this project are to utilize cellular and mouse models of Huntington disease (HD) to examine the molecular basis of a gene-environment neuroprotective interaction with manganese (Mn) and evaluate the potential of Mn exposure to modulate HD pathogenesis.

EHS Core Center Supplement 3P30 ES000267-45S1, (Aschner, PI; **Role: Bowman, Lead Co-investigator**), 7/25/12 – 3/31/13
Total Direct Costs: $75,000
A Human Stem Cell Based Multi-center Collaborative Toxicology Program
The major goal of this project is to foster collaborative sharing of hiPSC-based methods and research resources among four NIEHS centers (Vanderbilt, Columbia U., U. of Rochester, and U. of Washington)

RO1 ES016931-02S2 (**Bowman, PI**), 9/17/09–8/31/11
NIH/NIEHS ARRA Research Supplements to Promote Diversity in Health Related Research
Total Direct Costs: $65,664
Total Award: $101,600 (per NOGA 9/17/2009)
Gene-environment interactions between manganese exposure and Huntington disease
This supplemental award provides two-years funding for a graduate research assistant in my laboratory. The goal of funding is to promote diversity in the scientific workforce.

RO1 ES016931-02S1 (**Bowman, PI**), 6/01/09–8/30/10
NIH/NIEHS ARRA Undergraduate Research Supplement
Total Direct Costs: $29,600
Total Award: $45,806 (per NOGA 7/11/2009)
Gene-environment interactions between manganese exposure and Huntington disease
This supplemental award provides funding for undergraduate students to have a full-time summer research experience in the laboratory.

COMPETITIVE PILOT PROJECTS

Pilot Project, (Neely, PI; **Role: Co-investigator**), 3/31/12 – 3/30/13
Vanderbilt Center in Molecular Toxicology NIH/NIEHS 5P30 ES000267-44 (Aschner, PI)
Total Direct Costs: $40,000
Translational model for neurotoxicological risk using patient-specific neurons
The major goal of this project is to use human-induced pluripotent stem cell technology for the development of neurotoxicological risk assessment for Parkinson's Disease patients.

RR166-737/4787736 (**Bowman, PI)**, 8/01/10 – 1/31/12
Sub-Award Competitive Pilot Project under NIH/NIGMS 5 PO1 GM0895354 (Dalton, PI)
Total Direct Costs: $45,000
PO1 Title: *Understanding Mechanisms of hESC Self-Renewal and Cell Fate Commitment*
Sub-Award Title: *Genotype-Phenotype Correlations in Human Induced Pluripotent Stem Cells*
This pilot project sub-award directly tests the hypothesis that iPSCs derived from distinct individuals exhibit clear genotype-phenotype correlations by examining the neuronal differentiation pattern and neurotoxicant sensitivity between four genetically disparate individuals.

Pilot Project (**Bowman, PI**), 4/01/10–3/31/11
Vanderbilt Center in Molecular Toxicology NIEHS/NIH 5P30 ES000267 (Guengerich, PI)
Total Direct Costs: $40,000

Patient-derived stem cells as a translational model for neurotoxicological risk
The major goals of this project are to perform preliminary experiments to examine the utility of human iPSC lines for environmental neurotoxicological risk assessment.

Discovery Grant Pilot Project (**Bowman, PI**), 1/01/09–12/31/09
Nicholas Hobbs Discovery Grant - Vanderbilt Kennedy Center
Total Direct Costs: $30,000
Generating patient derived pluripotent stem cells for the study of Down syndrome
The major goals of this project are to generate induced pluripotent stem cells from Down syndrome patients and examine their differentiation into neurons, glia, and neural stem cells *in vitro*.

Pilot Project (**Bowman, PI**), 7/01/07–6/30/08
Vanderbilt Center in Molecular Toxicology NIEHS/NIH 5P30 ES000267 (Guengerich, PI)
Total Direct Costs: $40,000
The effect of manganese exposure on Huntington's Disease neuropathology
The major goals of this project are to perform preliminary experiments to examine the effect of manganese exposure on Huntington's Disease neuropathology.

Equipment Award (**Bowman, Ess, Gallagher, MPI**), 5/21/08
Vanderbilt Institute for Clinical and Translational Research 1UL 1RR024975 NCRR/NIH
Total Direct Costs: $24,671
Human Induced Pluripotent Stem Cells for the Study of Neurologic Disorders
Cryopreservation system and inverted microscope for pilot project to generate induced pluripotent stem (iPS) cells from patients with neurologic disorders such as Huntington's Disease, idiopathic generalized epilepsy, and tuberous sclerosis complex.

PUBLICATIONS AND PRESENTATIONS

My NCBI Bibliography:

http://www.ncbi.nlm.nih.gov/sites/myncbi/aaron.bowman.1/bibliography/40688189/public/?sort=date&direction=descending

Peer-reviewed primary research articles:

1. Tang X, Balachandran RC, Aschner M, Bowman AB. IGF/mTORC1/S6 Signaling Is Potentiated and Prolonged by Acute Loading of Subtoxicological Manganese Ion. Biomolecules. 2023 Aug 8;13(8):1229. doi: 10.3390/biom13081229. PMID: 37627294; PMCID: PMC10452562.
2. Xie J, Wu S, Szadowski H, Min S, Yang Y, Bowman AB, Rochet JC, Freeman JL, Yuan C. Developmental Pb exposure increases AD risk via altered intracellular Ca²⁺ homeostasis in hiPSC-derived cortical neurons. J Biol Chem. 2023 Aug;299(8):105023. doi: 10.1016/j.jbc.2023.105023. Epub 2023 Jul 7. PMID: 37423307; PMCID: PMC10413359.
3. Chun YW, Miyamoto M, Williams CH, Neitzel LR, Silver-Isenstadt M, Cadar AG, Fuller DT, Fong DC, Liu H, Lease R, Kim S, Katagiri M, Durbin MD, Wang KC, Feaster TK, Sheng CC, Neely MD, Sreenivasan U, Cortes-Gutierrez M, Finn AV, Schot R, Mancini GMS, Ament SA, Ess KC, Bowman AB, Han Z, Bichell DP, Su YR, Hong CC. Impaired Reorganization of Centrosome Structure Underlies Human Infantile Dilated Cardiomyopathy. Circulation. 2023 Apr 25;147(17):1291-1303. doi: 10.1161/CIRCULATIONAHA.122.060985. Epub 2023 Mar 27. PMID: 36970983; PMCID: PMC10133173.
4. Spitznagel BD, Buchanan RA, Consoli DC, Thibert MK, Bowman AB, Nobis WP, Harrison FE. Acute manganese exposure impairs glutamatergic function in a young mouse model of Alzheimer's disease. Neurotoxicology. 2023 Mar;95:1-11. doi:10.1016/j.neuro.2023.01.002. Epub 2023 Jan 5. PMID: 36621467; PMCID: PMC9998360.

5. Ke T, Santamaria A, Barbosa F Jr, Rocha JBT, Skalny AV, Tinkov AA, Bowman AB, Aschner M. Developmental Methylmercury Exposure Induced and Age-Dependent Glutamatergic Neurotoxicity in Caenorhabditis elegans. **Neurochem Res.** 2022 Nov 16. PMID: 36385214.

6. Pepe G, Capocci L, Marracino F, Realini N, Lenzi P, Martinello K, Bovier TF, Bichell TJ, Scarselli P, Di Cicco C, Bowman AB, Digilio FA, Fucile S, Fornai F, Armirotti A, Parlato R, Di Pardo A, Maglione V. Treatment with THI, an inhibitor of sphingosine-1-phosphate lyase, modulates glycosphingolipid metabolism and results therapeutically effective in experimental models of Huntington's disease. **Mol Ther.** 2022 Sep 16:S1525-0016(22)00558-5. doi: 10.1016/j.ymthe.2022.09.004. PMID: 36116006.

7. Ke T, Santamaria A, Junior FB, Rocha JBT, Bowman AB, Aschner M. Methylmercury exposure-induced reproductive effects are mediated by dopamine in Caenorhabditis elegans. **Neurotoxicol Teratol.** 2022 Sep-Oct;93:107120. doi: 10.1016/j.ntt.2022.107120. PMID: 35987454.

8. Ke T, Tinkov AA, Skalny AV, Santamaria A, Farina M, Rocha JBT, Bowman AB, Aschner M. The Human LRRK2 Modulates the Age-Dependent Effects of Developmental Methylmercury Exposure in Caenorhabditis elegans. **Neurotox Res.** 2022 Oct;40(5):1235-1247. doi: 10.1007/s12640-022-00547-x. PMID: 35838907

9. Cukier HN, Kim H, Griswold AJ, Codreanu SG, Prince LM, Sherrod SD, McLean JA, Dykxhoorn DM, Ess KC, Hedera P, Bowman AB, Neely MD. Genomic, transcriptomic, and metabolomic profiles of hiPSC-derived dopamine neurons from clinically discordant brothers with identical PRKN deletions. **NPJ Parkinsons Dis.** 2022 Jun 29;8(1):84. doi: 10.1038/s41531-022-00346-3. PMID: 35768426.

10. Pfalzer AC, Yan Y, Kang H, Totten M, Silverman J, Bowman AB, Erikson K, Claassen DO. Alterations in metal homeostasis occur prior to canonical markers in Huntington disease. **Sci Rep.** 2022 Jun 20;12(1):10373. doi: 10.1038/s41598-022-14169-y. PMID: 35725749

11. Ke T, Santamaria A, Farina M, Rocha JBT, Bowman AB, Aschner M. The Modulatory Role of sti-1 in Methylmercury-Induced Toxicity in Caenorhabditis elegans. **Neurotox Res.** 2022 Jun;40(3):837-846. doi: 10.1007/s12640-022-00515-5. PMID: 35471723.

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13. Wilcox JM, Consoli DC, Paffenroth KC, Spitznagel BD, Calipari ES, Bowman AB, Harrison FE. Manganese-induced hyperactivity and dopaminergic dysfunction depend on age, sex and YAC128 genotype. **Pharmacol Biochem Behav.** 2022 Feb;213:173337. doi: 10.1016/j.pbb.2022.173337. Epub 2022 Jan 19. PMID: 35063467; PMCID: PMC8833139.

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16. Wilcox JM, Pfalzer AC, Tienda AA, Debbiche IF, Cox EC, Totten MS, Erikson KM, Harrison FE, Bowman AB. YAC128 mouse model of Huntington disease is protected against subtle chronic manganese (Mn)-induced behavioral and neuropathological changes. **Neurotoxicology**. 2021 Dec;87:94-105. doi: 10.1016/j.neuro.2021.09.002. Epub 2021 Sep 17. PMID: 34543681; PMCID: PMC8761387.

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110. Bowman AB, Patel-King RS, Benashski SE, McCaffery JM, Goldstein LSB, King SM. Drosophila roadblock and Chlamydomonas LC7: A conserved family of dynein-associated proteins involved in axonal transport, flagellar motility and mitosis. 1999. **Journal of Cell Biology**. 146(1): 165-179.

Invited/peer-reviewed literature reviews and book chapters:

1. Ke T, Junior FB, Santamaria A, Bowman AB, Aschner M. Genetic factors in methylmercury-induced neurotoxicity: What have we learned from Caenorhabditis elegans models? Adv Neurotoxicol. 2023;9:271-290. doi: 10.1016/bs.ant.2023.01.006. Epub 2023 Mar 13. PMID: 37389202; PMCID: PMC10310048.
2. Martins AC, Virgolini MB, Ávila DS, Scharf P, Li J, Tinkov AA, Skalny AV, Bowman AB, Rocha JBT, Aschner M. Mitochondria in the Spotlight: C. elegans as a Model Organism to Evaluate Xenobiotic-Induced Dysfunction. Cells. 2023 Aug 22;12(17):2124. doi: 10.3390/cells12172124. PMID: 37681856; PMCID: PMC10486742.
3. Martins AC, Ferrer B, Tinkov AA, Caito S, Deza-Ponzio R, Skalny AV, Bowman AB, Aschner M. Association between Heavy Metals, Metalloids and Metabolic Syndrome: New Insights and Approaches. Toxics. 2023 Aug 3;11(8):670. doi: 10.3390/toxics11080670. PMID: 37624175; PMCID: PMC10459190.
4. Aschner M, Skalny AV, Lu R, Santamaria A, Zhou JC, Ke T, Karganov MY, Tsatsakis A, Golokhvast KS, Bowman AB, Tinkov AA. The role of hypoxia-inducible factor 1 alpha (HIF-1α) modulation in heavy metal toxicity. Arch Toxicol. 2023 May;97(5):1299-1318. doi: 10.1007/s00204-023-03483-7. Epub 2023 Mar 18. PMID: 36933023.
5. Ke T, Tinkov AA, Skalny AV, Santamaria A, Rocha JBT, Bowman AB, Chen W, Aschner M. Epigenetics and Methylmercury-Induced Neurotoxicity, Evidence from Experimental Studies. Toxics. 2023 Jan 12;11(1):72. doi: 10.3390/toxics11010072. PMID: 36668798; PMCID: PMC9860901.
6. Martins AC, Gubert P, Li J, Ke T, Nicolai MM, Moura AV, Bornhorst J, Bowman AB, Aschner M. Caenorhabditis elegans as a Model to Study Manganese-Induced Neurotoxicity. **Biomolecules**. 2022 Sep 29;12(10):1396. doi: 10.3390/biom12101396. PMID: 36291605.
7. Kim H, Harrison FE, Aschner M, Bowman AB. Exposing the role of metals in neurological disorders: a focus on manganese. **Trends Mol Med.** 2022 Jul;28(7):555-568. doi: 10.1016/j.molmed.2022.04.011. Epub 2022 May 22. PMID: 35610122
8. Ke T, Tinkov AA, Skalny AV, Bowman AB, Rocha JBT, Santamaria A, Aschner M. Developmental exposure to methylmercury and ADHD, a literature review of epigenetic studies. **Environ Epigenet.** 2021 Nov 22;7(1):dvab014. doi: 10.1093/eep/dvab014. PMID: 34881051; PMCID: PMC8648069.
9. Tinkov AA, Martins AC, Avila DS, Gritsenko VA, Skalny AV, Santamaria A, Lee E, Bowman AB, Aschner M. Gut Microbiota as a Potential Player in Mn-Induced Neurotoxicity. **Biomolecules.** 2021 Aug 31;11(9):1292. doi: 10.3390/biom11091292. PMID: 34572505; PMCID: PMC8469589.
10. Tinkov AA, Nguyen TT, Santamaria A, Bowman AB, Buha Djordjevic A, Paoliello MMB, Skalny AV, Aschner M. Sirtuins as molecular targets, mediators, and protective agents in metal-induced toxicity. **Arch Toxicol.** 2021 Jul;95(7):2263-2278. doi: 10.1007/s00204-021-03048-6. Epub 2021 May 24. PMID: 34028595.
11. Tinkov AA, Paoliello MMB, Mazilina AN, Skalny AV, Martins AC, Voskresenskaya ON, Aaseth J, Santamaria A, Notova SV, Tsatsakis A, Lee E, Bowman AB, Aschner M. Molecular Targets of Manganese-Induced Neurotoxicity: A Five-Year Update. **Int J Mol Sci.** 2021 Apr 28;22(9):4646. doi: 10.3390/ijms22094646. PMID: 33925013; PMCID: PMC8124173.

12. Martins AC Jr, Ruella Oliveira S, Barbosa F Jr, Tinkov AA, V Skalny A, Santamaría A, Lee E, Bowman AB, Aschner M. Evaluating the risk of manganese-induced neurotoxicity of parenteral nutrition: review of the current literature. **Expert Opin Drug Metab Toxicol.** 2021 Mar 4:1-13. doi: 10.1080/17425255.2021.1894123. Epub ahead of print. PMID: 33620266.

13. Tukker AM, Royal CD, Bowman AB, McAllister KA. The Impact of Environmental Factors on Monogenic Mendelian Diseases. **Toxicol Sci.** 2021 Mar 2:kfab022. doi: 10.1093/toxsci/kfab022. Epub ahead of print. PMID: 33677604.

14. Aschner M, Paoliello MMB, Tsatsakis A, Bowman AB, Dorea JG, Hartung T, Domingo JL, Barbosa F Jr. Social injustice in environmental health: A call for fortitude. **Environ Res.** 2021 Mar;194:110675. doi: 10.1016/j.envres.2020.110675. Epub 2020 Dec 26. PMID: 33373610; PMCID: PMC7946715.

15. Martins AC Jr, Gubert P, Villas Boas GR, Meirelles Paes M, Santamaría A, Lee E, Tinkov AA, Bowman AB, Aschner M. Manganese-induced neurodegenerative diseases and possible therapeutic approaches. **Expert Rev Neurother**. 2020 Nov;20(11):1109-1121. doi: 10.1080/14737175.2020.1807330. Epub 2020 Sep 2. PMID: 32799578; PMCID: PMC7657997.

16. Soares ATG, Silva AC, Tinkov AA, Khan H, Santamaría A, Skalnaya MG, Skalny AV, Tsatsakis A, Bowman AB, Aschner M, Ávila DS. The impact of manganese on neurotransmitter systems. **J Trace Elem Med Biol**. 2020 May 20;61:126554. doi: 10.1016/j.jtemb.2020.126554. Epub ahead of print. PMID: 32480053; PMCID: PMC7677177.

17. Martins AC, Krum BN, Queirós L, Tinkov AA, Skalny AV, Bowman AB, Aschner M. Manganese in the Diet: Bioaccessibility, Adequate Intake, and Neurotoxicological Effects. **J Agric Food Chem**. 2020 Nov 18;68(46):12893-12903. doi: 10.1021/acs.jafc.0c00641. Epub 2020 Apr 29. PMID: 32298096

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19. Gonçalves Soares AT, Castro da Silva A, Khan H, Santamaría A, Tinkov AA, Skalnaya MG, Skalny AV, Tsatsakis A, Aschner M, Bowman AB, Silva Ávila D. The impact of manganese on neurotransmitter systems. **J Trace Elem Med Biol.** 2020; in press

20. Miah MR, Ijomone OM, Okoh COA, Ijomone OK, Akingbade GT, Ke T, Krum B, da Cunha Martins A Jr, Akinyemi A, Aranoff N, Antunes Soares FA, Bowman AB, Aschner M. The effects of manganese overexposure on brain health. **Neurochem Int.** 2020 May;135:104688. doi: 10.1016/j.neuint.2020.104688. Epub 2020 Jan 20. Review. PubMed PMID: 31972215.

21. Martins AC Jr, Morcillo P, Ijomone OM, Venkataramani V, Harrison FE, Lee E, Bowman AB, Aschner M. New Insights on the Role of Manganese in Alzheimer's Disease and Parkinson's Disease. **Int J Environ Res Public Health**. 2019 Sep 22;16(19). pii: E3546. doi: 10.3390/ijerph16193546. Review. PubMed PMID: 31546716; PubMed Central PMCID: PMC6801377.

22. Ruszkiewicz JA, Tinkov AA, Skalny AV, Siokas V, Dardiotis E, Tsatsakis A, Bowman AB, da Rocha JBT, Aschner M. Brain diseases in changing climate. **Environ Res.** 2019 Oct;177:108637. doi: 10.1016/j.envres.2019.108637. PMID: 31416010

23. Ke T, Gonçalves FM, Gonçalves CL, Dos Santos AA, Rocha JBT, Farina M, Skalny A, Tsatsakis A, Bowman AB, Aschner M. Post-translational modifications in MeHg-induced neurotoxicity. **Biochim Biophys Acta Mol Basis Dis.** 2019 Aug 1;1865(8):2068-2081. doi: 10.1016/j.bbadis.2018.10.024. PMID: 30385410

24. Chen P, Totten M, Zhang Z, Bucinca H, Erikson K, Santamaría A, Bowman AB, Aschner M. Iron and manganese-related CNS toxicity: mechanisms, diagnosis and treatment. **Expert Rev Neurother.** 2019 Mar;19(3):243-260.

25. Prince LM, Aschner M, Bowman AB. Human-induced pluripotent stems cells as a model to dissect the selective neurotoxicity of methylmercury. **Biochim Biophys Acta Gen Subj.** 2019 Feb 10. pii: S0304-4165(19)30028-5.

26. Virginia C. Moser, Michael Aschner, Jason R. Richardson, Aaron B. Bowman, Rudy J. Richardson. Chapter 16. Toxic Responses of the Nervous System. **Casarett and Doull's Toxicology: The basic science of poisons - 9th edition.** 2019. ISBN 978-1-259-86374-5

27. Costa LG, Aschner M, Bowman AB, Richardson JR. Toxicology of the Nervous System. Published in the **Elsevier Reference Module in Biomedical Science**. 2018. https://doi.org/10.1016/B978-0-12-801238-3.00206-3

28. Nitin R, Bowman AB. Connections between manganese neurotoxicity and neurological disease. 2018. *Chapter XX*. In: **Series: Advances in Neurotoxicology Volume 2.** Academic Press (Elsevier). *Serial Editors: Michael Aschner and Lucio Costa.* ISBN: 9780128155516. *In press.*

29. Bryan MR, Bowman AB. Manganese and the Insulin-IGF Signaling Network in Huntington's Disease and Other Neurodegenerative Disorders. 2017. **Advances in neurobiology.** 18:113-142.

30. Pfalzer AC, Bowman AB. Relationships Between Essential Manganese Biology and Manganese Toxicity in Neurological Disease. 2017. **Curr Environ Health Rep.** 4(2):223-228.

31. Peres TV, Schettinger MR, Chen P, Carvalho F, Avila DS, Bowman AB, Aschner M. Manganese-induced neurotoxicity: a review of its behavioral consequences and neuroprotective strategies. 2016. **BMC Pharmacology and Toxicology**. 17(1):57.

32. Horning K, Caito S, Tipps KG, Bowman AB*, Aschner M*. Manganese is essential for neuronal health. 2015. **Annual Reviews of Nutrition.** 35: 71-108. PMID: 25974698 * *co-corresponding authors*

33. Parmalee NL, Maqbool SB, Ye B, Calder B, Bowman AB, Aschner M. RNASeq in C. elegans Following Manganese Exposure. 2015. **Current Protocols in Toxicology.** 65:11.20.1-11.20.17. PMID: 26250396

34. Chen, P, Chakraborty S, Mukhopadhyay S, Lee E, Paoliello MM, Bowman AB, Aschner M. Manganese Homeostasis in the Nervous System. 2015. **Journal of Neurochemistry.** 134(4):601-10. PMC4516557

35. Chen P, Chakraborty S, Peres TV, Bowman AB, Aschner M. Manganese-induced Neurotoxicity: From C. elegans to Humans. 2015. **Toxicol Res (Camb)**. 4(2): 191-202. PMC4399965

36. Kwakye GF, Paoliollo MMB, Mukhopadhyay S, Bowman AB, Aschner M. Manganese-Induced Parkinsonism and Parkinson's Disease: Shared and Distinguishable Features. 2015. **International Journal of Environmental Research and Public Health.** 12(7):7519-40. PMC4515672

37. Tidball AM, Bichell TJ, Bowman AB. Manganese and Huntington Disease. 2014. In: **Manganese in Health and Disease**. Royal Society of Chemistry: Cambridge, UK. Editors: Lucio G. Costa and Michael Aschner.

38. Bowman AB, Kwakye GF, Herrero Hernández E, Aschner M. Die Rolle von Mangan bei neurodegenerativen Erkrankungen. Perspect Med 2014; 2:91-108.

39. Bichell TJ, Uhouse M, Bradley E, and Bowman AB. Gene-Environmental Interactions in Huntington's Disease. 2014. In: **Environmental Factors in Neurodevelopmental and Neurodegenerative Disorders**. Academic Press, Elsevier: Waltham MA, USA. Editors: Lucio G. Costa and Michael Aschner.

40. Bowman AB, Ess KC, Kumar KK, Summar KL. Down Syndrome. 2013. In: **Neural Circuit Development and Function in the Healthy and Diseased Brain: Comprehensive Developmental Neuroscience**. *Chapter 30.* Academic Press (Elsevier): San Diego, CA, USA. ISBN: 978-0-12-397266-8. Editors: John Rubenstein and Pasko Rakic.

41. Kumar KK, Aboud AA, Bowman AB. The potential of induced pluripotent stem cells as a translational model of neurotoxicological risk. 2012. **Neurotoxicology.** 33(3): 518-529. PMCID: PMC3358591.

42. Neely MD, Tidball AM, Aboud AA, Ess KC, Bowman AB. Induced pluripotent stem cells (iPSCs) - an emerging model system for the study of human neurotoxicology. 2011. In: **Neuromethods 56 - Springer Protocols: Cell Culture techniques**. Humana Press: New York, NY. Editors: Michael Aschner, Cristina Suñol, Anna Price.

43. Sidoryk-Wegrzynowicz M, Wegrzynowicz M, Lee E, Bowman AB, Aschner M. Role of Astrocytes in Brain Function and Disease. 2011. **Toxicologic Pathology.** 39(1): 115-123. PMID: 21075920

44. Bowman AB, Kwakye GF, Hernández EH, Aschner M. Role of manganese in neurodegenerative diseases. 2011. **J Trace Elem Med Biol.** 25(4): 191-203. PMCID: PMC3230726

45. Bowman AB, Erikson KM, Aschner M. Manganese - The two faces of essentiality and neurotoxicity. 2010. In: **Metals and Neurodegeneration**. Research Signpost: Kerala, India. ISBN: 978-81-308-0396-8. Editor: Shile Huang.

46. Avila DS, Benedetto A, Au C, Teixeira da Rocha JB, Aschner M and Bowman AB. Manganese and brain function. 2010. In: **Biochemical Aspects of Human Nutrition**. Transworld Research Network: Kerala, India. ISBN: 978-81-7895-478-3. Editors: Luciana Avigliano and Luisa Rossi

47. Halladay AK, Amaral D, Aschner M, Bolivar VJ, Bowman A, DiCicco-Bloom E, Hyman SL, Keller F, Lein P, Pessah I, Restifo L, Threadgill DW. Animal models of autism spectrum disorders: information for neurotoxicologists. 2009. **Neurotoxicology.** 30(5): 811-821.

48. Bowman AB and Goldstein LSB. Dynein and Kinesin. 2001. In: **Encyclopedia of Life Sciences**. John Wiley & Sons, Ltd: Chichester. http://www.els.net/ [DOI: 10.1038/npg.els.0000677]

INVITED LECTURES AND ORAL PRESENTATIONS

"Investigating GxE neurotoxicant vulnerabilities across life stage and populations using iPSCS. October 2022. Virtual hosted from NIEHS campus in North Carolina. **Using New Approach Methodologies to Address Variability and Susceptibility Across Populations.** Invited Speaker.

"Cellular and molecular insights into the mechanisms of latent and persistent methymercury neurotoxicity". July 2022. **49th Annual Meeting of the Japanese Society of Toxicology.** SOT-JSOT Joint Symposium Invited Speaker.

"Genetic and Metal Neurotoxicant Interactions in Neurological Disease". January 2021. **Virginia Commonwealth University School of Medicine**. Anatomy and Neurobiology Seminar Series, Spring 2021 – Invited Speaker

"Gene x Neurotoxicant Interactions in Neurological Disease". January 2020. **Indiana University-Purdue University Indianapolis.** Seminar in Biology Series – Invited Speaker

"Human subject-derived stem cell models for genetic-risk and neural-lineage specific assessment of vulnerability to environmentally relevant toxicants". September 2019. **International Neurotoxicology Association, INA-17.** Dusseldorf, Germany – Invited Speaker and Chair

“Stepping Out of the Lab: Maximizing Access and Experience for Internships in Toxicology”. March 2019. **Society of Toxicology Annual Meeting** – Moderator

"Manganese biology and toxicity in neurological disease". April 2018. **University of California Santa Cruz, METX Seminar Series** – Invited Speaker

"Manganese biology and toxicity in neurological health and disease". February 2018. **Purdue University, School of Health Sciences, Special Seminar Series** – Invited Speaker

"Metal Biology, Neurotoxicity and Genetics in Neurodegenerative Disease". April 2017. **UT Health Science Center, San Antonio, Barshop Institute for Longevity and Aging Studies** – Invited Speaker.

"The role of manganese homeostasis and exposure in neurodegenerative disease". March 2017. **Middle Tennessee State University, Dept. of Molecular Biosciences** – Invited Student Hosted Speaker.

"Alterations of metal homeostasis in neurological disease". March 2017. **University of Iowa, College of Pharmacy**, Division of Division of Medicinal and Natural Products Chemistry Seminar Series – Invited Speaker.

"Alterations of metal homeostasis in neurological disease". March 2017. **Society of Toxicology Annual Meeting** – Invited CE course speaker and co-chair of session.

“Alterations of manganese biology in Huntington’s disease”. May 2016. **ONES Symposium, National Institute of Environmental Health Sciences** – Invited speaker.

“Alterations of manganese biology in Huntington’s disease”. April 2016. **ASPET Annual Meeting** – Invited symposium speaker and co-chair of session.

“Patient-Derived iPSC Models as a Translational Tool Between Human and Non-Human Model Systems for Environmental Health Research”. March 2016. **Society of Toxicology Annual Meeting** – Invited symposium speaker and co-chair of session.

“PARK2 Mutations Alter Vulnerability of Human Neurons to Copper Neurotoxicity”. March 2016. **Society of Toxicology Annual Meeting** – Invited symposium speaker.

“Alterations of neuronal manganese biology in Huntington’s disease”, December 2015. Columbia University NIEHS Center for Environmental Health – Invited lecturer.

“Alterations in neuronal manganese biology in Huntington’s disease and other movement disorders”, November 2015. University of Rochester, Toxicology Graduate Training Program – Invited lecturer.

“Mn-handling deficit in a prodromal HD mouse model underlies metabolic alterations”. October 2015 **Society for Neuroscience Annual Meeting** – Nanosymposium speaker

“Alterations of neuronal manganese biology in Huntington’s disease”. October 2015. University of Georgia Athens, School of Veterinary Medicine, Department of Physiology & Pharmacology – Invited lecturer.

“Introduction to Adult Neurogenesis”. March 2015. **Society of Toxicology Annual Meeting** – Invited symposium speaker.

"Alterations in neuronal manganese biology in Huntington's disease and other movement disorders". February 2015. **University of Nebraska-Lincoln, School of Veterinary Medicine & Biomedical Sciences** – Invited Speaker

"Manganese as a disease modifying factor in Huntington's Disease". October 2014. **Rutgers University - Environmental and Occupational Health Sciences Institute and Department of Neuroscience and Cell Biology** – Invited Speaker

"A manganese-handling deficit in Huntington's disease unravels ATM-p53 signaling". October 2014. **University of Texas Austin**, **Toxicology Seminar Series** – Invited Speaker.

"The role for alterations of manganese biology in Huntington's disease and parkinsonism". October 2014. **NorCal SOT Fall Symposium, 'Beyond small molecules…' –** Invited outside speaker.

"Manganese as a risk factor for neurological disease – tentative title". August 2014. **Emory University, HERCULES Center Noon Seminar Series** – Invited Speaker.

"A manganese-handling deficit in Huntington's Disease selectively impairs ATM-p53 signaling". July 2014. **NIEHS ONES Awardee Symposium** – Invited Speaker.

"Applications of Stem Cells for Toxicology and Regenerative Medicine". March 2014. **Society of Toxicology Annual Meeting. CE Course PM12** – Invited Speaker.

"Patient-derived stem cell models of environmental risk and neurodegeneration". April 2013. **Oklahoma State University, Distinguished Scientist Lecture Series, Department Physiological Sciences –** Invited Speaker.

"Culture and Differentiation of hPSC-Dervied Neurons and the Promise of Personalized Toxicology". March 2013. **Society of Toxicology Annual Meeting. CE/CME Course AM06** – Invited Speaker.

"Patient-derived stem cell models of toxicant risk in Neurodegenerative disease.". February 2013. **Colorado State University, Molecular Cellular and Integrative Neurosciences Program** – Invited Speaker.

"Patient-derived stem cell models of toxicant risk in Neurodegenerative disease". January 2013. **Albert Einstein College of Medicine, Department of Genetics –** Invited Speaker.

"Induced pluripotent stem cells as a translational model of gene - environment interactions in neurodegenerative disease". May 2012. **Univ. California Davis School of Veterinary Medicine / NIEHS Center** – Invited Speaker.

"Stem Cells….Super Heroes or Super Villains of Neurotoxicology?". October 2011. **27th International Neurotoxicology Conference** – Keynote address.

"Patient derived stem cells as a translational model of toxicological risk". August 2011. **Gordon Research Conference – Cellular and Molecular Mechanisms of Toxicity** – Invited Speaker.

"Analysis of disease-toxicant interactions in Huntington's Disease and Parkinson's Disease". April 2011. **Rutgers University - Environmental and Occupational Health Sciences Institute Seminar Series** – Invited Speaker.

"Patient-derived stem cells as a translational model for neurotoxicological risk". March 2011. **Society of Toxicology 50th Anniversary Meeting –** Invited Symposium Speaker.

"Analysis of disease-toxicant interactions in Huntington's Disease and Parkinson's Disease". March 2011. **University of Tennessee Health Science Center Neuroscience Seminar Series** – Invited Speaker.

"Gene-Environment Interactions in Neurodegenerative Disease". March 2011. **Case Western Reserve University, Department of Neurosciences Seminar Series** – Invited Speaker.

"Huntington's disease alters manganese transport kinetics and neurotoxicity". March 2010. **University of Rochester, Environmental Health Sciences** – Research Seminar Series Invited Speaker.

"Gene-environment interactions between Huntington's disease and manganese exposure". December 2008. **National Institute of Environmental Health Sciences** – 2008 ONES Award winner presentations.

"Gene-environment interactions between the Huntington's Disease gene and Manganese exposure". October 2008. **25th International Neurotoxicology Conference** – Invited Speaker

"Gene-environment interactions between metal ions and the Huntington's Disease gene". June 2008. **Buck Institute for Age Research** – Research Seminar Series Invited Speaker.

"Duplication of *Atxn1l* suppresses SCA1 neuropathology by decreasing incorporation of polyglutamine-expanded ataxin-1 into native complexes and promoting inclusion formation". March 2007. **Banbury Center** - When is Amyloid Functional and When is Amyloidogenesis Pathological?

"The selective neuropathology of Spinocerebellar Ataxia Type 1 (SCA1) is dependent upon the association of mutant ATAXIN-1 into a subset of its native protein complexes". 2006. **HDF Annual meeting** - HD 2006: Changes, Advances and Good News $(CAG)_n$.

"In vivo measurement of the ubiquitin proteasome system in a knock-in mouse model of the polyglutamine disease spinocerebellar ataxia type 7". 2004. **HDF Annual meeting** - HD 2004: Changes, Advances and Good News $(CAG)_n$.

"Molecular analysis of genomic imprint establishment in the mouse germline". 2003. **Life Sciences Research Foundation Annual Meeting**.

"The epigenetic regulation of genomic imprinting". 2001. **Gordon Research Conference on Epigenetics**.

"Roadblock is a member of a family of bithoraxoid-like dynein-associated proteins that is required for intracellular transport". 1999. **40th Annual Drosophila Research Conference**.