CURRICULUM VITAE

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EDUCATION

11/2009 Ph.D., Material Sciences, University of North Carolina at Chapel Hill
08/2006 M.S., Material Sciences, University of North Carolina at Chapel Hill
07/2002 M.S., Chemistry, Beijing University of Chemical Technology, Beijing, China
07/1999 B.E., Chemistry, Beijing University of Chemical Technology, Beijing, China

PROFESSIONAL TRAINING AND EXPERIENCES

11/2022 – present	Associate Editor, *Gut Microbes*
08/2018 – present	Associate Professor, Department of Environmental Sciences and Engineering, UNC
08/2018 – present	Director/Scientific Director, Biomarker Mass Spectrometry Facility, UNC
08/2016 – 07/2018	Assistant Professor, Department of Environmental Sciences and Engineering, University of North Carolina at Chapel Hill (UNC-CH)
12/2012 – 08/2016	Faculty, Regenerative Bioscience Center, University of Georgia (UGA)
10/2012 – 08/2016	Assistant Professor, Interdisciplinary Toxicology Program**,** UGA
08/2012 – 08/2016	Assistant Professor, Department of Environmental Health Science, UGA
10/2010 – 08/2012	Postdoctoral Associate, Massachusetts Institute of Technology (MIT)
12/2009 – 09/2010	Goldberg Postdoctoral Fellow, Curriculum in Toxicology, UNC-CH
09/2006 – 11/2009	Research Assistant, Environmental Sciences and Engineering, UNC-CH
08/2004 – 09/2006	Research Assistant, Department of Biochemistry and Biophysics, UNC-CH
09/1999 – 07/2004	Research Assistant, Beijing University of Chemical Technology (BUCT)

HONORS AND AWARDS

2023	Best Abstract Award, Society of Toxicology, Exposure Specialty Section
2021	“Extramural Paper of the Month” by National Institute of Environmental Health Sciences
2019	The Newton Underwood Award for Excellence in Teaching, ESE, UNC
2017	“Extramural Paper of the Month” by National Institute of Environmental Health Sciences
2016	IBM Junior Faculty Development Award, UNC-CH
2015	Outstanding New Environmental Scientist Award (ONES), NIEHS
2015	Research Excellence Award, College of Public Health, UGA
2012	TOXI Young Investigator Award for Best Postdoctoral Presentation, American Chemical Society
2011	Board of Publications Best Paper Award, Society of Toxicology

2010 Chinese Government Award for Outstanding Student Abroad, Chinese National Scholarship Council
2010 TOXI Travel Award, Division of Chemical Toxicology, American Chemical Society
2010 Perry J Gehring Best Graduate Student Abstract Award, Society of Toxicology
2010 Leon Goldberg Memorial Travel Award, UNC-CH
2009 Graduate Education Advancement Board Impact Award, UNC-CH
2009 Student Award of Carcinogenesis Specialty Section, Society of Toxicology
2001 Bayer Fellowship, Germany Bayer Group
1999 Scholarship of Distinguished Enrolled Graduate Candidate, BUCT
1999 Outstanding Diploma Project Thesis, BUCT
1996 - 1998 People Scholarship, BUCT

PROFESSIONAL MEMBERSHIPS

American Chemical Society
Society of Toxicology
American Society for Mass Spectrometry
North America Association of Metabolomics

INVITED BOOK AND BOOK CHAPTER

** = Dr. Lu as Corresponding author*

A = Advisee

1. Chi Liang [A] and **Lu Kun***. Biotransformation by the gut microbiome. Comprehensive Toxicology III, 2017, 64268, 1-15, Elsevier
2. **Kun Lu** and Robert J. Tursky. Biomarkers of Environmental Toxicants. Page 1-282, 2020, ISBN 978-03936-736-8, MDPI, Switzerland

PEER-REVIEWED PUBLICATION

** = Corresponding author*

A = Advisee

Manuscript under revision or review

118. Haoduo Zhao, Yun-Chung Hsiao, Chih-Wei Liu, Emily Werder, Jake Thistle, Yifei Yang, Jiahao Feng, Xueying Wang, Jingya Peng, Stephanie M. Engel *, and Kun Lu *. Towards Early life Human Exposome: Nontargeted Large-Scale Screening in Human Baby Urine Revealed Alarming Pesticide Exposure Landscapes. *under review*

117. Hu Wenxin, Xing Lei, Park Jieun, Taylor-Blake Bonnie, Krantz James, Hsiao Yun-Chung, Liu Chih-Wei, Lamberti Sophia, Lu Kun, and Zylka Mark. Identification of chemical pollutants that disrupt neurodevelopment in mice. *under review*

116. Jake E. Thistle, Chih-Wei Liu, Julia Rager, Alison Singer, Kenny Chen, Cherrel Manley, Joe Piven, John

Gilmore, Alexander P Keil, Anne P. Starling, Hongtu Zhu, Weili Lin, Kun Lu, Stephanie M. Engel. Urinary metabolite concentrations of phthalate and plasticizers in infancy and childhood in the UNC Baby Connectome Project. *under review*

115. Chih-wei Liu[A], Jiapeng Leng[A], and **Kun Lu*.** Endogenous and Exogenous Cross-linkages between Glutathione and DNA Induced by Formaldehyde. *under review*

114. Yun-Chung Hsiao[A], Yifei Yang[A], Chih-Wei Liu[A], Jiahao Feng[A], Haoduo Zhao[A], Talyor Teitelbaum, **Kun Lu***. Multi-Omics to Characterize the Molecular Events Underlying Impaired Glucose Tolerance in FXR-Knockout Mice. *under revision*

Published:

113. Jie Wang, Nathania A. Takyi, Yun-Chung Hsiao[A], Qi Tang, Yi-Tzai Chen, Chih-Wei Liu[A], Rui Qi, Ke Bian, Zhiyuan Peng, John M. Essigmann, **Kun Lu***, Stacey D. Wetmore*, and Deyu Li*. Stable Interstrand Crosslinks Generated from the Repair of 1,N6-Ethenoadenine in DNA by the α-Ketoglutarate/Fe(II)-Dependent Dioxygenase ALKBH2. *J. Am. Chem. Soc.* 2024, 146, 15, 10381–10392

112. Wenxin Hu , Yun-Chung Hsiao[A], Nikolas Morrison-Welch, Sophia Lamberti, Chih-Wei Liu^, Weili Lin, Stephanie M Engel, **Kun Lu**, Mark J Zylka. Co-detection of azoxystrobin and thiabendazole fungicides in mold and mildew resistant wallboards and in children. *Heliyon.* 2024,10(6): e27980

111. Craig Dorrell, Alexander M Peters, Qingshuo Zhang, Niveditha Balaji, Kevin Baradar, Makiko Mochizuki-Kashio, Angela Major, Milton Finegold, Chih-Wei Liu[A], **Kun Lu**, Markus Grompe. Long-term combination therapy with Metformin and Oxymetholone in a Fanconi Anemia mouse model. *Pediatric Blood & Cancer*. 2024, in press

110. Xing Cheng, Jing An, Jitong Lou, Qisheng Gu, Weimin Ding, Gaith Nabil Droby, Yilin Wang, Chenghao Wang, Yanzhe Gao, Jay Ramanlal Anand, Abigail Shelton, Andrew Benson Satterlee, Breanna Mann, Yun-Chung Hsiao[A], Chih-Wei Liu[A], **Kun Lu**, Shawn Hingtgen, Jiguang Wang, Zhaoliang Liu, C. Ryan Miller, Di Wu, Cyrus Vaziri & Yang Yang. Trans-lesion synthesis and mismatch repair pathway crosstalk defines chemoresistance and hypermutation mechanisms in glioblastoma. *Nature Communications*, 2024, 15, 1957

109. Joshua B Simpson, Morgan E Walker, Joshua J Sekela, Samantha M Ivey, Parth B Jariwala, Cameron M Storch, Mark E Kowalewski, Amanda L Graboski, Adam D Lietzan, William G Walton, Kacey A Davis, Erica W Cloer, Valentina Borlandelli, Yun-Chung Hsiao[A], Lee R Roberts, David H Perlman, Xue Liang, Hermen Overkleeft, **Kun Lu**, Matthew R. Redinbo. Gut Microbial β-Glucuronidases Influence Endobiotic Homeostasis and Are Modulated by Diverse Therapeutics. *Cell Host & Microbe, 2024, in press*

108. Liang Chi[A], Yifei Yang[A], Xiaoming Bian[A], Bei Gao[A], Pengcheng Tu[A], and **Kun Lu***. Chronic sucralose consumption inhibits FXR signaling and perturbs lipid and cholesterol homeostasis in the mouse livers, potentially by altering gut microbiota functions. *Sci. Total Environ.*, 2024, 919:169603

107. Yun-Chung Hsiao[A], Gregory Johnson[A], Yifei Yang[A], Chih-Wei Liu[A], Jiahao Feng[A], Haoduo Zhao[A], Sheryl S. Moy, Kathryn M. Harper, **Kun Lu***. Evaluation of Neurological Behavior Alterations and Metabolic Changes of Rats Under Chronic Glyphosate Exposure. Arch Toxicol, 2024, 98(1):277-288.

106. Yifei Yang[A] , Yun-Chung Hsiao[A], Chih-Wei Liu[A] and **Kun Lu***. The Role of FXR in Arsenic-induced Glucose Intolerance in Mice. *Toxics*, 2023 Oct 1;11(10):833

105. Yifei Yang [A], Liang Chi [A], Chih-wei Liu [A], Yun-Chung Hsiao and **Kun Lu***. Chronic Arsenic Exposure Perturbs Gut Microbiota and Bile Acid Homeostasis in Mice. *Chem Res Toxicol, 2023,36(7): 1037–1043*

104. Ming Ji, Xiaojiang Xu, Qing Xu, Yun-Chung Hsiao [A], Cody Martin, Svetlana Ukraintseva, Vladimir Popov, Konstantin G. Arbeev, Tom A. Randall, Xiaoyue Wu, Liz M. Garcia-Peterson, Juan Liu, Xin Xu, M. Andrea Azcarate-Peril, Yisong Wan, Anatoliy I. Yashin, Karthik Anantharaman, **Kun Lu**, Jian-Liang Li, Igor Shats & Xiaoling Li. Methionine restriction-induced sulfur deficiency impairs antitumour immunity partially through gut microbiota, *Nature Metabolism*, 2023, s42255-023-00854-3

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103. Hsiao, Yun-Chung, Chih-wei Liu [A], Yifei Yang [A], Jiahao Feng [A], Haoduo Zhao [A], and **Kun Lu***. DNA Damage and the Gut Microbiome: From Mechanisms to Disease Outcomes. *DNA*, 2023, 3(1),

13-32

102. Hsiao, Yun-Chung [A], Matulewicz, Richard, Sherman, Scott, Jaspers, Ilona, Weitzman, Michael, Gordon, Terry, Liu, Chih-Wei [A], Yang, Yifei [A], **Lu, Kun**, Bjurlin, Marc. Untargeted Metabolomics to Characterize the Urinary Chemical Landscape of E-cigarette Users. *Chem Res Toxicol, 2023, 36(4):630-642*

101. Jennifer L Griggs, Liang Chi [A], Nancy M Hanley, Michael Kohan, Karen Herbin-Davis, David J Thomas, **Kun Lu**, Rebecca C Fry, Karen D Bradham. Bioaccessibility of arsenic from contaminated soils and alteration of the gut microbiome in an in vitro gastrointestinal model. *Environ Pollut*. 2022, 15;309:119753.

100. Jessica A Pollard, Elissa Furutani, Shanshan Liu, Erica Esrick, Laurie E Cohen,Jacob Bledsoe, Chih-Wei Liu [A], **Kun Lu**, Maria Jose Ramirez de Haro, Jordi Surrallés, Maggie Malsch, Ashley Kuniholm, Ashley Galvin, Myriam Armant, Annette S Kim, Kaitlyn Ballotti, Lisa Moreau, Yu Zhou, Daria Babushok, Farid Boulad, Clint Carroll, Helge Hartung, Amy Hont, Taizo Nakano, Tim Olson, Sei-Gyung Sze, Alexis A Thompson, Marcin W Wlodarski, Xuesong Gu, Towia A Libermann, Alan D'Andrea, Markus Grompe, Edie Weller, Akiko Shimamura. Metformin for treatment of cytopenias in children and young adults with Fanconi anemia. *Blood Adv*, 2022, 6(12):3803-3811.

99. Alex Chaoa, Jarod Grossmanb, Celeste Carberry, Yunjia Lai [A], Antony J. Williams, Jeffrey M. Minucci, S. Thomas Purucker, John Szilagyi, **Kun Lu**, Kim Boggess, Rebecca C. Fry, Jon R. Sobusa, Julia E. Rager. Integrative Exposomic, Transcriptomic, Epigenomic Analyses of Human Placental Samples Links Understudied Chemicals to Preeclampsia*. 2022, Environmental International, 167:107385*

98. Muyiwa Awoniyi, Jeremy Wang, Billy Ngo, **Kun Lu**, Yunjia Lai [A], Stephanie Montgomery, Amba Viswanathan, Morgan Farmer, Jason Tam, Jenny PY Ting, Bernd Schnab, Yuri Popov, and R. Balfour Sartor. Protective and aggressive bacterial subsets and metabolites modify hepatobiliary inflammation and fibrosis in a murine model of PSC. 2022, *Gut*, 72(4):671-685

97. Yun-Chung Hsiao [A], Chih-Wei Liu [A], Carole Robinette, Noelle Knight, **Kun Lu***, Meghan E. Rebuli*. Development of LC-HRMS Untargeted Analysis Methods for Nasal Epithelial Lining Fluid Exposomics. Journal of Exposure Science & Environmental Epidemiology, 2022, 32(6):847-854

96. Christy L. Avery, Annie Green Howard, Anna F. Ballou, Victoria L. Buchanan, Jason M. Collins, Carolina G. Downie, Mariaelisa Graff, Heather M. Highland, Moa P. Lee, Adam G. Lilly, Engel Stephanie, Julia Rager **Kun Lu**, Brooke S. Staley, Susan C.J. Sumner, Kari E. North, and Penny Gordon-Larse. Strengthening causal inference in exposomics research: Application of genetic data and methods. *Environ*

Health Perspect. 2022, DOI 10.1289/EHP9098

95.Pengcheng Tu [A], Liang Chi, [A] Xiaoming Bian [A], Bei Gao [A], Jiapeng Leng [A], Jingchuan Xue [A], Yunjia Lai [A], Chih-Wei Liu [A], and **Kun Lu*.** A black raspberry-rich diet protects from dextran sulfate sodium-induced intestinal inflammation and host metabolic dysbiosis in association with increased aryl hydrocarbon receptor ligands in the gut microbiota of mice. *Frontiers in Nutrition, 2022, 9:842298.*

94. Jessica A Jiménez, Jeremy M Simon, Wenxin, Sheryl S Moy, Kathryn M Harper, Chih-Wei Liu [A], **Kun Lu**, Mark J Zylka. Developmental pyrethroid exposure and age influence phenotypes in a Chd8 haploinsufficient autism mouse model. Sci Rep. *2022*, 12(1):5555

93.Wenxin Hu, Chih-Wei Liu [A], Jessica A Jiménez, Eric S McCoy, Yun-Chung Hsiao [A], Weili Lin, Stephanie M Engel, **Kun Lu**, Mark J Zylka. Detection of Azoxystrobin Fungicide and Metabolite Azoxystrobin-Acid in Pregnant Women and Children, Estimation of Daily Intake, and Evaluation of Placental and Lactational Transfer in Mice. *Environ Health Perspect.* 2022, 130(2):27013.

92. Yun-Chung Hsiao [A], Chih-Wei Liu [A], Gary Hoffman, **Kun Lu***. Molecular Dosimetry of DNA Adducts in Rats Exposed to Vinyl Acetate Monomer. *Toxicol Sci,* 2022,185(2):197-207

91. **Kun Lu***, Yun-Chung Hsiao [A], Chih-Wei Liu [A], Rita Schoeny, Robinan Gentry, James Sherman, Kimberly White, and Tom Starr. Stable Isotope Labeling and Mass Spectrometry Methods to Distinguish Exogenous from Endogenous DNA Adducts and Improve Dose-Response Assessments for Chemicals with both Exogenous and Endogenous Exposures. *Chem Res Toxicol,* 2022, 35, 1, 7–29

90. Ting-Jia Fan, Laura Goeser, **Kun Lu**, Jeremiah J Faith, Jonathan J Hansen. Enterococcus faecalis Glucosamine Metabolism Exacerbates Experimental Colitis. *Cell Mol Gastroenterol Hepatol*. 2021,12(4):1373-1389

89. Lai Y [A], Dhingra R, Zhang Z, Ball LM, Zylka MJ, **Kun Lu***. Toward Elucidating the Human Gut Microbiota-Brain Axis: Molecules, Biochemistry, and Implications for Health and Diseases. *Biochemistry.* 2021, 61, 24, 2806–2821

88. Chih-Wei Liu [A], Yun-Chung Hsiao [A], Gary Hoffman, **Kun Lu***. LC-MS/MS Analysis of the Formation and Loss of DNA Adducts in Rats Exposed to Vinyl Acetate Monomer through Inhalation. *Chem Res Toxicol, 2021, 15;34(3):793-803 ((***Selected as ACS Editor's Choice)**

87. Yunjia Lai [A], Chih-Wei Liu [A], Yifei Yang [A], Yun-Chung Hsiao [A], and **Kun Lu***, High-coverage metabolomics annotation uncovers microbiota-driven biochemical landscape of interorgan transport and gut-brain communication. *Nature Communication, 2021, 16, 6000 (***Selected as *Papers of the Month* by the NIEHS***)***

86. Tracy A.Manuck, Yunjia Lai [A], Hongyu Ru, Angelica V. Glover, Julia Rager, Rebecca Fry and **Kun Lu**. Metabolites from mid-trimester plasma of pregnant patients at high-risk for preterm birth. AJOG-MFM, 2021, 3(4):100393

85. Nicholas Dopkins, Wurood Hantoosh Neameh, Alina Hall, Yunjia Lai [A], Alex Rutkovsky, Alexa Orr Gandy, **Kun Lu**, Prakash S Nagarkatti, Mitzi Nagarkatti. Effects of Acute 2,3,7,8-Tetrachlorodibenzo-p-Dioxin Exposure on the Circulating and Cecal Metabolome Profile. *Int J Mol Sci*. 2021, 22(21): 11801

84. Daniel van der Lelie1, Akihiko Oka, Safiyh Taghavi, Junji Umeno, Ting- Jia Fan, Katherine E. Merrel, Sarah D. Watson, Lisa Ouellette, Bo Liu, Muyiwa Awoniyi, Yunjia Lai [A], Liang Chi [A], **Kun Lu**, Christopher S. Henry, R. Balfour Sartor. Rationally designed bacterial consortia to treat chronic immune-mediated colitis

and restore intestinal homeostasis. *Nature Communication, 2021, 12(1):3105*

83. Liang Chi [A], Pengcheng Tu [A], Hongyu Ru, and **Kun Lu***. Studies of xenobiotic-induced gut microbiota dysbiosis: from correlation to mechanisms. *Gut Microbes,* 2021, 13(1): 1921912.

82. Megan S Beaudry, Jincheng Wang, Troy J Kieran, Jesse Thomas, Natalia J Bayona-Vásquez, Bei Gao [A], Alison Devault, Brian Brunelle, **Kun Lu**, Jia-Sheng Wang, Olin E Rhodes, Travis C Glenn. Improved microbial community characterization of 16S rRNA via metagenome hybridization capture enrichment. *Frontiers in Microbiology,* 2021, 12:644662. doi: 10.3389/fmicb.2021.644662

81. Jingchuan Xue [A], Liang Chi [A], Pengcheng Tu [A], Yunjia Lai [A], Chih-Wei Liu [A], Hongyu Ru, and **Kun Lu***. Detection of Gut Microbiota and Pathogen Produced N-Acyl Homoserine in Host Circulation and Tissues. *NPJ Biofilms and Microbiomes, 2021, 7(1):53. doi: 10.1038/s41522-021-00224-5*.

80. Yunjia Lai [A], Chih-Wei Liu [A], Liang Chi [A], Hongyu Ru, **Kun Lu***. High-Resolution Metabolomics of 50 Neurotransmitters and Tryptophan Metabolites in Feces, Serum, and Brain Tissues Using UHPLC-ESI-Q Exactive Mass Spectrometry. *ACS Omega* . 2021, 6(12):8094-8103. Doi: 10.1021/acsomega.0c05789.

79. Yifei Yang [A], Liang Chi [A], Yunjia Lai [A], Yun-Chung Hsiao [A], Hongyu Ru, **Kun Lu***. The gut microbiome and arsenic-induced disease-iAs metabolism in mice. *Curr Environ Health Rep* . 2021. Doi: 10.1007/s40572-021-00305-9.

78. Chih-Wei Liu [A], Yun-Chung Hsiao [A], Gary Hoffman, **Kun Lu***. LC-MS/MS Analysis of the Formation and Loss of DNA Adducts in Rats Exposed to Vinyl Acetate Monomer through Inhalation. *Chem Res Toxicol* . 2021, 34(3):793-803. Doi: 10.1021/acs.chemrestox.0c00404.

77. Christelle Douillet, Jinglin Ji, Immaneni Lakshmi Meenakshi, **Kun Lu**, Fernando Pardo-Manuel de Villena, Rebecca C Fry, Miroslav Stýblo. Diverse genetic backgrounds play a prominent role in the metabolic phenotype of CC021/Unc and CC027/GeniUNC mice exposed to inorganic arsenic. *Toxicology*. 2021, 452:152696. Doi: 10.1016/j.tox.2021.152696.

76. Hao Guo, Wei-Chun Chou, Yunjia Lai [A], Kaixin Liang, Jason W Tam, W June Brickey, Liang Chen, Nathan D Montgomery, Xin Li, Lauren M Bohannon, Anthony D Sung, Nelson J Chao, Jonathan U Peled , Antonio L C Gomes, Marcel R M van den Brink, Matthew J French, Andrew N Macintyry, Gregory D Sempowski, Xianming Tan, R Balfour Sartor, **Kun Lu**, Jenny P Y Ting. Multi-omics analyses of radiation survivors identify radioprotective microbes and metabolites. *Science.* 2020;370(6516):eaay9097. Doi: 10.1126/science.aay9097.

75. Robinan Gentry, Chad M Thompson, Allison Franzen, Joshua Salley, Richard Albertini, **Kun Lu**, Tracy Greene. Using mechanistic information to support evidence integration and synthesis: a case study with inhaled formaldehyde and leukemia. *Crit Rev Toxicol* . 2020, 50(10):885-918.

74. Yun-Chung Hsiao [A], Chih-Wei Liu [A], Liang Chi [A], Yifei Yang [A], **Kun Lu***. Effects of Gut Microbiome on Carcinogenic DNA Damage. *Chem Res Toxicol* . 2020, 33(8):2130-2138.

73. Chad M Thompson, Robinan Gentry, Seneca Fitch, **Kun Lu**, Harvey J Clewel. An updated mode of action and human relevance framework evaluation for Formaldehyde-Related nasal tumors. *Crit Rev Toxicol* . 2020, 50(10):919-952. Doi: 10.1080/10408444.2020.1854679.

72. Pengcheng Tu [A], Xiaoming Bian [A], Liang Chi [A], Jingchuan Xue [A], Bei Gao [A], Yunjia Lai [A], Hongyu Ru, and **Kun Lu***. Metabolite Profiling of the Gut Microbiome in Mice with Dietary Administration of Black Raspberries. *ACS Omega*. 2020, 5(3): 1318–1325.

71. Robert Turesky* and **Kun Lu***. Biomarkers of Environmental Toxicants: Exposure and Biological Effects. *Toxcis*, 2020, 8(2), 37.

70. Pengcheng Tu [A], Liang Chi [A], Wanda Bodnar, Zhenfa Zhang, Bei Gao [A], Xiaoming Bian [A], Jill Stewart, Rebecca Fry, and **Kun Lu***. Gut Microbiome Toxicity: Connecting the Environment and Gut Microbiome-Associated Diseases. *Toxics*. 2020, 8(1): 19.

69. Julia E Rager, Jacqueline Bangma, Celeste Carberry, Alex Chao, Jarod Grossman, **Kun Lu**, Tracy A Manuck, Jon R Sobus, John Szilagyi, Rebecca C Fry. Review of the environmental prenatal exposome and its relationship to maternal and fetal health 2020, S0890-6238(20), 30017-4

68. Wanda M Haschek, May Berenbaum, David E Hinton, Michelle Cora, Neil Chernoff, Gregory Travlos, Chih-Wei Liu [A], **Kun Lu**, Mac Law. Pathology in Ecological Research With Implications for One Health: Session Summary. *Toxicol Pathol* . 2019, 47(8):1072-1075.

67. Glenn, T. C., T. W. Pierson, N. J. Bayona-Vásquez, T. J. Kieran, S. L. Hoffberg, J. C. Thomas IV, D. E. Lefever, J. W. Finger Jr., Bao Gao [A], Xiaoming Bian [A], S. Louha, R. T. Kolli, K. Bentley, J. Rushmore, K. Wong, T. I. Shaw, M. J. Rothrock Jr., A. M. McKee, T. L. Guo, R. Mauricio, M. Molina, B. S. Cummings, L. H. Lash, **Kun Lu**, G. S. Gilbert, S. P. Hubbell, and B. C. Faircloth. Adapterama II: universal amplicon sequencing on Illumina platforms (TaggiMatrix), PeerJ. 2019; 7: e7786.

66. Liang Chi [A], Yunjia Lai [A], Pengcheng Tu [A], Chih-Wei Liu [A], Jingchuan Xue [A], Hongyu Ru, and **Kun Lu***. Lipid and Cholesterol Homeostasis after Arsenic Exposure and Antibiotic Treatment in Mice: Potential Role of the Microbiota. *Environ Health Perspect.* 2019 Sep; 127(9): 097002.

65. Pengcheng Tu [A] , Jingchuan Xue [A] , Xiaoming Bian [A], Liang Chi [A], Bei Gao [A] , Jiapeng Leng [A] , Hongyu Ru , Thomas J Knobloch , Christopher M Weghorst , **Kun Lu***. Dietary Administration of Black Raspberries Modulates Arsenic Biotransformation and Reduces Urinary 8-oxo-2'-deoxyguanosine in Mice. Toxicol Appl Pharmacol, 2019 Aug 15;377:114633

64. Tomlinson MS, Kun Lu, Stewart JR, Marsit CJ, O'Shea TM, Fry RC. Microorganisms in the Placenta: Links to Early-Life Inflammation and Neurodevelopment in Children. *Clin Microbiol Rev*. 2019, 32(3):e00103-18

63. Liang Chi [A], Pengcheng Tu [A], Chih-Wei Liu [A], Yunjia Lai [A], Jingchuan Xue [A], Hongyu Ru, **Kun Lu*.** Chronic Arsenic Exposure Induces Oxidative Stress and Perturbs Serum Lysolipids and Fecal Unsaturated Fatty Acid Metabolism. *Chem Res Toxicol*, 2019, 32(6):1204-1211

62. Liang Chi [A], Jingchuan Xue [A], Pengcheng Tu [A], Yunjia Lai [A], Hongyu Ru and **Kun Lu***. Gut microbiome disruption altered the biotransformation and liver toxicity of arsenic in mice. *Archives of Toxicology*, 2019, 93, 25–35

61. Pengcheng Tu [A], Bei Gao [A], Liang Chi [A], Yunjia Lai [A], Xiaoming Bian [A], Hongyu Ru, and **Kun Lu***. Subchronic low-dose 2,4-D exposure changed plasma acylcarnitine levels and induced gut microbiome perturbations in mice *Sci Rep*. 2019; 9: 4363

60. Jiapeng Leng [A], Chih-Wei Liu [A], Hadley J. Hartwell, Rui Yu, Yongquan Lai, Wanda M. Bodnar, **Kun Lu***, James A. Swenberg*. Evaluation of inhaled low-dose formaldehyde-induced DNA adducts and DNA–protein cross-links by liquid chromatography–tandem mass spectrometry, Archives of Toxicology, 2019, 93(3):763-773

59. Chih-Wei Liu [A], Liang Chi [A], Pengcheng Tu [A], Jingchuan Xue [A], Hongyu Ru, **Kun Lu***. Quantitative

proteomics reveals systematic dysregulations of liver protein metabolism in sucralose-treated mice. Journal of Proteomics. 2019, 196:1-10

58. Yunjia Lai [A], Jingchuan Xue [A], Chih-Wei Liu [A], Bei Gao [A], Liang Chi [A], Pengcheng Tu [A], **Kun Lu** and Hongyu Ru. Serum Metabolomics Identifies Altered Bioenergetics, Signaling Cascades in Parallel with Exposome Markers in Crohn's Disease. Molecules, 2019, 24(3): 449

57. Gao Bei [A], Chi Liang [A], Tu Pengcheng [A], Gao Nan, and **Lu Kun***. The Carbamate Aldicarb Altered the Gut Microbiome, Metabolome, and Lipidome of C57BL/6J Mice. Chemical Research in Toxicology, 2019, 22;32(1):67-79

56. Liu Chih-Wei [A] , Chi Liang [A], Tu Pengcheng [A], Xue Jinchuan[A] and **Lu Kun***. Isobaric Labeling Quantitative Metaproteomics for the Study of Gut Microbiome Response to Arsenic. *Journal of Proteome Research, 2019, 18(3):970-981. doi: 10.1021/acs.jproteome.8b00666*

55. Xue Jinchuan [A], Lai Yunjia [A], Chi Liang [A], Tu Pengcheng [A], Leng Jiapeng, Liu Chih-Wei [A], and **Lu Kun***. Serum metabolomics reveals that gut microbiome perturbation mediates metabolic disruption induced by arsenic exposure in mice. *Journal of Proteome Research, 2019, 18, 3, 1006–1018*

54. Tu Pengcheng [A], Bian Xiaoming [A], Chi Liang [A], Gao Bei [A], Ru Hongyu, Thomas J Knobloch, Christopher M. Weghorst, and **Lu Kun***. Characterization of the Functional Changes in Mouse Gut Microbiome Associated with Increased Akkermansia muciniphila Population Modulated by Dietary Black Raspberries. *ACS Omega, 2018, 3(9): 10927–10937.*

53. Liu Chih-Wei [A], Tian Xu, Hartwell J. Hadley, Chi Liang [A], **Lu Kun*** and JA Swenberg***.** Accurate Measurement of Formaldehyde–Induced DNA–Protein Crosslinks by High-resolution Orbitrap Mass Spectrometry. *Chemical Research in Toxicology, 2018, 31, 5, 350–357*

52. Chi Liang [A], Tu Pengcheng [A], Lai Yunjia [A], Ru Hongyu, Xue Jinchuan[A] and **Lu Kun***. Individual susceptibility to arsenic-induced diseases: the role of host genetics, nutritional status and gut microbiome. *Mammalian Genome,* 2018, s00335-018-9736-9, 1-17

51. Chi Liang [A]**,** Yunjia Lai [A], Tu Pengcheng [A], Jinchuan Xue [A]**,** and **Lu Kun*.** The Artificial Sweetener Neotame Affects the Gut Microbiome Profile and Fecal Metabolites in CD-1 Mice. *Molecules*, 2018, 23, 367,1-11

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CONFERENCE ABSTRACTS AND POSTER PRESENTATIONS

** = Dr. Lu as the Corresponding author*

A = Advisee

43. Jingya Peng [A], Liang Chi [A], Yifei Yang [A], Xiaoming Bian [A], **Kun Lu***. Chronic consumption of the artificial sweetener sucralose inhibits FXR signaling and perturbs lipid and cholesterol homeostasis in the mouse liver via gut microbiome. Annual meeting of the Society of Toxicology, Nashville, TN, March 2023

42. Chih-Wei Liu [A], Jake Thistle, Julia E. Rager, **Kun Lu***, Stephanie M. Engel. Quantification of Phthalates in Baby Urine by Liquid Chromatography Tandem Mass Spectrometry. Annual meeting of the Society of Toxicology, Nashville, TN, March 2023

41. Jiahao Feng [A], Greg Johnson [A], Yifei Yang [A], Yun-Chung Hsiao [A], Chih-Wei Liu [A], **Kun Lu*.** Evaluation of Neurological Behavior Alterations and Metabolic Changes of Rats Under Chronic Glyphosate Exposure. Annual meeting of the Society of Toxicology, Nashville, TN, March 2023

40. Haoduo Zhao [A], Chih-Wei Liu [A], Yun-Chung Hsiao [A], Jiahao Feng [A], Yifei Yang [A], **Kun Lu***. Towards Human Exposome: Nontargeted Large-Scale Pesticide Screening in Human Adult and Baby Urine with

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39. Yifei Yang [A], Yun-Chung Hsiao [A], Chih-Wei Liu [A], Haoduo Zhao [A], Jiahao Feng [A], Balfour Sartor and **Kun Lu***. Arsenic exposure induces glucose intolerance in mice via gut microbiome-bile acid-FXR signaling pathway. Annual meeting of the Society of Toxicology, Nashville, TN, March 2023

38. Yun-Chung Hsiao [A], Richard S. Matulewicz, Scott E. Sherman, Ilona Jaspers, Michael L. Weitman, Terry Gordon, Chih-Wei Liu [A], Yifei Yang [A], **Kun Lu***, Marc A. Bjurlin. Untargeted Metabolomics to Characterize the Urinary Chemical Landscape of E-cigarette Users. Annual meeting of the Society of Toxicology, Nashville, TN, March 2023

37. Yun-Chung Hsiao [A], Yifei Yang [A], Chih-Wei Liu [A], and **Kun Lu***. Chronic arsenic exposure perturbs gut microbiota and bile acid homeostasis in mice, Superfund Annual meeting, Raliegh, Dec 2022

36. Yifei Yang [A], Yun-Chung Hsiao [A], Chih-Wei Liu [A], and **Kun Lu***. Arsenic exposure induces glucose intolerance in mice through gut microbiome. Superfund Annual meeting, Raliegh, Dec 2022

35. Yun-Chung Hsiao [A]. Piecing up the Cancer Potential Contributed by the Gut Microbiome: Biomarkers and Xenobiotic Metabolism. RTP, NC, February 2021

34. Yifei Yang [A], Yun-Chung Hsiao [A], Chih-Wei Liu [A] , **Kun Lu***. Chronic arsenic exposure perturbs the gut microbiome and bile acid homeostasis in mice. Superfund Program Annual Meeting, Oct 2020

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28. Chi Liang [A], Bian Xiaoming [A], Gao Bei [A], Tu Pengcheng [A], and **Lu Kun*.** The Artificial Sweetener Acesulfame Potassium Affects the Gut Microbiome and Body Weight Gain in CD-1 Mice. NC Microbiome Consortium Conference, RTP, NC, May 2017

27. Tu Pengcheng[A], Bian Xiaoming [A], Chi Liang[A], Gao Bei[A] and **Lu Kun*.** Saccharin induced liver inflammation in mice by altering the gut microbiota and its metabolic functions**.** NC Microbiome Consortium Conference, RTP, NC, May 2017

26. Chi Liang [A], Bian Xiaoming [A], Gao Bei [A], Tu Pengcheng[A], and **Lu Kun***. Arsenic exposure induces oxidative stress and DNA damage and perturbs the carbohydrate metabolism in gut microbiome. The 56th Annual Meeting of Society of Toxicology, Baltimore, MD, March 12-16, 2017

25. Gao Bei[A], Chi Ling[A], Mahbub Ridwan[A], Bian Xiaongming[A], Tu Pengcheng[A], and **Lu Kun***. Multi-Omics Reveals Lead Exposure Disturbs Gut Microbiome Development, Key Metabolites and Metabolic Pathways. The 56th Annual Meeting of Society of Toxicology, Baltimore, MD, March 12-16, 2017

24. Tu Pengcheng[A], Chi Liang[A], Xiaoming Bian[A], Gao Bei[A] and **Lu Kun*.** Profound Perturbation Induced By Triclosan Exposure In Mouse Gut Microbiome. MEDx-IBIEM Joint Symposium: Frontiers in Microbiome Dynamics and Engineering, Durham, NC, March 2017

23. Chi Liang [A], Bian Xiaoming [A], Gao Bei [A], Tu Pengcheng [A], and **Lu Kun***. Arsenic exposure alters bacterial genes related to pathogenicity. MEDx-IBIEM Joint Symposium: Frontiers in Microbiome Dynamics and Engineering, Durham, NC, March 2017

22. Gao Bei[A], Bian Xiaoming[A], Chi Liang[A], Tu Pengcheng[A], **Lu Kun***. Metagenomics Analysis Reveals Compound-Specific Impacts of Organophosphate Malathion and Carbamate Aldicarb on Gut Microbiome and its Functional Capacity. NIEHS Environmental Health Science FEST, Durham, NC, December 6-8, 2016

21. Bian Xiaoming [A], Gao Bei [A], ChiLiang [A], Tu Pengcheng [A], Mahbub Ridwan [A], and **Lu Kun *.** Cadmium exposure perturbs the gut microbiome and its metabolic profile in mice. NIEHS Environmental Health Science FEST, Durham, NC, December 6-8, 2016

20. Tu Pengcheng [A], Mahbub Ridwan [A], ChiLiang [A], Bian Xiaoming [A], Gao Bei [A], and **Lu Kun *.** Effects of Nicotine on the Gut Microbiome and Its Metabolic Functions. NIEHS Environmental Health Science FEST, Durham, NC, December 6-8, 2016

19. ChiLiang [A], Bian Xiaoming[A], Gao Bei[A], Tu Pengcheng [A], and **Lu Kun***. Arsenic exposure increases pathogenicity of gut bacteria. NIEHS Environmental Health Science FEST, Durham, NC, December 6-8, 2016

18. Gao Bei[A], Bian X[A], Chi L[A], Tu P[A], and **Lu Kun***. Metatranscriptomics Reveals Functional Effects of Diazinon Exposure on Gut Microbiome. The 252nd American Chemical Society National Meeting, Philadelphia, PA, August 21-25, 2016

17. Bian Xiaoming[A], Gao Bei[A], Chi Liang[A], Mahbub Ridwan[A], and **Lu Kun***. Gut microbiome and metabolome response to artificial sweeteners, The 252nd ~~A~~merican Chemical Society National Meeting, Philadelphia, PA, August 21-25, 2016

16. Tu Pengcheng[A], Chi Liang[A], Mahbub Ridwan[A], Gao Bei[A] and **Lu Kun***. The effects of nicotine on the gut microbiome and its metabolic functions, The 252nd American Chemical Society National Meeting, Philadelphia, PA, August 21-25, 2016

15. Chi Liang[A], Bian Xiaoming[A], Gao Bei[A], Tu Pengcheng[A], and **Lu Kun***. Gender-specific effects of arsenic on the trajectories of gut microbiome and its function, The 252nd American Chemical Society National Meeting, Philadelphia, PA, August 21-25, 2016

14. Gao Bei[A], Bian Xiaoming[A], Mahbub Ridwan[A], and **Lu Kun***. Effects of Organophosphate Diazinon on the Gut Microbiome and its Function. The 250th National Meeting of American Chemical Society, Boston, MA, August 2015

13. Bian Xiaoming[A], Smith Mary Alice, Amosu Mayowa, Stice Steven, Henderson William, Wallace Shelley and **Lu Kun***. Metabolomics- and Human Neural Stem Cells-Based Assays for Toxicity Test. The 250th National Meeting of American Chemical Society, Boston, MA, August 2015

12. Amosu Mayowa, Wallace Shelley, Majumder Anirban, Bian Xiaoming[A], **Lu Kun**, Stice Steven, and Smith Mary Alice. Comparison of Human Neural Progenitor and Differentiated Human Neuronal Cells for In Vitro Tests of Neurotoxicity, Birth Defects Research Part A-Clinical and Molecular Teratology. 2015, 103, 5, 432-432, The 55th Teratology Annual Meeting, Montréal, Canada, June 2015

11. Smith Mary Alice, Amosu Mayowa, Bian Xiaoming[A], **Lu Kun**, Stice Steven, Henderson William, Wallace Shelley, and Majumder Anirban. Using Human-Derived Neural Cells As an In Vitro Model for Developmental Neurotoxicity following Exposure to Pesticides. The 54thAnnual Meeting of Society of Toxicology, San Diego, CA, March 2015

10. **Lu Kun**, Moeller Benjamin, Doyle-Eisele Melanie, McDonald Jacob, and Swenberg James. Molecular Dosimetry and Half Life of N^2-Hydroxymethyl-dG DNA Adducts in Rats Exposed to Formaldehyde. The 50th Annual Meeting of Society of Toxicology, Washington, DC, March 2011

9. Gul Husamettin, **Lu Kun**, Upton Pat and Swenberg James. Formaldehyde-Induced Hydroxymethyl DNA Adducts in Rats Exposed to Isotope Labeled Methanol. The 50th Annual Meeting of Society of Toxicology, Washington, DC, March 2011

8. Moeller Benjamin, **Lu Kun**, Doyle-Eisele Melanie, McDonald Jacob, Gigliotti Andrew, and Swenberg James. Molecular Dosimetry of N^2-Hydroxymethyl-dG Adducts Following Formaldehyde Exposure to Non-Human Primates. The 50th Annual Meeting of Society of Toxicology, Washington, DC, March 2011

7. **Lu Kun**, Ye Wenjie, Gold Avram, Ball Louise, and Swenberg James. Structural Characterization of Formaldehyde-Induced DNA-Protein Cross-Links. The 240th National Meeting of American Chemical Society, Boston, MA, August 2010

6. **Lu Kun**, Collins Leonard, Ru Hongyu, Bermudez Edilberto, and Swenberg James. Distribution and Molecular Dose of Inhalation-Derived and Endogenous DNA Adducts Support Causation of Nasal Carcinoma but not Leukemia. The 49th Annual Meeting of Society of Toxicology, Salt Lake City, UT, March 2010

5. **Lu Kun**, Ye Wenjie, Gold Avram, Ball Louise, and Swenberg James. Identification of Glutathione-DNA Adducts Induced by Formaldehyde. The 48th Annual Meeting of Society of Toxicology, Baltimore, MD, March 2009

4. **Lu Kun**, Ye Wenjie, Zhou Li, Gold Avram, Ball Louise, Chen Xian, and Swenberg James. Analysis of Formaldehyde Induced Lysine-Deoxyguanosine Cross-Links by Mass Spectrometry. The 238th National Meeting of American Chemical Society, Philadelphia, PA, August 2008

3. **Lu Kun**, Ye Wenjie, Zhou Li, Collins Leonard, Chen Xian, and Swenberg James. Structure Elucidation of Formaldehyde-Induced DNA-Protein Cross-Links by Mass Spectrometry and NMR. The 56th Annual Meeting of American Society of Mass Spectrometry, Denver, CO, June 2008

2. **Lu Kun**, Boysen Gunnar, Gao Lina, Collins Leonard, and Swenberg James. Identification of

Formaldehyde Induced Histone Modifications *In Vitro* by Mass Spectrometry. The 55th Annual Meeting of American Society of Mass Spectrometry, Indianapolis, IN, June 2007

1. **Lu Kun**, Petrotchenko Evgeniy, and Borchers Christoph. Cross-Linking and Mass Spectrometry for Identifying Protein-Protein Interaction Sites in Activator-Multi-Component Protein Complexes. The 54th Annual Meeting of American Society of Mass Spectrometry, Seattle, WA, June 2006

INVITED TALKS

33. Metabolomics uncovers microbiota-driven biochemical landscape of interorgan transport and gut-brain communication. CASMS Systems Biology and Epigenetics Virtual Conference, August 2023
32. Use of multi-omics to decipher signaling molecules of xenobiotic-gut microbiome-host interactions, Annual meeting of the Society of Toxicology, Nashville, TN, March 2023
31. Advances in Stable Isotope Labeling and Mass Spectrometry (SILMS) Technology and Use for Characterizing Molecular Dosimetry for Potential Molecular Targets in Target Organs, Alliance for Risk Assessment, Washington DC, Feb 2022
30. Dose response and risk assessment using endogenous and exogenous DNA adduct, American Chemistry Council, April 2021
29. Decipher Signaling Molecules of Gut Microbiome Toxicity: Mechanism, Biomarker, and Intervention, Workshop on Impact of environmental exposures on the microbiome and human health, NIEHS, February 2021
28. DNA adducts and its risk assessment in formaldehyde carcinogenicity and its risk assessment, Society of Risk Analysis, May 2020
27. *Effects of Heavy Metals on the Gut Microbiome*. National Academy of Science Microbiome Symposium, Environmental and Health: What's the Human Microbiome Have to Do With It? Washington, DC, January 2016
26. Functional interaction of arsenic and gut microbiome. Annual ONES meeting at the NIEHS, RTP, NC, May 2018
25. *Artificial sweeteners, gut microbiome and host metabolism*. Center for Gastrointestinal Biology and Disease, Chapel Hill, NC, November 2017
24. *Mass spectrometry based less-invasive biomarker development for inflammatory bowel diseases*, Center for Gastrointestinal Biology and Disease, Chapel Hill, NC, June 2017
23. *The gut microbiome toxicity and omics approaches*. The Bortree Lecture, Center of Molecular Toxicology and Carcinogenesis Pennsylvania State University, State College, PA, February, 2017
22. *Multi-omics to study the microbiome toxicity induced by environmental chemicals*. The NIEHS Environmental Health Science FEST, RTP, NC, December 2016
21. *The gut microbiome toxicity induced by heavy metals*. The 10thMetal Toxicity and Carcinogenesis Meeting, Lexington, KY, October 2016
20. *Gut microbiome, arsenic biotransformation and toxicity*. International Congress of Toxicology, Merida,

Mexico, October 2016

19. *Interactions between Environmental Exposure and Gut Microbiome: From 16S to Functional Characterization*. UGA Microbiome Seminar Serials, Athens, GA, March 2016
18. *Use of Animal Models Infected with Helicobacter Spp. To Study Chronic Inflammation and Metal Toxicity*. Department of Infectious Diseases, College of Veterinary Medicine, UGA, February 2016
17. *The Role of Gut Microbiome in Chemical Toxicity*. The 245th National Meeting of American Chemical Society, Boston, MA, August 2015
16. *Biomarker Discovery of Inflammatory Bowel Diseases*. The Exposome and Systems Biology Workshop. Georgia Tech, Atlanta, GA, May 2015
15. *Biomarker Discovery: From 1 to 1000s Molecules*. College of Public Health, Ohio State University, Columbus, OH, May 2015
14. *System-Level Approach to Study the Gut Inflammation*. Department of Pharmaceutical Science, University of Colorado, CO, February 2015
13. *Arsenic Exposure and Gut Microbiome for Toxicity and Individual Response*. The 244th National Meeting of American Chemical Society, San Francisco, CA, August 2014
12. *Functional Interaction between Gut Microbiome and Arsenic Exposure*. NIEHS Superfund Arsenic Workshop, Expert Panel, RTP, NC, March 2014
11. *The Effects of Gut Microbiome in Obesity and Potential Roles of Chemical Exposure on the Gut Microbiome*. UGA Obesity Initiative, Athens, GA, January 2014
10. *Modulation of Arsenic Toxicity in Animals with Different Gut Microbiome Phenotypes*. UGA Department of Animal and Dietary Science, Athens, GA, November 2013
9. *The Role of Gut Microbiome in Environmental Exposure and Human Disease*. UGA Department of Pharmacology and Physiology, Athens, GA, October 2013
8. *Omics-Based Biomarker Discovery for Inflammatory Bowel Disease: From Animal Models to Patients*. The 242nd National Meeting of American Chemical Society, Philadelphia, PA, August 2012
7. *Integration of Targeted and System-Level Approaches to Understand Environmental Exposure and Human Disease.* Superfund Research Program Seminar, Brown University, Providence, RI, February 2012
6. *Biomarker Discovery for Evaluating Chemical Exposure and Human Disease*. Department of Environmental Health Science, University of Massachusetts, Amherst, MA, January 2012
5. *Structural Characterization of Formaldehyde-Induced DNA-Protein Cross-Links*. The 240th National Meeting of American Chemical Society, Boston, MA, August 2010
4. *Analysis of Formaldehyde-induced DNA and Protein Damage*. The National Institute of Environmental Health Sciences, Research Triangle Park, NC, July 2010
3. *Quantitative Biomarkers to Understand Formaldehyde Genotoxicity*. Massachusetts Institute of Technology, Boston, MA, May 2010
2. *Molecular Binding of Formaldehyde to DNA and Protein and its Application in Risk Assessment*.

Vanderbilt University, Nashville, TN, April 2010

1. *Identification of a Novel Formaldehyde-induced Glutathione-DNA Adduct*. The 48th Annual Meeting of Society of Toxicology, Baltimore, MD, March 2008

TEACHING ACTIVITIES

Detailed Record of Courses taught

Semester	Course#	Title	Credit hours	Role	Student enrolled	-
2023 Fall	ENVR 430	Health effects of environmental agents	3	Instructor	50	Required
2023 Spring	ENVR/TOXC 707	Advanced Toxicology	3	Instructor	13	Elective*
2023 Spring	ENVR 240	Undergraduate Research Opportunities Program (UROP) Training	1	Guest lecturer	-	Elective
2022 Fall	ENVR 430	Health effects of environmental agents	3	Instructor	43	Required
2022 Fall	ENVR/TOXC 442	Biochemical and Molecular Toxicology	3	Guest lecturer	-	Elective*
2022 Spring	ENVR/TOXC 707	Advanced Toxicology	3	Instructor	12	Elective*
2022 Spring	ENVR 770	Biological Monitoring in Exposure Assessment	3	Guest lecturer	-	Elective
2021 Fall	ENVR 430	Health effects of environmental agents	3	Instructor	39	Required
2021 Spring	ENVR/TOXC 707	Advanced Toxicology	3	Instructor	13	Elective*
2020 Fall	ENVR 430	Health effects of environmental agents	3	Instructor	42	Required
2020 Fall	ENVR 442	Biochemical and Molecular Toxicology	3	Guest lecturer	-	Elective*
2020 Fall	ENVR 630	Systems Biology in Environmental Health	3	Guest lecturer	-	Elective
2020 Spring	ENVR/TOXC 707	Advanced Toxicology	3	Instructor	7	Elective*
2019 Fall	ENVR 430	Health effects of environmental agents	3	Instructor	36	Required
	ENVR/TOXC 442	Biochemical and Molecular Toxicology	3	Guest lecturer	-	Elective*
2019 Spring	ENVR/TOXC 707	Advanced Toxicology	3	Instructor	9	Elective*
2018 Fall	ENVR 430	Health effects of	3	Instructor	34	Required

		environmental agents				
	ENVR/TOXC 442	Biochemical and Molecular Toxicology	3	Guest lecturer	-	Elective*
	ENVR 630	Systems Biology in Environmental Health	3	Guest lecturer	-	Elective
2018 Spring	ENVR/TOXC 707	Advanced Toxicology	3	Instructor	6	Elective*
2017 Fall	ENVR 430	Health effects of environmental agents	3	Instructor	37	Required
	ENVR/TOXC 442	Biochemical and Molecular Toxicology	3	Guest lecturer	10	Elective*
	ENVR 630	Systems Biology in Environmental Health	3	Guest lecturer	14	Elective
2017 Spring	ENVR 400	In house seminar series	1	Guest lecturer	-	Required
2016 Fall	ENVR/TOXC 442	Biochemical and Molecular Toxicology	3	Guest lecturer	12	Elective*
	ENVR 630	Systems Biology in Environmental Health	3	Guest lecturer (2 lectures)	15	Elective
2016 Spring	EHSC 8650	Advanced Environmental Chemistry	4	Instructor	7	Required
	EHSC 8800	Special Problems in Environmental Health Sciences	3	Instructor	1	Elective
2015 Fall	EHSC4350/4350L	Environmental Chemistry	4	Instructor	11	Required
	EHSC 8010	Advanced topics in Environmental Health Sciences	3	Co-instructor (1 of 4)	6	Required
2015 Spring	EHSC 7010	Fundamentals of Environmental Health Science	3	Guest lecturer (1 lecture)	40	Required
	EHSC 8800	Special Problems in Environmental Health Sciences	3	Instructor	1	Elective
	EHSC 8110	Fundamentals of Chemical and Microbial Risk Assessment	3	Co-Instructor (1 of 4)	18	Required
2014 Fall	EHSC 8800	Special Problems in Environmental Health Sciences	3	Instructor	2	Elective
	EHSC 4350/6350 4350L/6350L	Environmental Chemistry and Lab	4	Instructor	10	Required

2014 Spring	EHSC 8800	Special Problems in Environmental Health Sciences	3	Instructor	3	Elective
	EHSC 4960	Undergraduate Research in Biology	4	Instructor	1	Elective
	EHSC 7010	Fundamentals of Environmental Health Science	3	Guest lecturer	45	Required
	EHSC 8020	Advanced topics in Environmental Health Sciences II	3	Co-instructor (1 of 4)	10	Required
2013 Fall	EHSC4350/6350	Environmental Chemistry	3	Instructor	11	Required
	EHSC 2020	Orientation to Environmental Health Science	1	Guest lecturer (1 lecture)	25	Required
2012 Fall	EHSC 2020	Orientation to Environmental Health Science	1	Guest lecturer (1 lecture)	22	Required

**These courses are required courses by the Curriculum of Toxicology*.

ADVISING ACTIVITIES

I have advised 27 trainees, including 11 PhD students, 5 Master's students, 7 undergraduate students, 3 post-doctoral researchers, and 1 visiting student. I have also served in 23 student committees of other research groups.

A. Ph.D or Master Students with me as the Advisor

Current (7 graduate students in the lab)

- Taylor Teitelbaum, PhD student, UNC-CH, Chemistry, 2023-present
  Dissertation title: Development of neurotoxicant database for human exposomics research
- Xueying Wang, Master student, UNC-CH, ESE, 2023-present
  Thesis title: Mitigation of metal toxicity through microbiome modulation
- Raven Zhao, PhD student, UNC-CH, ESE, 2022-present
  Dissertation title: Study the signaling molecules of microbiome-host interactions
- Jiahao Shen, PhD student, UNC-CH, ESE, 2022-present
  Dissertation title: Investigate the DNA/protein damage induced by reactive aldehydes
- Demi Peng, Master student, UNC-CH, ESE, 2022-present
  Thesis title: Use of exposomics and other omics to study environmental contributors of preeclampsia
- Yifei Yang, PhD students, UNC-CH, ESE, 2019-present

Dissertation title: The interaction of arsenic exposure, gut microbiome and FXR signaling in diabetes

- Yun-Chong Hsia, PhD student, UNC-CH, ESE, 2019-present
  Dissertation title: The impact of gut microbiome on the formation of DNA adducts

Graduated

- Greg Johnson, PhD students, UNC-CH, ESE, 2021-2022[#]
  Dissertation title: Development of new exposome mapping approaches to detect and measure environmental chemicals ([#] withdrew from the graduate school due to a health condition)
- *Xia Sheng*, Master students, UNC-CH, ESE, 2019-2021
  Thesis title: The effects of heavy metal exposure on the gut microbiome
- *Yu Hong Shu*, Master students, UNC-CH, ESE, 2019-2021
  Thesis title: Development of protein biomarker of formaldehyde exposure
- Yunjia Lai, PhD students, UNC-CH, ESE, 2017-2021
  Dissertation title: Development of exposome mapping approaches to study microbiome-exposure interaction and human diseases
- Chi Liang, PhD student, UNC-CH, ESE, 2015-2020
  Dissertation title: Decipher the functional interaction between arsenic exposure and the gut microbiome
- Tu Pengcheng, PhD student, UNC-CH, ESE, 2015-2019
  Dissertation title: Development of microbiome-based intervention methods to reduce toxicity of environmental chemicals
- Mahbub Ridwan, MS student, UGA, Environmental Health Science, 2013-2015
  Thesis title: The effects of nicotine on the gut microbiome and the serum metabolic profile of mice
- Bian Xiaoming, PhD student, UGA, Environmental Health Science, 2012-2017
  Dissertation title: Effects of artificial sweeteners on gut microbiome, metabolome and inflammation
- Gao Bei, PhD student, UGA, Environmental Health Science, 2012-2016
  Dissertation title: Understanding the role of gut microbiome in pesticide-induced toxicity

B. Ph.D or Master Students with me as a Committee Member

Current

- Devin I. Alewel, PhD student, UNC-CH, ESE, 2023-present
- Catalina Cobos-Uribe, PhD student, UNC-CH, CiTEM, 2023-present
- Kristina Stuckey, Master student, UNC-CH, ESE, 2023-present
- Nancy Urbano, PhD student, UNC, ESE, 2023-present
- Lauren Koval, PhD student, UNC-CH, ESE, 2022-present
- Anastasia Freedman, PhD student, UNC-CH ESE, 2021-present

Completed

- Jennifer N. Style, PhD student, UNC-CH, ESE, 2018-2022

  Dissertation: Residential Outdoor Air Microbiome (roAM): Exploring its environmental predictors, impacts on human gut and salivary microbiome, and association with human health effects

- Elise Hickman, PhD student, UNC-CH, Toxicology, 2018-2022
  Dissertation: Effects of electronic cigarettes on respiratory immune homeostasis using translational in vitro and in vivo approaches

- Alyssa Grube, PhD student, UNC-CH, ESE, Defensed in 2021

  Dissertation: Characterization of the environmental resistome in the Galapagos islands, Ecuador: A one health perspective

- Celeste K. Carberry, BSPH-ENHS, UNC-CH ESE, Defensed in 2020

  Honor Thesis: Non-targeted analysis of placentas from preeclamptic patients identifies links to acetaminophen and molecular alterations relevant to cell death

- Avula Vennela, UNC-CH ESE, Defensed in 2020

  Honor Thesis: Effects of Inorganic Arsenic on the Epithelial-Mesenchymal Transition, Migration, and Invasion of Placental Cells

- Paige Bommarito, PhD student, UNC-CH, ESE, 2017-2019
  Dissertation: Cadmium exposure, microRNA signaling and preeclampsia

- Martha Scott Tomlinson, PhD student, UNC-CH, ESE, 2017-2019
  Dissertation: Extremely low gestational age newborns (ELGAN) study, bacteria in the placenta and epigenetic modifications

- Jennifer Griggs, PhD student, UNC-CH, ESE, 2017-2020
  Dissertation: Bioaccessibility of arsenic from different types of contaminated soils
- Zhenyu Tian, PhD student, UNC-CH, ESE, defensed in 2017
  Dissertation: Structural characterization and toxicity of degradation products of PHA in soil

- Sloane Tilley, Master Student, UNC-CH, ESE, defensed in 2017
  Thesis: Analysis of Bladder Cancer Tumor CpG Methylation and Gene Expression within The Cancer Genome Atlas Identifies GRIA1 as a Prognostic Biomarker for Basal-Like Bladder Cancer

- Chan Monica, MS student, UGA, Environmental Health Science, 2014-2016
  Thesis title: Prevalence and location of Cronobacter species and Enterobacteriaceaein households

- Pati Sumitra, PhD student, UGA, Pharmaceutical and Biomedical Science, 2013-2018
  Dissertation: Cocaine-induced lipidomics alterations for the study of addictive behaviors

- Lee Sun Hye, PhD student, UGA, Nutrition, 2013-2017
  Dissertation title: Preserving the intestinal epithelial barrier against inflammation

- Li Jiaojiao, PhD student, UGA, Molecular Biology, Florida International University, 2013-2017
  Dissertation title: The effects of hAS3MT genetic polymorphisms on arsenic biomethylation

- Myer Mark, MS student, UGA, Environmental Health Science, 2013-2015

Thesis title: Effects of multi walled carbon nanotubes and sediment on the toxicity and bioavailability of diphenhydramine

- Wang Jincheng, PhD student, UGA, Toxicology, 2012-2016
  Dissertation title: Interaction between the microbiome and aflatoxin/green tea polyphenols

C. Undergraduate Student Research

Current

- Seifert, Cole Joseph, UNC. ESE, Undergraduate Research, Fall 2023-
  Project title: Analysis of DNA adducts induced by environmental carcinogens
- Souhan, Anna Ruth, UNC. ESE, Undergraduate Research, Fall 2023-
  Project title: The role of gut bacterial in metal toxicity
- Kathiravan, Chahaana, UNC. ESE, Undergraduate Research, Fall 2023-
  Project title: Analysis of DNA damage associated with the consumption of artificial sweeteners

Completed

- Chris Wood, UNC. IEHS-QUEST Summer Research, 2023
  Project title: Proteomics analysis of liver protein in mice treated with artificial sweeteners.
- Chris Wood, UNC. IEHS-QUEST Summer Research, 2023
  Project title: Examination the role of FXR in arsenic toxicity via proteomics
- Amy Cheng, UNC, Environmental Sciences and Engineering, Undergraduate Honor thesis, 2023
  Project title: Arsenic exposure on the microbiome and metabolic profiles
- Cao Fang, UNC, Environmental Sciences and Engineering, Undergraduate Honor thesis, 2019
  Project title: Exposomic analysis of amniotic fluid of pre-term birth patients using high resolution Orbitrap mass spectrometry
- Crider Robert, UGA, Environmental Health Science, Summer Research, 2015
  Project title: Characterization of pesticide-induced metabolic perturbation in C57/BL6 mice by mass spectrometry
- Kim Erica, UGA, Environmental Health Science, Undergraduate Research, 2014
  Project title: Evaluate the effects of ergothioneine on modulating the DNA oxidation products using LC-MS
- Min Andreana, UGA, Biology, Undergraduate Research, 2014
  Project title: Analysis of oxidative stress biomarkers in urine of mice exposed to arsenic in drinking water

D. Post-doctoral Researchers

Current

- Chih-Wei Liu, Postdoctoral Associate, UNC-CH, ESE, 2017-present
  Project title: Development of high-resolution mass spectrometry-based metaproteomics and pipeline to analyze the functional changes of the gut microbiome.

Completed

- Jingchuan Xue, Postdoctoral Associate, UNC-CH, ESE, 2017-2019
  Project title: Development of mass spectrometry based exposome mapping methods for drugs and emerging environmental contaminants.
- Jiapeng Leng, Postdoctoral Associate, UNC-CH, ESE, 2017-2018
  Project title: Formaldehyde-induced DNA adducts and DNA-protein crosslinks in rats exposed to low doses of formaldehyde.

E. Visiting Students

- Fei Ding, Chemistry, visiting PhD student, Chinese Agriculture University, 2012
  Project title: Use of mass spectrometry to identify and characterize protein modifications induced by lipid peroxidation and oxidative stress.

E. Academic Advising

- I provided academic advising for ESE undergraduate students and MPH students at UNC.
- I regularly provided academic advising for undergraduate students (~6 students per semester) at UGA.

RESEARCH GRANTS

Ongoing Research Support

15. P01HD106485/NIH 08/2023-07/2026
Title: Collaborative Center to Develop Improved Diagnostic and Therapeutic Approaches to Endometriosis
Total: $1,117,954
Description: to quantify lipid metabolites by high-resolution mass spectrometry in endometriosis patients.
Role: Investigator (3% effort)

14.R41/NIH/NIDDK 12/2022-12/2023
Title: DFMO Therapy for Polycystic Kidney Disease
Total: $12,496
Description: to examine DFMO therapy on altering polyamine metabolism in Polycystic Kidney Disease.
Role: PI of UNC Sub-award (3% effort)

13.RO1, NIH/NIEHS 11/2022-12/2027
Title: Chromatin assembly and formaldehyde toxicity
Total: $284,506
Description: Investigate formaldehyde induced protein damage and its role in carcinogenesis via epigenetic regulation
Role: PI of UNC Sub-award (5% effort)

12.S10, NIH/OD 09/2022-08/2023
Title: Acquisition of an Inductively Coupled Plasma Mass Spectrometer for element analysis at UNC-Chapel Hill
Total: $194,745

Description: provide fund to purchase a top-end ICP-MS for metal analysis at UNC
Role: PI (no required % effort)

11.RO1, FDA 07/2022-06/2024
Title: Quercetin Chemoprevention for Squamous Cell Carcinoma in Patients with Fanconi Anemia
Total: $36,237
Description: Study the role of aldehyde-derived DNA damage in chemoprevention for Fancni Anemia patients.
Role: PI of UNC Sub-award (3% effort)

10.IIG Award, NC Biotech Center 07/2022-06/2023
Title: Acquisition of a 7900 Inductively Coupled Plasma Mass Spectrometer for UNC Biomarker Mass Spectrometry Facility
Total: $148,182
Description: Provide fund to purchase a Agilent ICP-MS for metal analysis at UNC Mass Spectrometry Facility
Role: PI (no required % effort)

9. 1R01ES033518-01 08/2021-07/2026
Title: Early Life Phthalate Exposures in Relation to Structural and Functional Brain Development
Total: $3,887,279
Description: To examine the functional relationship between phthalate exposure and brain development using an existing and new cohort.
Role: Investigator (5% effort)

8.EPA STAR 07/2021-06/2025
Title: UNC Center for Early Life Exposures And Neurotoxicity (CLEAN)
Total: $1,894,823
Description: provide new knowledge on the role of early life phthalate exposures on neurobehavioral development
Role: Co-PI of the Exposome Project (5% effort)

7.P30ES010126, NIH/NIEHS 06/2021-01/2026
Total: $7,500,000
Title: UNC Center for Environmental Health Susceptibility
Description: The theme of the UNC Center for Environmental Health and Susceptibility (UNC-CEHS) is translating interdisciplinary research on environmental health threats to improve public health in North Carolina.
Role: Investigator, Co-Director of Molecular Analysis Statistical Support Core (MASS) (15% effort)

6. RO3, NIH/NIEHS 8/2020-7/2023
Total: $147,322
Title: The gut microbiome and glyphosate neurotoxicity
Description: Study how glyphosate alters the gut microbiome and how altered gut microbiome contributes to neurotoxicity
Role: PI (5% effort)

5.P42, NIH/NIEHS 02/2020–1/2025
Title: UNC Superfund Research Program
Total: $13,739,307
Description: This program investigates the effects of arsenic on diabetes using animal models and human

population samples.
Role: Project Lead for the Project 3 and Chemistry Analytical Core (CAC) (18% effort)

4.Research Gifts
Title: Gifts from Vinyl Acetate Council and American Chemistry Council
Total: $520,000
Description: The two gifts are used to support research, education and scholar activities related to improving our understanding of toxicity of environmental chemicals and science-based risk assessment.
Role: PI (no required % effort)

3.R35ES028366/NIH 07/2019-06/2027
Title: Environmental-use chemicals that target pathways linked to autism and other neurodevelopmental disorders
Total: $6,816,244
Description: Use of mass spectrometry to measure pesticides and their metabolites in urine of mice and human samples.
Role: Investigator (5% effort)

2.P01/NIH/NIDDK 09/2019-08/2024
Title: Identifying microbial, epithelia and immune cell interactions that mediate mucosal homeostasis and determine IBD phenotypes
Total: $1,859,749
Description: Use of mass spectrometry to measure metabolite profiles in mouse models with different disease phenotypes
Role: Investigator (6% effort)

1. UH3/NIH 08/2018-07/2023
Title: Environment, Epigenetics, Neurodevelopment & Health of Extremely Preterm Children
Total: $4,627,071
Description: The over-arching hypothesis of the study to be addressed is that prenatal exposures can initiate early life inflammation, thus increasing the risk of neurodevelopmental impairments.
Role: Investigator (2% effort)

Pending

1.RO1/NIH/NIEHS
Title: Microbial AhR/FXR ligands and inflammatory bowel disease
Description: To identify novel microbiome derived AhR/FXR ligands and their roles in the pathogenesis of inflammatory bowel disease.
Role: PI

2.RO1/NIH/NIEHS
Title: Exposure to Metal-Mixtures and Coronary Heart Disease across Diverse Populations
Description: to study the role of metal mixtures in coronary heart disease
Role: PI of UNC Sub-award

Selected Completed Research Grants

17. CEHS Pilot Grant 01/2020-07/2022
Title: Identify chemicals that lead to neurological diseases
Description: to measure chemical induced protein damage using proteomic approach
Role: Investigator

16. Gusto Global research grant 12/2018-3/2019
Title: The effects of GUT-103 bacteria on treating T-cell mediated colitis in IL-10 deficient gnotobiotic mice
Description: This study will use both targeted and global metabolomics to investigate the effects of 13 gut bacteria on altering key signaling molecules of gut microbiome-host interaction.
Role: PI of UNC subcontract

15.R43NS107067/NIH 11/2018-08/2020
Title: Novel Therapy for Huntington's Disease
Description: Examination of major metabolites in the mouse model of Huntington's Disease
Role: PI of the UNC Sub-contract

14. CEHS Interdisciplinary Pilot Grant 04/2018-03/2019
Title: Susceptibility to arsenic-induced diabetes: The role of As3mt polymorphisms and the microbiome
Description: Study how genetics and microbiome variation contribute to arsenic-induced diabetes
Role: Investigator

13. CEHS Interdisciplinary Pilot Grant 06/2017-07/2018
Title: Alleviating environmental toxin damage via the gut microbiota
Description: Using metabolomics to understand how gut bacterial enzyme inhibition reduces cancer incidence and progression
Role: Investigator

12. Center for Human Health and the Environment Pilot Grant 06/2017-07/2018
Title: Exposome mapping in inflammatory bowel disease
Description: Develop analytical and statistical method to map exposome in human inflammatory bowel disease patients.
Role: Co-PI

11. IBM Junior Faculty Development Award, UNC 01/2017-12/2017
Title: IBM Junior Faculty Development Award
Description: Study the effects of pesticides on the gut microbiome, its development trajectory and neurotoxicity
Role: PI

10.RO1-S1, NIH 09/2016-12/2017
Title: Functional interaction between the gut microbiome and arsenic exposure Administrative Supplement
Description: The supplement will examine the role of sex in gut microbiome response to arsenic exposure using animal models.
Role: PI

9.CEHS Pilot Grant 09/2016-09/2017
Title: Interaction between infectious disease and environmental exposure
Description: Study the impact of bacterial infection on the liver toxicity of arsenic exposure in mice.
Role: PI

8.P01, NIH 06/2016-05/2021
Title: Pathophysiology and Treatment of Fanconi Anemia
Description: Use of mass spectrometry to measure the changes of DNA adductome in children with Fanconi Anemia, who are treated with novel therapeutic drugs.
Role: PI of UNC subcontract

7. RO1, NIH/NIEHS 11/2015-11/2020
Title: Functional interactions between the gut microbiome and arsenic exposure
Description: Study how arsenic alters the gut microbiome gut microbiome-arsenic interaction impacts host metabolism.
Role: PI

6.RO3, NIH 06/2014-06/2016
Title: Biomarker of formaldehyde based on DNA-protein cross-links
Description: Develop novel biomarkers of formaldehyde exposure based on proteins cross-linked with DNA using highly sensitive mass spectrometry.
Role: PI

5.SBIR R43 Grant, NIH 06/2014-06/2015
Title: Metabolic assays utilizing neurodevelopmental cells derived from human pluripotent stem cells
Description: Developing mass spectrometry-based metabolomics for neurotoxicity test using stem cells
Role: Investigator

4.STAR Grant, EPA 10/2013-10/2016
Title: Neural stem cell adverse outcome pathways for endocrine disrupting chemicals (EDCs)
Description: Development of GC-MS-based metabolomics approach to examine the toxicity of EDCs in neural stem cell *in vitro* assays,
Role: Investigator

3.FRG Grant, UGARF 07/2013-06/2015
Title: Characterization of chemical-induced perturbations in the gut microbiome and its functions
Description: Examine the effects of a number of important environmental chemicals on the gut microbiome profiles and metabolic functions.
Role: PI

2.CPH Grant, UGA 01/2013-01/2014
Title: The effects of arsenic exposure on the gut microbiome and its functions
Description: Examine the time- and dose-dependent effects of arsenic in drinking water on the gut microbiome community structures.
Role: PI

1.Pilot Grant of MIT CEHS Center Grant (P30), NIH 02/2012-02/2013
Title: Functional interactions between gut microbiome and arsenic exposure
Description: Using 16S sequencing, metabolomics and arsenic speciation to investigate the functional interaction between arsenic exposure and gut microbiome in C57BL/6 mice.
Role: Co-PI

PROFESSIONAL SERVICE

1. National or International (other than grant reviewing)
    - Associate Editor, *Gut Microbes*, 2022-present
    - Associate Editor, Frontiers Cellular and Infection Microbiology, 2021
    - Guest Editor, the special issue on biomarker of environmental toxicants, Toxics Editorial Office, Switzerland, 2017
    - *Environmental Chemicals, the Human Microbiome, and Health Risk: A Research Strategy*, joint effort of the US EPA, NIEHS and National Academies of Sciences, Engineering and Medicine, 2017 (serve to review the report)
    - National Academy of Science Microbiome Symposium, *Environmental and Health: What's the Human Microbiome Have to Do With It*? Washington DC, 2016 (serve as keynote speaker and panelist)
    - American Chemical Society, 256th National Conference, Division of Chemical Research in Toxicology, Section Chair, Boston, MA, 2015
    - National Institute of Environmental Health Science workshop on health effects of arsenic, RTP, NC, 2014 (serve as expert panelist on microbiome)
2. National or International (grant review panels)*
    - 2023 Review panel of Hepatology and Environmental Toxicology, NIH
    - 2023 Review panel for ViCTER, NIH/NIEHS
    - 2023 Review panel for EXACT, NIH
    - 2023 Review panel for neurotoxicity, DOD
    - 2022 Review panel for career development K grants, NIH/NIEHS
    - 2022 Review panel for ViCTER, NIH/NIEHS
    - 2021 Review panel for Superfund Research Program Phase I, NIH/NIEHS
    - 2021 Review panel for Superfund Research Program Phase II, NIH/NIEHS
    - 2021 Review panel for ViCTER, NIH/NIEHS, NIH/NIEHS
    - 2020 Review panel, NIH/CSR
    - 2020 Review panel, NIH/NHLBI
    - 2020 Review panel, NIH/NIEHS
    - 2020 Review panel for career development K grants, NIH/NIEHS
    - 2019 Review panel for instrument grants, NIH/CSR
    - 2019 Review panel for small business grants, NIH/CSR
    - 2018 Review panel for career development K grants, NIH/NIEHS
    - 2018 Review panel for small business grants, NIH/CSR
    - 2018 Review panel for SIEE study section, NIH/CSR
    - 2018 Review panel for ONES grants, NIH/NIEHS
    - 2017 Review panel for R13 grants, NIH/NIEHS
    - 2017 PAR Review Panel: DNA Adducts, NIH/CSR
    - 2017 Review panel for career development K grants, NIH/NIEHS
    - 2017 PAR Review Panel: DNA Adducts, NIH/CSR
    - 2017 COBRE Review Panel, NIH/NIGMS

- 2017 PAR Review Panel: Fogarty Global Brain Disorders, NIH/CSR
- 2017 Review Panel of Outstanding New Environmental Scientist Award, NIH/NIEHS
- 2017 Review Panel ViCTER, NIH/NIEHS
- 2017 External grant reviewer for the Hong Kong Baptist University
- 2016 External grant reviewer for the Swiss Federal Institute of Technology, Switzerland
- 2016 Review Panel of Outstanding New Environmental Scientist Award, NIH/NIEHS
- 2016 Superfund Project Review Panel, NIH/NIEHS
- 2016 COBRE Review Panel, NIH/NIGMS
- 2015 Review Panel of Outstanding New Environmental Scientist Award, NIH/NIEHS
- 2015 Superfund Project Review Panel, NIH/NIEHS
- 2013 Superfund Project Review Panel, NIH/NIEHS
- 2013 External Grant Reviewer for the New York University CEHS

*I have been also invited to review grants from different countries/regions, such as European Union, Canada, etc.

3. School or University
   - Review Committee for ESE Department Chair, UNC (2021)
   - Gillings School Study Section, UNC (2019)
   - Review Committee for Johnson and Johnson WiSTEM2D Scholars Program, UNC (2019, 2020)
   - University Library Committee at UGA (2016)
   - UGA Microbiome Initiative (2015-2016)
   - The Diversity Committee, College of Public Health, UGA (2014-2015)
   - UGA Obesity Initiative (2013-2016)

4. Department
   - UNC Biomarker Mass Spectrometry Facility (2018-present)
   - Departmental Graduate Admission Committee, ESE, UNC (2018-present)
   - Search committee for mass spectrometry facility director, ESE, UNC (2021)
   - Departmental Graduate Admission Committee, EHS, UGA (2013-2016)
   - Departmental Faculty Search Committee, EHS, UGA (2013)

5. Regular reviewers for over 30 journals, including:
   Nature Communication, Environmental Health Perspectives, Nanotoxicology, Toxicology Letter, , Molecular Biosystems, Toxicology, Toxicology and Applied Pharmacology, Mutagenesis, Cancer Research, Carcinogenesis, Chemical Research in Toxicology, Toxicological Sciences, Environmental Microbiology, Archives of Toxicology, Microbiome, Environmental Science and Technology, etc.