

Amie K. Lund, Ph.D.

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Education

- 2005 Ph.D., Biomedical Sciences**
Emphasis: Cardiovascular Toxicology and Physiology
University of New Mexico, Albuquerque, NM
Dissertation title: Factors which mediate cardiac hypertrophy in Aryl hydrocarbon receptor (AhR) null mice: Characterizing a role for the AhR in cardiovascular physiology.
- 1994 B.S., Biology**
Kansas State University, Manhattan, KS

Employment / Professional Experience:

- 2021–current **Director, Advanced Environmental Research Institute (AERI), University of North Texas, Denton, TX.**
- The Advanced Environmental Research Institute (AERI) is one of the "Institutes of Research Excellence" at the University of North Texas. AERI is comprised of a multidisciplinary team of 35 Ph.D.-level researchers committed to collaborating on large research projects with an emphasis on the application of research findings to solutions for the most pressing environmental issues. AERI also fosters mentored research and training opportunities for students to help prepare them for career fields that address challenging environmental, sustainability, and injustice issues in novel ways.
 - **Associate Director (2020-2021).**
- 2021–current **Associate Professor (with tenure) – Biological Sciences. Advanced Environmental Research Institute, University of North Texas, Denton, TX.**
- Investigating the role of inhaled air pollutants on gut and lung microbiota profiles, gut integrity, adipocyte signaling, dysregulation of the renal system, and resulting systemic inflammatory responses that are associated with disease-states including atherosclerosis, metabolic syndrome, obesity, and diabetes.
 - Investigation and characterization of the toxicological and pathophysiological pathways and mechanisms involved in the progression of cardio- and cerebral-vascular pathologies associated with inhalational exposure to common environmental pollutants utilizing both *in vivo* and *in vitro* experimental models
 - Additional research interests / ongoing projects include determining the effects of common environmental pollutants on blood brain barrier (BBB) structure and integrity, and the toxicological and pathophysiological vascular

(e.g., endothelial cell vs. smooth muscle cell regulation and barrier integrity) effects of nanomaterial-exposures.

- Characterization of pathways involved in air pollution exacerbation of central nervous system disorders, including Alzheimer's disease and Multiple Sclerosis.
- Investigation of sex-differences in air pollution exposure-mediated outcomes in the cardiovascular and neurovascular systems.
- Professor/Instructor: BIOL 4250/5150 (Pharmacology), BIOL 4370/5370 (General Toxicology); BIOL 1132 (Environmental Science for Non-Majors)

2012 – 2019 **Assistant Professor – Biological Sciences, Advanced Environmental Research Institute, University of North Texas, Denton, TX.**

2009 – 2012 **Associate Scientist – Cardiopulmonary Toxicology Dept.**
Lovelace Respiratory Research Institute, Albuquerque, NM.

- Investigation and characterization of the toxicological and pathophysiological pathways and mechanisms involved in the progression of cardio- and cerebral-vascular pathologies associated with inhalational exposure to common environmental pollutants utilizing both *in vivo* and *in vitro* experimental models.
- Research focuses on molecular and cell-signaling pathways responsible for exacerbation of progression of atherosclerosis and/or occurrence of heart attack/stroke including MAPK signaling, oxLDL (and relevant receptors), endothelin-1, matrix metalloproteinase expression/activity, and reactive oxygen species.

2005 - 2009 **Post-doctoral Fellow**
Lovelace Respiratory Research Institute, Albuquerque, NM

- Independently designed experiments and investigated mechanisms involved in vascular effects of inhaled air pollutants, such as nano- particles and engine emissions, including vascular remodeling pathways (matrix metalloproteinases), vasoactive factors (endothelin- 1) and reactive oxygen species, as well as the pulmonary-vascular interactions which regulate such pathways, on initiation and progression of vascular disease.
- Study designs utilized include *in vivo* animal model exposures, *in vivo* assessment of cardiovascular endpoints (ECG, heart rate, blood pressure, echocardiograms), *in vivo* pharmaceutical treatments to determine critical pathways in exposure-mediated (toxicological) vascular effects, and experimental analysis of critical pathophysiological cardiovascular endpoints.
- Independent research funded through NIH NRSA Postdoctoral Fellowship (F32 ES015404) and an NIEHS K99 Pathway to Independence Award (K99 ES016586)

2005 - 2005 **Post-doctoral Research Fellow**
University of New Mexico, Albuquerque, NM

- Independently designed experiments and investigated mechanisms involved in cardiovascular physiology, cardiovascular pathophysiology (cardiac hypertrophy and hypertension), pharmacological interventions, and mechanisms of cardiovascular toxicology pertaining to the aryl hydrocarbon receptor (AhR).

2000 - 2005 **Graduate Student / Research Assistant**

University of New Mexico, Albuquerque, NM

- Identified factors which mediate cardiac hypertrophy in Aryl hydrocarbon receptor (AhR) null mice, including elevated mean arterial blood pressure, as well as increases in angiotensin II, endothelin-1 and reactive oxygen species
- Utilized pharmacological therapies to determine the contribution of independent vasoactive factors in the elevation of blood pressure and the progression of cardiac hypertrophy in AhR null mice.

Awards, Honors, Recognitions:

Fellowships Awarded:

- 2008-2009 National Institute of Health Pathway to Independence Award (K99-R00). NIEHS Grant #1K99 ES016586 - # 4R00ES016586 (2010 – 2015).
- 2006-2008 National Institute of Health Ruth L. Kirschstein National Research Service Award (NRSA) for Individual Postdoctoral Fellows (F32). Grant # NIH1 F32 ES015404.
- 2003-2005 Environmental Protection Agency's (EPA) Science to Achieve Results (STAR) Pre-doctoral Graduate Fellowship.

Awards:

- 2020 'Fessor Graham Award (highest honor given by student body for outstanding service to students) – University of North Texas
- 2017 Outstanding Service Award - McNair Scholars Program, University of North Texas. 2008 ** "Publication of the Year" award, 2008. SOT Inhalation and Respiratory Specialty Section.
- 2007 Post-doctoral award – SOT Inhalation and Respiratory Specialty Section - Society of Toxicology.
- 2004 Student Platform Presentation Award (2nd place), Mountain West Society of Toxicology
- 2004 Graduate Student Travel Award – FASEB meeting. American Society for Pharmacology and Experimental Therapeutics (ASPET)
- 2004 Graduate Student Travel Award – National Society of Toxicology Meeting. Society of Toxicology
- 2003 Graduate Student Travel Award – FASEB meeting. American Society for Pharmacology and Experimental Therapeutics (ASPET)

Recognitions (National):

Nationally Published Articles on Research: Lund A. **Research collaboration featured in The Chronicle of Higher Education and New York Times:** U.S. Seen as Weak on Global Research Collaboration (July 20, 2014). http://www.nytimes.com/2014/07/21/us/us-seen-as-weak-on-global-research-collaboration.html?_r=2 (Story a result of UNT-IGRO Award project).

Citation Metrics (Google Scholar):

Citations: 2432

h-index: 27

i10-index: 41

Peer-Reviewed Publications (*mentored graduate or ‡undergraduate student):

1. Schneider LJ*, Johnson, BL‡, Cook M‡, Stanley AH‡, Penaredondo BA‡, **Lund AK**. (2023) Molecular Alterations Associated with Non-alcoholic Fatty Liver Disease Observed in Wildtype C57Bl/6 Male Mice in Response to Sub-chronic Exposure to Mixed Vehicle Emissions and the Consumption of a High-Fat Diet. *Env Res*. In review, December 2023.
2. Suwannasual U* and **Lund AK**. (2023) The Angiotensin II Type 1 Receptor Mediates Alterations in Adipocyte Size and Lipid Accumulation Associated with Exposure to Vehicle Exhaust and a High-fat Diet. Submitted to *Tox Letters*. In review, December 2023.
3. Schneider LJ*, Santiago I‡, Johnson B‡, Stanley AH‡, Penaredondo B‡, **Lund AK**. (2023) Histological Features of Non-alcoholic Fatty Liver Disease Revealed in Response to Mixed Vehicle Emission Exposure and Consumption of a High-Fat Diet in Wildtype C57Bl/6 Male Mice. *Ecotoxicol Environ Saf*. 261: 115094. <https://doi.org/10.1016/j.ecoenv.2023.115094>
4. Thyagarajan A, Rapp CM, Schneider L*, **Lund A**, Travers JB, Sahu RP. (2023) Exposure to diesel exhaust particulates and desert sand dust generates microvesicle particles and platelet-activating factor agonists. *Skin Res Technol*. 29(4):e13312. doi: 10.1111/srt.13312. PMID: 37113092.
5. Bonatesta F*, Messerschmidt VL, Schneider L*, Lee J, **Lund AK**, Mager EM. (2022). Acute exposure of early life stage zebrafish (*Danio rerio*) to Deepwater Horizon crude oil impairs glomerular filtration and renal fluid clearance capacity. *Env Sci Pollut Res Int*. doi: 10.1007/s11356-022-23805-z.
6. Leads RR*, Magnuson JT*, Lucero J, **Lund AK**, Schlenk D, Chavez JR, Roberts AP. (2022). Transcriptomic responses and apoptosis in larval red drum (*Sciaenops ocellatus*) co-exposed to crude oil and ultraviolet (UV) radiation. *Mar Pollut Bull*. 179: 113684. doi: 10.1016/j.marpolbul.2022.113684.
7. Phillippi DT*, Daniel S*, Nguyen KN‡, Penaredondo BA‡, **Lund AK**. (2022) Probiotics Function as Immunomodulators in the Intestine in C57Bl/6 Male Mice Exposed to Inhaled Diesel Exhaust Particles on a High-Fat Diet. *Cells*. 11(9): 1445. doi: 10.3390/cells11091445
8. Phillippi DT*, Daniel S*, Pusadkar V, Youngblood VL*, Nguyen KN‡, Azad RK, McFarlin BK, **Lund AK**. (2022). Inhaled diesel exhaust particles result in microbiome-related systemic inflammation and altered cardiovascular disease biomarkers in C57Bl/6 male mice. *Part Fibre Toxicol*. 19(1):10. doi: 10.1186/s12989-022-00452-3.
9. Adivi A*, Lucero J, Simpson N‡, McDonald JD, **Lund AK**. (2022). Traffic-Generated Air Pollution– Exposure Mediated Expression of Factors Associated with Demyelination in a Female Apolipoprotein E^{-/-} Mouse Model. *Neurotox Teratol*. 90: 107071. doi: 10.1016/j.ntt.2022.107071.

10. Butcher G, Davidson A, Sloan A, Schneider L*, **Lund AK**, Becker A. (2022). An Apparatus for Automatically Training and Collecting Individualized Behavioral Data with Socially Housed Rodents. *J Neurosci Methods*. 365: 109387. doi: 10.1016/j.jneumeth.2021.109387.
11. Nayek S*, **Lund AK**, Verbeck GF. (2021) Inhalation exposure to silver nanoparticles induces hepatic inflammation and oxidative stress, associated with altered renin-angiotensin system signaling, in Wistar rats. *Environ Tox*. 37(3): 457-467. doi: 10.1002/tox.23412.
12. Phipps B[‡], Suwannasual U*, Lucero J, **Lund AK**. (2021). Vehicle emissions-exposure alters expression of systemic and tissue-specific components of the renin-angiotensin system and promotes outcomes associated with cardiovascular disease and obesity in wild-type C57BL/6 male mice. *Toxicol Rep*. 8: 846-862. doi: 10.1016/j.toxrep.2021.04.001.
13. Daniel S*, Pusadkar V, McDonald JD, Mirpuri J, Azad RK, Goven A, **Lund AK**. (2021). Traffic generated emissions alter the lung microbiota by promoting the expansion of Proteobacteria in C57BL/6 mice placed on a high-fat diet. *Ecotoxicol Environ Saf*. 213: 112035. doi: 10.1016/j.ecoenv.2021.112035.
14. Daniel S*, Phillippi*, Schneider LJ*, Nguyen KN[‡], Mirpuri J, **Lund AK**. (2021). Exposure to diesel exhaust particles results in a ROS-RNS mediated lung bacterial dysbiosis in wildtype mice on a high-fat diet. *Part Fibre Toxicol*. 18:3. doi: 10.1186/s12989-020- 00393-9.
15. Adivi A*, Lucero J, Simpson N[‡], McDonald JD, **Lund AK**. (2021). Exposure to Traffic-Generated Air Pollution Promotes Alterations in the Integrity of the Brain Microvasculature and Inflammation in Female ApoE^{-/-} mice. *Toxicol Lett*. 339: 39-50. doi: 10.1016/j.toxlet.2020.12.016.
16. Nayek S*, De Silva IW, Aguilar R, **Lund AK**, Verbeck GF. (2020) Toxicological alterations induced by subacute exposure of silver nanoparticles in Wistar rats. *J Appl Toxicol*. doi: 10.1002/jat.4086.
17. Armstrong T*, Suwannasual U*, Kennedy CL[‡], Thasma A[‡], Schneider LJ*, Phillippi D*, **Lund AK**. (2020). Exposure to traffic-generated pollutants exacerbates the expression of factors associated with the pathophysiology of Alzheimer's disease in aged C57BL/6 wild-type mice. *J of Alzheimer's Dis*. 78: 1453-1471. doi: 10.3233/JAD-200929.
18. Guyot AC, Leuxe C, Disdier C, Oumata N, Costa N, Roux GL, Fernandez-Varela P, Duchon A, Charbonnier JB, Herault Y, Pavoni S, Galons H, Andriambeloson E, Wagner S, Meijer L, **Lund AK**, Mabondzo A. (2020). A Small Compound Targeting Prohibitin With Potential Interest for Cognitive Deficit Rescue in Aging Mice and Tau Pathology Treatment. *Sci Rep*. 10:1143. doi: 10.1038/s41598-020-57560-3.
19. Magnuson JT*, Bautista NM, Lucero J, Lund AK, Xu EG, Schlenk D, Burggren WW, Roberts AP. (2020). *Environ Sci Technol*. 54:2843-2850. doi: 10.1021/acs.est.9b07658. Epub 2020 Feb 19. Exposure to Crude Oil Induces Retinal Apoptosis and Impairs Visual Function in Fish.
20. Fitch MN*, Phillippi D*, Zhang Y, Lucero J, Pandey RS, Liu J, Brower J, Allen MS, Campen MJ, McDonald JD, **Lund AK**. (2020). Effects of inhaled air pollution on markers of integrity, inflammation, and microbiota profiles of the intestines in Apolipoprotein E mice. *Environ Res*. 181:108913. doi: 10.1016/j.envres.2019.108913.

21. Suwannasual U*, Lucero J, Davis G*, McDonald JD, **Lund AK**. (2019). Mixed Vehicle Emissions Induces Angiotensin II and Cerebral Microvascular Angiotensin Receptor Expression in C57Bl/6 Mice and Promotes Alterations in Integrity in a Blood-Brain Barrier Coculture Model. *Toxicol Sci*. 170: 525-535.
22. Davis G*, Lucero J, Fellers C, McDonald JD, **Lund AK**. (2018). The effects of subacute inhaled multi-walled carbon nanotube exposure on signaling pathways associated with cholesterol transport and inflammatory markers in the vasculature of wild-type mice. *Toxicol Lett*. 296:48-62.
23. Suwannasual U*, Lucero J, McDonald JD, **Lund AK**. (2018). Exposure to traffic-generated air pollutants mediates alterations in brain microvascular integrity in wildtype mice on a high-fat diet. *Environ Res*. 160:449-461.
24. Disdier C, Chalansonnet M, Gagnaire F, Gaté L, Cosnier F, Devoy J, Saba W, **Lund AK**, Brun E, Mabondzo A. (2017). Brain Inflammation, Blood Brain Barrier dysfunction and Neuronal Synaptophysin Decrease after Inhalation Exposure to Titanium Dioxide Nano- aerosol in Aging Rats. *Sci Rep*. 7(1):12196.
25. Lucero J, Suwannasual U*, Herbert LM, McDonald JD, **Lund AK**. (2017). The role of the lectin-like oxLDL receptor (LOX-1) in traffic-generated air pollution exposure-mediated alteration of the brain microvasculature in Apolipoprotein (Apo) E knockout mice. *Inhal Toxicol*. 29(6):266-281.
26. Mumaw CL, Levesque S, McGraw C, Robertson S, Lucas S, Stafflinger JE, Campen MJ, Hall P, Norenberg JP, Anderson T, **Lund AK**, McDonald JD, Ottens AK, Block ML. (2016) Microglial priming through the lung-brain axis: the role of air pollution-induced circulating factors. *FASEB J*. 2016 May;30(5):1880-91.
27. Disdier C, Devoy J, Cosnefroy A, Chalansonnet M, Herlin-Boime N, Brun E, **Lund A**, Mabondzo A. (2015) Tissue Biodistribution of Intravenously Administered Titanium Dioxide Nanoparticles Revealed Blood-Brain Barrier Clearance and Brain Inflammation in Rat. *Part Fibre Toxicol*. Sep 4;12(1):27.
28. Mauderly JL, Barrett EG, Day KC, Gigliotti AP, McDonald JD, Harrod KS, **Lund AK**, Reed MD, Seagrave JC, Campen MJ, Seilkop SK. (2014) The National Environmental Respiratory Center (NERC) experiment in multi-pollutant air quality health research: II. Comparison of responses to diesel and gasoline engine exhausts, hardwood smoke and simulated downwind coal emissions. *Inhal Toxicol*. Sep;26(11):651-67.
29. Mauderly JL, Kracko D, Brower J, Doyle-Eisele M, McDonald JD, **Lund AK**, Seilkop SK. (2014) The National Environmental Respiratory Center (NERC) experiment in multi-pollutant air quality health research: IV. Vascular effects of repeated inhalation exposure to a mixture of five inorganic gases. *Inhal Toxicol*. Sep;26(11):691-6.
30. Campen M, Robertson S, **Lund A**, Lucero J, and McDonald J. (2014) Engine exhaust particulate and gas phase contributions to vascular toxicity. *Inhal Toxicol*, 26(6):353-60.
31. Oppenheim H*, Lucero J, Herbert L, Mabondzo A, McDonald JD, **Lund AK**. (2013) Exposure to vehicular engine emissions results in increased blood brain barrier permeability and altered tight junction protein expression. *Part Fibre Toxicol*. Dec 17;10:62.

32. Duan M, Yao H, Hu G, Chen XM, **Lund AK**, Buch S. (2013) HIV Tat induces expression of ICAM-1 in HUVECs: Implications for miR221/-222 in HIV-associated cardiomyopathy. *PLOS One*. 8(3):e60170.
33. **Lund AK**, Doyle-Eisele M, Lin YH, Arashiro M, Surratt JD, Holmes T, Schilling KA, Seinfeld JH, Rohr AC, Knipping EM, McDonald JD. (2013). The effects of α -pinene vs. toluene-derived secondary organic aerosol exposure on the expression of markers associated with vascular disease. *Inhal Toxicol*. 25(6):309-24.
34. Campen MJ, Lund AK, Rosenfeld M. (2012) Mechanisms Linking Traffic-Related Air Pollution and Atherosclerosis. *Curr Opin Pulm Med*. 18(2):155-60. Review.
35. McDonald JD, Doyle-Eisele M, Kracko D, **Lund A**, Surratt JD, Hersey SP, Seinfeld JH, Rohr AC, Knipping EM. (2012) Cardiopulmonary response to inhalation of secondary organic aerosol derived from gas-phase oxidation of toluene. *Inhal Toxicol*. 24(11):689- 97.
36. Seilkop SK, Campen MJ, **Lund AK**, McDonald JD, Mauderly JL (2012). Identification of chemical components of combustion emissions that affect pro-atherosclerotic vascular responses in mice. *Inhal Toxicol*. 24(5):270-87.
37. **Lund AK**, Lucero J, Herbert L, Liu Y, Naik J. (2011) Human Immunodeficiency Virus-Transgenic Rats Exhibit Pulmonary Hypertension. *Amer J Physiol Lung Cell Molec Physiol*. 301(3):L315-26.
38. **Lund AK**, Lucero J, Harman M, Madden MC, Seagrave JC, McDonald M, Campen MJ. (2011) LOX-1 Mediates Vascular Inflammation and Oxidative Injury Caused by Inhaled Vehicular Emissions. *Am J Respir Crit Care Med*. 184(1):82-91.
39. Kodavanti UP, Thomas R, Ledbetter AD, Schladweiler MC, Shannahan JH, Wallenborn JG, **Lund AK**, Campen MJ, Butler EO, Gottipolu RR, Nyska A, Richards JE, Andrews D, Jaskot RJ, McKee J, Kotha SR, Patel BR, Parianandi NL. (2010) Vascular and Cardiac Impairments in Rats Inhaling Ozone and Diesel Exhaust Particles. *Environ Health Perspect*. 119(3):312-18.
40. Campen MJ, **Lund AK**, Doyle-Eisele M, McDonald J, Knuckles TL, Rohr A, Knipping E, Mauderly JL. (2010) A Comparison of Vascular Effects from Complex and Individual Air Pollutants Indicates a Toxic Role for Monoxide Gases. *Environ Health Perspect*. 118:921- 7.
41. Campen MJ, **Lund AK**, Knuckles TL, Conklin DJ, Bishop B, Young D, Seilkop S, Seagrave J, Reed MD, McDonald JD. (2010) Inhaled Diesel Emissions Alter Atherosclerotic Plaque Composition in ApoE^{-/-} Mice. *Toxicol Appl Pharmacol*. 242(3):310-7.
42. McDonald JD, Doyle-Eisele M, Campen MJ, Seagrave JC, Holmes TD, **Lund A**, Surratt JD, Seinfeld JH, Rohr AC, and Knipping, EM (2010) Cardiopulmonary Response to Inhalation of Biogenic Secondary Organic Aerosol. *Inhalation Toxicol*, 22(3):253-265.
43. **Lund AK**, Lucero J, Lucas S, McDonald J, Campen MJ. (2009) Vehicular Emissions Induce Vascular MMP-9 Expression and Activity Associated with Endothelin-1 Mediated Pathways. *Arterioscler. Thromb. Vasc. Biol*. 29(4):511-517.
44. Knuckles TL, **Lund AK**, Lucas SN, Campen MJ. (2008) Diesel Exhaust Exposure Enhances Venoconstriction via Uncoupling of eNOS. *Toxicol. Appl. Pharmacol*. 230, 346- 351.

45. **Lund AK**, Agbor, L, Zhang N, Baker A, Zhao H, Fink G, Kanagy NL, Walker MK. (2008) Loss of the Aryl Hydrocarbon Receptor Induces Hypoxemia, Endothelin-1, and Systemic Hypertension at Modest Altitude. *Hypertension*. 51, 803-80.
46. ****Lund AK**, Knuckles T, Obat Akata C, Shohet R, McDonald J, Gigliotti A, Seagrave JC, Campen MJ. (2007) Gasoline Exhaust Emissions Induce Vascular Remodeling Pathways Involved in Atherosclerosis. *Toxicological Sciences*. 95(2):485-94.
47. **Lund AK**, Goens MB, Nunez BA, Walker MK. (2006) Characterizing the role of endothelin- 1 in the progression of cardiac hypertrophy in Aryl hydrocarbon receptor (AhR) null mice. *Toxicology and Applied Pharmacology*. 212, 127-135.
48. **Lund AK**, Peterson SM, Timmins GS, Walker MK. (2005) Endothelin-1 – Mediated Increase in Reactive Oxygen Species and NADPH Oxidase Activity in Hearts of Aryl Hydrocarbon Receptor (AhR) Null Mice. *Toxicological Sciences*. 88(1): 265-73.
49. Walker DM, Poirier MC, Campen MJ, Cook DL Jr, Divi RL, Nagashima K, **Lund AK**, Cossey PY, Hahn FF, Walker VE. (2004) Persistence of mitochondrial toxicity in hearts of female B6C3F1 mice exposed in utero to 3'-azido-3'-deoxythymidine. *Cardiovascular Toxicology*. 4(2):133-53.
50. Thackaberry EA, Bedrick EJ, Goens MB, Danielson L, **Lund AK**, Gabaldon D, Smith SM, Walker MK. (2003) Insulin Regulation in AhR-Null Mice: Embryonic Cardiac Enlargement, Neonatal Macrosomia, and Altered Insulin Regulation and Response in Pregnant and Again AhR-Null Females. *Toxicological Sciences*. 76: 407–417.
51. **Lund AK**, Goens MB, Kanagy N, Walker MK. (2003) Cardiac Hypertrophy in Aryl Hydrocarbon (AhR) Null Mice is Associated with Elevated Angiotensin II, Endothelin-1 and Mean Arterial Blood Pressure. *Toxicol. Appl. Pharmacol*. 193: 177-187, 2003.

Published abstract/report for Health Effects Institute: Vedal S, Campen M, **Lund A**, McDonald J. (2012) National Particulate Component Toxicity Initiative: Animal Toxicology Studies. *Epidemiology* 23(5S):S-111. Abstract.

Book Chapter Author/Contributions:

1. **Lund AK**. Comprehensive Toxicology, 4th edition, Elsevier Limited Publisher. Author, Chapter III “Oxidants and Endothelial Dysfunction”. In progress; due September, 2023.
2. Daniel S and **Lund AK**. Comprehensive Toxicology, 4th edition, Elsevier Limited Publisher. Author, “Lung Microbiome and Toxicology”. In progress, due December, 2023.
3. **Lund AK**. Comprehensive Toxicology, 3rd edition, Elsevier Limited Publisher. Author, Chapter III “Oxidants and Endothelial Dysfunction”. January, 2018.
4. Campen MJ and **Lund AK**. Environmental Cardiology, Royal Society of Chemistry. Co-Author, Chapter “Cardiovascular Effects of Diesel and Automobile Exhaust”. Springer, 1st edition, 2011.

5. McDonald JD and **Lund AK**. Co-Author, Systemic Health Effects of Carbon Nanotubes following Inhalation. Chapter 11, "The Toxicology of Carbon Nanotubes." Cambridge University Press Ltd, 2011
6. **Lund AK**. Comprehensive Toxicology, 2nd edition, Elsevier Limited Publisher. Author, Chapter III "Oxidants and Endothelial Dysfunction". August, 2010.

Invited and Conference Presentations:

*denotes mentored post-doc or graduate student or ‡undergraduate student

1. **Lund, A.K.** (2023). Wright State University Seminar Series, "Investigating Mechanisms Involved in Air Pollution Exposure-Mediated Outcomes on Gut Microbiome and resulting Adipose Tissue Signaling Related to Obesity and Cardiovascular Disease.," Invited Talk, Wright State University January, 2023.
2. Mager, E., Bonatesta, F., Emadi, C., Khursigara, A., Schneider, L., Lee, J., **Lund, A.K.**, Esbaugh, A. (2023) Texas Chapter of the American Fisheries Society, "Early Life Stage Exposure to Deepwater Horizon Crude Oil Impairs Teleost Osmoregulation by Altering Kidney Development and Function," Oral Presentation, American Fisheries Society, Corpus Christi, TX.
3. Armstrong, T.*, and **Lund, A.K.** (2023). Inhalation Exposure to Traffic-Generated Air Pollution Results in Renin-Angiotensin System Dysregulation and Increased Factors Associated with Alzheimer's Disease in the Central Nervous System of Apolipoprotein E-/- Mice. Poster Presentation, Society of Toxicology National Meeting, Nashville, TN. March 19-23, 2023.
4. Nguyen, K.N.*, Daniel, S.*, Schneider, L.J.*, **Lund, A.K.** (2023). Inhaled diesel exhaust particulate matter, coupled with a high fat diet, promotes the expression of factors utilized by the SARS-COV-2 for cellular entrance in lungs of C57Bl/6 male mice, which is mitigated through probiotic treatment. Poster Presentation, Society of Toxicology National Meeting, Nashville, TN. March 19-23, 2023.
5. Youngblood, V., Lucero, J., **Lund, A.K.** (2023). The role of female hormones in mediating the expression of vascular factors associated with progression of atherosclerosis following exposure to traffic-generated air pollution exposure in female Apolipoprotein E null mice. Poster Presentation, Society of Toxicology National Meeting, Nashville, TN. March 19-23, 2023
7. Armstrong, T.*, and **Lund, A.K.** Traffic-generated pollutant-exposure combined with high-fat diet exacerbates the expression of factors associated with Alzheimer's disease pathophysiology in aged C57BL/6 wild-type mice. Society of Toxicology National Meeting, San Diego, CA. March 30, 2022. Invited Platform Presentation.
8. **Lund, A.K.** Baylor Environmental Science Seminar Series, "Investigating Mechanisms Involved in Air Pollution Exposure-Mediated Outcomes in Adipose Tissue Signaling Related to Obesity and Cardiovascular Disease.," Invited Talk, Baylor University, November, 2022.
9. **Lund, A.K.** Investigating mechanisms involved in traffic-generated air pollution exposure mediated outcomes in adipose tissue signaling related to obesity and cardiovascular disease. Invited Seminar Speaker, Texas Christian University. February, 2022.
10. Nguyen, K.N.‡, Phillippi, D.T*, Daniel, S.*, **Lund, AK**. (2022) Inhalation Exposure to Diesel Exhaust Particles in Conjunction with a High-fat Diet Alters Expression of Receptors Associated with COVID-19 Infection, which is Mitigated by Probiotic-Treatment in C57Bl/6 Male Mice. Lone Star Society of Toxicology (SOT), College Station Texas, January 13-14, 2022. Featured Undergraduate Student Presentation.
11. Armstrong, T.*, and **Lund, A.K.** (2022) Traffic-generated pollutant-exposure combined with high-fat diet exacerbates the expression of factors associated with Alzheimer's disease

pathophysiology in aged C57BL/6 wild-type mice. Lone Star Society of Toxicology Regional Meeting, Texas A&M, College Station, TX, January 13-14, 2022.

12. Penaredondo, B.[‡], Suwannasual, U.^{*}, Lucero, J., McDonald, J.D., and **Lund, A.K.** (2022) Angiotensin -II signaling mediates expression of atherogenic factors in the vasculature resulting from inhalation exposure to traffic-generated air pollution in Apolipoprotein E knockout mice. Society of Toxicology National Meeting, San Diego, CA. March 26-31, 2022.
13. Nguyen, K.N.[‡], Daniel, S.^{*}, Phillippi, D.T.^{*}, Schneider, L.^{*}, and **Lund, A.K.** (2022) Inhalation Exposure to Diesel Exhaust Particles in Conjunction with a High-fat Diet Alters Expression of Receptors Associated with COVID-19 Infection, which is Mitigated by Probiotic-Treatment in C57Bl/6 Male Mice. Society of Toxicology National Meeting, San Diego, CA. March 26-31, 2022.
14. Schneider, L.J.^{*}, Penaredondo B.[‡], Lin, Y., Bucher, D., Anderson, L., and **Lund, A.K.** (2022) Inhalation Exposure to Mixed Vehicle Emissions and/or Consumption of a High Fat Diet Induces Proteoform Alterations that may Contribute to the Development of Non- Alcoholic Fatty Liver Disease in C57Bl/6 Mice. Society of Toxicology National Meeting, San Diego, CA. March 26-31, 2022.
15. **Lund AK.** Investigating mechanisms involved in traffic-generated air pollution exposure mediated outcomes in adipose tissue signaling related to obesity and cardiovascular disease. Invited Speaker (Virtual). Texas A&M Toxicology Seminar Series, College Station, TX. March, 2021.
16. Suwannasual U^{*}, **Lund AK.** Exposure to traffic-generated air pollution increases angiotensin II pathway signaling, lipid accumulation, and inflammation in C57Bl/6 mice and 3T3-L1 adipocytes, which is exacerbated by consumption of a high fat diet. Plenary presentation. Society of Toxicology (Virtual), 2021.
17. Armstrong T^{*}, Suwannasual U^{*}, **Lund AK.** Exposure to traffic-generated pollutants exacerbates the expression of factors associated with the pathophysiology of Alzheimer's disease in aged C57BL/6 wild-type mice. Poster presentation. Society of Toxicology (Virtual), 2021.
18. Phillippi D^{*}, Nguyen K[‡], Daniel S, **Lund AK.** Exposure to Inhaled Diesel Exhaust Particles Alters Gut Microbiome and Intestinal Integrity, which is Mitigated by Probiotic Treatment in C57BL/6 Male Mice. Poster presentation. Society of Toxicology (Virtual), 2021.
19. Nguyen K[‡], Phillippi D^{*}, Daniel S, **Lund AK.** Inhaled Diesel Exhaust Particulate Matter Causes Intestinal Epithelial Barrier Disruption Which Can Be Mitigated By Probiotics in C57/Bl6 Mice. Lone Star Society of Toxicology Fall Meeting (Virtual), November 20, 2020. Invited Featured Undergraduate Presentation
20. Mitchell N^{*}, Suwannasual U^{*}, **Lund AK.** Plasma from C57Bl/6 mice Exposed to Vehicle Emissions Mediates Lipid Accumulation and Renin Angiotensin Signaling in 3T3-L1 Mouse Adipocytes. Lone Star Society of Toxicology Fall Meeting (Virtual), November 20, 2020. Invited Trainee Presentation.
21. Schneider L^{*}, McDonald JD, **Lund AK.** Top-down Proteomics Reveals Alteration in Liver Protein Profile of C57Bl/6 Mice Exposed to Mixed Vehicular Emissions and a High Fat Diet. Lone Star Society of Toxicology Fall Meeting, November 20, 2020, Virtual.
22. Armstrong T^{*}, Suwannasual U^{*}, McDonald JD, **Lund AK.** Exposure to traffic-generated pollutants exacerbates the expression of factors associated with the pathophysiology of Alzheimer's disease in aged C57BL/6 wild-type mice. Lone Star Society of Toxicology Fall Meeting, November 20, 2020, Virtual.
23. Phillippi D^{*}, Daniel S^{*}, Nguyen K[‡], **Lund AK.** Probiotics mitigate systemic response and

altered lung microbiota in mice exposed to inhaled diesel exhaust particles in male C57Bl/6 wildtype mice. Lone Star Society of Toxicology Fall Meeting, November 20, 2020, Virtual.

24. **Lund AK.** Exposure to Traffic-Generated Air Pollution Increases Systemic and Adipocyte Renin-Angiotensin Pathway Signaling, Lipid Accumulation, and Inflammation in C57Bl/6 Mice. Lone Star 2020 Annual SOT Meeting – Texas Edition (Virtual). April, 2020.
25. Gowdy, K and **Lund, AK.** (co-Organizer), Society of Toxicology webinar, "Smoke signals: examining the toxicities of wildfire exposures," Webinar, Inhalation and Respiratory Specialty Section, United States of America. 2019.
26. **Lund, AK.** Investigating Pathways involved in Air Pollution-Mediated Alteration of Blood- Brain Barrier Integrity. Invited Speaker, Virginia Commonwealth University Medical School, Richmond, VA, United States of America. 2019.
27. Devakul Na Ayutthaya, W.*, Suwannasual, U.*, Phillippi, D.*, Daniel, S.*, **Lund, AK.** Diesel particulate matter exposure results in altered lipid accumulation and expression of receptors involved in nonalcoholic fatty liver disease. Poster presentation, Lone Star Society of Toxicology Regional conference, Galveston, TX 2019.
28. Daniel, S.*, Phillippi, D.*, **Lund, AK.** Exposure to diesel exhaust particles alters immune response and promotes the expansion of proteobacteria in the lungs of C57Bl/6 mice. Invited Oral Presentation, Lone Star Society of Toxicology Regional conference, Galveston, TX. 2019.
29. Armstrong, T.*, **Lund, AK.** Inhalation Exposure to Traffic-Generated Air Pollution Results in Renin-Angiotensin System Dysregulation of Kidneys in ApoE^{-/-} Mice., Poster, Society of Toxicology, Galveston, United States of America. 2019.
30. Suwannasual, U.*, **Lund, AK.** Plasma from C57Bl/6 mice exposed to vehicle emissions mediates alterations in lipid accumulation and renin-angiotensin pathway signaling in 3T3- L1 mouse adipocytes. Poster presentation, Lone Star Society of Toxicology, Galveston, TX. 2019.
31. Schneider, L.*, Koerber, R., **Lund, AK.** Top-down proteomics reveals alterations in the liver protein profiles of C57Bl/6 mice with inhalation exposure to mixed vehicular emissions and a high fat diet. Poster presentation, Lone Star Society of Toxicology, Galveston, TX. 2019.
32. Phipps, B[‡], Lucero, J., McDonald, J.D., **Lund, AK.** The Effects of Inhalation Exposure to Traffic-Generated Air Pollutants on Angiotensin II Receptor Expression and Signaling of Monocytes/Macrophages in the Vasculature and Kidney of Wildtype Mice on a High-Fat vs. Low-Fat Diet. Poster presentation, Society of Toxicology, Baltimore, United States of America. 2019.
33. Suwannasual, U.*, McDonald, J.D., **Lund, AK.** The Effects of Inhaled Traffic-Generated Pollutant Exposure on Alterations of Blood Brain Barrier Integrity via Angiotensin II Receptors and Increased Inflammation in C57Bl/6 Wildtype Mice on Either a High or Low Fat Diet. Poster presentation, Society of Toxicology, Baltimore, United States of America. 2019.
34. Lucero, J., Lund, AK. "Traffic-Generated Air Pollution-Exposure Mediates Adipocyte Hypertrophy Associated with Increased Angiotensin II Signaling in C57Bl/6 Wildtype Mice. Poster presentation, Society of Toxicology, Baltimore, United States of America. 2019.
35. *Kennedy, C., McDonald, J.D, Lund, AK. Traffic-Generated Air Pollution-Mediated Alterations in Cerebral AhR and CYP Enzyme Expression Dependent Upon Age and Diet in C57Bl/6 Wild Type Mice. Poster presentation, Society of Toxicology, Baltimore, United States of America. 2019.
36. *Ghanbari-Adivi Z, Lucero J, Simpson N, McDonald JD, **Lund AK.** Traffic-Generated Air Pollution-Exposure Mediated Expression of Factors Associated with Onset and/or Progression of Multiple Sclerosis in a Female Mouse Model. Society of Toxicology Conference: Air Pollution

Toxicology, San Antonio, TX. March 2018.

37. *Kennedy, C., Lucero, J., McDonald, J.D., and **Lund, A.K.** Air Pollution-Mediated Alterations in CYP Enzyme Expression Dependent upon Age and Diet in the Brains of C57B16 Wild-Type Mice. Society of Toxicology Conference: Air Pollution Toxicology, San Antonio, TX. March 2018.
38. Schneider L*, Lucero J, McDonald JD, **Lund AK.** Alterations in Liver Protein Profiles of C57Bl6 Mice Exposed Mixed Vehicular Emissions Via Inhalation. Society of Toxicology Conference: Air Pollution Toxicology, San Antonio, TX. March 2018.
39. Suwannasual U*, Lucero J, McDonald JD, **Lund AK.** The Effects of Inhaled Traffic- Generated Pollutant Exposure on Angiotensin II Receptor Expression and Blood Brain Barrier Integrity in Wildtype Mice on Either a High or Low Fat Diet. Society of Toxicology Conference: Air Pollution Toxicology, San Antonio, TX. March 2018.
40. Phillippi D*, Fitch MN*, Lucero J, Zhang Y, Allen MS, McDonald JD, Campen MJ, **Lund AK.** Effects of Inhaled Air Pollution on Inflammation and Microbiota Profiles of the Intestines in Apolipoprotein E Knockout Mice. Society of Toxicology Conference: Air Pollution Toxicology, San Antonio, TX. March 2018.
41. **Lund AK,** and McDonald JD. Inhalation Exposure to Traffic-Generated Air Pollutants Results in Increased Plasma Angiotensin II and Angiotensin II Type 1 Receptor Expression in the Vasculature, Kidneys, and Adipocytes of C57Bl/6 Wildtype Mice. Society of Toxicology Conference: Air Pollution Toxicology, San Antonio, TX. March 2018
42. Suwannasual U*, Lucero J, McDonald JD, **Lund AK.** The Effects of Inhaled Traffic- Generated Pollutant Exposure on Oxidized Low Density Lipoprotein Receptor Expression and Blood Brain Barrier Integrity in Wildtype Mice on a High or Low Fat Diet. Poster presentation – Society of Toxicology Conference, 2017.
43. Davis G*, Lucero J, McDonald JD, **Lund AK.** The Effects of Inhaled Multiwalled Carbon Nanotube Exposure on Signaling Pathways Associated with Vascular Disease in Wildtype Mice. Poster presentation – Society of Toxicology Conference, 2017.
44. **Lund AK.** Inhalation Exposure to Traffic-Generated Air Pollutants Increased Renal Oxidative Stress, Matrix Metalloproteinase-9 Expression, and Fibrosis, which are Mediated through an Angiotensin II-Dependent Pathway. Poster presentation – Society of Toxicology Conference, 2016.
45. Fitch M*, Lucero J, Campen MJ, McDonald J, **Lund AK.** The Effects of Inhaled Air Pollution Exposure on the Duodenal Epithelial Lining Integrity in Apo E-/- Mice. Poster Presentation – Society of Toxicology, 2016.
46. Suwannasual U*, Lucero J, McDonald J, **Lund AK.** The Role of Oxidized-Low Density Lipoprotein Receptors in Matrix Metalloproteinase Activity and Tight Junction Protein Expression in the Cerebral Microvasculature of Mice Exposed to Traffic-Generated Air Pollutants (Poster presentation) Society of Toxicology Conference, 2015.
47. **Lund AK.** Vehicle Emissions-Exposure Results in Increased Cerebrovascular Lipid Peroxidation Associated with Altered Blood Brain Barrier Permeability. Invited Symposium Speaker – Society of Toxicology Conference, 2014.
48. **Lund AK.** Air Pollution in Chronic Cardiovascular Disease – Potential Mechanisms Involved. Invited Symposium Speaker – Society of Toxicology Conference, 2013.
49. **Lund AK,** Lucero J, Herbert L, Naik J. Human Immunodeficiency Virus (HIV) Transgenic Rats Display Induced Expression of Vascular Factors Associated with Atherosclerosis. Poster Presentation – American Heart Association Conference, 2012.
50. **Lund AK,** Oppenheim H, Lucero J, Herbert L, McDonald JM. Exposure to Traffic- Generated

Air Pollutants Results in Disruption of the Blood Brain Barrier through Altered Expression of Tight Junction Proteins. Poster Presentation - American Heart Association Conference, 2012.

51. **Lund AK**, Lucero J, Blair L, McDonald J. Gender-Related Differences in Air-Pollution – Mediated Expression of Vascular Factors Associated with Progression of Atherosclerosis. Presentation – Society of Toxicology Conference, 2011.
52. **Lund AK**. Elucidating Pathways Involved in Environmental Air Pollution – Mediated Exacerbation of Cardiovascular Disease. (Invited Speaker) Mountain West Region - Society of Toxicology Conference, 2010.
53. **Lund AK**. Gender-Related Differences in Air-Pollution – Mediated Expression of Vascular Factors Associated with Progression of Atherosclerosis. (Invited Speaker) NIEHS – EPA Air Pollution and Cardiovascular Disease Symposium, 2010.
54. **Lund AK**, Lucero J, Mathews N, Lucas S, Campen MJ. Statin-Treatment Effectively Reduces Inhaled Vehicular Emissions-Mediated Expression of Vascular Markers Associated with the Progression of Atherosclerosis. Poster Presentation, AHA - Arteriosclerosis, Thrombosis, and Vascular Biology (ATVB) Conference, 2010.
55. McDonald JL, Doyle-Eisele M, Knipping E, Rohr A, **Lund AK**, Campen M. Comparison of Health Effects and Composition of Toluene Derived Secondary Organic Aerosols Formed with and without Sulfur Dioxide. Poster, Society of Toxicology, 2010.
56. Campen MJ, **Lund AK**, Buntz J, Lucero J, Mathews N, Mauderly JL. Vascular Lipid Peroxidation and Dysfunction Induced by Complex Combustion Emissions: an Update of the NPACT Study. Poster, Society of Toxicology, 2010.
57. **Lund AK**, Lucero J, Lucas S, Knuckles TL, and Campen MJ. Gasoline Engine Emissions Results in Upregulation of Endothelin-1 – Mediated Vascular Matrix Metalloproteinase Expression and Activity. Poster, Society of Toxicology, 2008.
58. Kodavanti UP, Thomas R. **Lund AK**, Schladweiler MC, Campen MJ, Shannahan JH, Ledbetter AD, Richards JE, Nyska A, Jaskot RH, Butler EO, Parinandi RL. Oxidized Lipids and Lipid Mediators are Involved in Cardiovascular Injury Induced by Diesel Exhaust Particles (DEP) and Ozone. Poster, Society of Toxicology, 2010.
59. **Lund AK**, Lucero J, Mathews N, Lucas S, Campen MJ. Statin-Treatment Effectively Reduces Inhaled Vehicular Emissions-Mediated Expression of Vascular Markers Associated with the Progression of Atherosclerosis. Presentation, Society of Toxicology, 2010.
60. **Lund AK**, Lucero J, Mathews N, Lucas S, Campen MJ. Vascular Lectin-Like-OxLDL Scavenger Receptor (LOX-1) Mediates Oxidative Stress, Endothelin-1, and Matrix Metalloproteinase Expression in the Vasculature of Engine Emissions-Exposed Mice. Poster Presentation, American Heart Association Conference, 2009.
61. **Lund AK**, Lucero J, Mathews N, Lucas S, Harman M, Campen MJ. Vehicular Emissions Exposure Increases Vascular Oxidative Stress, Endothelin-1, and Matrix Metalloproteinase-9 via the Lectin-like OxLDL Scavenger Receptor. Poster presentation, AHA - Arteriosclerosis, Thrombosis, and Vascular Biology (ATVB) Conference, 2009.
62. **Lund AK**, Lucero J, Mathews N, Lucas S, Harman M, Campen MJ. Inhalational Exposure to Vehicular Emissions Increases Vascular Oxidative Stress Via the Lectin-Like-OxLDL Scavenger Receptor (LOX-1). Poster presentation, Society of Toxicology, 2009.
63. **Lund AK**, Knuckles TL, Lucero J, Seagrave JC, McDonald JD, and Campen MJ. Exposure to Gasoline Engine Emissions Increases Vascular Reactive Oxygen Species and Activates Matrix Metalloproteinases Associated with the Progression of Atherosclerosis. Poster, Gordon Research Conference on Matrix Metalloproteinases, 2007.

64. **Lund AK**, Knuckles TL, Lucero J, Seagrave JC, McDonald JD, and Campen MJ. Exposure to Whole Gasoline Engine Emissions Results in Alterations of Molecular Pathways Involved in Progression of Atherosclerosis. Poster presentation, American Heart Association - Atherosclerosis, Thrombosis, and Vascular Biology Conference, 2007.
65. Kopf PG, **Lund AK**, Walker MK. Sub-chronic, Low Level Exposure of Adult Male Mice to 2,3,7,8 – Tetrachlorodibenzo-p-Dioxin (TCDD) Induces Obesity and Hypertension. Poster, Society of Toxicology, 2006.
66. Knuckles TL, **Lund AK**, Campen MJ. Diesel Exhaust Enhances Venous Congestions in a Model of Heart Failure. Poster, Society of Toxicology, 2007.
67. **Lund AK**, Knuckles TL, Lucero J, Seagrave JC, McDonald JD, and Campen MJ. Exposure to Whole Gasoline Engine Emissions Results in Alterations of Molecular Pathways Involved in Progression of Atherosclerosis. Symposia presentation, Society of Toxicology, 2007.
68. **Lund AK**, Peterson SL, Timmins GS, Walker MK. Endothelin-1 – Mediated Increase in Reactive Oxygen Species and NADPH Oxidase Activity in Hearts of Aryl Hydrocarbon Receptor (AhR) Null Mice. Platform presentation, Mountain West – Society of Toxicology, 2005.
69. **Lund AK**, Knuckles TL, Campen MJ. Subchronic Exposure to Whole Gasoline Engine Emissions Results in Alterations of Molecular Pathways Involved in Progression of Atherosclerosis. Poster, American Heart Association - Atherosclerosis, Thrombosis, and Vascular Biology Conference, 2006.
70. Walker MK, Fink G, **Lund AK**. The Aryl Hydrocarbon Receptor (AhR) Influences the Oxygen-Regulation of Endothelin-1 Expression and Modulates the Development of Hypertension. Platform presentation, Society of Toxicology, 2006.
71. **Lund AK**, Peterson SL, Timmins GS, Walker MK. Endothelin-1 – Mediated Increase in Reactive Oxygen Species and NADPH Oxidase Activity in Hearts of Aryl Hydrocarbon Receptor (AhR) Null Mice. Platform presentation, Society of Toxicology, 2006.
72. **Lund AK** and Walker MK. The Role of Endothelin-1 in Cardiac Hypertrophy and Elevated Mean Arterial Blood Pressure in Aryl Hydrocarbon Receptor (AhR) Null Mice. Poster presentation, FASEB (Experimental Biology), 2005.
73. **Lund AK** and Walker MK. The Role of Endothelin-1 in Cardiac Hypertrophy and Elevated Mean Arterial Blood Pressure in Aryl Hydrocarbon Receptor (AhR) Null Mice. Poster presentation, Society of Toxicology, 2005.
74. **Lund AK** and Walker MK. The Role of Endothelin-1 in Cardiac Hypertrophy and Elevated Mean Arterial Blood Pressure in Aryl Hydrocarbon Receptor (AhR) Null Mice. Platform presentation, Mountain West – Society of Toxicology, 2004.
75. **Lund AK** and Walker MK. Elevated Mean Arterial Blood Pressure in Aryl Hydrocarbon Receptor (AhR) Null Mice is Correlated with Endothelin-1." Poster presentation, FASEB (Experimental Biology), 2004.
76. **Lund AK** and Walker MK. Elevated Mean Arterial Blood Pressure in Aryl Hydrocarbon Receptor (AhR) Null Mice is Correlated with Endothelin-1. Poster presentation, Society of Toxicology, 2004.
77. **Lund AK** and Walker MK. Hypertension in Aryl Hydrocarbon Receptor Null Mice is Correlated with Plasma Endothelin-1, but not Angiotensin II. Poster presentation, FASEB (Experimental Biology), 2003.
78. **Lund AK**, Born JL, Walker MK. Hypertension in Aryl Hydrocarbon Receptor Null Mice is Correlated with Plasma Endothelin-1, but not Angiotensin II. Platform presentation, Society of Toxicology, 2003.

79. **Lund AK**, Born JL, Walker, MK. The Role of Angiotensin II in Hypertension and Plasma Endothelin-1 Levels Observed in Aryl Hydrocarbon Receptor (AhR) Null Mice. Platform presentation, Mountain West - Society of Toxicology, 2002.
80. **Lund AK**, Kanagy N, Walker, MK. Aryl Hydrocarbon (AhR) Null Mice Exhibit Hypertension and Elevated Plasma Endothelin-1 Levels. Poster presentation, FASEB, 2002.
81. **Lund AK**, Kanagy N, Walker, MK. Aryl Hydrocarbon (AhR) Null Mice Exhibit Hypertension and Elevated Plasma Endothelin-1 Levels. Platform presentation, Society of Toxicology, 2002.

Other Invited Presentations:

1. **Lund AK**. Pathways Involved in Air Pollution-Mediated Progression of Vascular Disease and Blood Brain Barrier Disruption. Seminar Speaker – UNT Biological Sciences Seminar Series, 2014.
2. **Lund AK**. Investigating the role of the renin-angiotensin system in air pollution-exposure mediated exacerbation of vascular disease and obesity. Seminar Speaker (for Tenure Review) – UNT Biological Sciences Seminar Series, 2018.

International Invited Presentation:

1. **Lund AK**. Vehicle Emissions-Exposure Results in BBB Disruption through Altered Tight Junction (TJ) Protein Expression. Invited Speaker – CEA (Saclay, France), 2014.

Media / Interviews (re: Research):

1. CBS News Interview (aired March 5, 2020). <https://dfw.cbslocal.com/video/4472893-the-ones-for-wellness-pollution-obesity/>
2. ABC WFAA-DAL Interview (live, aired November 20, 2019). <https://mms.tveyes.com/MediaCenterPlayer.aspx?u=aHR0cDovL21lZGhY2VudGVyLnR2ZXllcy5jb20vZG93bm9vYWRnYXRld2F5LmFzcHg%2FVXNlcklEPTYyMzM4NiZnREIEPTEyNTlwNTE3Jk1EU2VIZD02NDk2JIR5cGU9TWVkaWE%3D>
3. Estrella Interview (aired November 18, 2019).
4. Denton Record Chronicle (November 12, 2019). https://dentonrc.com/education/unt-professor-researching-link-between-air-pollution-and-obesity/article_12c20029-98b4-56c8-b943-2f56759649b5.html
5. Frisco Enterprise. (November 10, 2019). https://starlocalmedia.com/friscoenterprise/news/research-maps-link-between-air-pollution-and-obesity/article_35a1ef06-028b-11ea-bd35-03aaa28e6634.html
6. Dallas Innovates. (November 8, 2019). <https://dallasinnovates.com/discovery-utsws-hi-res-microscope-produces-better-images-unt-prof-finds-polluted-air-can-cause-weight-gain/>
7. World Health.net (November 7, 2019). <https://www.worldhealth.net/news/air-pollution-may-be-adding-your-waistline/>
8. D Magazine (November 6, 2019). <https://www.dmagazine.com/frontburner/2019/11/a-new-study-finds-air-pollution-can-make-you-fat/>
9. Medical Express (November 6, 2019). <https://medicalxpress.com/news/2019-11-link-air-pollution-obesity.html>

Funded Grants:

Extramural (Active):

10/1/2023 – 9/30/2028 NOAA RESTORE \$2,030,752

Co-producing a conceptual model to support assessments of cumulative effects from multiple stressors on Houston area dolphins under CERCLA and OPA.

The project team seeks to develop conceptual models, statistical models, and analyses based on laboratory and survey data to help managers conduct more targeted and specific Natural Resource Damage Assessment (NRDA) pre-assessment evaluations of Houston-area bottlenose dolphins potentially injured by releases of polychlorinated biphenyls (PCBs) and dioxins.

Role: Co-Investigator (PI: Takeshita)

9/15/2017- 8/31/2026* NIH/NIEHS - R15 ES026795 \$435,247

The Renin-Angiotensin System in Air Pollution-Mediated Exacerbation of Obesity.

The purpose of this grant is to elucidate the role of air pollution-induced systemic (renal) and localized renin-angiotensin activity in promotion of adipogenesis and adipokine expression associated with onset and/or progression of obesity and underlying metabolic syndrome.

Role: Principle Investigator (PI)

**Renewed 2023:* NIH/NIEHS – 2 R15 ES026795 \$435,982

The purpose of the renewal of this grant is to investigate whether inhalation to traffic-generated particulate matter (PM) alters gut microbiome profiles and enteroendocrine GLP-1 signaling, contributing to an obese adipocyte phenotype. Furthermore, we will determine the role of GLP-1 – Ang II crosstalk in promoting an obese phenotype in adipose tissue following air pollution PM exposure.

Role: Principal Investigator (PI)

Extramural (Completed):

9/1/2009 – 8/31/2013 NIH/NIEHS R00 ES0126586 \$708,473

Activation of MMP9 Mediates Vascular Effects of Inhaled Air Pollutants.

The purpose of this grant is to determine molecular signaling pathways involved in air pollution-mediated progression of atherosclerosis, as well as identify circulating biomarkers in human- models of exposure that indicate predisposition to a cardiovascular clinical event.

Role: Principal Investigator (PI)

12/1/2010-11/30/2015 EPA Center Grant-R834796 \$8,000,000

Clean Air Research Center

The purpose of this Research Center is to integrate exposure, epidemiological, toxicological, clinical, and statistical sciences to study cardiovascular hazards of fresh and aged roadway emissions and significantly advance our understanding of the components and reaction products that cause these effects.

Role: Co-Investigator – Projects 2, 3

Project Total Funds: \$3,900,000

9/1/2010 – 8/31/2011 NIEHS/NIH R00 ES0126586-S1 \$14,297

MMP-9 Activity Mediates Vascular Effects of Inhaled Environmental Air Pollutants.

Supplement to R00 Award Grant to support salary and supplies for a summer graduate student to study the alterations in vascular physiologic response of mice with/without cardiovascular disease or obesity, in response to air pollution-exposure.

Role: Principle Investigator (PI)

9/1/2008 – 8/31/2011 EPA STAR Award-R833990 \$500,000

Novel Markers of Air Pollution-induced Vascular Toxicity.

The goal of this research is to further characterize molecular alterations in circulating biomarkers in an animal model of exposure to inhaled diesel exhaust (DE) and then translate these findings to plasma from humans that have been exposed to DE under controlled conditions.

Role: Co-Principle Investigator

9/1/2008 – 8/31/2009 NIH/NIEHS K99 ES0126586 \$108,000

Activation of MMP9 Mediates Vascular Effects of Inhaled Air Pollutants.

The purpose of this grant is to determine molecular signaling pathways involved in air pollution-mediated progression of atherosclerosis.

Role: Principal Investigator (PI) – Training (post-doctoral) phase

6/1/2006 - 5/31/2008 NIH/NIEHS - NRSA \$134,600

Air Pollution-Induced Vascular Endothelin Regulation of Metalloproteinase Activity

The major goal of this study was to determine the key pathways responsible for upregulation of vascular matrix metalloproteinase (MMP) activity which is mediated by inhalation exposure to vehicular engine emissions.

Role: Principal Investigator (PI)– Post doctoral fellowship

5/1/2003 - 12/31/2006 EPA STAR Award -U916215 \$115,244

The Role of Endothelin-1 Regulation and Expression in Cardiac Hypertrophy Observed in Aryl Hydrocarbon (AhR) Null Mice.

The objective of this research project is to determine the role of the Aryl hydrocarbon receptor (AhR), which is known to mediate the toxicity of several environmental pollutants, in cardiovascular physiology and homeostasis. Additionally, pathological studies of AhR null mice suggest a role for AhR in normal development and homeostasis of the heart; these experiments set out to elucidate the etiology of cardiac hypertrophy observed in AhR null mice.

Role: Principal Investigator (PI) – Predoctoral fellowship

Extramural (Pending):

6/1/2024-5/31/2027 DOD – TERP \$500,000

Determining Effects of Diesel Exhaust Particulate Exposure Using Organ-on-a-Chip.

To validate an organ-on-a-chip (OcC) model to characterize toxicological outcomes from exposure to vehicle (diesel) engine particulate matter. The following OcC will be utilized to characterize toxicological outcomes, which will be compared to in vivo study endpoints from similar exposure concentrations: blood brain barrier, kidney, heart and liver.

Role: Co-Investigator (PI: Schneider)

8/1/2024-7/31/2027

NSF ADVANCE

\$999,809

UNT CRECE: Culturally Responsive, Equitable, and Caring Environments

The goal of the UNT-CRECE program is to induce sustainable systemic change by implementing evidence-based practices, adapted from five ADVANCE institutions, that will foster an inclusive, intersectional, and culturally responsive environment in our university's STEM departments.

Role: Senior Personnel (PIs: Padilla, Barrio, Hutchins)

2/1/2025 – 1/31/2030

NIE/NIEHS P42 Superfund Program

\$14,500,000

Toxic Exposures Affecting Community Health (TEACH) Superfund Research Project

The purpose of this Multi Project Center grant is to investigate the levels of methylmercury (MeHg) currently found in subsistence fish species populations found in commonly fished lakes across the urban Dallas-Fort Worth metroplex region. These concentrations will then be utilized for two Biomedical Projects to investigate the (1) the effects of in utero MeHg exposure on neurobehavioral outcomes and (2) the effects of MeHg exposure on gut microbiome-adipose tissue signaling during adolescence vs. adulthood related to metabolic dysfunction and obesity. The fourth Project will focus on designing remediation methodologies to reduce MeHg levels currently found in lakes in the DFW region. Additionally, the Training, Data Management, and Community Engagement Cores will be actively involved in providing infrastructure for student and post-doc training across Projects, storing/sharing all data collected across Project studies, and disseminating information to affected communities, respectively.

Role: PI, Project 3

Intramural (Active/Completed):

2023

UNT College of Science Equipment Grant

\$59,176

Equipment Proposal for Atomic Absorption Spectrometer with Furnace Autosampler

The purpose of this proposal was to acquire an iCE 3500 AAS atomic absorption spectrometer with furnace and autosampler will allow for trace element analysis with high through-put abilities as a shared piece of environmental chemistry equipment to support AERI and Biology researchers.

2023

UNT COS/COE Pilot Project Grant

\$10,000

Cost-effective Modular Systems for Autonomous Management of Small-Scale Farms and Ranches.

The purpose of this pilot project grant is to demonstrate the efficacy of a cost-effective solution for the management of small farms/ranches by using a modified autonomous UAV in conjunction with interchangeable monitoring and control (MAC) modules, to manage the daily activities without having to be physically present.

2018

UNT Team Mentoring Grant

\$5,000

Women in Science Mentoring Grant.

The purpose of this grant is to provide program activities that facilitate the research goals of UNT College of Science female faculty in order to accelerate research productivity, increase institutional and funding opportunity awareness, and facilitate peer networking.

Role: Team member

2017 UNT Research Seed Grant (RSG) \$10,000

Investigating the Production of Gut Microbiota-derived Factors in Air Pollution-Exposure Mediated Blood Brain Barrier Disruption.

The purpose of this grant is to provide funds to run experiments to acquire preliminary data for a future NIH grant submission. This project will investigate whether exposure to a mixture of gasoline and diesel engine emissions results in altered microbiota-produced factors (SCFA, indoles, LPS), and subsequent BBB disruption, using samples from both *in vivo* exposures and *in vitro* BBB co-culture models.

Role: Principle Investigator

2014 UNT Incentives for Global Research Opportunities (IGRO) \$5,000

Establishing a Translatable Mammalian Blood Brain Barrier Co-culture Model.

The purpose of this grant was to provide travel money to visit and train in a collaborator's (Aloïse Mabondzo) laboratory in Paris, France. During this week-long visit, I was involved in development and characterization of a novel co-culture model that more closely relates to the anatomy and physiology (tight junction protein, signaling) of the human blood brain barrier, in an effort to bring this technology back to my laboratory at UNT.

Role: Principle Investigator (PI)

2013 UNT Research Initiation Grant (RIG) \$7,500

Air Pollution-Mediated Progression of Atherosclerosis in Females.

The objective of this grant was to provide salary and supply money to support a summer project looking at pathways involved in air-pollution mediated progression of atherosclerosis in females.

Role: Principle Investigator (PI)

Research Group / Major Advisor of:

2019-2020 Watcharaporn Devakul Na Ayutthaya, PhD., visiting Post-doc Scholar (J1)

2010-2017	Dedric Taylor	Ph.D. graduate (degree awarded)
2013-2018	Griffith Davis	Ph.D. graduate (degree awarded)
2014-2020	Usa Suwannasual	Ph.D. graduate (degree awarded)
2015-2020	Zeinab Adivi-Ghanbari	Ph.D. graduate (degree awarded)
2017-2020	Sarah Thomas	Ph.D. graduate (degree awarded)
2017-2020	Subhayu Nayek	Ph.D. graduate (degree awarded)
2017-2021	Danielle Phillippi	Ph.D. graduate (degree awarded)
2017-2022	Leah Schneider	Ph.D. graduate (degree awarded)
2019-current	Tyler Armstrong	Ph.D. candidate (ABD)
2022-current	Victoria Youngblood	Ph.D. candidate
2022-current	Kayla Nguyen	Ph.D. candidate
2023-current	Mia Cook	Ph.D. candidate and NIH G-RISE Scholar
2014-2016	Megan Fitch	M.S. graduate (degree awarded)
2018-2020	Denice Reed	M.S. Science Educator (degree awarded)
2020-2022	Jordan Pankrez	M.S. Science Educator (degree awarded)
2021-2022	Chelsey Templeton	M.S. Science Educator (degree awarded)

2022 – current	Annya McManus	M.S. Science Educator
2015-2016	Caitlin Fellers	Undergraduate, honors thesis (B.S.)
2015-2017	Nicholas Simpson	Undergraduate, honors thesis (B.S.)
2016-2018	Karly Flemming	Undergraduate, research project
2016-2019	Conner Kennedy	McNair Undergraduate, honors thesis (B.S.)
2017-2019	Benjamin Phipps*	Undergraduate, honors thesis (B.S.)
2019-2020	Jacqueline Pass	Undergraduate (B.S.)
2019-2020	Robert Nance*	Undergraduate, honors thesis (B.S.)
2020-2022	Kayla Nguyen*	Undergraduate, honors thesis (B.S.)
2020-2022	Bea Penaredondo*	Undergraduate, honors thesis (MLS)
2020-2022	Akshay Thasma	TAMS student
2021-2022	Isabella Santiago	Undergraduate, research project (B.S.)
2022-2023	Anapaula Soverno	Undergraduate, research project (B.S.)
2022-2023	Sheila Finney	Undergraduate, research project
2022 – current	Lanie Stanley*	Undergraduate, honors thesis
2022 – current	Bailee Johnson*	Undergraduate, honors thesis
2023 – current	Amaya Green	Undergraduate, research project
2023 – current	Sophia Giasolli	Undergraduate, research project
2024 – current	Reymond Salazar	Undergraduate, research project

*Recipient of UNT Undergraduate Research Award

Served as Advisor or Committee Member for undergraduate honors thesis paper:

- Carlos Andrade (2015)
- Bich Nguyen (2016-2017)
- Emmilany Ortiz (2018)
- Linh Nguyen (2019)

Collaborations:

2020 –current	Lauren Fischer, Lu Liang (One Health) UNT – Denton Collaboration with the city of Lewisville to monitor air quality and health outcomes in the population with/without access to greenspace and parks.
2020 – current	Rajeev Azad, UNT-Denton Collaboration on NIH-funded studies for biostatical analyses of microbiome, transcriptomics, and lipidomics projects.
2018-current	Yong Yang, UNT-Denton Collaborative projects on designing/characterizing blood brain barrier on a chip to utilize for high throughput toxicological/pharmaceutical applications.
2016-current	Rebecca Cunningham, UNT-HSC Collaborative projects on blood-brain barrier, neuroinflammation, air pollution-exposed mediated changes in behavior

2015-current	Brain McFarlin, UNT-Denton Collaborative projects on oxLDL, obesity, and microbiota
2015-current	Michael Allen, UNT-Health Science Center Collaboration on identification of alterations of microbiota in the gut and lung after exposure to environmental air pollutants.
2010-current	Aloïse Mabondzo, CEA-Saclay, Paris, France. Collaborative projects on blood brain barrier co-culture and the effects of nanoparticle-exposure in the vasculature.
2005-current	Matthew Campen, University of New Mexico Collaborative projects on the effects of air pollution in cardiovascular disease-states.
2005-current	Jacob McDonald, Lovelace Respiratory Research Institute Collaborative projects in complex-whole emissions and nanoparticle exposures in rodents and non-human primate studies.

Teaching Experience:

- Graduate:
 - o BIOL 5370 General Toxicology
 - o BIOL 5150 Pharmacology
- Undergraduate courses:
 - o BIOL 4910 Research hours
 - o BIOL 4370 General Toxicology
 - o BIOL 4250 Pharmacology
 - o BIOL 2302 Anatomy & Physiology II
 - o BIOL 2301 Anatomy & Physiology I
 - o BIOL 2041 Microbiology
 - o BIOL 1720 Intro Biology for Majors II
 - o BIOL 1710 Intro Biology for Majors I
 - o BIOL 1132 Environmental Science for Non-Majors
 - o BIOL 1112 Contemporary Biology for Non-Majors
 - o Biotechnology
- Special Problems/ Research Hours:
 - o BIOL 6950 Dissertation
 - o BIOL 6940 Individual Research
 - o BIOL 5950 Thesis
 - o BIOL 5910 Graduate Special Problems
 - o BIOL 5900 Graduate Special Problems
 - o BIOL 4900 Undergraduate Special Problems

Service:

- Professional:

- External Advisory Board Member, Alaska NIH INBRE Program (2023-current)
- Society of Toxicology Committee on Diversity and Inclusion, member (2022-current)
- Society of Toxicology RC4 Committee: Chair (2021-2022), co-Chair (2020 – current)
- Executive Committee Lone Star Society of Toxicology Regional Section: Past President (2021-2022), President (2020-2021), Vice-President (2019-2020), Secretary (2018-2019), Treasurer (2022 – current).
- Society of Toxicology Inhalational Toxicology Specialty Section: Secretary/Treasurer (2011 – 2013), Councilor (2019 – 2021)
- American Heart Association - Southwest Affiliation Advisory Committee (2010 – current)
- Member of Society of Toxicology Cardiovascular Specialty Section Committees:
 - Mentoring Committee (2010 – 2014)
 - Outreach Committee (2010 – 2014)
- Editorial Boards:
 - Pharmacology Research, Editorial Board (2015 – current)
 - Cardiovascular Toxicology, Associate Editor (2020 – current)
 - Journal of Alzheimer's Disease (JAD) Editor (2021-2023)
- Ad Hoc Reviewer for the following scientific journals (selected from over 25):
 - Environmental Research
 - Ecotoxicology and Environmental Safety
 - Circulation Research
 - Environmental Pollution
 - Toxicology and Applied Pharmacology
 - Toxicology Reports
 - Journal of Pharmacology and Experimental Therapeutics
 - Cardiovascular Toxicology
 - Cardiovascular Research
 - Biochemical Pharmacology
 - Toxicological Letters
 - Environmental Health Perspectives
 - Particle and Fibre Toxicology
 - Inhalation Toxicology
 - Toxicology
 - Toxics
 - PLoS ONE
 - Cell Communication and Signaling
 - Critical Reviews in Toxicology
 - Toxicological Sciences
 - Neurotoxicology

- Journal Obesity and Body Weight
- Acta Histochemica

○ Grant Review Panel Member (ad hoc):

- NIH Social and Environmental Determinants of Health (SEDH) Review Panel, 2024
- NIH COBRE Phase 2 Review Panel, 2023
- NIH KUDS A (04) Special Emphasis Panel Study Section, 2023
- NIH ZRG1 Special Emphasis Panel: Topics in Environmental Toxicology Study Section 2022/10 ZRG1 DKUS-A (06) M, 2022
- NIH ZRG1 CVRS-B 2022/05 NIH Director New Innovator Award Program (DP2) Study Section, 2021-2022
- NIH Neurotoxicology and Alcohol (NAL) Study Section, 2021
- NIH Special Emphasis Panel/SRG (SIEE) 2021/10 ZRG1 SIEE-P (07) Study Section, 2021
- NIH Special Emphasis Panel/SRG (SIEE) 2021/05 ZRG1 SIEE-M Study Section, 2021
- American Heart Association – Predoctoral/Postdoctoral Vascular Study Section (group 2) – 2021
- American Heart Association – Predoctoral/Postdoctoral Vascular Study Section (group 2) – 2020
- NIH HHEAR Science Centers Study Section/Review; 2019
- NIH R15 Lung Cellular, Molecular, and Immunobiology Study Section; 2018-2019
- NIH CSR Anonymization Study Section; 2018
- American Heart Association – Career Development Grant (Vascular Study Section) - 2018.
- American Heart Association - Vascular Study Section (recurring); 2013 - current
- NIH - NeuroAIDS and other End Organ Disease (NAED) Study Section; 2015
- Alaska INBRE Program; 2015
- NIEHS Center Grants for University of New Mexico (Environmental Toxicology) (recurring); 2010-2012.
- EPA STAR Grant (Environmental Exposure Assessment) (ad hoc); 2011.

- **University and College**

- Director, Advanced Environmental Research Institute (AERI), 2021-current
- Organized and hosted inaugural UNT AERI Environment, Social, Governance (ESG) Conference, October, 2023.
- IACUC Committee (co-Chair); 2017 – current.
- Scholarship Committee; 2014-2020; 2021-current
- Associate Director, Advanced Environmental Research Institute (AERI), 2020-2021.

- UNT Leadership Fellow, 2020-2021
- Co-Organizer and Moderator for UNT Women in STEM Event, “Building a Better World”, 2019.
- Faculty Advisor, For the Learning and Advancement of Scientific Knowledge (FLASK); 2016-2019
- Mentor for McNair Scholar (Conner Kennedy); 2016 - 2020
- Advocates and Allies Committee; 2016 - 2019
- SRC Committee, TAMS Research Organization; 2015-current
- SETE Task Force; 2014-2016

- **Department**

- Search Committee Chair, Department of Biological Sciences, Ecology Education Clinical Assistant Professor, 2023-
- Search Committee, Department of Biological Sciences, Immunology/Endocrinology Assistant Professor, 2023-
- Faculty Mentor, Dr. Vanessa Macias, Department of Biological Sciences, 2021-current
- Biological Sciences Executive Committee, Environmental Science Division Representative and Division Director, 2020-current
- Personnel Affairs Committee (PAC), Biological Sciences, 2019-current
- Search Committee Chair, Department of Biological Sciences, Environmental Chemistry Assistant/Associate Professor, 2022-2023.
- Biological Sciences Promotion and Tenure Committee A Member, 2020 - 2023
- Chair, Personnel Affairs Committee (PAC), Biological Sciences, 2020-2021
- Search Committee, Department of Biological Sciences, A&P Lecturer; 2019- 2020
- Graduate Student – Faculty Liaison Group (GaSFLiG) Committee Member, 2020 – current.
- Search Committee, Department of Biological Sciences, Invertebrate Biologist; 2019-current
- BGSA Graduate Research Day Judge for Poster Presentations; 2017, 2018.
- Search Committee, Department of Biological Sciences, Genetics/Cell Biology/Biochemistry Lecturer position; 2018.
- Search Committee, Department of Biological Sciences, Microscopy Supervisor position; 2016.
- Search Committee, Department of Biological Sciences, Biology Lecturer/Advisor position; 2015.
- P&T Policies Revision Committee, Department of Biological Sciences; 2015.
- Search Committee, Department of Biological Sciences, Environmental Science Laboratory Supervisor; 2014.
- Graduate student Committee Member for Biology or Environmental Science graduate students (27 Ph.D.; 3 M.S students)