Curriculum vitae: Chad S. Weldy, M.D., Ph.D.

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Current Position

Attending Cardiologist, Physician-Scientist
Instructor of Medicine, July 1, 2023 — present
Division of Cardiovascular Medicine
Department of Medicine
Stanford Center for Inherited Cardiovascular Disease
Research investigator within the labs of Dr. Thomas Quertermous (CV medicine) and Dr. Jin Billy Li (Genetics)

- Mentored Clinical Scientist Research Career Development Award (K08)(NIH/NHLBI, 1 K08 HL167699-01), "ADAR Mediated RNA editing is a causal mechanism in coronary artery disease". 8/1/2023-7/31/2028
- Career Development Award, American Heart Association (AHA CDA)(23CDA1042900), "Linking RNA editing to coronary artery calcification and disease". 7/1/2023-6/30/2026

Education and Previous Training

Postdoctoral Research Fellow, July 1, 2021 – June 30, 2023
Division of Cardiovascular Medicine, Department of Medicine
Stanford University, June 2021 – Present
NIH/NHLBI Ruth L. Kirschstein National Research Service Award (NRSA) Individual Postdoctoral Fellowship (F32) ***Received perfect score with impact score 10, 1st percentile**
Research Advisor: Thomas Quertermous, M.D.
Research area: Genetic and epigenetic basis of coronary artery disease, human genetics, single cell transcriptomics/epigenomics, RNA editing

Cardiovascular Medicine Fellowship
Stanford University Hospitals, July 1, 2019 – June 30, 2023
Department of Medicine
Research Advisor: Thomas Quertermous, M.D.
Fellowship Program Director: Joshua Knowles, M.D., Ph.D.
Clinical Advisor: Euan Ashley, M.D., Ph.D.

Internal Medicine Internship and Residency
Stanford University Hospitals, June 25, 2017 – June 24, 2019
Translational Investigator Program (Physician Scientist Training Program)
Department of Medicine

Residency Program Director: Ronald Witteles, M.D.
TIP Program Co-Directors: Joshua Knowles, M.D., Ph.D., Joy Wu, M.D., Ph.D., Vinicio de Jesus Perez, M.D.

Medical Doctorate (M.D.)
Duke University School of Medicine, August 2014 – May 2017
Advisory Dean: Delbert Wigfall, M.D.

Postdoctoral Fellowship, June 2012 – June 2014
NHLBI T32 Senior Fellow (September 2012 — September 2013)
Division of Cardiology
University of Washington School of Medicine
Research Advisor: Michael T. Chin, M.D. Ph.D.
Research area: Cardiovascular biology, heart failure, epigenetics, DNA methylation, air pollution

Ph.D., Toxicology, September 2007 - June 2012
NIEHS T32 Predoctoral Fellow
Department of Environmental and Occupational Health Sciences,
University of Washington School of Public Health
Research Advisor: Terrance J. Kavanagh, Ph.D.
Research area: Free radial biology, oxidative stress, vascular physiology, nitric oxide biology, air pollution, toxicology

*Dissertation Title: Inhalation of Diesel Exhaust (DE) and its effects on inflammation and vascular function; investigating the role of oxidative stress and glutathione in DE-mediated effects

Visiting Scientist, April 2010 – July 2010, April 2011 – May 2011
Department of Internal Medicine, Division of Cardiology
University of Heidelberg School of Medicine
Heidelberg, Germany
Research Advisor: Florian Bea, M.D., Ph.D., Michael R. Preusch, M.D., Ph.D.

B.S., Environmental Science (Environmental Toxicology);
Minor, Chemistry, June 2007
Huxley College of the Environment, Western Washington University
Advisor: Ruth Sofield (Harper), Ph.D.

Summary — Physician Scientist in Cardiovascular Medicine

I am an attending cardiologist and physician scientist at Stanford University School of Medicine and a research scientist in the lab of Dr. Thomas Quertermous, the William G. Irwin Professor of Medicine at Stanford University. As an Instructor of Medicine, I am a faculty member within the Division of Cardiovascular Medicine and the Stanford Center for Inherited Cardiovascular Disease. I received my M.D. from Duke University School of Medicine and completed my internal medicine internship, residency, and clinical cardiology fellowship at Stanford University as a member of the Stanford Translational Investigator Program (TIP). Prior to entering medical school, I received my Ph.D. from the University of Washington and completed a postdoctoral fellowship with the University of Washington, Division of Cardiology where I conducted basic science research investigations within the fields of cardiovascular biology, redox biology, toxicology, and epigenetics. I have a clinical interest in the field of inherited cardiomyopathies where I treat patients and families within Stanford's Center for Inherited Cardiovascular Disease (SCICD) where I trained with Dr. Euan Ashley and have growing national recognition as a physician and scientist in cardiovascular genetics and precision medicine. As a physician-scientist I work to better understand human genetics, epigenetics, and transcriptional regulation in

cardiovascular disease. My research within the Quertermous lab is focused on the genetic and epigenetic mechanisms of vascular disease where we employ cutting edge techniques such as single cell sequencing and genetic mouse models of disease. I have received two career development awards including my K08 mentored clinical scientist award from the NIH and the American Heart Association Career Development Award (AHA CDA), as well as a Ruth L. Kirschstein National Research Service Award (NRSA) Individual Postdoctoral Fellowship (F32) and an NIH Loan Repayment Award for my work on single cell biology and atherosclerosis. I have 20 publications, 12 first author with more than 580 citations including a national paper of the year award. Within Stanford, I am the recipient of the Gerald Reaven Award for Basic Science from the Division of Cardiovascular Medicine, I have been inducted into AOA from the Stanford School of Medicine, and I was the recipient for the Timothy F. Beckett Jr. Award for Best Clinical Teaching from the Department of Medicine.

Clinical Experience

Cardiology and Internal Medicine: I am a cardiologist and internal medicine physician trained at Duke University and Stanford University Hospitals. As a cardiology fellow I received advanced training in managing complex cardiovascular disease across the CV spectrum including lipid disorders, coronary artery disease, ischemic cardiomyopathy, nonischemic cardiomyopathy, hypertension, valvular disease, arrhythmias, and infiltrative disease including cardiac amyloid and sarcoidosis. I am trained in echocardiography (level 2 board certified), catheterization, and other imaging modalities.

Stanford Center for Inherited Cardiovascular Disease (SCICD): I am a core faculty member within SCICD who treats those with inherited cardiomyopathies with a primary focus on hypertrophic cardiomyopathy, dilated cardiomyopathy, arrhythmogenic cardiomyopathy, noncompaction cardiomyopathies, mitochondrial myopathies, muscular dystrophies with cardiac involvement, and other rare disorders. My independent clinic within SCICD is within the heart failure program and I manage those prior to advanced heart failure therapies such as heart transplant or mechanical circulatory support. As a clinical fellow I worked directly with Dr. Euan Ashley for 4 years where I developed expertise in treating those with inherited cardiovascular disorders. The Stanford Center for Inherited Cardiovascular Disease (SCICD) is Stanford's home to all patients with inherited CV disorders throughout the 5 major categories with inherited CV disease — those being cardiomyopathies, channelopathies, inherited lipid disorders, neuromuscular disorders with muscular dystrophies, and vascular disorders with aortopathies. In my clinical training with Dr. Ashley, I have focused on those patients with cardiomyopathies, channelopathies and other inherited arrhythmogenic cardiomyopathies, and muscular dystrophies with cardiac involvement. Publications from this clinical work include:

Weldy, C. S. & Ashley, E. A. Towards precision medicine in heart failure. *Nat Rev Cardiol* 1–18 (2021) doi:10.1038/s41569-021-00566-9.

Weldy, C. S. & Ashley, E. A. Mulibrey Nanism and the Real Time Use of Genome and Biobank Engines to Inform Clinical Care in an Ultrarare Disease. *Circulation Genom Precis Medicine* CIRCGEN121003430 (2021) doi:10.1161/circgen.121.003430.

Weldy, C. S., Murtha, R. & Kim, J. B. Dissecting the Genomics of Spontaneous Coronary Artery Dissection. *Circulation Genom Precis Medicine* 101161CIRCGEN122003867 (2022) doi:10.1161/circgen.122.003867.

Weldy, C. S., Perez, M. V. From Founder to Function: can we unravel phenotype from genotype? *Heart Rhythm*. 2023;S1547-5271(23)02646-2.

Clinical Licensure:

NPI: 1477084309
California Medical License: A157175, Expiration 7/31/2024
ABIM Internal Medicine Board Certification: October, 2020
ABIM Cardiovascular Medicine Board Certification: Anticipated October, 2023
National Board of Echocardiography Level II Board Certification: Test passed September, 2021

Research Experience

Cardiology Research Fellowship, Department of Medicine, Division of Cardiology, Stanford University School of Medicine, June 2021 – June 2023. Advisor: Dr. Thomas Quertermous, M.D.
As a physician-scientist in the lab of Dr. Quertermous I work to understand the genetic basis of cardiovascular disease and the transcriptional and epigenomic mechanisms of atherosclerosis. My work is focused across four main areas of cardiovascular genetics and mechanisms of coronary artery disease and smooth muscle biology:

1. **Vascular smooth muscle specific ADAR1 mediated RNA editing of double stranded RNA and activation of the double stranded RNA receptor MDA5 in coronary artery disease and vascular calcification**
2. **Defining on single cell resolution the cellular and epigenomic features of human vascular disease across vascular beds of differing embryonic origin**
3. **CRISPRi screening with targeted perturb seq (TAPseq) to identify novel CAD genes in human coronary artery smooth muscle cells**
4. **Investigation of the epigenetic and molecular basis of coronary artery disease and smooth muscle cell transition in mice with conditional smooth muscle genetic deletion of CAD genes *Pdgfd* and *Sox9***

My work with Dr. Quertermous is focused on discovery of causal mechanisms of disease through leveraging human genetics with sophisticated molecular biology, single cell sequencing technologies, and mouse models of disease. **This work attempts to apply multiple scientific research arms to ultimately lead to novel understandings of vascular disease and discover important new therapeutic approaches for drug discovery.**

RNA editing and vascular disease — Through a collaboration with Dr. Billy Jin Li, Associate Professor of Genetics, Stanford University, I have undertaken work focused on understanding the mechanisms underpinning the human genetics link between RNA editing by adenosine deaminase acting on RNA (ADAR1) and coronary artery disease. Rare loss of function variants in ADAR1 cause a profound interferonopathy (i.e. Aicardi Goutières Syndrome and Singleton Merton Syndrome) which includes severe early onset vascular calcification. Common genetic variants which decrease RNA editing increase risk of numerous inflammatory disorders, including coronary artery disease. My work has revealed that *ADAR1* is the master regulator of RNA editing in human coronary artery smooth muscle cells and I have delineated a mechanism where loss of ADAR1 RNA editing results in activation of the double strand RNA receptor MDA5 (encoded by *IFIH1*). Loss of RNA editing by *ADAR1* regulates human SMC phenotypic transition, response to TGFβ stimulation, and calcification, effects which can be blocked with concurrent KD of MDA5 (*IFIH1*), highlighting the link between ADAR1-dsRNA-MDA5 in regulating SMC phenotype. I have generated a tamoxifen inducible SMC specific *Adar1* deletion mouse model which has revealed that *Adar1* is required to maintain vascular integrity, where loss of *Adar1* causes intravascular hemorrhage, elastin disarray, and inflammatory cell infiltrate. By leveraging human genetics with my collaborators with Dr. Li, we have the ability to predict patient RNA editing efficiency through an 'editing-QTL polygenic risk score' where we feel that inhibition of MDA5 can serve a valuable therapeutic strategy through a true precision medicine approach. This work has served as the basis for my K08

and AHA CDA applications, where I will 1) determine the effect of SMC specific *Adar1* haploinsufficiency on progression of atherosclerosis and will identify the potential for MDA5 inhibition as therapy through investigating the effect of constitutive *Ifih1*-/- deletion, 2) further determine the role of *ADAR1* RNA editing in human coronary artery SMCs phenotypic transition and calcification and determine specific dsRNA structures elucidating these effects, and 3) map the downstream regulatory networks of MDA5 activation through a large CRISPRi screen and computational topic modeling (cNMF) using dCas9-hTert Human Coronary Artery SMCs targeting the ~2500 genes I have identified which are regulated by RNA editing and MDA5 activation.

Grant funding received for this work:

Mentored Clinical Scientist Research Career Development Award (K08)(NIH/NHLBI, 1 K08 HL167699-01), Submitted June, 2022. **PI: Weldy, Chad**

- Title of proposal: “ADAR Mediated RNA editing is a causal mechanism in coronary artery disease”.
- Pending 08/01/2023 Start date
- $850,000 over 5 years

Career Development Award, American Heart Association (AHA CDA)(23CDA1042900), July, 2023 – June, 2026. **PI: Weldy, Chad**

- Title of proposal: “Linking RNA editing to coronary artery calcification and disease”
- Activation on 07/01/2023
- $231,000 over three years

NIH Loan Repayment Program (LRP) Award (NIH/NHLBI) Renewal Award, July, 2023. **PI: Weldy, Chad**

- Title of proposal: “RNA editing is a causal mechanism of coronary artery disease”

Ruth L. Kirschstein National Research Service Award (NRSA) Individual Postdoctoral Fellowship (F32) (NIH/NHLBI, 1 F32 HL160067-01), July, 2021. **PI: Weldy, Chad**

- Titled, “A transcriptional network which governs smooth muscle transition is mediated by causal coronary artery disease gene PDGFD”
- ***Received perfect score with impact score 10, 1st percentile**

NIH Loan Repayment Program (LRP) Award (NIH/NHLBI), July, 2021. **PI: Weldy, Chad**

- Title of proposal: "Single cell transcriptomic and epigenomic features of human atherosclerosis".
- This will award up to $100,000 towards student loans over the next 24 months with opportunity for renewal after 24 months.

Residency Research, Department of Pediatrics, Division of Cardiology, Stanford University School of Medicine, September 2017 – 2020. Advisor: Dr. Sushma Reddy, M.D.

During internal medicine residency, I developed a project with Dr. Sushma Reddy (Pediatric Cardiology) investigating peripheral blood global microRNA expression profiles as a biomarker of progressive right ventricular (RV) dysfunction in adult patients with tetralogy of Fallot. By utilizing microarray and RNAseq technologies in adult patients with TOF and varying degrees of RV dysfunction, our work led to the discovery that as RV failure progresses, peripheral blood miRNA expression dynamically changes and reflects the degree of RV dysfunction. Pathway analyses further suggest that dysregulated miRNA reflect changes in cell cycle progression, angiogenesis, fibrosis, and fatty acid metabolism, potentially identifying unique mechanisms of disease in mediating RV failure in adults with TOF (Weldy et al., *PLoS ONE*, 2020).

Postdoctoral Fellowship, Department of Medicine, Division of Cardiology, University of Washington, June 2012 – June 2014. Fellowship advisor: Dr. Michael T. Chin, M.D., Ph.D.

During my postdoctoral fellowship, I worked under Dr. Michael T. Chin within the UW Division of Cardiology where I investigated the fetal origins of adult cardiovascular disease. My work led to the discovery that *in utero* and early life exposure to diesel exhaust air pollution increases adult susceptibility to heart failure in mice. By inducing heart failure in mice using the transverse aortic constriction model, we observed that mice exposed to diesel exhaust during *in utero* and early life development develop a pronounced dilated cardiomyopathy, systolic dysfunction, and extensive myocardial fibrosis that exceeds that found in control mice (Weldy et al. *Particle and Fibre Toxicology*, 2013). In addition, we have shown that *in utero* exposure to diesel exhaust directly impacts the placenta, promoting reduced placental weight and increased placental inflammation and vascular oxidative stress. We have found this effect on *in utero* development is sufficient to cause increased body weight, altered blood pressure, and increased susceptibility to heart failure in adult male offspring (Weldy et al. *PloS One*, 2014). We believe that air pollution alters placental function and embryonic development in a manner that confers epigenetic reprogramming that may determine one's risk of cardiovascular disease throughout life, and we have discovered that this *in utero* exposure can lead to DNA methylation changes in specific genes, including *Mir133a2* (Goodson and Weldy, *FASEB J*, 2017). We are utilizing next generation bisulfite sequencing to investigate the DNA methylome to further investigate potential epigenetic determinants of this hypersensitivity. As I believe these environmental exposures have developmental effects that program our adult susceptibility to disease, it is my goal to understand what fetal programming occurs, determine if there may be markers of this programming, and develop clinical therapeutics that would allow intervention prior to disease onset.

PhD, Program in Toxicology, Department of Environmental and Occupational Health, School of Public Health, University of Washington, June 2007 – June 2012, Graduate Research Assistant. Advisor: Dr. Terrance Kavanagh, Ph.D.

In my Ph.D. work, I joined the lab of Dr. Terrance J. Kavanagh to investigate the role of oxidative stress and biosynthesis of the antioxidant glutathione (GSH) in mediating vascular function and pulmonary inflammation in response to toxic injury. Our work led to mechanistic discoveries that help us understand how GSH mediates vascular reactivity and nitric oxide bioavailability and how injury from inhalation of air pollution can elicit systemic vascular effects. My dissertation identified key interactions between macrophages and vascular endothelium following diesel exhaust (DE) particulate exposure (Weldy et al., *Toxicology in Vitro*, 2011), discovered that heterozygosity in a GSH synthesis gene increases susceptibility to DE-induced lung inflammation (Weldy et al., *Inhalation Toxicology*, 2011), delineated the role for GSH in mediating vascular reactivity and nitric oxide production (Weldy et al., *Free Radical Biology and Medicine*, 2012), and further identified the gene-environment interaction between GSH synthesis and DE exposure on vascular function (Weldy et al., *Inhalation Toxicology*, 2013). As air pollution and exposure to fine ambient particulate matter ($PM_{2.5}$) is a major cause of cardiovascular disease worldwide, these investigations have led to our better basic understanding of particle toxicology and the role of oxidative stress and the genetic determinants of antioxidant synthesis in mediating vascular function in response to injury.

Visiting Scientist, Department of Medicine, Division of Cardiology, University of Heidelberg, Germany, March 2010 – July 2010, March 2011-April 2011, Research Advisors: Prof. Dr. med Florian Bea, Dr. med Michael Preusch

During my 3rd year at UW, I moved to Heidelberg, Germany for a total of 6 months to pursue research on pulmonary hypertension (PAH). Under the guidance of Drs. Michael Preusch and Florian Bea within the department of internal medicine, we observed that the inflammatory cytokine Oncostatin M (OSM) is elevated in certain female patients with PAH, but not in those with dilated or ischemic cardiomyopathies. I continued this investigation by comparing important clinical markers determined by right heart catheterization and

echocardiography to plasma OSM concentrations. We observed that elevated plasma OSM was associated with increased pulmonary arterial pressure, but also associated with an increase in 6 minute walking test performance, suggesting that OSM plays a causal role in pulmonary arterial remodeling, potentially allowing for adaptation under high pressure. I continued investigating the potential mechanisms behind this observation through *in vitro* techniques, where we discovered that OSM rapidly increases early growth response protein 1 (Egr1), an important transcription factor in extracellular matrix formation and cell migration. Although it is not known if OSM in these PAH patients provides a beneficial or deleterious effect to their disease, our work provides insight into the potential therapeutic potential behind altering OSM activity. This work was presented as an oral presentation at the 2011 American Heart Association meeting in Orlando, Fl.

Industry Consulting Experience

- Consultant *(non active)* — Tensixteen Bio, October 1, 2021 – September 1, 2022. Tensixteen Bio is an early stage biotech focused on understanding the role for clonal hematopoiesis and coronary artery disease. I provided consultation regarding cardiovascular genetics, clinical cardiology, preclinical drug development, and clinical development.

- Consultant *(non active)* — Renovacor, January 1, 2022 – January 1, 2023. Renovacor was an early to mid stage biotech now acquired by Rocket Pharmaceuticals, focused on gene-therapies for inherited cardiomyopathies with particular interest in *BAG3* cardiomyopathy. I provided insight into the genetics of cardiomyopathy, clinical management of cardiomyopathy patients, and consultation on arrhythmogenic cardiomyopathy.

Publications – 20 publications, 12 first author, 588 citations, h-index 12 (Google Scholar, 8/31/23)

1. **Weldy, C. S.,** Perez, M. V. From Founder to Function: can we unravel phenotype from genotype? *Heart Rhythm*. 2023;S1547-5271(23)02646-2.

2. Shi H, Nguyen T, Zhao Q, Cheng P, Sharma D, Kim H-J, Kim JB, Wirka R, **Weldy CS**, Monteiro JP, Quertermous T. Discovery of Transacting Long Noncoding RNAs That Regulate Smooth Muscle Cell Phenotype. *Circ Res*. 2023;

3. Kim H-J, Cheng P, Travisano S, **Weldy C**, Monteiro JP, Kundu R, Nguyen T, Sharma D, Shi H, Lin Y, Liu B, Haldar S, Jackson S, Quertermous T. Molecular mechanisms of coronary artery disease risk at the PDGFD locus. *Nat Commun*. 2023;14:847.

4. Navarre, B. M., Clouthier, K. L., Ji, X., Taylor, A., **Weldy, C. S.**, Dubin, A., Reddy, S. miR Profile of Chronic Right Ventricular Pacing: a Pilot Study in Children with Congenital Complete Atrioventricular Block. *J Cardiovasc Transl* 1–13 (2022) doi:10.1007/s12265-022-10318-w.

5. **Weldy, C. S.**, Murtha, R. & Kim, J. B. Dissecting the Genomics of Spontaneous Coronary Artery Dissection. *Circulation Genom Precis Medicine* 101161CIRCGEN122003867 (2022) doi:10.1161/circgen.122.003867.

6. **Weldy, C. S.** & Ashley, E. A. Towards precision medicine in heart failure. *Nat Rev Cardiol* 1–18 (2021) doi:10.1038/s41569-021-00566-9.

    - Featured on the cover of the November 2021 edition of *Nature Reviews Cardiology*

7. **Weldy, C. S.** & Ashley, E. A. Mulibrey Nanism and the Real Time Use of Genome and Biobank Engines to Inform Clinical Care in an Ultrarare Disease. *Circulation Genom Precis Medicine* CIRCGEN121003430 (2021) doi:10.1161/circgen.121.003430.

8. **Weldy, C.,** Syed, S., Amsallem, M., Hu, D., Ji, X., Punn, R., Taylor, A., Navarre, B., Reddy, S. (2020). Circulating whole genome miRNA expression corresponds to progressive right ventricle enlargement and systolic dysfunction in adults with tetralogy of Fallot. PLOS ONE 15(11), e0241476. https://dx.doi.org/10.1371/journal.pone.0241476

    - Featured in Stanford University School of Medicine SCOPE blog — "Tiny bits of RNA give window into adult congenital heart disease" https://scopeblog.stanford.edu/2020/11/16/tiny-bits-of-rna-give-window-into-adult-congenital-heart-disease-in-stanford-study/

9. Goodson, J.M., **Weldy, C.S.**, MacDonald, J.W., Liu, Y, Bammler, T.K., Chien, W-M and Chin, M.T. (2017). In utero exposure to diesel exhaust particulates is associated with an altered cardiac transcriptional response to transverse aortic constriction and altered DNA methylation. *The FASEB journal : official publication of the Federation of American Societies for Experimental Biology*. 2017:fj.201700032R.

10. Liu, Y., **Weldy, C. S.**, & Chin, M. T. (2016). Neonatal Diesel Exhaust Particulate Exposure Does Not Predispose Mice to Adult Cardiac Hypertrophy or Heart Failure. *International Journal of Environmental Research and Public Health*, *13*(12), 1178. http://doi.org/10.3390/ijerph13121178

11. Hartman, M. E., Liu, Y., Zhu, W.-Z., Chien, W.-M., **Weldy, C. S.**, Fishman, G. I., et al. (2014). Myocardial deletion of transcription factor CHF1/Hey2 results in altered myocyte action potential and mild conduction system expansion but does not alter conduction system function or promote spontaneous arrhythmias. *The FASEB Journal : Official Publication of the Federation of American Societies for Experimental Biology*, *28*(7), 3007–3015. http://doi.org/10.1096/fj.14-251728

12. **Weldy, C. S.**, Liu, Y., Liggitt, H. D., & Chin, M. T. (2014). In Utero Exposure to Diesel Exhaust Air Pollution Promotes Adverse Intrauterine Conditions, Resulting in Weight Gain, Altered Blood Pressure, and Increased Susceptibility to Heart Failure in Adult Mice. *PloS One*, *9*(2), e88582. http://doi.org/10.1371/journal.pone.0088582

13. **Weldy, C. S.**, Liu, Y., Chang, Y.-C., Medvedev, I. O., Fox, J. R., Larson, T. V., et al. (2013). In utero and early life exposure to diesel exhaust air pollution increases adult susceptibility to heart failure in mice. *Particle and Fibre Toxicology*, *10*(1), 59. http://doi.org/10.1186/1743-8977-10-59

    - Society of Toxicology, Inhalation and Respiratory Specialty Section, 2014 National Paper of the Year Award

14. Liu, Y., Chien, W.-M., Medvedev, I. O., **Weldy, C. S.**, Luchtel, D. L., Rosenfeld, M. E., & Chin, M. T. (2013). Inhalation of diesel exhaust does not exacerbate cardiac hypertrophy or heart failure in two mouse models of cardiac hypertrophy. *Particle and Fibre Toxicology*, *10*(1), 49. http://doi.org/10.1186/1743-8977-10-49

15. **Weldy, C. S.**, Luttrell, I. P., White, C. C., Morgan-Stevenson, V., Cox, D. P., Carosino, C. M., et al. (2013). Glutathione (GSH) and the GSH synthesis gene Gclm modulate plasma redox and vascular responses to acute diesel exhaust inhalation in mice. *Inhalation Toxicology*, *25*(8), 444–454. http://doi.org/10.3109/08958378.2013.801004

16. McConnachie, L. A., Botta, D., White, C. C., **Weldy, C. S.**, Wilkerson, H.-W., Yu, J., et al. (2013). The Glutathione Synthesis Gene Gclm Modulates Amphiphilic Polymer-Coated CdSe/ZnS Quantum Dot-Induced Lung Inflammation in Mice. *PloS One*, *8*(5), e64165. http://doi.org/10.1371/journal.pone.0064165

17. **Weldy, C. S.**, Luttrell, I. P., White, C. C., Morgan-Stevenson, V., Bammler, T. K., Beyer, R. P., et al. (2012). Glutathione (GSH) and the GSH synthesis gene Gclm modulate vascular reactivity in mice. *Free Radical Biology and Medicine*, *53*(6), 1264–1278. http://doi.org/10.1016/j.freeradbiomed.2012.07.006

18. **Weldy, C. S.**, White, C. C., Wilkerson, H.-W., Larson, T. V., Stewart, J. A., Gill, S. E., et al. (2011). Heterozygosity in the glutathione synthesis gene Gclm increases sensitivity to diesel exhaust particulate induced lung inflammation in mice. *Inhalation Toxicology*, *23*(12), 724–735. http://doi.org/10.3109/08958378.2011.608095

19. **Weldy, C. S.**, Wilkerson, H.-W., Larson, T. V., Stewart, J. A., & Kavanagh, T. J. (2011). DIESEL particulate exposed macrophages alter endothelial cell expression of eNOS, iNOS, MCP1, and glutathione synthesis genes. *Toxicology in Vitro : an International Journal Published in Association with BIBRA*, *25*(8), 2064–2073. http://doi.org/10.1016/j.tiv.2011.08.008

20. **Weldy, C. S.**, & Huesemann, M. H. (2007). Lipid Production by Dunaliella salina in Batch Culture: Effects of Nitrogen Limitation and Light Intensity. *Journal of Undergraduate Research, VII:115-122*, *7*.

Submitted/Preprint

1. **Weldy CS**, Cheng PP, Pedroza AJ, Dalal AR, Sharma D, Kim H-J, Shi H, Nguyen T, Kundu RK, Fischbein MP and Quertermous T. The epigenomic landscape of single vascular cells reflects developmental origin and identifies disease risk loci. *bioRxiv*. 2022:2022.05.18.492517.

Awards and Fellowships

Mentored Clinical Scientist Research Career Development Award (K08)(NIH/NHLBI, 1 K08 HL167699-01), Submitted June, 2022. **PI: Weldy, Chad,** Pending activation on 8/1/23

- Title of proposal: “ADAR Mediated RNA editing is a causal mechanism in coronary artery disease”.

Career Development Award, American Heart Association (AHA CDA)(23CDA1042900), July 1, 2023 – June 30, 2026. **PI: Weldy, Chad**

- Title of proposal: “Linking RNA editing to coronary artery calcification and disease”

NIH Loan Repayment Program (LRP) Award (NIH/NHLBI) Renewal Award, July, 2023. **PI: Weldy, Chad**

- Title of proposal: “RNA editing is a causal mechanism of coronary artery disease”

Stanford Cardiovascular Institute (CVI) — Cornell University Research Symposium, Best Poster Award, for the abstract, “ADAR1 regulates RNA editing in vascular smooth muscle and is a novel mechanism implicated in the pathogenesis of coronary artery disease”. December, 2022, Stanford, CA, USA.

Ruth L. Kirschstein National Research Service Award (NRSA) Individual Postdoctoral Fellowship (F32) (NIH/NHLBI, 1 F32 HL160067-01), July, 2021. **PI: Weldy, Chad**

- Titled, “A transcriptional network which governs smooth muscle transition is mediated by causal coronary artery disease gene PDGFD”

- ***Received perfect score with impact score 10, 1st percentile**

NIH Loan Repayment Program (LRP) Award (NIH/NHLBI), July, 2021. **PI: Weldy, Chad**

- Title of proposal: "Single cell transcriptomic and epigenomic features of human atherosclerosis".
- This will award up to $100,000 towards student loans over the next 24 months with opportunity for renewal after 24 months.

Gerald Reaven Award for Basic Science Research, June 2021. Stanford, CA, USA.

- Selected of all cardiovascular medicine fellows for excellence in basic science research.

Timothy F. Beckett Jr. Award for Best Clinical Teaching by a Medicine Fellow, June, 2021. Stanford, CA, USA.

- Elected by the Stanford Internal Medicine Residents to for excellence in clinical teaching.

AOA, Alpha Omega Alpha, Honor Medical Society, Stanford University School of Medicine, June, 2020. Stanford, CA, USA.

Winner, 2019 Stanford Internal Medicine Residency Research Symposium Travel Award, for the abstract, "Changes in circulating whole genome miRNA expression implicate inflammation as a key mediator of RV failure in adults with tetralogy of Fallot". April, 2019, Stanford, CA, USA.

Winner, 2014 Society of Toxicology, Inhalation and Respiratory Specialty Section, Paper of the Year Award, for the publication, "In utero and early life exposure to diesel exhaust air pollution increases adult susceptibility to heart failure in mice", *Particle and Fibre Toxicology*. March 24, 2014, Phoenix, AZ, USA.

Winner, 2014 Society of Toxicology, Cardiovascular Toxicology Specialty Section, Postdoctoral Travel Award. March 25, 2014, Phoenix, AZ, USA.

Pacific Northwest Association of Toxicologists, 1st Place Postdoctoral Presentation Award, Seattle, WA, USA. September 2013. Abstract titled: – "In utero and early life exposure to diesel exhaust air pollution increases adult susceptibility to heart failure in mice"

Second Place, Postdoctoral Fellowship Poster Competition, UW Medicine, Department of Pathology Annual Retreat, 2013. Seattle, WA, USA. Abstract titled: – "In utero and early life exposure to diesel exhaust air pollution increases adult susceptibility to heart failure in mice"

Recipient of the University of Washington Center for Ecogenetics and Environmental Health (CEEH) 2012 "Innovations in Research" Award. Seattle, WA, USA.

- This award was given for my 2011 publication in the journal *Inhalation Toxicology*. This publication was selected out of more than 30 publications from the 2011-2012 funding year from CEEH for best representing and advancing the CEEH mission.

Senior Fellow on the T32 University of Washington School of Medicine, Experimental Pathology of Cardiovascular Disease Training Grant. NIH/NHLBI T32HL007312 September 1, 2012 – August 31, 2013.

- Funded by the National Heart Lung and Blood Institute (NHLBI), this is a competitive training grant that is directed by Dr. Steven Schwartz within the UW Department of Pathology.

Departmental nominee and one of four finalists selected for the University of Washington Graduate School Medal. Seattle, WA, USA.

- Each PhD granting department across campus can nominate one PhD candidate for the UW GSM, where "This medal is given to recognize Ph.D. candidates whose academic expertise and social

awareness are integrated in a way that demonstrates an exemplary commitment to the University and its larger community."

Society for Free Radical Biology and Medicine (SFRBM), Young Investigator Award (YIA); Atlanta, GA, USA. November 5th, 2011.

- 15 YIA awards are given to recognize the best presentations and abstracts at the annual SFRBM meeting (roughly 200 abstracts eligible).

Pacific Northwest Association of Toxicologists, 2nd Place Student/Post Doc Oral Presentation Award; Bonneville, WA, USA. October 10th, 2011.

- 8 student or postdoc presentations were given

Pacific Northwest Association of Toxicologists, 1st Place Student/Post Doc Oral Presentation Award; Corvallis, OR, USA. October 24th, 2010.

- 9 student or postdoc presentations were given

Pacific Northwest Association of Toxicologists, 2nd Place Student/Post Doc Poster Presentation Award; Seattle, WA, USA. September 9th, 2009.

- 16 student or postdoc posters were presented

Predoctoral fellow on the T32 University of Washington Environmental Pathology and Toxicology training grant. September 1, 2008 – June 5, 2012.

- Funded by the National Institute of Environmental Health Sciences (NIEHS), the UW offers limited fellowships to predoctoral students and postdoctoral researchers who are pursuing research in environmental pathology and toxicology. This fellowship provides tuition and stipend for its fellows for up to 5 years.

Professor Ming-Ho Yu Award; Outstanding Student in Environmental Toxicology 06-07. May 20th, 2007. *Institute of Environmental Toxicology, Huxley College of the Environment*. Bellingham, WA, USA.

- Given to the top student in environmental toxicology at Western Washington University, recognizing academic performance, research experience and potential to contribute to the field of environmental toxicology.

Honorable Mention. May 18, 2007 *Sigma Xi Student Poster Session at Western Washington University,* Bellingham, WA, USA.

- Given to the student who created and presented a poster that demonstrates understanding and capability of a research topic, first place and honorable mention received invitation to *Sigma Xi, The scientific research society*.

Third Place, Student Oral Presenters. November 2006. *Northwest International Section of the Air and Waste Management Association Annual Meeting*, Victoria B.C. Canada.

- Given to the student who best presents his/her topic based on clarity, professionalism and scientific success; received $100 prize. Received award among a field of graduate students and was the only undergraduate student who gave an oral presentation.

Travel Award, U.S. Department of Energy. Paid travel, hotel and conference fees for 4 days to attend American Association for the Advancement of Science, National Conference in San Francisco, CA, USA. February 6th, 2007.

- Given to 20 selected interns of more than 600 participating DOE interns nationally, given based on quality and impact of research and research paper written from summer internship position. The 20

selected had their papers published in the 2007 edition of the DOE's *Journal of Undergraduate Research*.

First Place Team Member, Student Environmental Challenge Competition. November 15th, 2005. *Northwest International Section of the Air and Waste Management Association Annual Meeting,* Blaine, WA, USA.

- Given to all the team members who developed the best solution to an environmental problem with regard to risk assessment, use of technology, financial funding, and ability to create and present a power point presentation at the conference in an environmental challenge; received one fourth share of $1500 prize.

President's List. Fall 2004, Winter 2005. Western Washington University, Bellingham, WA, USA.

- Given to students who maintained above a 3.9 GPA

Abstracts and Presentations

1. **Weldy CS,** Li Q, Galls D, Guo H, Bhate A, Cheng P, Sharma D, Räsänen M, Li D, Monteiro JP, Palmisano B, Kundu R, Nguyen T, Li JB, Quertermous T. Study of ADAR1 implicates RNA editing in vascular smooth muscle cells as a mechanism of coronary artery disease risk. Vascular Discovery, American Heart Association, Boston, MA, May 13, 2023.

2. **Weldy CS**, Cheng PP, Pedroza AJ, Dalal AR, Sharma D, Kim H-J, Shi H, Nguyen T, Kundu RK, Fischbein MP and Quertermous T. The epigenomic landscape of single vascular cells reflects developmental origin and identifies disease risk loci. Vascular Discovery, American Heart Association, Seattle, WA, May 13, 2022. ***Invited Oral Presentation, selected as "Best of Vascular Discovery" and represented at AHA Scientific Sessions, Chicago, November, 2022.**

3. **Chad S. Weldy,** Saad Ali Syed, Dong-Qing Hu, Xuhuai Ji, Anne Taylor, Brittany Navarre, Sushma Reddy. Changes in circulating whole genome miRNA expression implicate cell cycle dysregulation as a key mediator of RV failure in adults with tetralogy of Fallot, Circulation. 2019;140:A11848, Scientific Sessions, American Heart Association, Philadelphia, PA, November 17, 2019. ***Oral Poster Presentation**

4. **Chad S. Weldy,** Saad Ali Syed, Dong-Qing Hu, Xuhuai Ji, Anne Taylor, Brittany Navarre, Sushma Reddy. Changes in circulating whole genome miRNA expression implicate inflammation as a key mediator of RV failure in adults with tetralogy of Fallot, Stanford Internal Medicine Residency Research Symposium, April 30, 2019. ***Travel Award Winner**

5. **Chad S. Weldy,** Saad Ali Syed, Dong-Qing Hu, Xuhuai Ji, Anne Taylor, Brittany Navarre, Sushma Reddy. Changes in circulating whole genome miRNA expression implicate inflammation as a key mediator of RV failure in adults with tetralogy of Fallot, *Lucile Packard Children's Hospital, Heart Center Research Day*, Stanford University, March 11, 2019 ***Invited Oral Presentation**

6. **Chad S. Weldy,** Yonggang Liu, H. Denny Liggit, Theodor K. Bammler, James W. MacDonald, Federico M. Farin, Michael T. Chin. In utero exposure to diesel exhaust air pollution promotes adverse intrauterine conditions, resulting in weight gain, altered blood pressure, and increased susceptibility to heart failure in adult mice, *Society of Toxicology Annual Meeting,* Pheonix, AZ, March 2014. ***Postdoctoral Travel Award**

7. **Chad S. Weldy**, Ian P. Luttrell, Collin C. White, Timothy V. Larson, James A. Stewart, Kanchan Chitaley, Terrance J. Kavanagh. Glutathione (GSH) and the GSH Synthesis Gene *Gclm* Modulate

Vascular Reactivity and Diesel Exhaust-Induced Perturbations in Mice, *Gordon Research Conference for Oxygen Radicals,* Ventura, CA., February 2012.

8. **Chad S. Weldy**, Ian P. Luttrell, Collin C. White, Timothy V. Larson, James A. Stewart, Kanchan Chitaley, Terrance J. Kavanagh. Glutathione (GSH) and the GSH Synthesis Gene *Gclm* Modulate Vascular Reactivity and Diesel Exhaust-Induced Perturbations in Mice, *Society for Free Radical Biology and Medicine Annual Meeting,* Atlanta, GA., November 2011. ***2011 SFRBM Young Investigator Award**

9. **Chad S. Weldy**, Errol Wijelath, Michael E Rosenfeld, Erwin Blessing, Florian Bea, Arthur Filusch, Hugo A Katus, Michael Preusch. Oncostatin M is Elevated in the Plasma of Patients with Pulmonary Arterial Hypertension, but Not Patients with Ischemic or Dilated Cardiomyopathies: Insight into Mechanisms *In Vitro*, *American Heart Association, Scientific Sessions Annual Meeting,* Oral Presentation, Orlando, FL., November 2011.

10. **Chad S. Weldy**, Ian P. Luttrell, Collin C. White, Timothy V. Larson, James A. Stewart, Kanchan Chitaley, Terrance J. Kavanagh. Glutathione (GSH) and the GSH Synthesis Gene *Gclm* Modulate Vascular Reactivity and Diesel Exhaust-Induced Perturbations in Mice, *Pacific Northwest Association of Toxicologists Annual Meeting*, Oral Presentation, Bonneville, WA, October 2011. ***2nd Place Student/Post Doc oral presentation award**

11. **Chad S. Weldy**, CC White, HW Wilkerson, S Gill, TJ Kavanagh, Modulation Of Glutathione Synthesis Gene *Gclm* is an Important Determinant of Pulmonary Inflammation Following Intranasal Instillation Of Diesel Exhaust Particulate, *Society of Toxicology Annual Meeting*, Washington D.C., March 2011.

12. **Chad S. Weldy**, Inhalation Of Diesel Exhaust (DE) and its Effects On Inflammation and Vascular Function; Investigating the Role of Oxidative Stress and Glutathione in DE-Mediated Effects, *General Examination*, Oral Presentation, University of Washington, December 2010.

13. **Chad S. Weldy**, Ian Luttrell, Vicki Morgan, Dave Cox, Timothy V. Larson, James A. Stewart, Francis Kim, Kanchan Chitaley, and Terrance J. Kavanagh, Acetylcholine-Stimulated Aortic Dilation is Impaired by Diesel Particulate Exposed Macrophages; Investigation of Susceptibility in Mice with Compromised Glutathione Synthesis, *Society for Free Radical Biology and Medicine Annual Meeting*, Orlando, FL, November 2010.

14. **Chad S. Weldy**, Ian Luttrell, Collin C. White, Sean E. Gill, William C. Parks, Kanchan Chitaley, Terrance J. Kavanagh, Diesel Exhaust Particulate (DEP)-Exposed Macrophages Impair Vascular Function in Aortic Rings; Investigation of the Role of Glutathione in Mediating DEP-Induced Inflammation, *Pacific Northwest Association of Toxicologists Annual Meeting*, Oral Presentation, Corvallis, OR, October 2010. ***1st Place Student/Post Doc Oral Presentation Award**

15. **Chad S. Weldy**, Ian Luttrel, Hui-wen Wilkerson, Timothy V. Larson, James A. Stewart, Kanchan Chitaley and Terrance J. Kavanagh, Diesel Particulate Exposed Macrophages Alter eNOS, iNOS, and Mcp1 Expression in Endothelial Cells and Impair Vascular Function, *Society of Toxicology Annual Meeting*, Salt Lake City, UT, March 2010.

16. **Chad S. Weldy**, Collin C White, Tim V Larson, James A Stewart and Terrance J Kavanagh, Preliminary Results Investigating *Gclm* Modulation in Diesel Exhaust Particulate Mediated Lung Inflammation, *Society of Toxicology Annual Meeting*, Salt Lake City, UT, March 2010.

17. **Chad S. Weldy**, Dave P Cox, Tim V Larson, James A Stewart, Hui-wen Wilkerson and Terrance J

Kavanagh, Diesel Exhaust Particulate Alters Endothelial Cell NOS, Endothelin and Mcp1 Gene Expression in Two *In Vitro* Models Of Exposure, *Society for Free Radical Biology and Medicine Annual Meeting*, San Francisco, CA, November 2009.

18. **Chad S. Weldy**, Collin C White, Tim V Larson, James A Stewart and Terrance J Kavanagh, Preliminary Results Investigating Diesel Exhaust Particulate Mediated Lung Inflammation in Wild Type and *Gclm*-Heterozygous Mice, *Society for Free Radical Biology and Medicine Annual Meeting*, San Francisco, CA, November 2009.

19. **Chad S. Weldy** DP Cox, TV Larson, JA Stewart, HW Wilkerson and TJ Kavanagh. Diesel Exhaust Particulate Alters Endothelial Cell NOS, Endothelin and Mcp1 Gene Expression in Two *In Vitro* Models of Exposure. *Pacific Northwest Association of Toxicologists*, Seattle, WA, September 2009. ***2nd Place Student Poster Presentation Award**

20. **Chad S. Weldy**, CC White, TV Larson, JA Stewart and TJ Kavanagh. Preliminary Results Investigating Diesel Exhaust Particulate Mediated Lung Inflammation in Wild Type and Gclm-Heterozygous Mice. *Pacific Northwest Association of Toxicologists*, Seattle, WA, September 2009.

21. **Chad S. Weldy**, DP Cox, HW Wilkerson and TJ Kavanagh. Diesel Exhaust Particulate Exposure Affects Endothelin-1, eNOS, iNOS Expression in Mouse Lymph Node Endothelial Cells. *Society of Toxicology* Annual Meeting, Baltimore MD, March 2009.

22. **Chad S. Weldy** and Michael H. Huesemann, Lipid Production by *Dunaliella salina* in Batch Culture: Effects of Nitrogen Limitation and Light Intensity. *Western Washington University Scholar's Week, Sigma Xi Student Poster Competition*. Bellingham, WA, May 18, 2007. ***Honorable Mention Award for Student Poster Presentation**

23. **Chad S. Weldy** and Michael H. Huesemann, The Production of Biodiesel by the Marine Microalgae *Dunaliella salina*. *American Association for the Advancement of Science Annual Meeting*. Student Poster Presentation, Environment and Ecology Section. San Francisco, CA, February 15-17, 2007.

24. **Chad S. Weldy** and Michael H. Huesemann, The Production of Biodeisel by the Marine Microalgae *Dunaliella salina*. *The Pacific Northwest International Section of the Air and Waste Management Association Annual Meeting* "*Healthy Communities – Using Science-Based Solutions for Sustainability"*. Oral Presentation, Renewable Energy Section, Victoria B.C. Canada, November 8-10, 2006. ***3rd Place Student Oral Presentation Award**

Invited Seminars/Presentations

Invited Seminar – "The path to precision medicine through epigenetics and RNA editing" Stanford Cardiovascular Institute, Early Career Research Symposium. Stanford University, Palo Alto, CA, August 9, 2023.

Invited Seminar – "The epigenomic landscape of single vascular cells reflects developmental origin and identifies disease risk loci" Stanford Cardiovascular Institute, Cardiac Epigenetics Talks (CVI-CET) Seminar Series. Stanford University, Palo Alto, CA, April 29, 2022.

Invited Seminar – "Fetal origins of disease: In utero exposure to air pollution and adult susceptibility to heart failure" *Grand Rounds*, Duke University School of Medicine, Department of Pathology. Durham, NC. August 21st, 2015. *CME Credit.*

Organizer and Discussion Moderator – "Physicians in Pharmaceutical Drug Development – Expert Panel" with panelists from GlaxoSmithKline, Pfizer, Cempra Pharmaceuticals, and Duke Clinical Research Unit. Duke University School of Medicine, sponsored by Duke Medical School interest groups: Careers in Internal Medicine Interest Group and Careers in Global Health Interest Group. Durham, NC. June 23rd, 2015.

Invited Seminar – "Fetal origins of adult disease - How exposure to air pollution during in utero development may predispose to heart disease" University of Washington School of Medicine, South Lake Union Group Research Seminar Series. Seattle, WA. January 23rd, 2014.

Invited Seminar – "In utero and early life exposure to diesel exhaust air pollution increases adult susceptibility to heart failure in mice" Pacific Northwest Chapter of the Society of Toxicology Annual Meeting, Seattle, WA. September 20th, 2013.

Invited Seminar – "In utero and early life exposure to diesel exhaust air pollution increases adult susceptibility to heart failure in mice" University of Washington School of Medicine, South Lake Union Group Research Symposium. Seattle, WA. May 16th, 2013.

Panelist - "What are you willing to breathe? Coal terminal health impacts forum" and "Effects of Diesel Particulate Matter Pollution on Cardiovascular and Respiratory Health". Bellingham, WA. December 14th, 2012.

Invited Seminar – "Biosynthesis of the antioxidant glutathione mediates vascular reactivity and influences nitric oxide", University of Washington School of Medicine, Center for Cardiovascular Biology, Breakfast Club Seminar Series. Seattle, WA. October 2nd, 2012. http://slubio.blogspot.com/2012/09/breakfast-club-tue-oct-2-2012-chad-weldy.html

Invited Seminar – "Health Effects of Air Pollution and Fine Particulate Matter" PeaceHealth St. Joseph Medical Center, Grand Rounds, Bellingham, WA. January 24th, 2012. *CME Credit*.

Invited Seminar – "Diesel Exhaust and Cardiovascular Health: How our genetics may influence our susceptibility to air pollutants" University of Washington School of Public Health, Department of Environmental and Occupational Health Sciences, Departmental Seminar. Seattle, WA. December 1st, 2011.

Invited Seminar – "Investigations in Diesel Exhaust-mediated effects in pulmonary inflammation and vascular reactivity; how our genes may increase our susceptibility to air pollutants" Western Washington University, Huxley College of the Environment "Speaker Series", Bellingham, WA. November 4th, 2011. *Seminar was videotaped by WWU and placed onto their youtube page, available at: http://www.youtube.com/watch?v=aXEaI4YJsOU

Invited Presentation – "The Production of Biodiesel by the Marine Microalgae *Dunaliella salina*" Western Washington University Board of Trustees, Bellingham, WA. I was asked to be one of 3 students to give an oral presentation to WWU's board of trustees at one of their meetings, representing excellence on campus. Bellingham, WA. June 15th, 2007.

Media Relations

Work featured in Stanford University School of Medicine's SCOPE blog: https://scopeblog.stanford.edu/2020/11/16/tiny-bits-of-rna-give-window-into-adult-congenital-heart-disease-in-stanford-study/

Work featured on Straight.com, Vancouver, B.C., Canada, news outlet:
http://www.straight.com/news/556671/early-exposure-diesel-exhaust-linked-heart-failure-mice

Interviewed by reporter Brian Bienkowski, and work featured on Environmental Health News:
http://www.environmentalhealthnews.org/ehs/newscience/2013/12/early-life-diesel-exhaust-and-heart-failure/

Work featured on naturalnews.com:
http://www.naturalnews.com/043309_diesel_exhaust_cardiovascular_disease_prenatal_exposure.html

Work featured on Technology.org: http://www.technology.org/2013/11/28/exposure-diesel-fumes-pregnancy-neonatal-period-lead-heart-disease-adulthood/

Interviewed by Ashley Ahearn, Environment/Science reporter for KUOW-94.9FM to discuss the health effect of diesel exhaust. This was for a story about a proposed coal export terminal and the risk of diesel exhaust emissions from resulting coal trains. My interview was ultimately not included in the story, but the story is available here: http://earthfix.kuow.org/communities/article/increased-coal-train-traffic-could-mean-bad-news-f/

Interviewed on 'The Joe Show' KBAI-930AM. November 3rd, 2011.
http://www.kgmi.com/play_window.php?audioType=Episode&audioId=5543859
This was a 20-25 minute interview discussing the health effects of diesel exhaust.

Professional Organization Memberships and Involvements

AOA — Alpha Omega Alpha The Medical Honor Society. Stanford University School of Medicine.

- I serve as a scientific ambassador reviewing grant applications for national AOA awards.

Elected Student Representative by the members of the Pacific Northwest Association of Toxicologists (PANWAT), regional chapter of the Society of Toxicology, 2010 (2 year term). Actively serve on the PANWAT council, involving myself in discussions regarding the organization, awards, and the annual meeting.

American Heart Association (AHA), Since March 2011.

Society of Toxicology (SOT), Since September 2009

Society of Free Radical Biology and Medicine (SFRBM), Since September 2009

American Association for the Advancement of Science (AAAS), Since February 2007

Sigma Xi, The Scientific Research Society, Since May 2007

Teaching Experience

Cardiovascular physiology lab facilitator, Stanford Medical School (MD program), Stanford University. 2022 – Present (Course Director: Daniel Bernstein, M.D.)

- Facilitate 4 labs each Spring for echocardiography, ECG, and clinical cases for Stanford 1st year medical students

Invited to lecture on: Redox Biology, Oxidative Stress, and Cardiovascular Disease for the course, Occupational and Environmental Toxicology II (ENV H 515).

Lecture on Air Pollution and Cardiovascular health for the course, Environmental Science 455 "Environmental Toxicology 1", Autumn quarter 2011, Western Washington University, Huxley College of the Environment. I was an invited guest lecturer for Dr. Ruth Sofield's Toxicology course.

Lectures on Air Pollution for the course, Environmental Health 111 "Exploring Environment and Health Connections". Autumn quarter, 2011, University of Washington. I developed unique lectures aimed at presenting a history as well as current issues and research within air pollution.

Lectures on Toxicology for the course, Environmental Health 111 "Exploring Environment and Health Connections". Autumn quarter, 2009, 2010, University of Washington. This work was done on a volunteer basis and I had been specifically invited to give these lectures by previous and current instructors, Dr. Matthew Keifer and Janice Camp.

Environmental Health at Bainbridge High School (BHS), October 2009, May 2011, May 2012. I have given 26, 105 minute lectures to biology students at BHS in Mrs. Charisa Moore's and Ms. Korrie Beemer's Biology, AP Biology, and Health classes. This educational opportunity has allowed me to reach over 750 students in a dynamic interactive style of education at the high school. I developed lectures and educational goals with the intention to introduce environmental health and environmental toxicology to high school students. I particularly focus on teaching the students about the heart and how air pollution can influence cardiovascular disease. This work was done on a volunteer basis and was self promoted with the involvement of Mrs. Moore.

Teaching Assistant, Environmental Health 405/505 "Toxic Chemicals and Human Health", Spring quarter, UW, 2009. Responsibilities included attending class, providing assistance to students by 5hrs/week office hours, leading occasional after hours review sessions, grading assignments and tests, and creating tests and test questions. Participated in teaching the course by giving the lecture on reproductive toxicology.

Teaching Assistant, Environmental Health 111, "Exploring Environment and Health Connections", Autumn quarter 2008. Responsibilities included attending class, leading weekly discussion sections, grading weekly assignments, grading exams, providing assistance to students by holding 5hrs/week office hours, developing and giving two lectures on environmental toxicology, and participating with and answering questions from students regularly about course materials.

PhD Research Rotations

University of Washington, April 2008-June 2008, Graduate Research Assistant. Advisor: Dr. Michael Rosenfeld, PhD

-Investigation of inflammatory responses within the intestine of diesel exhaust exposed mice by analysis of proinflammatory cytokine and histology of small intestinal tissue.

University of Washington, January 2008-March 2008, Graduate Research Assistant. Advisor: Dr. Evan Gallagher, PhD

-Toxicological assessment of poly brominated diphenyl ether (PBDE) 47 and PBDE mixture in salmon hepatocytes cultured *in vitro*

University of Washington, September 2007-December 2007, Graduate Research Assistant. Advisor: Dr. Terrance Kavanagh, MS, PhD, DABT

-Assessment of cadmium and quantum dot toxicity to mouse macrophage cell line *in vitro*

Undergraduate Research Experience

Department of Energy, Science for Undergraduate Laboratory Intern (SULI) internship. U.S. Department of Energy, Pacific Northwest National Laboratory, Sequim, WA Marine Sciences Laboratory, June 2006-August 2006. Assistant Research Scientist. Mentor: Dr. Michael Huesemann, PhD

While attending Western Washington University, I was accepted to the competitive SULI intern program with the Department of Energy. For 3 months, I worked at the Pacific Northwest National Laboratory in Sequim, WA under Dr. Michael Huesemann. I investigated the potential of the marine microalgae species, *Dunaliella salina*, to be cultivated for biodiesel production. I was 1 of 20 interns selected, out more than 600 interns nationwide, to have their paper published in the DOE's Journal of Undergraduate Research and receive paid travel to the 2007 Annual AAAS meeting in San Francisco, CA to present their research.