# CURRICULUM VITAE Date: Oct 22<sup>nd</sup>, 2024

NAME:	Wan-yee (Winnie) Tang
INSTITUITION:	University of Pittsburgh School of Public Health Department of Environmental and Occupational Health
BUSINESS ADDRESS:	130 DeSoto Street, Room 4119 PUBHL Pittsburgh, PA 15261 Phone: 412-383-3903 E-mail: <u>wat23@pitt.edu</u>

# **EDUCATION AND TRAINING**

#### Undergraduate

1997-2000	Chinese University of Hong Kong, Hong Kong	BSc, 2000	Biochemistry
Graduate			
2000-2004	Chinese University of Hong Kong, Hong Kong	PhD, 2004	Biochemistry
Post-Graduate			
2004-2005	University of Massachusetts Medical School, Massachusetts	Postdoctoral Fellow	Department of Surgery Prostate Cancer Research Program (Dr. Shuk-mei Ho's Lab)

# **APPOINTMENTS AND POSITIONS**

#### Academic

2020-present	Associate Professor	Environmental and Occupational Health (EOH), University of Pittsburgh School of Public Health (Pitt SPH), Pittsburgh, PA
2019-present	Adjunct Associate Professor	Environmental Health and Engineering (EHE), Johns Hopkins University Bloomberg School of Public Health (JHSPH), Baltimore, MD
2016-2019	Associate Professor	Environmental Health and Engineering (EHE), Johns Hopkins University Bloomberg School of Public Health (JHSPH), Baltimore, MD
2010-2016	Assistant Professor	Environmental Health Sciences (EHS), Johns Hopkins University Bloomberg School of Public Health (JHSPH), Baltimore, MD
2005-2010	Research Associate	Environmental Health, University of Cincinnati College of Medicine, Cincinnati, OH

# MEMBERSHIP IN PROFESSIONAL AND SCIENTIFIC SOCIETIES

2011-present	Environmental Mutagen Society
2010-present	American Thoracic Society
2009-present	Society of Toxicology

# HONORS

2022-2023	i4Kids Pilot Grant, University of Pittsburgh Institute for Infection, Inflammation and Immunity in Children
2022	EOH Pilot Grant, University of Pittsburgh School of Public Health
2021-2022	Pitt Health Sciences Bridge Funding, University of Pittsburgh
2019	Excellence in Teaching Award, Johns Hopkins Bloomberg School of Public Health
2018	Excellence in Teaching Award, Johns Hopkins Bloomberg School of Public Health
2018-2019	Joint Research Fund Award for Overseas Chinese Scholars, National Natural Science Foundation of China
2015-2016	Thomas and Carol McCann Innovation Research Fund Award, Johns Hopkins Bloomberg School of Public Health
2012-2013	Faculty Innovative Award, Johns Hopkins Bloomberg School of Public Health
2009	Outstanding Abstract and Poster Award, Endocrine Society Annual Meeting
2008-2013	Pathway to Independence (PI) Award (K99/R00), NIEHS
2008-2010	Director's Discretionary Award, Center of Environmental Genetics, University of Cincinnati College of Medicine
2008	Travel Award, Breast Cancer and Environmental Research Centre Annual Meeting, NIEHS
2007	Travel Award for Endocrine Society Annual Meeting
2007	Travel Award for Endocrine Disruptor Meeting, NIEHS
2006-2008	Postdoctoral Trainee Award, Prostate Cancer Research Program, Department of Defense, US Government
2005	Travel Award and Outstanding Poster Award for Endocrine Society Annual Meeting
2002-2004	Overseas Conference Grant, Chinese University of Hong Kong

# **PROFESSIONAL ACTIVITIES**

## 1.

Teaching Courses Taught a.

Years Taught	Course Number: Title	Hours of Lecture, credits Average Enrollment	Role in course Primary/Coordinator	
2023- present	Pitt SPH: EOH 2175 Principle of Toxicology	48hrs, 3 credit, 20	Course Director	
2021- present	Pitt SPH: EOH 2805 Epigenetics and Epigenomics of Environmental Health	48hrs, 3 credit, 10	Course Director	
2020- present	Pitt SPH: EOH Departmental Seminar (Fall and Spring)	12hrs, N/A, 30	Seminar Coordinator	
Johns Hopkins Bloomberg School of Public Health (JHSPH)				
2018-2019	JHSPH: Introduction and Analysis of Environmental Genomics and Epigenomics	32hrs, 4 credit, 15	Course Director	
2018-2019	JHSPH: Advanced Topics in Toxicology and Physiology	8hrs, 1 credit, 10	Course Director	
2017-2019	JHSPH: Introduction to Molecular Toxicology (online)	24hrs, 3 credits, 25	Course Director	
2016-2019	JHSPH: Molecular Toxicology	32hrs, 4 credits, 20	Course Director	
2016-2018	JHSPH: Molecular Mechanisms & Pathophysiology Journal Club	20hrs, 1 credit, 20	Course Director	

#### b. **Other Teaching (lectures, tutorials and continuing education courses)**

Date(s)	Type of Teaching	Title
2022-24	Lecture (Pitt SPH, PUBHLT 0422: Molecules of Life, Sickness and Health)	Toxico-Epigenomics
2022-24	Lecture (Pitt SPH, EPIDEM 2600: Molecular Epidemiology)	Environment x Epigenetics
2022-24	Lecture (Pitt SPH, EOH 2310 Molecular Fundamentals)	DNA and RNA

Date(s)	Type of Teaching	Title
2021-24	Lecture (Pitt SPH, EOH 3210, Pathophysiology of environmental disease)	Impact of Environmental Exposures on Human Development

### Johns Hopkins Bloomberg School of Public Health (JHSPH)

2020-2024	Online Lecture	Environmental Epigenetics: Update and New Challenge
2020-2022	Online Lecture	Endocrinology and Reproductive Systems
2020-2022	Online Lecture	Airway Smooth Muscle and Asthma
2018-2020	Lecture	Endocrinology and Reproductive Systems
2017	Lecture	Epigenetics: Nature vs Nurture
2014-2016	Lecture	Molecular Epidemiology: Epigenetics
2014-2019	Lecture	Environmental Epigenetics
2012-2016	Lecture	Epigenome, Kinome and Inflammasome

#### c. Major Advisor for Graduate Student Essays, Theses, and Dissertations

Name of Student	Degree Awarded, Year	Type of Document and Title	Notes
Jiaqi (Vivien) Lyu	PhD candidate (2023-present)	Epigenetic Impact of Maternal Arsenic Exposure on Offspring Asthma Risk	Pitt SPH (EOH)
Yuchen (Kristine) Sun	PhD candidate (2020-present)	Crosstalk between mitochondria and epigenetic regulation of gene transcription	Pitt SPH (EOH)
Johns Hopkins	Bloomberg School	of Public Health (JHSPH)	
Joan Lee	Part-time DrPH candidate (2016-present)	Effects of Maternal Exposure to Environmental Pollutant PBDEs on Offspring Epigenome	JHSPH (EHE)
Jairus Pulczinski	PhD, 2022	Epigenetic Effects of Maternal Exposures on Offspring Allergic Airway Disease	JHSPH (EHE), F31 awarded trainee
Joe Yracheta	DrPH, 2021	Arsenic, Genetics and Chronic Kidney Disease in American Indian Communities	JHSPH (EHE)
Rohan Kuruvilla	ScM, 2020	Maternal Effect of Flame Retardant on Offspring Inflammatory Response	JHSPH (EHE)

Name of Student	Degree Awarded, Year	Type of Document and Title	Notes
Weizheng Mao	MHS, 2018	Mental Health Effects of Particulate Matters	JHSPH (EHE)
Cong Cong	MHS, 2017	Arsenic Toxicity: Its Epigenetic Effect on Pulmonary Diseases	JHSPH (EHE)
Tyna Dao	PhD, 2015	TET1-Mediated Hydroxymethylation and Airway Hyperresponsiveness	JHSPH (EHS) Sommer Scholar

#### d. Service on Masters or Doctoral Committees

Dates Served	Name of Student	Degree Awarded	Title of Dissertation/Essay
2024- present	Rain Katz (Pitt SPH EPIDEM)	PhD	Molecular Biomarkers of Subclinical Cardiovascular Disease in the Tobago Health Study and Long-Life Family Study
2024- present	Baoli Qian (Pitt SPH EOH)	PhD	The Impact of Prenatal Arsenic Exposure on Offspring Skeletal Muscle Integrity and Metabolic Health
2023- present	Shuangjia (Nicole) Xue (Pitt SPH EOH)	PhD	Impact of air pollution on respiratory diseases, fibrotic interstitial lung disease (fILD) and asthma
2023-2024	Zachary Clemens (Pitt SPH EOH)	PhD	Arsenic-Induced Dysregulation of Muscle Satellite Cell Paracrine Communication
2022-2023	Alexander James Schuyler (Pitt SPH EOH)	PhD	Airway epithelial resilience to environmental/oxidative threats: Intersections with Type-2 biology and racial inequity
2020-2021	Heng Bai (Pitt SPH EOH)	PhD	Associations of Arsenic Exposure, Arsenic Metabolism, and Cadmium Exposure with Body Composition: Evidence from the Multi-Ethnic Study of Atherosclerosis
Johns Hopkins Bloomberg School of Public Health (JHSPH)			

2017-2020	Dana Freeman	PhD	Mechanistic Insights into Chromatin
			Mediated Gene Regulation in Rotenone-
			Induced Neurodegeneration

Dates Served	Name of Student	Degree Awarded	Title of Dissertation/Essay
2016-2019	Kelvin Casin	PhD	Sex Differences in Ischemia-Reperfusion Injury and Cardioprotection-Revisited: The Role of S-Nitrosoglutathione Reductase, S- Nitrosylation, and Formaldehyde Regulation
2015-2018	Jessie Huang	PhD	Making Sense Of Scents in The Lung: Odor Transduction in Human Airway Smooth Muscle
2015-2018	Merricka Livingstone	PhD	Micrornas in Aflatoxin-Induced Hepatocellular Carcinoma and Chemoprevention: Sentinels of Disease Risk
2014-2017	Fengrong Wang	PhD	Insight into the Role of The Keratin Cytoskeleton During Collective Epithelial Cell Migration
2013-2016	Xiao Xiao	PhD	Metabolic Alterations in Airway Epithelium in Allergic Asthma
2012-2016	Katelyn Bruno	PhD	Effect of Environmentally-Derived Sex Steroids on Coxsackievirus B3 Myocarditis: Focus on Vitamin D And Bisphenol A
2010-2011	Michael J. Coronado	PhD	Role of Testerone-Mediated Sex Differences in Myocarditis and Dilated Cardiomyopathy

# e. Service on Comprehensive or Qualifying Examination Committees

Dates Served	Student Population	Type of Exam (Qualifying/Comprehensive)
2020- present	5 PhD student (4, EOH; 1, EPIDEM)	Comprehensive Exam (Pitt SPH)
2020-2024	7 PhD student (6, EOH; 1, EPIDEM)	Qualifying Exam (Pitt SPH)
Johns Hopkin	s Bloomberg School of Public Health (JHSPH)	
2011-2022	<ul><li>2 DrPH students (Health Policy and Management),</li><li>1 DrPH, 18 PhD and 5 ScM students (EHE/EHS),</li><li>1 PhD student (Molecular Microbiology and Immunology)</li></ul>	Qualifying Exam (JHSPH)
2011-2019	2 DrPH students (Health Policy and Management), 15 PhD students (EHE/EHS) and 1 PhD student (Biochemistry and Molecular Biology)	Thesis Oral Exam (JHSPH)

## f. Supervision of Post-Doctoral Students, Residents, and Fellows

Dates	Name of Student	<b>Position of Student</b>
Supervised		

#### Johns Hopkins Bloomberg School of Public Health (JHSPH)

2015-2019	Bonnie Yeung, PhD (postdoc)	Present Position: Research Scientist, Pediatric, Johns Hopkins School of Medicine
2018-2019	Yulan Qu, MD (visiting medical fellow)	Present Position: Physician, Changhai Hospital, Shanghai, China
2016-2018	Qinying Sun, MD (visiting medical fellow)	Present position: Physician, Changhai Hospital, Shanghai, China
2014-2015	Qian Wu, PhD (postdoc)	Present Position: Associate Professor, Nanjing University School of Public Health, China
2010-2012	Shang Yan, MD, PhD (postdoc)	Present Position: Director of Department of General Medicine, Shanghai Changhai Hospital, The First Affiliated Hospital of Naval Military Medical University, Shanghai, China

## g. Other Teaching and Training

Dates	<b>Teaching Activity</b>	Program/Description
2023- present	Advise undergraduate students	Research Interns: Joe Raneri (Undergraduate in Biological Sciences, PITT Class of 2025), Samhita Gudapati (Undergraduate in Environmental Engineering Carnegie Mellon University Class of 2026), Ray Harris (BSPH, Pitt Class of 2027) and Aditi Kapoor (BSPH, Pitt Class of 2028).
2022, 2024	Advised high school student	Public Health Science Academy Summer Program, Pitt SPH (2022: Sahada Jawaula, 11 <sup>th</sup> grade student; 2024: Evangelina Passero, 12 <sup>th</sup> grade student)
Johns Hopki	ns Bloomberg School of	Public Health (JHSPH)
2018	Advised 1 summer intern	DREAM Program with the Chinese University of Hong Kong, Hong Kong (Peter Yang, Class of 2019)
2017-2021	Advised 1 undergraduate student	Undergraduate Research Program, Johns Hopkins University (Moira McCormick, Molecular & Cellular Biology, Class of 2021)
2012-2016	Advised 5 diversity	Diversity Summer Internship Program, JHSPH (Stephanie

Advised 5 diversity	Diversity Summer Internship Program, JHSPH (Stephanie
undergraduate	Chan, Isabel Jimenez-Bush, Erika Fimbres, Yohana
students	Ghebrechristos and Breanna Thomas)

- 2. Research and Training
- a. Grants and Contracts Received

Principal Investigator, Multiple Principal Investigator, or Program Project Principal Investigator \*as listed in NIH RePORT and/or on Notice of Award

Years Inclusive	Grant and/or Contract Number and Title	Source	Total Direct Costs\$	% Effort
<u>ACTIVE</u> 2023- 2028	*NIH Research Project Grant, R01 ES034760, Impact of Maternal Arsenic Exposure on Offspring's Epigenetic Reprogramming of Allergic Airway	NIEHS	1,469,855	30
2022- 2023 (NCE- 2024)	Disease *NIH Research Project Grant, R56HL158681, Mitochondrial- epigenetic crosstalk in regulation of airway hyperresponsiveness	NHLBI	250,000	20
<u>PAST</u> 2022- 2023	i4Kids Pilot Grant, Institute for Infection, Inflammation and Immunity in Children, Early-life Exposure to Inorganic Arsenic Primes the Offspring to Increased Airway Hyperresponsiveness: Insights from Integrative Analysis of Epigenome (MPI: Tang (contact) and Rajasundaram)	Pitt, UPMC	50,000	No salary support
2022	<b>EOH Pilot Grant</b> , Prenatal smoking and birth outcomes: the influence of environmental factors on children's health in Western Pennsylvania (MPI: Bortey-Sam, Sanders, and Tang)	Pitt EOH	20,000	No salary support
2022	<b>EOH Pilot Grant,</b> Identification of new regulators of ferroptosis: An epigenetics approach (MPI: Dar and Tang)	Pitt EOH	20,000	No salary support
2021- 2022	<b>Pitt Health Sciences Bridge Funding</b> , Mitochondrial-epigenetic crosstalk in regulation of airway hyperresponsiveness	Pitt	50,000	No salary support

Years Inclusive	Grant and/or Contract Number and Title	Source	Total Direct Costs\$	% Effort
2017- 2019	*NIH Exploratory/Developmental Research Grant, R21ES028351, Window of Susceptibility for Epigenetic Programming and Asthma (MPI: Tang (contact), Wang)	NIEHS	275,000	15
2015- 2021	*NIH Research Project Grant, R01ES024784, TET1-mediated 5- hydroxymethylcytosine modification and airway hyperresponsiveness	NIEHS	1,064,890	20
2015- 2016	<b>Innovation Award</b> , how early life exposure to allergens set up the "asthma epigenome" in offspring?	Thomas and Carol McCann Research Fund	25,000	No salary support
2012- 2013	<b>JHSPH Population Center Pilot</b> <b>Project Award</b> , Saliva DNA methylation (MPI: Granger/Tang/Wang)	JHSPH	30,000	5
2012- 2013	<b>JHSPH Faculty Innovation Award</b> , Epigenetic modulations of lung mesenchymal stem cells in mice exposed to house-dust-mite	JHSPH	32,000	No salary support
2010- 2013	*Pathway to Independence Award, R00ES016817, Estrogens/Xenoestrogens and epigenetic regulation of gene expression	NIEHS	455,366	75
2008- 2010	*Pathway to Independence Award, K99ES016817, Estrogens/Xenoestrogens and epigenetic regulation of gene expression	NIEHS	166,666	75
2008- 2010	<b>Director Discretionary Award</b> , Bisphenol A and epigenetic regulation of gene expression	Centre of Environmental Genetics, University of Cincinnati College of Medicine	42,000	10

Years Inclusive	Grant and/or Contract Number and Title	Source	Total Direct Costs\$	% Effort
2006- 2008	<b>Postdoctoral Trainee Award,</b> <b>W81XWH-06-1-0373,</b> Investigation of a putative estrogen-imprinting gene, phosphodiesterase type IV variant, in determining prostate cancer risk	Department of Defense Prostate Cancer Research Program, U.S Government	125,000	100

#### **Co-Investigator**

\*Include institutional grants as well as inter-institutional subcontracts for which you are officially listed as Co-Investigator (e.g., key personnel designation in NIH grant)

Years Inclusive	Grant and/or Contract Number and Title (PI: Name; Institution)	Source	Total Direct Costs\$	% Effort
<u>ACTIVE</u>				
2022- 2026	*NIH PO1 Research Project, Renewal of P01AI106684, Immune Airway- Epithelial Interactions in Steroid- Refractory Severe Asthma (PIs: Wenzel and Ray; Pitt SPH)	NIAID	6,014,024	10
2021- 2026	*NIH Research Project, R01ES033519, Dysfunctional skeletal muscle communication in arsenic-promoted cardiometabolic disease (PI: Barchowsky; Pitt SPH)	NIEHS	2,009,793	5
2021- 2025	*NIH Research Project, Renewal of R01HL133100, Leptin signaling in the carotid body: mechanisms and consequences (PI: Polotsky; GWU)	NHLBI	2,072,411	10
PAST				
2019- 2020	*NIH Small Grant Program, R03ES029594, In Utero Exposure to Metals and Vitamins B on Placenta and Child Cardiometabolic Outcomes (PI: G. Wang; JHSPH)	NICHD	100,000	1

Years Inclusive	Grant and/or Contract Number and Title (PI: Name; Institution)	Source	Total Direct Costs\$	% Effort
2016- 2020	*NIH Research Project Grant, R01ES025761, Exposure-altered gene expression in five candidate imprinted loci for adult disease (PI: Z. Wang; JHSPH)	NIEHS	1,125,000	5
2016- 2020	*NIH Research Project, R01HL133100, Leptin signaling in the carotid body: mechanisms and consequences (PI: Polotsky; JHU)	NHLBI	1,689,444	7
2016- 2021	*NIH Research Project Cooperative Agreement, U01ES026721, Epigenomics of Air Pollution driven Inflammation, Obesity and Insulin Resistance (PI: Biswal; JHSPH)	NIEHS	3,066,974	5
2016- 2019	*Subcontract PI of NIH Research Project Grant, R01ES025216, Arsenic, epigenetics and cardiovascular disease in American Indian communities (PI: Navas- Acien)	NIEHS	1,822,034	10
2016- 2018	*NIH Exploratory/Developmental Research Grant, R21HD085556, Prenatal Multi-Level Stressors and Alterations in Maternal and Fetal Epigenomes (PI: Surkan and X. Wang; JHSPH)	NICHD	275,000	4
b. Invited	Lectureships and Major Seminars Related	to Your Res	search	
Date	Title of Presentation		Venue (in pe	erson)
Sept 2024	Environment, Epigenetics, and Asthma		Pittsburgh In Conference, I	ternational Pittsburgh, PA
May 2024	The Impact of Air Pollution on Epigenetic I of Inflammatory Gene Transcription in Astl Patients Living in Western Pennsylvania	-	International Conference of the American Thoracic Society, San Diego, CA	
Feb 2024	Intergenerational Impact of Maternal Expos Inorganic Arsenic on Offspring's Asthma R Insights from Integrative Analysis of Epige Mouse Model	sthma Risk: Hospital of Pittsburgh,		ittsburgh,
Dec 2023	Early-life Exposure to Arsenic Primes the C to Increased Asthma Risk	Offspring	Engineering,	al Health and Johns Hopkins chool of Public more, MD

Date	Title of Presentation	Venue (in person)
Jul 2023	Epigenetic Inheritance of Asthma	The Young Scientist Seminar Series, Nanjing Medical University, Nanjing, China
Jun 2023	Maternal Smoking and Child Health in Western Pennsylvania: An Epigenetic Perspective	Annual Meeting of the Allegheny-Erie Society of Toxicology, Morgantown, WV
May 2023	Early-Life Exposure to Inorganic Arsenic Primes the Offspring to Increased Airway Hyperresponsiveness: Insights from Integrative Analysis of Epigenome	The Steel City Chromatin Club, Pittsburgh PA
Apr 2023	Community Epigenetics Perspective: Can Health Outcomes Be Shaped Through Gene Expression	Epigenetic Workshop for Equity, Diversity, & Inclusion, Pittsburgh, PA
Feb 2023	Mitochondrial-epigenetic crosstalk in regulation of airway hyperresponsiveness	Basic & Translational Research in Lung Diseases Conference, UPMC, Pittsburgh PA
Feb 2019	Environmental Epigenetics and Asthma	Environmental and Occupational Health, University of Pittsburgh School of Public Health, Pittsburgh, PA
Nov 2018	Antioxidants and Epigenetic Regulation of Asthma	Lung Research Conference, Division of Pulmonary and Critical Care Medicine, Johns Hopkins School of Medicine, Baltimore, MD
Nov 2018	Cell metabolism, Epigenome and Asthma	University of Kentucky, Lexington, KY
Nov 2018	Transgenerational Epigenetic Regulation of Asthma	Nanjing Medical University, Nanjing, China
Mar 2018	How Gene Interacts with the Environment	Beltsville Human Nutrition Research Center, United State Department of Agriculture
Nov 2017	Maternal Exposures, Epigenomics and Developmental Changes	Life Sciences Seminar Series, The Chinese University of Hong Kong, Hong Kong, China
Nov 2017	Epigenetic Regulation of Asthma	2 <sup>nd</sup> Young Scientist Forum, Nanjing Medical University, Nanjing, China

Date	Title of Presentation	Venue (in person)
Nov 2017	Maternal exposure to polybrominated diphenyl ethers (PBDEs), epigenomics and developmental changes	International Conference on Environmental Mutagens, Inchon, South Korea
Apr 2017	Tet1-mediated DNA Hydroxymethylation and Airway Hyperresponsiveness	Epigenetics Consortium Series, University of Minnesota, Minneapolis, MN
Jun 2016	Oxidative Stress, DNA Hydroxymethylation and Asthma: How They Are Linked	NIEHS 50th Anniversary Meeting, Durham, NC
Feb 2016	Epigenetic Alterations by DNA Methylation in Human Asthma	Lung Research Conference, Division of Pulmonary and Critical Care Medicine, Johns Hopkins School of Medicine, Baltimore, MD
Apr 2014	Epigenetics: How Gene Interacts with the Environment	Chinese Leadership Workshop in Education and Training, Johns Hopkins Bloomberg School of Public Health
May 2013	Epigenetics: From Bench To Policy To Promote Early Childhood Health	Annual Meeting of Pediatric Academic Societies, Washington DC
Jul 2012	The Impact Of DNA Methylation In Asthma	The Shanghai Oriental Respiratory International Conference, Shanghai, China
Nov 2011	Emerging Science And Technologies To Explore Epigenetic Mechanisms: Better Understanding Of Human Diseases	Annual Meeting of the Environmental Mutagen Society, Montreal, Canada
May 2011	Investigation Of Epigenetic Changes In House Dust Mite (HDM)-Induced Asthma	International Conference of the American Thoracic Society, Denver, CO
May 2010	Bisphenol A Beyond Its Estrogen Action: A Methylome Study	Annual Meeting of Endocrine Society, San Diego, CA
Mar 2009	Early Developmental Exposures To Estrogens/Bisphenol A Impact A Specific Prostate Epigenome	Annual Meeting of Society of Toxicology, Baltimore, MD
Jan 2009	Epigenetic Markers For Transplacental Exposure To Airborne Polycyclic Aromatic Hydrocarbons (PAHs) And Childhood Asthma, Workshop For Use Of Emerging Science And Technologies To Explore Epigenetic Mechanisms Underlying The Developmental Basis For Disease	Board on Life Sciences, The National Academies of Sciences, Washington DC

Date	Title of Presentation	Venue (in person)
May 2007	Early Exposure To Diethylstilbestrol Or Genistein And Uterus Cancer Risk: Investigating Nucleosomal Binding Protein 1 (Nsbp1) As A Gene Susceptible To Estrogen Reprogramming In Mouse Uterus	Annual Meeting of Endocrine Society, Toronto, Canada
Sep 2006	Early Developmental Exposures To Estrogen/Bisphenol A Impact A Specific Prostate Epigenome	Annual Meeting of Endocrinology Society, San Diego, CA

# **PUBLICATIONS**

#### 1. Refereed Articles

<sup>†</sup>Corresponding author; <sup>#</sup>Mentee (Students, postdocs or fellows)

- Schlegel, B.T., Morikone, M., Mu, F.P., <u>Tang, W.T. \*</u>, Kohanbash, G., Rajasundaram, D. (2024) bcRflow: a Nextflow pipeline for the comprehensive and reproducible analysis of B cell receptor repertoires from transcriptomic data. *NAR Genomics and Bioinformatics*, in press
   <u>Review the application of this pipeline in biomedical and environmental health research</u>
- Shin, M.K., <u>Tang, W.Y.</u>, Amorim, M.R., Sham, J.S., Polotsky, V.Y. (2024) Carotid body denervation improves hyperglycemia in obese mice. *J Appl Physiol 2024*;136(2):233-243. PMID: 38126089. <u>Supervise the design and data analysis for gene expression studies</u>
- Yeung, B.H.Y., Wally, A., Jauregui, S., Lee, E., Zhang, R., Thapa, S., Chen, D., Upadya, N., Ghosh, B., Biswal, S., <u>Tang, W.Y.</u><sup>▲</sup> and Sidhaye, V., Epigenetic reprogramming drives epithelial disruption in COPD *Am J Respir Cell Mol Biol*. (2024) Mar;70(3):165-177. PMID: 37976469; <u>Aupervise the design and data analysis for epigenetic regulation of CDH1</u>
- Iijima, H., Wang, K., D'Amico, E., <u>Tang, W. Y.</u><sup>\*</sup>, Rogers, R. J., Jakicic, J. M., & Ambrosio, F. (2023). Exercise-primed extracellular vesicles improve cell-matrix adhesion and chondrocyte health. *Research square*. 2023 Jun 6:rs.3.rs-2958821. PMID: 37333349. <u>Supervise the design and data analysis for the DNA methylation study</u>
- Iijima, H., Gilmer, G., Wang, K., Bean, A. C., He, Y., Lin, H., <u>Tang, W. Y.</u><sup>\*</sup>, Lamont, D., Tai, C., Ito, A., Jones, J. J., Evans, C., & Ambrosio, F. (2023) Age-related matrix stiffening epigenetically regulates α-Klotho expression and compromises chondrocyte integrity. *Nat Commun.* 2023;14(1):18. Published 2023 Jan 10. PMID: 36627269 <u>Supervise the design and data analysis for the DNA methylation study</u>
- Kim, L.J., Shin, M.K., Pho, H., <u>Tang, W.Y.</u><sup>\*</sup>, Hosamane, N., Anokye-Danso, F., Ahima, R.S., Sham, J.S.K., Pham, L.V., Polotsky, V.Y. (2022) TRPM7 channels regulate breathing during sleep in obesity by acting peripherally in the carotid bodies. *J Physiol*. 2022 Oct 10. PMID: 36214387. Discuss the design and data analysis of Trpm7 transcription.
- Navas-Acien, A., Domingo-Relloso, A., Subedi, P., Riffo-Campos, A.L., Xia, R., Gomez, L., Haack, K., Goldsmith, J., Howard, B.V., Best, L.G., Devereux, R., Tauqeer, A., Zhang, Y., Fretts, A.M., Pichler, G., Levy, D., Vasan, R.S., Baccarelli, A.A., Herreros-Martinez, M., <u>Tang, W.Y.</u><sup>\*</sup>, Bressler, J., Fornage, M., Umans, J.G., Tellez-Plaza, M., Fallin, M.D., Zhao, J., Cole, S.A. (2021) Blood DNA Methylation and Incident Coronary Heart Disease: Evidence From the Strong Heart Study. *JAMA Cardiol.* 2021 Aug 4:e212704. Epub ahead of print.

PMID: 34347013; PMCID: PMC8340006. A Discuss the design and data analysis for the DNA methylation study

- Yeung, B.H. <sup>#</sup>, Griffiths, K. <sup>#</sup>, Berger, L., Paudel, O., Shin, M.K., Rui, L., Sham, J.S.K., Polotsky, V.Y., <u>Tang, W.Y.<sup>†</sup></u> (2021) Leptin Induces Epigenetic Regulation of Transient Receptor Potential Melastatin 7 in PC12 Cells. *Am J Respir Cell Mol Biol*. 2021 Apr 23. Epub ahead of print. PMID: 33891828. <u>\*\* accompanied by an editorial, Lingappan K. Does the Epigenome Hold Clues to Leptin-associated Hypertension in Obesity? *Am J Respir Cell Mol Biol*. 2021 PMID: 34029509
  </u>
- Pulczinski, J. \*, Shang, Y. \*, Dao, T. \*, Limjunyawong, N., Sun, Y. \*, Mitzner, W., Cheng, R.Y.S., and <u>Tang, W.Y.<sup>†</sup>.</u> (2021) Multigenerational Epigenetic Regulation of Allergic Diseases: Utilizing an Experimental Dust Mite-Induced Asthma Model. *Frontiers in Genetics*, PMID: 33868365
- 10. Shin, M.K., Mitrut, R., Gu, C., Kim, L., Yeung, B. \*, Lee, R., Pham, L., <u>Tang, W.Y</u>. \*, Sham, J., Cui, H. and Polotsky, V. (2021) Pharmacological and Genetic Blockage of Trpm7 in the Carotid Body Treats Obesity-Induced Hypertension. *Hypertension*, May 17 2021. PMID: 33993722 <u>Supervise the design and data analysis for molecular assays of Trpm7 in carotid body</u>
- 11. Wang, G., <u>Tang, W.Y.</u>, Wills-Karp, M., Ji, H., Bartell, T.R., Ji, Y., Hong, X., Pearson, C., Cheng, T.L. and Wang, X. (2021) A Nonlinear Relation Between Maternal Red Blood Cell Manganese Concentrations and Child Blood Pressure at Age 6-12 y: A Prospective Birth Cohort Study. *J Nutr.* 2021 PMID: 33438012. Discuss the impact of manganese on childhood health
- 12. Wang, G., <u>Tang, W.Y.</u>, Ji, H., and Wang, X.B. (2021), Prenatal exposure to mercury and precocious puberty: a prospective birth cohort study. *Human Reproduction*, PMID: 33367618.
   <u>A Discuss the impact of early exposure to mercury on preterm birth</u>
- 13. Crocker, K. C., Domingo-Relloso, A., Haack, K., Fretts, A. M., <u>Tang, W.Y.\*</u>, Herreros, M., Tellez-Plaza, M., Daniele Fallin, M., Cole, S. A., & Navas-Acien, A. (2020). DNA methylation and adiposity phenotypes: an epigenome-wide association study among adults in the Strong Heart Study. *International journal of obesity*. 2020 Nov;44(11):2313-2322. Advance online publication. PMID: 32728124 <u>Discuss the design and data analysis for the DNA methylation study</u>
- 14. Anguiano, T., Sahu, A., Qian, B., <u>Tang, W.Y.</u> Ambrosio, F., & Barchowsky, A. (2020). Arsenic Directs Stem Cell Fate by Imparting Notch Signaling into the Extracellular Matrix Niche. *Toxicological sciences* Advance online publication. PMID: 32647881 <u>Supervise the</u> <u>design and data analysis for the DNA methylation and histone modifications study</u>
- 15. Domingo-Relloso, A., Riffo-Campos, A. L., Haack, K., Rentero-Garrido, P., Ladd-Acosta, C., Fallin, D. M., <u>Tang, W. Y</u>. <sup>▲</sup>, Herreros-Martinez, M., Gonzalez, J. R., Bozack, A. K., Cole, S. A., Navas-Acien, A., & Tellez-Plaza, M. (2020). Cadmium, Smoking, and Human Blood DNA Methylation Profiles in Adults from the Strong Heart Study. *Environmental Health perspectives*, 128(6), 67005. PMID: 32484362 ▲ <u>Discuss the design and data analysis for the DNA methylation study</u>
- 16. Hong, X., Zhang, B., Ji, H., <u>Tang, W.Y.</u><sup>\*</sup>, Kimmel, M., Ji, Y., Pearson, C., Zuckerman, B., Surkan, P.J. and Wang, X.B. (2020) Genome-wide Association Study Identifies a Novel Maternal Gene × Stress Interaction Associated with Spontaneous Preterm Birth. *Pediatr Res.*

2020 Jul 29. Epub ahead of print. PMID: 32726798 A Discuss the possible epigenetic mechanisms underlying regulation of preterm birth

- 17. Bozack, A.K., Tellez-Plaza, M., Haack, K., Gamble, M.V., Domingo-Relloso, A., Umans, J.G., Best, L.G., Yracheta, J., Gribble, M.O., Cardenas, A., Francesconi, K.A., Goessler, W., <u>Tang, W.Y.</u>, Fallin, M.D., Cole, S.A. and Navas-Acien, A. (2020) Locus-specific differential DNA methylation and urinary arsenic: An epigenome-wide association study in blood among adults with low-to-moderate arsenic exposure. *Environ Health Perspect*. 128(6):67015. PMID: 32603190 A Discuss the design and data analysis for the DNA methylation study
- Yeung, B.H<sup>#</sup>, Huang, J., An, S.S., Solway, J., Mitzner, W., <u>Tang, W.Y.</u><sup>†</sup>. (2020) Role of Isocitrate Dehydrogenase 2 on DNA Hydroxymethylation in Human Airway Smooth Muscle Cells. *Am J Respir Cell Mol Biol.* Jul;63(1):36-45 PMID: 32150688. \*\* <u>accompanied by an</u> <u>editorial, Huang S. A Fresh Take on the "TCA" Cycle: TETs, Citrate, and Asthma. Am J Respir Cell Mol Biol. 2020 PMID: 32223718</u>
- 19. Shin, M.K., Pichard, L.E., Caballero Eraso, C., Gu, C., Yeung, B.H.<sup>#</sup>, Mu1, Y.P., Wu, Z., Paudel, O., Liu, X., Shirahata, M., <u>Tang, W.Y</u>.<sup>\*</sup>, Sham, J.S.K., and Polotsky, V.Y. (2019) Leptin induces hypertension acting on transient receptor potential melastatin 7 (Trpm7) channel in the carotid body, *Circ Res.* 125(11):989-1002. PMID: 31545149 <u>Asupervise the</u> <u>design and data analysis for molecular assays of lepr and Trpm7 in carotid body</u>
- Wu, Q.<sup>#</sup>, Odwin-Dacosta, S., Cao, S., Yager, J.D. and <u>Tang, W. Y.<sup>†</sup></u> (2019) Estrogen down regulates COMT transcription via promoter DNA methylation in human breast cancer cells, *Toxicology and Applied Pharmacology*. 15; 367:12-22. PMID: 30684530
- 21. Surkan, P.J, Hong, X., Zhang, B., Nawa, N., Ji, H., <u>Tang, W.Y.</u>, Ji, Y., Kimmel, M.C., Wang, G., Pearson. C. and Wang, X. (2019) Can social support during pregnancy affect maternal DNA methylation? Findings from a cohort of African-Americans. *Pediatr Res.* PubMed PMID: 31349361. Discuss the possible epigenetic effect of social support on <u>maternal health</u>
- 22. Cheikhi, A., Wallace, C., Croix, C.S., Cohen, C., <u>Tang, W.Y.</u><sup>▲</sup>, Wipf, P., Benos, P.V., Ambrosio, F. and Barchowsky, A. (2019) Mitochondria are a Substrate of Cellular Memory. *Free Radic Biol Med.* 130:528-541. PubMed PMID: 30472365. <u>▲ Supervise the design and</u> <u>data analysis for the DNA methylation and histone modifications study</u>
- Caballero-Eraso, C., Shin, M.K., Pho, H., Kim, L.J., Pichard, L.E., Wu, Z.J., Gu, C., Berger, S., Pham, L., Yeung, H.B., Shirahata, M., Schwartz, A.R., <u>Tang, W.Y.</u>, Sham, J.S.K. and Polotsky, V.Y. (2019) Leptin acts in the carotid bodies to increase minute ventilation during wakefulness and sleep and augment the hypoxic ventilatory response. *J Physiol*. 597(1):151-172. PubMed PMID: 30285278. ▲ <u>Discuss the possible role of leptin on regulation of sleep apnea</u>
- 24. Sahu, A., Mamiya, H., Shinde, S.N., Cheikhi, A., Winter, L.L., Vo, N.V., Stolz, D., Roginskaya, V., Tang, W. Y<sup>\*</sup>, St Croix, C., Sanders, L.H., Franti, M., Van Houten, B., Rando, T.A., Barchowsky, A. and Ambrosio, F. (2018) Age-related declines in α-Klotho drive progenitor cell mitochondrial dysfunction and impaired muscle regeneration. *Nat Commun.* 9(1):4859. PubMed PMID: 30451844 <u>Supervise the design and data analysis for the DNA methylation and histone modifications study</u>
- 25. Fink, A.L., Engle, K., Ursin, R.L., <u>**Tang, W. Y^**</u> and Klein, S.L. Biological sex affects vaccine efficacy and protection against influenza in mice. (2018) *Proc Natl Acad Sci U S A*.

115(49):12477-12482. PubMed PMID: 30455317. ▲ Supervise the design and data analysis for the DNA methylation study

- 26. Zhang, B., Hong, X., Ji, H., <u>Tang, W.Y.</u>, Kimmel, M., Ji, Y., Pearson, C., Zuckerman, B., Surkan, P.J. and Wang, X.B. (2018) Maternal Smoking during Pregnancy and Cord Blood DNA Methylation: New Insight on Sex Differences and Effect Modification by Maternal Folate Epigenetics, *Epigenetics*. 13(5):505-518. PubMed PMID: 29945474; PubMed Central PMCID: PMC6140808. Discuss the possible epigenetic mechanisms underlying regulation of preterm birth
- 27. Riffo-Campos, A., Garcia-Fuentes, A., <u>Tang, W.Y.</u>, García, Z., De Marco, G., Rentero-Garrido, P., Felici, V., Lendinez, V., Francesconi, K., Goessler, W., Ladd-Acosta, C., Leon-Latre, M., Casasnovas, J., Chaves, J., Navas-Acien, A., Guallar, E., and Tellez-Plaza, M. (2018) In silico environmental epigenetics of metals and subclinical atherosclerosis in middle age men: preliminary results from the AWHS study. *Philosophical Transactions of The Royal Society B Biological Sciences*. 373(1748):20170084. PMID:29685964. <u>ADiscuss the design and data analysis for the DNA methylation study</u>
- 28. Wang, T., Pehrsson, E.C., Purushotham, D., Li, D., Zhuo, X., Zhang, B., Lawson, H.A., Province, M.A., Krapp, C., Lan, Y., Coarfa, C., Katz, T.A., <u>Tang, W.Y<sup>\*</sup>.</u>, Wang, Z., Biswal, S., Rajagopalan, S., Colacino, J.A., Tsai, Z.T., Sartor, M.A., Neier, K., Dolinoy, D.C., Pinto, J., Hamanaka, R.B., Mutlu, G.M., Patisaul, H.B., Aylor, D.L., Crawford, G.E., Wiltshire, T., Chadwick, L.H., Duncan, C.G., Garton, A.E., McAllister, K.A. Bartolomei, M.S., Walke,r C.L., Tyson, F.L. (2018) The NIEHS TaRGET II Consortium and environmental epigenomics. *Nat Biotechnol.* 36:225-227. PubMed PMID: 29509741. <u>Supervise the design for arsenic exposure in one of consortium's project</u>
- 29. Surkan, P.J., Dong, L., Ji, Y., Hong, X., Ji, H., Kimmel, M., <u>Tang, W.Y</u><sup>\*</sup> and Wang, X. (2017) Paternal involvement and support and risk of preterm birth: findings from the Boston birth cohort. *J sychosomObstet Gynaecol*. 16:1-9. PMID: 29144191. Discuss the possible epigenetic mechanisms underlying regulation of preterm birth
- Cheong A, Zhang X, Cheung YY, <u>Tang, W.Y<sup>\*</sup></u>, Chen J, Ye SH, Medvedovic M, Leung YK, Prins GS, Ho SM. (2016) DNA methylome changes by estradiol benzoate and bisphenol A links early-life environmental exposures to prostate cancer risk. *Epigenetics*. 11(9):674-689. PubMed PMID: 27415467 ▲ <u>Discuss the possible epigenetic role of fetal origin of prostate</u> <u>disease</u>
- 31. An, S.S., Mitzner, W., <u>Tang, W.Y.</u>, Ahn, K., Yoon, A.R., Huang, J., Kilic, O., Yong, H.M., Fahey, J.W., Kumar, S., Biswal, S., Holgate, S.T., Panettieri, R.A., Solway, J. and Liggett, S.B. (2016) An inflammation-independent contraction mechanophenotype of airway smooth muscle in asthma. *Journal of Allergy & Clinical Immunology*. 138(1):294-297.e4. PMID: 26936804 ▲ Discuss the possible epigenetic mechanisms underlying regulation of ASM phenotypes
- 32. Lin, H.Y., Shang, Y.<sup>#</sup>, Mitzner, W., Sham, J.S.K., and <u>Tang, W.Y.<sup>†</sup></u> (2016) Aberrant DNA Methylation of Phosphodiestarase 4D Alters Airway Smooth Muscle Cell Phenotypes. *Am J Respir Cell Mol Biol.* 54(2):241-249. PMID:26181301.
- 33. Dao, T.<sup>#</sup>, Hong, X., Wang, X. and <u>Tang, W.Y.<sup>†</sup></u> (2015) Maternal exposure to polybrominated diphenyl ethers and DNA methylation of cord blood metabolism-related genes. *PLoS One*. 10(9):e0138815. PMID:26406892.
- 34. Tellez-Plaza, M., <u>**Tang, W.Y.**</u>, Shang, Y.<sup>#</sup>, Umans JG., Francesconi, KA., Goessler, W., Pollak, J., Guallar, E., Cole, S., Fallin, D. and Navas-Acien, A. (2014) Global DNA

methylation and global DNA hydroxymethylation in a population-based pilot sample from the Strong Heart Study. *Environ Health Perspect.* 122(9):946-54. PMID 24769358. Supervise the design and data analysis for the DNA methylation study

- 35. Cheng, R.Y.S., Shang, Y.<sup>#</sup>, Limjunyawong, N., Dao, T.<sup>#</sup>, Das, S., Rabold, R., Sham, J., Mitzner, W. and <u>Tang, W.Y.<sup>†</sup></u> (2014) Alterations of the lung methylome in allergic airway hyper-responsiveness. *Environ Mol Mutagen*. 55(3):244-255. PMID:24446183.
- 36. Gribble, M., <u>Tang, W.Y.</u> Shang, Y.<sup>#</sup>, Pollak, J., Umans, J., Francesconi, K.A., Goessler, W., Silbergeld, E.K, Guallar, E., Cole, S., Fallin, D., and Navas-Acien, A. (2013) Differential methylation of the arsenic (III) methyltransferase promoter according to arsenic exposure. *Arch Toxicol.* 88(2):275-282. PMID:24154821. ▲ Supervise the design and data analysis for the DNA methylation study
- 37. Shang, Y.<sup>#</sup>, Das, S., Xiao, X., Rabold, R., Mitzner, W. and <u>Tang, W.Y<sup>†</sup>. (2013)</u> Investigation of DNA methylation changes in house-dust-mite (HDM) induced asthma. *Am J Respir Cell Mol Biol.* 49(2):279-287. PMID:23526225.
- 38. Tankersley, C.G., Georgakopoulos, D., <u>**Tang, W.Y.**</u>, and Sborz, N. (2012) Effects of ozone and particulate matter on cardiac mechanics: role of the atrial natriuretic peptide gene. *Toxicol Sci.* 131(1):95-107. PMID:22977167.
- 39. <u>Tang, W.Y.</u>, Levin, L., Talaska, G., Cheung, Y.Y., Herbstman, J.B., Miller, R., Perera, F., and Ho, S. (2012) Maternal exposure to polycyclic aromatic hydrocarbons is associated with methylation at a 5'-CpG island of interferon-γ in cord white blood cells. *Environ Health Perspect*. 120(8): 1195–1200. PMC3440069.
- 40. **Tang, W.Y.,** Morey, L., Cheung, Y.Y., Belmonte, J., Prins, G.S., and Ho, S. (2012) Neonatal exposure to 17β-estradiol/bisphenol A alters promoter methylation and expression of Nsbp1 and Hpcal1 genes and transcriptional programs of Dnmt3a/b and Mbd2/4 in the rat prostate gland throughout life. *Endocrinology*. 153(1):42-55. PMID:22109888.
- 41. Wu, T.Y., Giovannucci, E., Weldge, J., Mallick, P., Lemasters, G., <u>Tang, W.Y</u>. and Ho, S. (2011) Measurement of GST-P1 methylation in body fluids may complement PSA screening for prostate cancer: implication of using plasma and urine samples: a meta-analysis. *Br J Cancer*. 105(1):65-73. PMID:21654682.
- 42. <u>Tang, W.Y.\*</u>, Perera, F.\*, Herbstman, J.B., Tang, D.T., Levin, L., Miller, R. and Ho, S. (2009) Relation of DNA methylaton of 5'-CpG island of ACSL3 to transplacental exposure to airborne polycyclic aromatic hydrocarbons and childhood asthma. *PLoS One*. 4(2):e4488. \* **co-authorship**. PMID:19221603.
- 43. <u>Tang, W.Y.</u> Newbold, R., Mardilovich, K., Jefferson, W., Cheng, R., Medvedovic, M., and Ho, S. (2008) Persistent hypomethylation in the promoter of nucleosomal binding protein (*Nsbp1*) correlates with *Nsbp1* overexpression in mouse uteri neonatally exposed to diethylstilbestrol or genistein. *Endocrinology*. 149(12):5922–5931. PMID: 18669593.
- 44. Prins, G.S., <u>Tang, W.Y.</u>, Belmonte, J. and Ho, S. (2008) Developmental exposure to bisphenol A increases prostate cancer susceptibility in adult rats: epigenetic mode of action is implicated. *Fertility and Sterility*. 89 (2 Suppl): e41. PMID:18308059.
- 45. Prins, G.S., <u>Tang, W.Y.</u>, Belmonte, J. and Ho, S. (2007) Perinatal exposure to estradiol and bisphenol A alters the prostate epigenome and increases susceptibility to carcinogenesis. *Basic & Clinical Pharmacology & Toxicology*. 102(2):134-138. PMID:18226066.
- 46. Mak, P., Leung, Y.K., <u>Tang, W.Y.</u>, Harwood, C.M. and Ho, S. (2006) Apigenin suppresses cancer cell growth via ER beta. *Neoplasia*. 8(11):896-904. PMID:17132221.

- 47. <u>Tang, W.Y.\*</u>, Ho, S.\*, Belmonte, J. and Prins, G.S. (2006) Developmental exposure to estradiol and bisphenol A increases susceptibility to prostate carcinogenesis and epigenetically regulates phosphodiesterase type 4 variant 4. *Cancer Research*. 66(11):5624-5632 \* **co-authorship** PMID:16740699.
- 48. <u>Tang, W.Y.</u>, Chau, S.P., Tsang, W.P., Kong, S.K. and Kwok, T.T. (2004) The role of Raf-1 in radiation resistance of human hepatocellular carcinoma Hep G2 cells. *Oncol Rep.* 12(6):1349-1354. PMID:15547762.

#### 2. Books and Book Chapters

<sup>†</sup>Corresponding author; #Mentee (Students, postdocs or fellows)

- Pulczinski, J.<sup>#</sup>, Mccormick, M.<sup>#</sup>, Sun, Y.<sup>#</sup>, Watfa, M., Cheng, R.Y.S and <u>Tang, W.Y.</u><sup>†</sup> (2021)
   'Epigenetic Biomarkers Links to Maternal Exposure and Offspring Health Outcomes', In: *Genomic and Epigenomic Biomarkers of Toxicology and Disease: Clinical and Therapeutic Actions*. Edited by Saura C. Sahu, The John Wiley and Sons Ltd
- Pulczinski, J.<sup>#</sup>, Yeung, B.H.Y.<sup>#</sup>, Wu, Q., Cheng, R.Y.S and <u>Tang, W.Y.<sup>†</sup></u> (2018) 'DNA Hydroxymethylation: Implications for Toxicology and Epigenetic Epidemiology', In: *ToxicoEpigenetics: Core Principles and Applications*. Edited by Shaun McCullough and Dana Dolinoy, Elsevier 2018, pp191-214
- Shirahata, M., <u>Tang, W.Y.</u>, Shin, M.K. and Polotsky, V.Y. (2015) 'Is the Carotid Body a Metabolic Monitor?' In: *Arterial Chemoreceptors in Physiology and Pathophysiology, Advances in Experimental Medicine and Biology*. Edited by Chris Peers and Nanduri Prabhakar, The Springer International Publishing Switzerland 2015, pp153-159.
- 4. <u>Tang, W.Y.</u>, Shirahata, M., and Kostuk, E.W. (2015) 'A short-term fasting in neonates induces breathing instability and epigenetic modification in the carotid body' In: *Arterial Chemoreceptors in Physiology and Pathophysiology, Advances in Experimental Medicine and Biology*. Edited by Chris Peers and Nanduri Prabhakar, The Springer International Publishing Switzerland 2015, pp187-193.
- 5. Cheng, R.Y.S. and <u>Tang, W.Y.</u><sup>†</sup> (2012) 'Environment, epigenetics and diseases.' In: *Toxicology and Epigenetics*. Edited by Saura C. Sahu, The John Wiley and Sons Ltd, pp5-24.

#### 3. Editorial

O'Hagan, H.M. and <u>Tang, W.Y.</u> (2014) Increased understanding of the impact of environmental exposures on the epigenome. Special Issue on Environmental Epigenomics. *Environ Mol Mutagen*. Apr; 55(3):151-154. PMID:24339126.

#### 4. **Review Articles**

- Martos, S., <u>Tang, W.Y.</u>, and Wang, Z.B. (2015) Elusive inheritance: Transgenerational effects and epigenetic inheritance in human environmental disease. *Prog Biophys Mol Biol*. 118(1-2):44-54. Review. PMID:25792089.
- Ruiz-Hernandez, A., Kuo, C., Rentero-Garrido, P., <u>Tang, W.Y.</u>, Redon, J., Ordovas, J.M., Navas-Acien, A. and Tellez-Plaza, M. (2015). Environmental chemicals and DNA methylation in adults: a systematic review of the epidemiologic evidence. *Clin Epigenetics*. 7(1):55. Review. PMID 25984247.

- 3. Dao, T.<sup>#</sup>, Cheng, R.Y.S., Revelo, P., Mitzner, W., and <u>**Tang, W.Y.**<sup>†</sup></u> (2014) Hydroxymethylation as a novel environmental biosensor. *Curr Environ Health Rep.* 1(1):1-10. PMID:24860723.
- 4. <u>**Tang, W.Y.**</u> and Ho, S. (2007) Epigenetic reprogramming and imprinting in origins of disease. *Reviews in Endocrine and Metabolic Disorder*. 8(2):173-82. PMID:17638084.
- Ho, S. and <u>Tang, W.Y.</u> (2007) Techniques used in studies of epigenome dysregulation due to aberrant DNA methylation: an emphasis on fetal-based adult diseases. *Reproductive Toxicology*. 23(3):267-282. PMID:17317097.

#### 5. Published Abstracts (selected, related to major research)

<sup>†</sup>Corresponding author; #Mentee (Students, postdocs or fellows)

- Lyu, J.<sup>#</sup>, Sun, Y.<sup>#</sup>, Qian, B.<sup>#</sup>, Schlegel, B., Rajasundaram, D., Sadovsky, Y., Barchowsky, A., and <u>Tang, W.Y.</u><sup>+</sup> Early-life Exposure to Inorganic Arsenic Primes the Offspring to Increased Airway Hyperresponsiveness Through the Epigenetic Modifications of Transcriptome. *Pittsburgh International Lung Conference 2024*
- Ranieri, J.<sup>#</sup>, Sun, Y<sup>#</sup>, Macedonia, T<sup>.#</sup>, Nouraie, S., Wenzel, S., and <u>Tang, W.Y.</u><sup>+</sup> Epigenetic Effects of Air Pollution on Inflammatory Gene Transcription In Asthmatic Patients Living In Western Pennsylvania Annual Meeting of the Allegheny-Erie Society of Toxicology Regional Chapter 2024
- Sun, Y.<sup>#</sup>, Zimmerman, Z., Catov, J., Barchowsky, A., Sanders, A., Bortey-Sam, N., and <u>Tang</u>, <u>W.Y.</u><sup>+</sup> Maternal Blood MicroRNA Signatures and Associations with Maternal Smoking Status During Pregnancy in Western Pennsylvania: Potential Impacts on Tissue Development and Inflammatory Responses *Platform presentation, Annual Meeting of the Allegheny-Erie Society of Toxicology Regional Chapter 2024*
- 4. Lyu, J.<sup>#</sup>, Sun, Y.<sup>#</sup>, Schlegel, B., Rajasundaram, D., <u>**Tang, W.Y.**</u><sup>+</sup> Maternal exposure to inorganic arsenic causes placental dysfunction that exerts impacts on the development of progenies, *i4Kids Research Symposium 2024*
- Sun, Y.<sup>#</sup>, Zimmerman, Z., Catov, J., Barchowsky, A., Sanders, A., Bortey-Sam, N., and <u>Tang.</u> <u>W.Y.</u><sup>+</sup> MicroRNA Signatures in Maternal Second Trimester Blood and Associations with Maternal Smoking Status: Potential Impacts on Tissue Development and Inflammatory Responses *Annual Meeting for Society of Toxicology 2024 (platform presentation)*
- 6. Yeung, B.H.Y., Pulczinski, J., Mitzner, W., and <u>Tang, W.Y.</u><sup>+</sup>. SS-31 Mitigates Allergic Airway Hyperresponsiveness, *Annual Meeting of American Thoracic Society 2023*
- Sun, Y.<sup>#</sup>, Yeung, B.H.Y., Wenzel, S., and <u>Tang, W.Y.</u><sup>+</sup> Epigenetic Modulation of Airway Smooth Muscle Cell Function via Glutamate Metabolism, *Annual Meeting of American Thoracic Society* 2023
- 8. Macedonia, T.<sup>#</sup>, <u>Tang, W.Y.</u>, Sun, Y.<sup>#</sup>, Byrwa-Hill, B., Broerman, M., Nouraie, S.M., and Wenzel S.E., Exploring Epigenetic Differences in Asthma Patients Living in Western Pennsylvania: What it may tell us about the consequences of Air Pollution and Socioeconomic Stress, *Annual Meeting of American Thoracic Society 2023*
- Rajasundaram, D., Sun, Y.<sup>#</sup>, Yeung, B. H.Y., Mitzner, W., and <u>Tang, W.Y.</u> Impact of maternal arsenic exposure on offspring's epigenetic reprogramming of allergic airway disease, *i4Kids Research Symposium 2023*
- 10. <u>**Tang, W.Y.**</u>; Rajasundaram, D., Sun, Y., Yeung, H.Y., Pulczinski, J., Park, B., Mitzner, W., and Biswal, S., Early-life Exposure to Inorganic Arsenic Primes the Offspring to Increased Airway

Hyperresponsiveness: Insights from Integrative Analysis of Epigenome, *Annual Meeting for* Society of Toxicology 2023

- 11. Macedonia, T.<sup>#</sup>, <u>Tang, W.Y.</u>, Byrwa-Hill, B., and Wenzel S.E., The Impact of Air Pollution on Global DNA Methylation in Asthmatic Patients Living in Western Pennsylvania, *Annual Meeting of American Thoracic Society* 2022
- 12. Sun, Y.<sup>#</sup>, Yeung, B.H.Y.<sup>#</sup>, Pulczinski, J.<sup>#</sup>, Watfa, M., Mitzner, W., and <u>Tang, W.Y.</u><sup>†</sup> Early-life Exposure to Inorganic Arsenic Primes the Offspring to Increased Airway Hyperresponsiveness Through the Modification of Transcriptome, *Platform presentation, Annual Meeting of the Allegheny-Erie Society of Toxicology Regional Chapter* 2022
- 13. Sun, Y.<sup>#</sup>, Pulczinski, J.<sup>#</sup>, Watfa, M., and <u>**Tang, W.Y.**</u>; Epigenetic effects of maternal house dust mite exposure on mice placenta, *Annual Meeting for Society of Toxicology* 2022
- McCormick, M.<sup>#</sup>, Shinde, S., Anguiano, T., <u>Tang, W.Y</u>, Ambrosio, F., and Barchowsky, B. Arsenic Alters ECM to Impair Skeletal Muscle Regeneration, *Annual Meeting for Society of Toxicology* 2020
- 15. Pulczinski, J.<sup>#</sup>, Yeung, B.H.Y.<sup>#</sup>, Loube, J., Mitzner, W and <u>Tang, W.Y.</u><sup>†</sup> In utero allergen exposure and gene markers for lung development as modified by maternal folate intake. *Annual Meeting for Society of Toxicology* 2019
- 16. Yeung, B.H.Y.<sup>#</sup>, Lee, L.<sup>#</sup>, Sun, Q., Pulczinski, J.<sup>#</sup>, Loube, J., Mitzner, W and <u>Tang, W.Y.</u><sup>†</sup> Maternal Exposure to Polybrominated Diphenyl Ether (PBDE47) Increased Asthma Susceptibility in Adult Offspring. *Annual Meeting for Society of Toxicology* 2018
- Yeung, B.H.Y<sup>#</sup>, Dao, T.<sup>#</sup>, Huang, J. An, S. and <u>Tang, W.Y.</u><sup>†</sup> Modulation of airway smooth muscle cell functions via isocitrate dehydrogenase 2 and TET-mediated hydroxymethylation, *Annual Meeting of American Thoracic Society* 2016
- 18. <u>**Tang, W.Y.**</u><sup>†</sup>, Limjunyawong, J., Dao, T. <sup>#</sup>, Yeung, B.H.Y<sup>#</sup>. and Mitzner, W. In utero epigenetic programming and asthma pathogenesis, *Annual Meeting of American Thoracic Society* 2016
- Sham, J.S.K., Paudel, O., <u>Tang, W.Y.</u><sup>†</sup> Epigenetic Regulation of the Anti-Proliferative Transient Receptor Potential Melastatin 8 (TRPM8) Channels of Pulmonary Arterial Smooth Muscle Cells in Hypoxic Pulmonary Hypertension. *Annual Meeting of American Thoracic Society* 2016
- <u>Tang, W.Y.</u><sup>†</sup>, Dao, T.<sup>#</sup>, Limjunyawong, J., Rabold, R., and Mitzner, W. TET1-mediated 5hydroxymethylcytosine modification and airway hyperresponsiveness, *Annual Meeting of American Thoracic Society* 2014
- 21. Dao, T.<sup>#</sup>, Nembald, M., Hopkins, J., Mitzner, W. and <u>Tang, W.Y.</u><sup>†</sup> Epigenetic regulation of transforming growth factor Beta2 in airway smooth muscle cells, *Annual Meeting of American Thoracic Society* 2014
- Dao, T.<sup>#</sup>, Cheng, R.Y.S., Hong, X., Wang, X. and <u>Tang, W.Y.</u><sup>†</sup> Epigenetic mechanisms of environmental estrogens corruption of immune functions, *Annual Meeting of Society of Toxicology* 2013
- 23. Shang, Y.<sup>#</sup>, Mitzner, W. and <u>**Tang, W.Y.**</u><sup>†</sup> Relation of DNA methylation in lung genome and asthma induced by house dust mite. *Annual Meeting of American Thoracic Society* 2012
- 24. <u>**Tang, W.Y.,</u>** Revelo, M.P., Levin, L., and Ho, S. A new signature for prostate cancer risk disparity: differential methylation of phosphodiesterase IV variant 4 between black and white-Americans. *Endocrine Society Annual Meeting* 2009</u>
- 25. <u>**Tang W.Y.,**</u> Barker, J., Prins, G. and Ho, S. Bisphenol A demethylated rat PDE4D4 promoter via alteration of expression levels of demethylases, 99<sup>th</sup> Annual Meeting of American Association for Cancer Research 2008

- 26. <u>Tang, W.Y</u>, Newbold, R., Mardilovich, K., Jefferson, W., Cheng, R., Medvedovic M., and Ho, S. Persistent hypomethylation in the promoter of nucleosomal binding protein (Nsbp1) correlates with Nsbp1 overexpression in mouse uteri neonatally exposed to diethylstilbestrol or genistein, *NIEHS Annual Environmental Health Sciences Core Centers Meeting* 2008
- 27. <u>**Tang W.Y.**</u>, Ho, S. Bisphenol A demethylates PDE4D4 promoter and reactivates gene transcription in a rat epithelial cell line (NbE-1) via up-regulation of DNA demethylases, *NIEHS/EPA Endocrine Disruptor Meeting* 2007
- 28. <u>Tang, W.Y.</u>, Prins, G.S., Belmonte, J. and Ho, S. Neonatal exposure to estradiol or bisphenol A epigenetically alters phosphodiesterase type IV variant 4 (PDE4D4) and increases susceptibility to adult-induced prostate carcinogenesis, 97<sup>th</sup> Annual Meeting of American Association for Cancer Research 2006
- 29. <u>**Tang, W.Y.,</u>** Prins, G.S., Belmonte, J. and Ho, S. Neonatal estradiol or bisphenol A (BPA) exposure increases susceptibility to adult-induced prostate carcinogenesis: association with epigenetic changes in gene methylation patterns and phosphodiesterase type 4 expression, *Environmental Epigenomics Conference* 2005</u>
- 30. <u>Tang, W.Y.</u>, Prins, G.S., Belmonte, J. and Ho, S. Discovery of phosphodiesterase type 4 variant (PDE4D4) as a gene susceptible to neonatal imprinting by estrdiol or bisphenol A in the rat prostate, Endocrine Disruptors Workshop, *Endocrine Society Annual Meeting* 2005
- Tang, W.Y., Chau, P.Y. and Kwok, T.T. Minichromosome maintenance 3 (MCM3) and radiation resistance in human hepatocellular carcinoma HepG2 cells, 95<sup>th</sup> Annual Meeting of American Association for Cancer Research 2004
- 32. <u>**Tang, W.Y**</u>., Tsang, W.P., Chau, P.Y. and Kwok, T.T. The role of Raf signaling pathway in radiation resistance of human hepatocellular carcinoma HepG2 cells, 94<sup>th</sup> Annual Meeting of American Association for Cancer Research 2003

#### 6. Media Interview

- 1. Tang, W.Y. Interviewed with Carrie Arnold. Transgenerational Epigenetics. *Johns Hopkins SPH Magazine* Date: 09/01/2017
- 2. Tang, W.Y. Interviewed with Virginia Gewin. Genetics researcher reaps career benefits of moving from China to the United States. *Nature Careers News. Nature* 510:179. Date: 06/04/2014
- 3. Tang, W.Y. Interviewed with John Schieszer. Estrogen may explain the higher PCa risk in blacks. *Renal and Urology News*. Date: 09/18/2009.
- 4. Tang, W.Y. Interviewed with Aaron Lohr. A gene reprogrammed by the hormone estrogen may explain why black men have higher prostate cancer risk than whites. *Endocrinology Society Press Release*. Date: 06/10/2009.
- Tang, W.Y. Interviewed with University of Cincinnati Academic Health Center Public Relations. Research suggests pollution-related asthma may start in the womb. UC Health News. Date: 02/13/2009.

# SERVICE

#### Service to School and University 1.

Years	Committee	Position
2024	Faculty Search Committee for Department of Biostatistics and Health Data Science and Human Genetics	Appointed
2024- present	PhD Graduate Program Committee for EOH, University of Pittsburgh School of Public Health	Appointed
2024	Search Committee for Chair for Department of Human Genetics	Appointed
2023- present	Faculty Appointment, Promotion, and Tenure Committee, University of Pittsburgh School of Public Health	Appointed
2023	Retreat Committee for EOH, University of Pittsburgh School of Public Health	Appointed
2023	Moderator for Community Epigenetics Perspective Workshop, Office for Equity, Diversity, & Inclusion, University of Pittsburgh	Appointed
2023-2024	Search Committee for Chair of Department of Human Genetics, University of Pittsburgh School of Public Health	Appointed
2021-2024	Planning, Budget and Policy Committee, University of Pittsburgh School of Public Health	Appointed
Johns Hopki	ns Bloomberg School of Public Health (JHSPH)	
2017-2019	PhD Program Co-Director in Toxicology, Physiology & Molecular Mechanisms, Department of Environmental Health and Engineering, JHSPH	Appointed
2016-2019	Advisory Committee for the New Umbrella PhD Program (Departments of Environmental Health and Engineering, Biochemistry and Molecular Biology and Molecular Microbiology and Immunology), JHSPH	Appointed
2016-2019	Advisory Committee of Education Programs, Environmental Health and Engineering, JHSPH	Appointed
2015-2019	Advisory Committee for the Online Education Master Program in Public Health Biology, JHSPH	Appointed
2012-2013	Advisory Committee for JHSPH Retreat Committee	Appointed

# 2. Service to Field of Scholarship a. Editorial Boards, Editorships

Date	Position	Organization
2020-2021	Guest Editor	Frontiers in Endocrinology (Special issue of Endocrine-disrupting and Inflammatory effects of environmental chemicals on animal metabolism)

Date	Position	Organization	
2012-2014	Guest Editor	Environmental and Molecular Mutagenesis (Special issue of environmental epigenetics)	
b. Manuscript	and Other Do	cument/Publication Review	
Dates	Journ	Journal Title	
2010-present	Envir	Environmental and Molecular Mutagenesis	
	Moleo	cular Carcinogenesis	
	Envir	Environmental Health Perspectives	
	Britis	British Journal of Cancer	
	Epige	Epigenetics	
	Clinic	Clinical Epigenetics	
	Scien	tific Reports	
	Toxic	ology and Applied Pharmacology	
	The Jo	ournal of Allergy and Clinical Immunology	
	Envir	ican Journal of Respiratory Cell and Molecular Biology onmental Health iers in Physiology	

# c. Study Sections, Review Panels, and Advisory Boards

Date	Position	Organization and Nature of Activity
2024	Review Panel	NIEHS Superfund Research Program P42 mechanism
2024	Review Panel	NIA U01 RFA-AG-24-023: Impact of Toxicants on Brain Aging and Alzheimer's Disease
2023	Reviewer	Underrepresented Minority Pilot/Feasibility Grant Program, The Michigan Nutrition Obesity Research Center
2021-present	Review Panel	Tobacco-Related Disease Research Program (TRDRP), Environmental Toxicology Section, Prenatal Review Panel, University of California
2021	Reviewer	Swiss National Science Foundation (SNSF)
2020	Mail reviewer	NIH Neurotoxicology and Alcohol (NAL) Study Section
2017-2019	Review Panel	Tobacco-Related Disease Research Program (TRDRP), Environmental Toxicology Section, University of California

Date	Position	Organization and Nature of Activity
2017-2019	Ad hoc reviewer	NIH Systemic Injury by Environmental Exposure (SIEE) Study Section
2017	Ad hoc reviewer	NIH ZRG1 IMM-T(90) Special Emphasis Panel
2016-present	Reviewer	The Health and Medical Research Fund, Food and Health Bureau of Hong Kong
2015	Ad hoc reviewer	NIH Kidney, Nutrition, Obesity and Diabetes (KNOD) Study Section
2012	Ad hoc reviewer	United Kingdom Prostate Action Grant
2011	Review panel	NIEHS U01 RFA-ES-10-009: Research Consortium for Bisphenol A Toxicity Study
2011	Ad hoc reviewer	United Kingdom Medical Research Council Prostate Cancer Research
2008-present	Reviewer	Hong Kong Research Grants Council

# d. Leadership in Scholarly and Professional Organizations and Honorary Societies

Date	Position	Organization
2024-present	Councilor (elected) for Allegheny-Erie Chapter	Society of Toxicology
2024	Co-chair for Epigenetics Symposium, Annual Meeting Society of Toxicology	Society of Toxicology
2014-2018	Committee Member for Respiratory Structure and Function Assembly	American Thoracic Society
2014	Discussion Panelist Represented as one of 10 US young women scientists and shared experience in performing scientific research with China- counterparts and building professional network	U.S. – China People-to-People Exchange and Young Scientist Voluntary Visitor Program, U.S. Department of State and the Chinese Ministry of Science and Technology