THE FACULTY OF MEDICINE
Harvard University

The Faculty of Medicine of Harvard University
Curriculum Vitae

Date Prepared:	**March 21, 2023**
Name:	**Pi-I Debby Lin**
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Education:

Jun/2006	BS	Genetics, Cell Biology and Development; Physiology	University of Minnesota, Twin Cities
Jun/2013	MS	Public Health; Epidemiology (Dr. Ming-Tsang Wu)	Kaohsiung Medical University, Taiwan
Nov/2017	ScD	Environmental and Occupational Molecular Epidemiology (Dr. David Christiani)	Harvard T.H. Chan School of Public Health

Postdoctoral Training:

Aug/17 – Feb/20	Research Fellow	Population Medicine (Dr. Jason Block)	Harvard Medical School and Harvard Pilgrim Health Care Institute
Feb/20 – Feb/21	Senior Research Fellow	Population Medicine (Dr. Emily Oken)	Harvard Medical School and Harvard Pilgrim Health Care Institute

Appointments at Affiliated Institutions:

2021-2022	Research Scientist I	Population Medicine	Harvard Pilgrim Health Care Institute
2023-	Research Scientist II	Population Medicine	Harvard Pilgrim Health Care Institute

Committee Service:

Local

2020-	Diversity, Equality, and Inclusion Committee	Harvard Pilgrim Health Care Institute

	2020-2022	Community Outreach and Mentorship Subcommittee chair
	2023-	Committee Chair

National

2022-	Chemical Exposure Working Group	Environmental Influences on Child Health Outcome (ECHO) Program, National Institute of Health

International

2018-2020	Student and New Researchers Network (SNRN)	International Society for Environmental Epidemiology (ISEE)
2019-	Communication Committee	International Society for Environmental Epidemiology (ISEE)
2020-	Antiracism Task Force	International Society for Environmental Epidemiology (ISEE)
2022-2023	International Scientific Committee	International Society for Environmental Epidemiology (ISEE) 2023 Annual Conference

Professional Societies:

2015-2016	Endocrine Society	Member
2017-2018	American Association of Cancer Research	Member
2018-	International Society for Environmental Epidemiology	Member
	2018-2020	Steering committee member, Student and New Researchers Network
	2019-	Committee member, Communication Committee
	2020-	Committee member, Antiracism Task Force
2018-	Society for Epidemiological Research	Member
2018-	American Society for Nutrition	Member

Grant Review Activities:

2019	Icelandic Research Fund	The Icelandic Center for Research

		Ad hoc reviewer
2020	Harvard Catalyst Everyday Exposure Toxins and Health Pilot Grant	Harvard Medical School Ad hoc reviewer

Editorial Activities:

- **Ad hoc Reviewer**

American Medical Informatics Association, Informatics Summit, 2018
Environmental Research
Environment International
Environmental Science and Pollution Research
International Journal of Hygiene and Environmental Health
International Journal of Environmental Research and Public Health
International Journal of Public Health
International Journal of Obesity
Journal of Nutrition
Journal of Hazardous Materials Nutrients
PLOS One
Scientific Reports

Honors and Prizes:

2013-2016	National Merit Scholarship for Studying Abroad	Ministry of Education, Taiwan	Outstanding academic performance
2013-2015	HSPH Central Grant	Harvard T.H. Chan School of Public Health	Outstanding academic performance
2013-2016	HSPH Tuition Grant	Harvard T.H. Chan School of Public Health	
2017	WGH Conference Stipend	Women, Gender and Health at Harvard T.H. Chan School of Public Health	

Report of Funded and Unfunded Projects

Past

2017-2018	PCORnet Obesity Observational Study: Short- and Long-term Effects of Antibiotics on Childhood Growth Patient-Centered Outcomes Research Institute (PCORI) Program Award (OBS-1505-30699) Research Fellow (PI: Block)

This project seeks to characterize the association between childhood antibiotic use before 24 months of age and the risk of obesity at age 5.

2018-2022 Longitudinal Association of PFCs with Obesity, Diabetes, and Metabolic Syndrome
National Institute of Health (NIH) Research Project (R01) (5R01ES024765)
Research Scientist (PI: Oken)
This project evaluates longitudinal associations of per- and poly-fluoroalkyl substances (PFAS) with detailed cardio-metabolic risk measures in a large, well-characterized population of adults who are at high risk for developing type 2 diabetes and cardiovascular disease (CVD). I led 5 separate analyses from this project.

Current

2016-2023 Common and Distinct Early Environmental Influences on Cardiometabolic and Respiratory Health: Mechanisms and Methods (ECHO)
National Institute of Health (NIH) (5UH3OD023286)
Research Scientist (PI: Oken and Kleinman)
The major goals of this project are to examine early life environmental exposures that, singly and as mixtures, influence the separate and co-evolution of obesity, asthma, and related dysfunctions using state-of-the-art statistical methods. I led two ECHO-wide projects on environmental exposure and child health.

2019-2024 Medications and Weight Gain in PCORnet: The MedWeight Study
National Institute of Health (NIH) Research Project (R01) (1 R01 DK120598-)
Research Scientist (PI: Block)
This project will conduct comprehensive assessment of medication initiation on weight gain and metabolic risk in children and adults receiving care in 19 healthcare institutions, with separate analyses of 6 classes of medications used for chronic disease treatment. I led projects specific to antihypertensive medications.

2020-2025 Built Environment Assessment through Computer visiON (BEACON): Applying Deep Learning to Street-Level and Satellite Images to Estimate Built Environment Effects on Cardiovascular Health
National Heart, Lung, and Blood Institute (NHLBI) Research Project (R01) (1R01HL150119)
Research Scientist (PI: James)
This project applies deep learning algorithms to derive street-level built environment and greenspace parameters for participants from the Nurses' Health Study, Nurses' Health Study II, and the Health Professional Follow-up Study, and the study evaluates potential relationships between the built environment and CVD health behaviors, to better specify pathways to CVD incidence, and ultimately, to yield actionable insights to guide land use policy and urban planning strategies to design cities that optimize cardiovascular health. My role is to perform the data process to derive the exposure variable and lead analyses.

Projects Submitted for Funding

2023-2028 Long-term prospective associations of PFAS with musculoskeletal and cardiovascular health in older adults
National Institute of Health (NIH) Research Project (R01) (5R01ES024765)
Research Scientist (PI: Oken)
This renewal project leverages the PFAS results from the previous grant and examines the longitudinal association of individual PFAS and PFAS mixture with muscle strength, bone

mass, and incident CVD, and the effect modification of PFAS-outcome association by lifestyle intervention, diet, and physical activities. I will serve as the lead research scientist overseeing the entire project. (Score: top 2nd percentile)

2023-2027 The COvid and Diabetes Assessment (CODA) Study
National Institute of Health (NIH) Research Project (R01) TBD
Research Scientist (PI: Russell)
CODA will recruit children and adults with new-onset diabetes (type 1 or type 2) and follow them for 2 years. The study team will examine the differences between those with recent COVID infection and those without recent COVID infection. (Score: 24)

2023-2028 Climate-related Environmental Exposures and Brain Health
National Institute of Health (NIH) Research Project (R01) TBD
Research Scientist (PI: James)
The goals of the proposed study are to 1) quantify associations between short-term smartphone GPS-based climate-related exposures and smartphone-assessed cognitive function, 2) estimate associations between long-term climate-related exposures and cognitive function trajectories over years, and 3) measure associations between long-term climate-related exposures and cognitive decline, incident dementia, and Alzheimer's disease and other dementia-causing neuropathologies.

Report of Local Teaching and Training

Teaching of Students in Courses:

2013-2016	EH330: Field Experience in International Occupational Health and Safety	Harvard T.H. Chan School of Public Health
	Graduate students	8-hours class for 14 days
2019-2023	Essentials of the Profession I - Clinical Epidemiology and Population Health	Harvard Medical School
	1st year medical students	2-hour small group discussion for 8 sessions
2020	The Environment and Public Health	Massachusetts College of Pharmacy and Health Sciences
	Undergraduate students	2 lectures on Food and Environment
2020-2023	Essentials of the Profession II - Clinical Epidemiology and Population Health	Harvard Medical School
	3rd or 4th-year medical students	2-hour small group discussion for 8 sessions

Other Mentored Trainees and Faculty:

2021 Irasema C. Paster/Medical Student at A.T. Still University School of Osteopathic Medicine in Arizona, Tucson, AZ

Co-mentored with Dr. Emily Oken on Irasema's research project: "Association of Total Lifetime Breastfeeding Duration with Midlife Hand Grip Strength: Findings from Project Viva"; paper published at BMC Women's Health.

Report of Scholarship

Research Investigations

[1] Lu, T., Lai, L., **Lin, B**., Chen, L., Hsiao, T., Liber, H., Cook, J., Mitchell, J., Tsai, M., Chuang, E. Distinct Signaling Pathways After Higher or Lower Doses of Radiation in Three Closely Related Human Lymphoblast Cell Lines. International Journal of Radiation Oncology Biology Physics. 2010. 76(1), p.212-219. DOI: 10.1016/j.ijrobp.2009.08.015

[2] **Lin, P.I.**, Bromage, S., Mostofa, M.G., Allen, J., Oken, E., Kile, M.L., Christiani, D.C. Validation of a Dish-Based Semiquantitative Food Questionnaire in Rural Bangladesh. Nutrients. 2017. 9 (1), p.49. DOI: 10.3390/nu9010049

[3] **Lin, P.I.**, Wu, C.F., Kou, H.S., Huang, T.Y., Shiea, J. and Wu, M.T. Removal of Diethylhexyl Phthalate from Hands by Handwashing: Evidence from Experimental N-of-1 and Crossover De- signs. Scientific Reports. 2017. 7(1), p.454. DOI: 10.1038/s41598-017-00581-2

[4] **Lin, P.I.**, Bromage, S., Mostofa, M.G., Allen, J., Oken, E., Kile, M.L. and Christiani, D.C., 2017. Associations between Diet and Toenail Arsenic Concentration among Pregnant Women in Bangladesh: A Prospective Study. Nutrients. 2017. 9(4), p.420. DOI: 10.3390/nu9040420

[5] Cardenas, A., Hauser, R., Gold, D., Kleinman, K.P., Hivert, M.R., Fleisch, A., **Lin, P.I.D.**, Calafat, A.M., Webster, T.F., Horton, E.S., Oken, E. Association of perfluoroalkyl and polyfluoroalkyl substances with adiposity. JAMA Network Open. 2018;1(4):e181493. DOI:10.1001/jamanetworkopen.2018.1493

[6] Lin, P.C., Peng, C.Y., Pan, C.H., **Lin, P.I.**, and Wu, M.T. Gender differences and lung cancer risk in occupational chefs: Analyzing more than 350,000 chefs in Taiwan, 1984-2011. International Archives of Occupational and Environmental Health. 2018: 1-9. DOI: 10.1007/s00420-018- 1358-8

[7] Ahmed, S.M., Joya, S.A, Hasan, S.I., Rahman, M., **Lin, P.I.**, Mostofa, M.G., Quamruzzaman, Q., Rahman, M., Christiani, D.C., and Kile, M.L. A prospective cohort study examining the association between maternal arsenic exposure, fetal loss, and neonatal mortality. American Journal of Epidemiology. 2018. DOI: 10.1093/aje/kwy243

[8] **Lin, P.I.**, Bromage, S., Mostofa, G., Rahman, M., Allen, J.G., Oken, E., Kile, M.L., and Christiani D.C. Mediating role of arsenic in the relationship between diet and pregnancy outcomes: prospective birth cohort in Bangladesh. Environmental Health. 2019. 18:10. DOI: 10.1186/s12940-019-0450-1

[9] Hu, J., Oken, E., Aris, I.M., **Lin, P.I.D.**, Ma, Y., Ding, N., Gao, M., Wei, X. and Wen, D. Dietary Patterns during Pregnancy Are Associated with the Risk of Gestational Diabetes Mellitus: Evidence from a Chinese Prospective Birth Cohort Study. Nutrients. 2019. 11(2), p.405. DOI: 10.3390/nu11020405

[10] **Lin, P.I.**, Daley, M.F., Boone-Heinone, J., Rifas-Shiman, S.L, Bailey, L.C., Forrest, C.B., Sturte- vant, J., Young, J.G., Toh, S., and Block, J.P. Comparing Prescribing and Dispensing of the PCOR- net Common Data Model using PCORnet Antibiotics and Childhood Growth Study. eGEMS. 2019. 7(1). DOI: 10.5334/egems.274

[11] **Lin, P.I.**, Cardenas, A., Gold, D., Hauser, R., Kleinman, K., Hivert, M.F., Calafat, A., Webster, T.F., Horton, E. and Oken, E. Per-and polyfluoroalkyl substances and blood lipid levels in pre-diabetic adults—longitudinal analysis of the diabetes prevention program outcomes study. Environment International. 2019. 129, pp.343-353. DOI: 10.1016/j.envint.2019.05.027

[12] Cardenas, A., Hivert, M.F., Gold, D., Hauser, R., Kleinman, K., **Lin, P.I.D.**, Fleisch, A.F., Calafat, A., Ye, X., Webster, T.F., Horton, E., and Oken, E. Associations of Perfluoroalkyl and

Polyfluoroalkyl Substances With Incident Diabetes and Microvascular Disease. Diabetes Care. 2019. Sep; 42(9): 1824-1832. DOI: 10.2337/dc18-2254

[13] Gao, S., **Lin, P.I.**, Mostafa, M.G., Qamruzzaman, Q., Rahman, M., Rahman, M., Su, L., Hsueh, Y.M., Weisskopf, M., Coull, B., and Christiani, D.C. Determinants of arsenic methylation efficiency and urinary arsenic level in pregnant women in Bangladesh. Environmental Health. 2019.Nov; 18(1): 94. DOI: 10.1186/s12940-019-0530-2

[14] Toh, S., Rifas-Shiman, S., Bailey, L.C., Forrest, C., Horgan, C.E., **Lin, P.I.**, Lunsford, D., Moyneur, E., Sturtevant, J., Young, J.G., Block, J.P., and On behalf of the PCORnet Antibiotics and Childhood Growth Study Group. Privacy-protecting multivariable-adjusted distributed regression analysis in multi-center clinical research. Pediatric Research. 2019. Oct 2. DOI: 10.1038/s41390-019-0596-0

[15] Canterberry M., Kaul A.F., Goel S., **Lin P.I.**, Block J., Nair V.P., Carton T.W. The Patient Centered Outcomes Research Network Antibiotics and Childhood Growth Study: Implementing Patient Data-linkage. Population Health Management. 2019. Dec 17 DOI: 10.1089/pop.2019.0089

[16] Pasupuleti, R.R., Tsai, P.C., Lin, **P.I.D.**, Wu, M.T. and Ponnusamy, V.K. Rapid and Sensitive Analytical Procedure for Biomonitoring of Organophosphates Pesticides' Metabolites in Human Urine Samples using Vortex-Assisted Salt-Induced Liquid-Liquid Microextraction Technique Coupled with UHPLC-MS/MS. Rapid Communications in Mass Spectrometry. 2020. Apr; 34: e8565. DOI: 10.1002/rcm.8565

[17] **Lin, P.I.**, Cardenas, A., Gold, D., Hauser, R., Kleinman, K., Hivert, M.F., Calafat, A., Webster, T.F., Horton, E. Sanchez-Guerra, M., Osorio-Yanezand, C., and Oken, E. Dietary characteristics associated with plasma concentrations of per- and polyfluoroalkyl substances among adults with pre-diabetes: cross-sectional results from the Diabetes Prevention Program Trial. Environment International. 2020 Apr;137:105217. DOI: 10.1016/j.envint.2019.105217

[18] Ahmed, S.M, Branscum, A., Welch, B.M., Megowan, M., Bethel, J.W., Odden, M.C., Joya, S.A., Hasan, M.O.S.I., **Lin, P.I.**, Mostofa, G., Quamruzzaman, Q., Rahman, M., Christiani, D.C., Kile, M.L. A prospective cohort study of in utero and early childhood arsenic exposure and infectious disease in 4-to 5-year-old Bangladeshi children. Environmental Epidemiology. 2020. 4(2). DOI: 10.1097/EE9.0000000000000086

[19] **Lin, P.I.**, Cardenas, A., Gold, D., Hauser, R., Kleinman, K., Hivert, M.F., Calafat, A., Webster, T.F., Horton, E., and Oken, E. Per- and Polyfluoroalkyl Substances and Blood Pressure in Pre-Diabetic Adults—Cross-Sectional and Longitudinal Analyses of the Diabetes Prevention Program Outcomes Study. 2020. Environment International. 2020 Apr;137:105573. DOI: 10.1016/j.envint.2020.105573

[20] Rifas-Shiman, S.L., Bailey, L.C., Lunsford, D., Daley, M.F., Eneli, I., Finkelstein, J., Heerman, W., Horgan, C.E., Hsia, D.S., Jay, M. and Rao, G., Reynolds, J.S. , Sturtevant, J.L., Toh, S., Trasande, L. , Young, J., **Lin, P.I.**, Forrest, C.B., Block, J., Childhood Growth Study Group. Early Life Antibiotic Prescriptions and Weight Outcomes in Children 10 Years of Age. Academic Pediatrics. 2020: S1876-2859. DOI:doi.org/10.1016/j.acap.2020.10.016

[21] Hu, J., Aris, I.M., **Lin, P.I.**, Rifas-Shiman, S.L., Perng, W., Woo Baidal, J.A., Wen, D. and Oken, E. Longitudinal associations of modifiable risk factors in the first 1000 days with weight status and metabolic risk in early adolescence.The American Journal of Clinical Nutrition. 2021, January. DOI: doi.org/10.1093/ajcn/nqaa297

[22] **Lin, P.I.**, Cardenas, A., Hauser, R., Gold, D., Kleinman, K., Hivert, M.F., Calafat, A., Webster, T.F., Horton, E., and Oken, E. Per-and polyfluoroalkyl substances and kidney function: Follow-up results from the Diabetes Prevention Program trial. Environment International. 2021 March;148:106375. DOI: 10.1016/j.envint.2020.106375

[23] Osorio-Yanez, C., Sanchez-Guerra, M., Cardenas, A., **Lin, P.I.**, Hauser, R., Gold, D., Kleinman, K., Hivert, M.F., Fleisch, A.F., Calafat, A., Webster, T.F., Horton, E., and Oken, E. Per-and polyfluoroalkyl substances and kidney function: Follow-up results from the Dia- betes Prevention Program trial. Environment International. 2021 March;148:106375. DOI: 10.1016/j.envint.2020.106375

[24] **Lin, P. I. D.**, Cardenas, A., Rifas-Shiman, S. L., Hivert, M. F., James-Todd, T., Amarasiriwardena, C., Wright, R. O., Rahman, M. L., and Oken, E. Diet and erythrocyte metal concentrations in early pregnancy—cross-sectional analysis in Project Viva. The American Journal of Clinical Nutrition, 2021, May. 114 (2), 540-549. DOI:doi.org/10.1093/ajcn/nqab088

[25] Seshasayee, S. M., Rifas-Shiman, S. L., Chavarro, J. E., Carwile, J. L., **Lin, P. D.**, Calafat, A. M., Sagiv, S. K., Oken, E., and Fleisch, A. F. Dietary patterns and PFAS plasma concentrations in childhood: Project Viva, USA. Environment International, 2021, March. 151, 106415-106415.DOI:10.1016/j.envint.2021.106415

[26] Hu, J., Aris, I.M., **Lin, P. I.**, Wan, N., Liu, Y., Wang, Y., Wen, D. Association of Maternal Dietary Patterns during Pregnancy and Offspring Weight Status across Infancy: Results from a Prospective Birth Cohort in China. Nutrients, 2021 June. DOI: doi.org/10.3390/nu13062040

[27] Liu, Z., Lee, J., **Lin, P. I.**, Valeri, L., Christiani, D. C., Bellinger, D. C., Bellinger, D. C., Wright, R. O., Mazumdar M. M., and Coull, B. A. A Cross-validated Ensemble Approach to Robust Hypothesis Testing of Continuous Nonlinear Interactions: Application to Nutrition-Environment Studies. Journal of the American Statistical Association, 2021 July. DOI: doi.org/10.1080/01621459.2021.1962889

[28] **Lin, P. I. D.**, Cardenas, A., Hauser, R., Gold, D. R., Kleinman, K. P., Hivert, M. F., ... Oken, E. Temporal trends of concentrations of per-and polyfluoroalkyl substances among adults with overweight and obesity in the United States: Results from the Diabetes Prevention Program and NHANES. Environment International, 2021. 157, 106789. DOI:10.1016/j.envint.2021.106789

[29] Zheng, Y., Lin, P. I. D., Williams, P. L., Weisskopf, M. G., Cardenas, A., Rifas-Shiman, S. L., Wright, R. O., Amarasiriwardena, C., Claus Henn, B., Hivert, M. F., Oken, E., and James-Todd, T. Early pregnancy essential and non-essential metal mixtures and gestational glucose concen- trations in the 2nd trimester: Results from project viva. Environment International, 2021, 155, 106690-106690. DOI:10.1016/j.envint.2021.106690

[30] Rahman, M. L., Oken, E., Hivert, M. F., Rifas-Shiman, S., **Lin, P. I. D.**, Colicino, E., Wright, R. O., Amarasiriwardena, C., Claus Henn, B. G., Gold, D. R., Coull, B. A., and Cardenas, A. Early pregnancy exposure to metal mixture and birth outcomes-A prospective study in Project Viva. Environment International, 2021. 156, 106714. DOI:10.1016/j.envint.2021.106714

[31] Aris, I. M., **Lin, P. I. D.**, Rifas-Shiman, S. L., Bailey, L. C., Boone-Heinonen, J., Eneli, I. U., Solomonides, A. E., MMath, Janicke, D. M., Toh, S., Forrest, C. B., and Block, J. P. Association of Early Antibiotic Exposure With Childhood Body Mass Index Trajectory Milestones. JAMA Network Open, 2021. 4(7), e2116581-e2116581. DOI:10.1001/jamanetworkopen.2021.16581

[32] Smith, A.R., **Lin, P.I.D.**, Rifas-Shiman, S.L., Rahman, M.L., Gold, D.R., Bacarelli, A.A., Claus Henn, B., Amarasiriwardena, C., Wright, R.O., Coull, B., Hivert, M.F., Oken, E., and Cardenas, Prospective Associations of Early Pregnancy Metal Mixtures with Mitochondria DNA Copy Number and Telomere Length in Maternal and Cord Blood. Environmental Health Perspectives. 2021, November. DOI:doi.org/10.1289/EHP9294

[33] Bailey, L.C, Bryan, M., Maltenfort, M., Block, J.P., Teneralli, R., Lunsford, D., Boone-Heinonen, J., Eneli, I., Horgan, C.E., **Lin, P.I.D.**, Reynolds, J.S., Solomonides, A.E., Janicke, D., Sturtevant, J.L., Toh, S., Taveras, E., Appelhans, B.M., Arterburn, D., Daley, M.F., Dempsey, A., Dugas, L.R., Finkelstein, J., Fitzpatrick, S.L., Goodman, A., Gurka, M.J.,

Heerman, W.J., Horberg, M., Hossain, M.J., Hsia, D.S., Isasi, C.R., Kharbanda, E.O., Messito, M.J., Murphy, K., O'Bryan, K., Peay, H.L., Prochaska, M.T., Puro, J., Rayas, M., Rosenman, M.B., Taylor, B., VanWormer, J.J., Willis, Z., Yeramaneni, S., Forrest, C.B. and Childhood Growth Study Group. Antibiotics prior to age 2 years have limited association with preschool growth trajectory. International Journal of Obesity. 2022, January. DOI:doi.org/10.1038/s41366-021-01023-w

[34] Sun, J.W., Young, J.G., Sarvet, A.L., Bailey, L.C., Heerman, W.J., Janicke, D.M., **Lin, P.I.D.**, Toh, S., and Block, J. Comparison of Rates of Type 2 Diabetes in Adults and Children Treated With Anticonvulsant Mood Stabilizers. JAMA Network Open. 2022, April. DOI:10.1001/jamanetworkopen.2022.6484

[35] Paster, I.C., **Lin, P.I.D.**, Rifas-Shiman, S.L., Perng, W., Chavarro, J.E. and Oken, E. Association of total lifetime breastfeeding duration with midlife handgrip strength: findings from Project Viva. BMC Women's Health. 2022, July. DOI:doi.org/10.1186/s12905-022-01880-1

[36] Rifas-Shiman, S.L., Aris, I.M., Bailey, C., Daley, M.F., Heerman, W.J., Janicke, D.M., **Lin, P.I.D.**, Petimar, J. and Block, J.P. Changes in obesity and BMI among children and adoles cents with selected chronic conditions during the COVID-19 pandemic. Obesity. 2022, July, DOI:doi.org/10.1002/oby.23532

[37] Brennan, P.A., Dunlop, A.L., Croen, L.A., Avalos, L.A., Salisbury, A.L., Hipwell, A.E., Nozadi, S.S., Sathyanarayana, S., Crum, R.M., Musci, R. Li, M.,Li, X., Mansolf, M., O'Connor, T.G., Elliott, A.J., Ghildayal, N., **Lin, P.I.D.**, Sprowles, J.L.N., Stanford, J.B., Bendixsen, C., Ozonoff, S., Lester, B.M., Shuster, C.L., Huddleston, K., Posner, J., Paneth, N. Prenatal Antidepressant Expo- sures and Autism Spectrum Disorder or Traits: A Retrospective, Multi-Cohort Study. Research on Child and Adolescent Psychopathology. 2022, November, DOI:doi.org/10.1007/s10802-022- 01000-5

[38] Smith, A.R.,**Lin, P.I.D.**, Rifas-Shiman, S.L., Wright, R.O., Coull, B., Hivert, M.F., Hubbard, A., Oken, E. and Cardenas, A. Associations of Prenatal First Trimester Essential and Nonessential Metal Mixtures with Body Size and Adiposity in Childhood. Epidemiology. 2022, November, DOI:doi.org/10.1097/EDE.0000000000001560

[39] **Lin, P.I.**, Rifas-Shiman, S.L., Aris, I.M., Daley, M.F., Janicke, D.M., Heerman, W.J., Chudnov, D.L., Freedman, D.S. and Block, J.P. N Cleaning of anthropometric data from PCORnet electronic health records using automated algorithms. JAMIA open. 2022, December, DOI:doi.org/10.1093/jamiaopen/ooac089

[40] **Lin, P.I.**, Cardenas, A., Rifas-Shiman, S.L., Zota, A.R., Hivert, M.F., Aris, I.M. and Sanders, A.P. Non-essential and essential trace element mixtures and kidney function in early pregnancy–A cross-sectional analysis in Project Viva. Environmental Research. 2023, January, DOI:doi.org/10.1016/j.envres.2022.114846

[41] Rokoff, L.B., Cardenas, A., **Lin, P.I.D.**, Rifas-Shiman, S.L., Wright, R.O., Enlow, M.B., Coull, B.A., Oken, E, and Korrick, S.A. Early pregnancy essential and non-essential metal mixtures and maternal antepartum and postpartum depressive symptoms. NeuroToxicology. 2023, January, DOI:doi.org/10.1016/j.neuro.2022.12.005

[42] Martinez, M., Harry, G.J., Haynes, E.N., **Lin, P.I.**, Oken, E., Horton, M.K., Wright, R.O., Arora, M. and Austin, C. Quantitative fluoride imaging of teeth using CaF emission by laser induced breakdown spectroscopy. Journal of Analytical Atomic Spectrometry. 2023, DOI:10.1039/D2JA00134A

[43] Ames, J.L., Burjak, M., Avalos, L.A., Braun, J.M., Bulka, C.M., Croen, L.A., Dunlop, A.L., Ferrara, A., Fry, R.C., Hedderson, M.M., Karagas, M.R., Liang, D., **Lin, P.I.D.**, Lyall, K., Moore, B., Morello-Frosch, R., O'Connor, T.G., Oh, J., Padula, A.M., Woodruff, T.J., Zhu, Y.,

Hamra, G.B., on behalf of program collaborators for Environmental influences on Child Health Outcomes. Prenatal exposure to per- and polyfluoroalkyl substances and childhood autism-related outcomes. Epidemiology. 2023, January. DOI:10.1097/EDE.0000000000001587

Books/textbooks for the medical or scientific community

[1] Lin, C.F., Gao, I.A., **Lin, P.I.**. (2017) Efforts and Concerns for Indigenous Language Education in Taiwan. In: McKinley E., Smith L. (eds) Handbook of Indigenous Education. Springer, Singapore.

Thesis:

[1] **Lin, P.I.** Study on the Removal Strategy of Dermal Exposure to Phthalate Ester by Hand Washing. Kaohsiung Medical University, 2013.

[2] **Lin, P.I.** Maternal Diet, Arsenic Exposure, and Pregnancy Outcome in Bangladesh Harvard T.H. Chan School of Public Health, 2017.

Abstracts, Poster Presentations, and Exhibits Presented at Professional Meetings:

[1] **Lin, P.I.** Characterization of shed baby tooth metal concentrations in Project Viva, International Society for Environmental Epidemiology Annual Conference 2022. Oral Presentation. Athens, Greece, 2022.

Narrative Report

I am an environmental epidemiologist with expertise in chemical exposures and chronic disease outcomes. My research focuses on understanding the relationship of metals and persistent chemicals, specifically perfluoroalkyl and polyfluoroalkyl substances (PFAS), with chronic disease risk across the life course. I use epidemiological methods and statistical modeling to evaluate this relationship in large national-representative cohort studies. Additionally, I investigate factors that may modify the relationship to gain insight on the potential intervention strategy.

My research career began with my master thesis which investigated an intervention strategy to reduce the exposure to phthalate, a known endocrine disrupting chemical used in plastic products. This work was motivated by the 2011 incident of phthalate-contaminated foodstuffs in Taiwan which caused a great public health panic. I joined a research team at the Center for Environmental Medicine at Kaohsiung Medical School, Kaohsiung, Taiwan, that started a birth cohort to prospectively evaluate the long-term health effect of phthalate on pregnant and children. My work showed that exposure to high quantities of phthalates, mostly through contaminated food products, led to low birth heights, changes in sex steroid hormones, and increased rates of allergies and asthma among children.

I continued to engage in birth cohort research during my doctoral studies at Harvard T.H. Chan School of Public Health where I used data from a Bangladesh birth cohort to examine the relationship of maternal diet, arsenic exposure, and pregnancy outcome. My research showed environmental arsenic was strongly correlated with shorter-term pregnancies, higher risks of fetal and neonatal mortality, and lower infant birth weight.

I joined the Department of Population Medicine at Harvard Medical School for postdoctoral training and continued to build on my research portfolio using birth cohort studies in the US. I applied novel environmental mixture methods and causal inference methods to evaluate the relationship between diet and chemical exposure and how chemical exposures at critical time windows shape the health trajectory across life course. During this time, I was also able to expand my research scope to examine other environmental exposures, such as PFAS and greenspace, and utilized different data sources, including clinical trials and electronic health records.

I became a research scientist in 2021 and took on more leadership roles. I assist faculty from grant submission to project execution. For example, I led key analyses for the R01 grant (PI: Oken) on PFAS and developed a substantial body of evidence that higher PFAS exposure to are related to higher risks for adiposity, hyperlipidemia, diabetes, microvascular diseases and declined kidney function. In many cases these associations were substantially attenuated by lifestyle intervention, suggesting that the adverse health effects of PFASs may attenuated with a healthy lifestyle of weight loss, diet and exercise. Our highly productive R01 allowed us to secure renewal funding for another 5 years, and I will serve as the main research scientist lead for the project.

I assisted faculty to teach the Clinical Epidemiology and Population portion of the Essential for Profession I & II course for medical students at Harvard Medical School. I have mentored medical students and postdocs on research projects and lead research group meetings and journal clubs. I also had the opportunity to serve on the Diversity, Equity and Inclusion committee for the Department of Population Medicine as subcommittee chair (2020-2022) and now as a co-chair (2023-) and participated in the Antiracism Task Force for International Society for Environmental Epidemiology.