

History of CEHS Supported Pilot Projects

PILOT PROJECTS PROGRAM 2023-2024
<p>Project Title: Spatial clustering for environmental health</p> <p>PI: Didong Li, Assistant Professor, Department of Biostatistics, Gillings School of Global Public Health</p>
<p>Project Title: Characterizing occupational and residential per- and polyfluoroalkyl substance (PFAS) exposures: an essential first step toward the development of effective interventions to mitigate cancer risk</p> <p>PI: Barbara J Turpin, Professor, Department of Environmental Sciences and Engineering, Gillings School of Global Public Health</p> <p>Collaborator: Jason Surratt, Professor, Department of Environmental Sciences and Engineering, Gillings School of Global Public Health</p>
<p>Project Title: Effects Burn Pit Exposure on Sino-nasal health</p> <p>PI: Adam Kimple, Assistant Professor, Department of Otolaryngology, School of Medicine</p> <p>Collaborator: Ilona Jaspers, Professor, Department of Pediatrics, School of Medicine</p>
<p>Project Title: Gut and vaginal microbiome profiles of endometrial cancer survivors</p> <p>PI: Hazel Nichols, Associate Professor, Department of Epidemiology, Gillings School of Global Public Health</p>
<p>Project Title: Extracellular Vesicles altered by Per- and Polyfluoroalkyl Substance Mixtures: In Vitro Regulation</p> <p>PI: Julia Rager, Assistant Professor, Department of Environmental Sciences and Engineering, Gillings School of Global Public Health</p>
<p>Project Title: Collaborations for Change: Determining the Strategic Priorities to Support the Wellbeing of Migrant Farmworkers in Eastern North Carolina</p> <p>PI: Deshira Wallace, PhD, Assistant Professor, Department of Health Behavior, Gillings School of Global Public Health</p> <p>Collaborator: Yesenia Cuello, Executive Director, NC FIELD</p>
<p>Project Title: Incidence, prevalence, and severity of upper and lower respiratory tract diseases among a cohort of patients living near a wood pellet production facility</p> <p>PI: Cameron Worden, MD, Resident Physician, Postdoctoral Research Fellow, Department of Otolaryngology – Head and Neck Surgery, University of North Carolina Hospitals</p> <p>Collaborator: Cassandra O’Lenick, PhD, Research Associate, Center for Environmental Medicine Asthma and Lung Biology (CEMALB)</p>
<p>Project Title: Building Infrastructure to Investigate Community Concerns about the Disparate Impacts of Extreme Weather Related Disasters on Healthcare Access in North Carolina</p> <p>PI: Jennifer Lund, PhD, Associate Professor, Department of Epidemiology, UNC Lineberger Comprehensive Cancer Center</p> <p>Collaborator: Chris Baggett, Assistant Professor, Department of Epidemiology, Gillings School of Global Public Health</p>
<p>Project Title: Per- and polyfluoroalkyl substances in children and impaired antibody response to COVID-19 vaccination</p> <p>PI: Anne Starling, Assistant Professor, Department of Epidemiology, Gillings School of Global Public Health</p> <p>Collaborator: Michelle Hernandez, Professor, Department of Pediatrics, School of Medicine</p>
<p>Project Title: Screening environmental chemicals linked to Alzheimer’s disease using novel tau sensor cells</p> <p>PI: Todd Cohen, PhD, Associate Professor, Department of Neurology, School of Medicine</p>

PILOT PROJECTS PROGRAM 2022-2023	
Project Title: Understanding the Impacts of Natural Disasters on Disruptions to Healthcare Delivery in Eastern North Carolina: Identifying Community Stakeholder Priorities PI: Jennifer Lund , PhD, Associate professor, Department of Epidemiology and UNC Lineberger Comprehensive Cancer Center Collaborators: John Wallace , Senior Data Advisor, North Carolina Institute for Public Health; Larry Engel (19-20 PI) , Associate Professor, Department of Epidemiology; Stephanie Wheeler , Professor, Department of Health Policy and Management / UNC Lineberger Community Outreach and Engagement; Arrianna Planey , Assistant Professor, Department of Health Policy and Management; Elizabeth Frankenberg , Professor, Department of Sociology / Carolina Population Center; Paul Delamater , Associate Professor, Department of Geography / UNC Lineberger, Carolina Population Center; Chris Baggett , Assistant Professor, Department of Epidemiology / UNC Lineberger Cancer Information and Population Health Resource	
Project Title: Listening to and Understanding Farmworker Values and Priorities Related to Individual-Level Extreme Heat-Quantifying Research PI: Max Cawley , Program Manager, Public Engagement with Science – Museum of Life and Science (Cawley) PI: Lariza Garzón , Executive Director, Episcopal Farmworker Ministry, Episcopal Farmworker Ministry	
Project Title: Assessing How Measured and Perceived Water Quality Influence Water Use Among Private Well Owners in Sampson County PI: Sherri White-Williams , Co-founder and Board Chair, Environmental Justice Community Action Network (EJCAN) PI: Courtney Woods , Assistant Professor, Department of Environmental Sciences and Engineering, Gillings School of Global Public Health	
Project Title: Creating robust disease trajectories to test when environmental factors could alter disease progression PI: Tanya P. Garcia , Associate Professor, Biostatistics, Gillings School of Public Health	
Project Title: Environmental risk factors for amyotrophic lateral sclerosis PI: Giulia Fragola , Ph.D., Research Associate, Department of Neurology, School of Medicine PI: Todd Cohen , PhD, Associate Professor, Department of Neurology, School of Medicine	
Project Title: Establishing the role, and mechanistic basis, of PFAS-induced resistance to platinum-based chemotherapy in metastatic ovarian cancer PI: Imran Rizvi , Ph.D., Assistant Professor, Joint Department of Biomedical Engineering Collaborator: Bae Jump, Victoria; M.D., Ph.D.; Professor and Fellowship Director, Division of Gynecologic Oncology, Department of Obstetrics & Gynecology, UNC School of Medicine	
Project Title: Environmental Influences on Early Life Inflammation-related Buccal Cell DNA methylation PI: Chantel L. Martin , PhD., Assistant Professor Collaborator: Anne Starling , Assistant Professor, Epidemiology/Gillings School of Global Public Health	
Project Title: Ozone-induced dysregulation of ion transport and surface hydration in airway epithelia PI: Martina Gentzsch , PhD, Associate Professor, Pediatrics-Pediatric Pulmonology/School of Medicine Collaborator: Samir Kelada , PhD, Associate Professor, Genetics/School of Medicine	
Project Title: Defining Roles of the E3 Ubiquitin Ligase Trim69 in Mitotic Progression of Breast Cancer PI: Yilin Wang , PhD, Post-doctoral fellow, Department of Pathology & Lab Medicine, School of Medicine PI: Cyrus Vaziri (16-17 PI) , Professor, Departments of Pathology & Laboratory Medicine, Biochemistry & Biophysics, and Lineberger Comprehensive Cancer Center	
Understanding genetic and environmental drivers of primary liver cancer PI: Jesse Raab , Assistant Professor, Department of Genetics, School of Medicine PI: Katherine Hoadley , Assistant Professor, Department of Genetics, School of Medicine	

Project Title: Per- and polyfluoroalkyl substances in children and impaired antibody response to COVID-19 vaccination

PI: Anne Starling, Assistant Professor, Epidemiology/Gillings School of Global Public Health

Co-I: Michelle Hernandez (16-17 Co-I), Professor, Pediatrics/School of Medicine

PILOT PROJECTS PROGRAM 2021-2022

Project Title: Identifying a genomic basis for adaptation to the common air pollutant ozone PI: **Samir Kelada**, Associate Professor, SOM/Genetics

Project Title: Attributing national trends in global ambient air pollution mortality to drivers: the importance of migration PI: **Jason West**, Full Professor, Gillings / Environmental Sciences & Engineering

Project Title: Modification of E-cigarette Flavoring Toxicity by Concomitant Exposure to Vaped Cannabidiol PI: **Phillip Clapp**, Research Assistant Professor, Department of Pediatrics and **Ilona Jaspers**, Professor, Department of Environmental Sciences and Engineering, Department of Pediatrics, Microbiology and Immunology

Project Title: Prenatal Arsenic Exposure and Infant Development at 6 months of age: The Role of the Gut Microbiota. PI: **Cathi Propper**, Associate Professor, Frank Porter Graham Child Development Institute; Psychology and Neuroscience

PI: **Rebecca Fry**, Full Professor, Gillings / Environmental Sciences & Engineering

Project Title: Identifying markers of invasion in early cutaneous melanomas

PI: **Kathleen Conway Dorsey and Nancy Thomas**, Associate Professor and Professor, Department of Epidemiology - School of public Health, Department of Dermatology – School of Medicine

Project Title: Spatially resolved cell-type specific maternal immune activation effects on cortical organoids from individuals with autism

PI: **Jason Stein**, Assistant Professor, Department of Genetics and UNC Neuroscience Center

PILOT PROJECTS PROGRAM 2020-2021

Project Title: Linking chemical exposure and respiratory immune health in e-cigarette users

P.I.: Meghan Rebuli, Assistant Professor of Pediatrics

Co-I: Kun Lu, Associate Professor of Environmental Science and Engineering

Co-I: Julia Rager, Assistant Professor of Environmental Science and Engineering

Project Title: PFOS, humoral immunity, and specialized pro-resolving metabolites

P.I.: Raz Shaikh, Associate Professor of Nutrition

Project Title: Effect of Acute Ozone Exposure on Restenosis Rates after Vascular Interventions

P.I.: Edward Bahnson, Assistant Professor of Surgery

Co-Is:

Project Title: The role of the lung microbiome in sexually dimorphic immune responses to air pollution.

P.I.: Patricia Silveyra, Associate Professor of Pediatrics

<p>Project Title: Defining the Defining the Upper Respiratory Tract Immune Response in Novel Coronavirus 2019 (COVID-19)</p> <p>PI: Subhashini Sellers, MD MSCR, Assistant Professor, Department of Medicine, Division of Pulmonary Diseases and Critical Care Medicine</p>
<p>Project Title: American Indian Women Mindfully Building Resistance to Environmental Adversities Through Healing Exercises (AIM to BREATHE)</p> <p>PI: Jada L. Brooks, MSPH, RN, PhD, FAAN, Assistant Professor, School of Nursing</p> <p>Co-sponsor: Institute for Environmental Health Solutions</p>
<p>Project Title: Residence time and viability of coronavirus in airborne respirable particles in public spaces</p> <p>PI: Karsten Baumann, PhD, Assistant Professor, Department of Environmental Sciences and Engineering</p> <p>Co-Is: Barbara Turpin, Jason Surratt, Glenn Morrison, Mike Fisher, Jill Stewart, Ralph Baric</p> <p>Co-Sponsor: School of Public Health GILS Grant</p>

LIST OF PROPOSALS SUBMITTED TO THE PILOT PROJECTS PROGRAM 2019-2020
<p>Project Title: Environmental Contributors to Health Outcomes in North Carolina's Least Healthy County</p> <p>P.I.: Lawrence Engel, Associate Professor of Epidemiology</p> <p>Co-I: Jackie MacDonald</p>
<p>Project Title: The placental exposome: a driver of epigenetic regulation and preeclampsia</p> <p>P.I.: Julia Rager, Assistant Professor of Environmental Science and Engineering</p> <p>Co-Is: Kim Boggess, Tracy Manuck, and Rebecca Fry</p>
<p>Project Title: Baby teeth: A new frontier for investigating environmental risk factors for birth defects</p> <p>P.I.: Tania Desrosiers, Research Assistant Professor of Epidemiology</p>
<p>Project Title: Development of peanut allergy through airway exposure to peanut antigens in house dust</p> <p>P.I.: Michael Kulis, Assistant Professor of Pediatric Allergy, Immunology and Rheumatology</p>
<p>Project Title: Demonstrating the impact of clothing on transdermal uptake of endocrine disruptors found in home environments.</p> <p>P.I.: Glenn Morrison, Professor of Environmental Science and Engineering</p>
<p>Project Title: Heterogeneous Oxidation of Isoprene Epoxydiol (IEPOX)-Derived Particulate Organosulfates by Hydroxyl Radicals: A Plausible Mechanism for Explaining Oxidative Stress in Human Lung Cells from Exposure to Isoprene-Derived PM2.5</p> <p>P.I.: Jason D. Surratt, Professor, Environmental Sciences and Engineering (ESE)</p>
<p>Project Title: Evaluating early life pyrethroid exposure and sleep disruption in autism spectrum disorder</p> <p>P.I.: Graham Diering, Ph.D. Assistant Professor Cell Biology and Physiology</p>
<p>Project Title: Blood Spot Collection to Enable Future Study of Environmental Exposures and Brain-Behavior Development in Two Unique, Longitudinal Cohorts of Infants at High Risk for Autism</p> <p>P.I.: Mark Shen, Ph.D. Assistant Professor of Psychiatry, UNC</p>

LIST OF PROPOSALS SUBMITTED TO THE PILOT PROJECTS PROGRAM 2018-2019	
Project Title: Genomic Influences on Ozone Response in Mice	P.I.: Terrence Furey, PhD, Associate Professor of Genetics and Biology
Project Title: Defining novel Chk2 functions in suppression of UV-induced skin carcinogenesis	P.I.: Di Wu, Assistant Professor of Biostatistics and Desintistry
Project Title: Susceptibility to arsenic-induced diabetes: The role of As3mt polymorphisms and the microbiome	P.I.: Miroslav Styblo, Professor of Nutrition and Associate Professor of Environmental Sciences and Engineering
Project Title: Identification of indoor environmental adjuvants in house dust	P.I.: Timothy Moran, MD, PhD, Assistant Professor of Pediatrics
Project Title: Does prenatal pesticide exposure exacerbate phenotypes in a mouse model of autism?	P.I.: Mark J. Zylka, Professor and Director of Cell Biology and Physiology
Project Title: Glycine Cleavage System (GCS) Formaldehyde Induced Genotoxicity	P.I.: Jeffrey MacDonald, PhD, Associate Professor of Biomedical Engineering, SoM
Project Title: The spatial distribution of lead exposure and identify social and neighborhood factors associated with blood lead concentration in Durham and Detroit	P.I.: Allison Aiello, PhD MS Professor of Epidemiology, Social Epidemiology Program Leader
Project Title: Sampling The Nasal Epithelial Lining Fluid As A Non-Invasive Indicator Of Pollutant-Induced Modification Of COPD	P.I.: Ilona Jaspers, PhD, Professor of Environmental Science and Engineering/Professor of Pediatrics
Project Title: Pro-inflammatory responses of airway cells to hydroperoxyalkenyls, emerging toxic components of PM2.5	P.I.: Avram Gold, PhD, Professor of Environmental Science and Engineering
Project Title: Feasibility of measuring environmental toxicants and endogenous markers of possible immunotoxicity from newborn blood spots to study risk factors for eosinophilic esophagitis	P.I.: Evan Dellon, MD, MPH, Professor of Medicine and Epidemiology, Division of Gastroenterology and Hepatology
Project Title: Connection of Vibrio bacterial dynamics to exposure after extreme events	P.I.: Rachel Noble, PhD, Professor of Environmental Science and Engineering/Institute of the Environment
Project Title: Cadmium exposure and Hepatocellular Carcinoma	P.I.: Cathrine Hoyo, Associate Professor in the Department of Biological Sciences

LIST OF PROPOSALS SUBMITTED TO THE PILOT PROJECTS PROGRAM 2017-2018	
Project Title: Exploring a causal relationship among toxic metals and hypertension using genomics	P.I.: Nora Franceschini, MD, MPH, Research Associate Professor, Department of Epidemiology
Project Title: Development of a structural-functional optical imaging platform for environmental exposure studies in an organotypic model of the mammary gland.	P.I.: Amy L. Oldenburg, Associate Professor, Department of Physics and Astronomy (Primary). Also affiliated with: Biomedical Research Imaging Center, Department of Biomedical Engineering and Lineberger Comprehensive Cancer Center.
Project Title: Airway Extracellular Vesicle MicroRNA Profiling in Ozone-Induced Asthma	P.I.: Samir Kelada and Gregory J. Smith, Ph.D, Department of Genetics

Project Title: Use of isotopic ratios to characterize newborn blood lead measures and environmental lead contamination from operating industrial sites in Forsyth County, North Carolina P.I.: David Richardson, PhD, Associate Professor, Epidemiology Department
Project Title: Identifying the Effects of Environmental Toxicant Exposure on miRNA-regulated Adrenomedullin in the Development of Preeclampsia P.I.: Kathleen M. Caron, Professor and Chair of the Department of Cell Biology and Physiology, SoM
Project Title: Alleviating Environmental Toxin Damage via the Gut Microbiota. P.I.: Matthew R. Redinbo, Kenan Distinguished Professor, Department of Chemistry, College of Arts & Sciences, and Biochemistry, Microbiology, Genomics, School of Medicine.
Project Title: Environmental Impacts on early Brain Development. P.I.: Stephanie M. Engel, PhD, Associate Professor of Epidemiology Co-Is: Weili Lin, PhD, Professor of Radiology, Neurology and Biomedical Engineering, Director of BRIC; Joseph Piven, MD, Professor of Psychiatry, Pediatrics and Psychology, Director of CIDD; Margaret Sheridan, PhD, Assistant Professor of Clinical Psychology and John H. Gilmore, MD Distinguished Professor, Director of the Early Brain Development Program.

LIST OF PROPOSALS SUBMITTED TO THE PILOT PROJECTS PROGRAM 2016-2017
Project Title: Using CRISPR/Cas9 Technology to Establish the Role of NRF2 as a Driver of Isoprene SOA-Induced Genomic Stress Response P.I.: Rebecca Fry Co-PIs: Jason D. Surratt; William Vizuite, Department ESE
Project Title: Chemical Mechanism of Ozone-Induced DNA Damage P.I.: Zhenfa Zhang, Research Assistant Professor, Environmental Science and Engineering
Project Title: Profiling an endocrine disruption model for risk assessment of epigenetic outcomes P.I.: Folami Ideraabdullah, Assistant Professor, Department of Genetics, Department of Nutrition, UNC-CH Nutrition Research Institute
Project Title: Impact of common African American SULT polymorphisms on disease risk secondary to environmental exposures P.I.: Beverly Koller, Associate Professor of Genetics
Project Title: Interaction between infectious disease and environmental exposure P.I.: Kun Lu, Assistant Professor, and Zhengfa Zhang, Research Assistant Professor, Department of Environmental Sciences and Engineering
Project Title: Defining MAGEA4-RAD18 as a Novel Mutagenic Driver of Environmental Carcinogenesis P.I.: Cyrus Vaziri, Ph.D. Co-Is: Di Wu, Ph.D., Department of Periodontology, UNC School of Dentistry; Scott Williams, Ph.D., Department of Pathology & Laboratory Medicine, UNC SOM
Project Title: Etiologic heterogeneity of bladder cancer: Defining the molecular profile of low- grade, non-muscle invasive tumors P.I.: Andrew Olshan, Professor of Epidemiology Co-Is: William Kim, MD, Department of Medicine, UNC School of Medicine; Katherine Hoadley, PhD, Department of Genetics, UNC School of Medicine
Project Title: Non-Invasive Sampling Techniques to Assess Potential Health Disparities in Environmental Triggers of Asthma P.I.: Ilona Jaspers, PhD, Professor of Environmental Science and Engineering/Professor of Pediatrics Co-Is: Michelle Hernandez, MD, Pediatrics; Allison Burbank, MD, Pediatrics

