



History of CEHS Supported Pilot Projects

PILOT PROJECTS PROGRAM 2022-2023
<p>Project Title: Understanding the Impacts of Natural Disasters on Disruptions to Healthcare Delivery in Eastern North Carolina: Identifying Community Stakeholder Priorities</p> <p>PI: Jennifer Lund, PhD, Associate professor, Department of Epidemiology and UNC Lineberger Comprehensive Cancer Center</p> <p>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</p>
<p>Project Title: Listening to and Understanding Farmworker Values and Priorities Related to Individual-Level Extreme Heat-Quantifying Research</p> <p>PI: Max Cawley, Program Manager, Public Engagement with Science – Museum of Life and Science (Cawley)</p> <p>PI: Lariza Garzón, Executive Director, Episcopal Farmworker Ministry, Episcopal Farmworker Ministry</p>
<p>Project Title: Assessing How Measured and Perceived Water Quality Influence Water Use Among Private Well Owners in Sampson County</p> <p>PI: Sherri White-Williams, Co-founder and Board Chair, Environmental Justice Community Action Network (EJCAN)</p> <p>PI: Courtney Woods, Assistant Professor, Department of Environmental Sciences and Engineering, Gillings School of Global Public Health</p>
<p>Project Title: Creating robust disease trajectories to test when environmental factors could alter disease progression</p> <p>PI: Tanya P. Garcia, Associate Professor, Biostatistics, Gillings School of Public Health</p>
<p>Project Title: Environmental risk factors for amyotrophic lateral sclerosis</p> <p>PI: Giulia Fragola, Ph.D., Research Associate, Department of Neurology, School of Medicine</p> <p>PI: Todd Cohen, PhD, Associate Professor, Department of Neurology, School of Medicine</p>
<p>Project Title: Establishing the role, and mechanistic basis, of PFAS-induced resistance to platinum-based chemotherapy in metastatic ovarian cancer</p> <p>PI: Imran Rizvi, Ph.D., Assistant Professor, Joint Department of Biomedical Engineering</p> <p>Collaborator: Bae Jump, Victoria; M.D., Ph.D.; Professor and Fellowship Director, Division of Gynecologic Oncology, Department of Obstetrics & Gynecology, UNC School of Medicine</p>
<p>Project Title: Environmental Influences on Early Life Inflammation-related Buccal Cell DNA methylation</p> <p>PI: Chantel L. Martin, PhD., Assistant Professor</p> <p>Collaborator: Anne Starling, Assistant Professor, Epidemiology/Gillings School of Global Public Health</p>
<p>Project Title: Ozone-induced dysregulation of ion transport and surface hydration in airway epithelia</p> <p>PI: Martina Gentsch, PhD, Associate Professor, Pediatrics-Pediatric Pulmonology/School of Medicine</p> <p>Collaborator: Samir Kelada, PhD, Associate Professor, Genetics/School of Medicine</p>

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**

<p>Project Title: Effect of Acute Ozone Exposure on Restenosis Rates after Vascular Interventions P.I.: Edward Bahnson, Assistant Professor of Surgery Co-Is:</p>
<p>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>
<p>Project Title: Defining the Defining the Upper Respiratory Tract Immune Response in Novel Coronavirus 2019 (COVID-19) 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) PI: Jada L. Brooks, MSPH, RN, PhD, FAAN, Assistant Professor, School of Nursing Co-sponsor: Institute for Environmental Health Solutions</p>
<p>Project Title: Residence time and viability of coronavirus in airborne respirable particles in public spaces PI: Karsten Baumann, PhD, Assistant Professor, Department of Environmental Sciences and Engineering Co-Is: Barbara Turpin, Jason Surratt, Glenn Morrison, Mike Fisher, Jill Stewart, Ralph Baric 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.I.: Lawrence Engel, Associate Professor of Epidemiology Co-I: Jackie MacDonald</p>
<p>Project Title: The placental exposome: a driver of epigenetic regulation and preeclampsia P.I.: Julia Rager, Assistant Professor of Environmental Science and Engineering 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.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.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.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.I.: Jason D. Surratt, Professor, Environmental Sciences and Engineering (ESE)</p>

Project Title: Evaluating early life pyrethroid exposure and sleep disruption in autism spectrum disorder
P.I.: Graham Diering, Ph.D. Assistant Professor Cell Biology and Physiology

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.I.: Mark Shen, Ph.D. Assistant Professor of Psychiatry, UNC

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

<p>Project Title: Development of a structural-functional optical imaging platform for environmental exposure studies in an organotypic model of the mammary gland.</p> <p>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.</p>
<p>Project Title: Airway Extracellular Vesicle MicroRNA Profiling in Ozone-Induced Asthma</p> <p>P.I.: Samir Kelada and Gregory J. Smith, Ph.D, Department of Genetics</p>
<p>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> <p>P.I.: David Richardson, PhD, Associate Professor, Epidemiology Department</p>
<p>Project Title: Identifying the Effects of Environmental Toxicant Exposure on miRNA-regulated Adrenomedullin in the Development of Preeclampsia</p> <p>P.I.: Kathleen M. Caron, Professor and Chair of the Department of Cell Biology and Physiology, SoM</p>
<p>Project Title: Alleviating Environmental Toxin Damage via the Gut Microbiota.</p> <p>P.I.: Matthew R. Redinbo, Kenan Distinguished Professor, Department of Chemistry, College of Arts & Sciences, and Biochemistry, Microbiology, Genomics, School of Medicine.</p>
<p>Project Title: Environmental Impacts on early Brain Development.</p> <p>P.I.: Stephanie M. Engel, PhD, Associate Professor of Epidemiology</p> <p>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.</p>

LIST OF PROPOSALS SUBMITTED TO THE PILOT PROJECTS PROGRAM 2016-2017
<p>Project Title: Using CRISPR/Cas9 Technology to Establish the Role of NRF2 as a Driver of Isoprene SOA-Induced Genomic Stress Response</p> <p>P.I.: Rebecca Fry</p> <p>Co-PIs: Jason D. Surratt; William Vizuete, Department ESE</p>
<p>Project Title: Chemical Mechanism of Ozone-Induced DNA Damage</p> <p>P.I.: Zhenfa Zhang, Research Assistant Professor, Environmental Science and Engineering</p>
<p>Project Title: Profiling an endocrine disruption model for risk assessment of epigenetic outcomes</p> <p>P.I.: Folami Ideraabdullah, Assistant Professor, Department of Genetics, Department of Nutrition, UNC-CH Nutrition Research Institute</p>
<p>Project Title: Impact of common African American SULT polymorphisms on disease risk secondary to environmental exposures</p> <p>P.I.: Beverly Koller, Associate Professor of Genetics</p>
<p>Project Title: Interaction between infectious disease and environmental exposure</p> <p>P.I.: Kun Lu, Assistant Professor, and Zhengfa Zhang, Research Assistant Professor, Department of Environmental Sciences and Engineering</p>
<p>Project Title: Defining MAGEA4-RAD18 as a Novel Mutagenic Driver of Environmental Carcinogenesis</p> <p>P.I.: Cyrus Vaziri, Ph.D.</p> <p>Co-Is: Di Wu, Ph.D., Department of Periodontology, UNC School of Dentistry; Scott Williams, Ph.D., Department of Pathology & Laboratory Medicine, UNC SOM</p>

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