Yolton, Ryan, Cecil earn 5-year, $5 million R01 Award

CEG Internal Advisory Board member Kimberly Yolton, PhD, Professor and Director of Research Section, General and Community Pediatrics, Cincinnati Children’s Hospital Medical Center, and fellow CEG members Patrick H. Ryan, PhD, MS, Professor of Pediatrics, and Kim Cecil, PhD, Professor in the Department of Radiology, have received a new NIEHS R01 award: Longitudinal Impact of Air Pollution on Mental Health and Neuroimaging Outcomes during Adolescence in the Cincinnati Combined Childhood Cohorts (C4). R01 ES031621. Project start-end 3/3/2021–12/31/2025, total 2021 funding $1.1 million.

The team will use existing longitudinal data from the Cincinnati Childhood Allergy and Air Pollution Study (CCAAPS) and the Health Outcomes and Measures of the Environment (HOME) Study to address the hypothesis that exposure to air pollution during critical periods of brain development, including adolescence, is associated with adverse mental health outcomes. Both prospective cohorts have been followed from birth and evaluated with concordant measures of mental health and neuroimaging at age 12 years. The team will conduct new follow-up at age 18 years to assess the onset and persistence of mental health outcomes through adolescence and apply validated models for PM2.5 and TRAP to characterize air pollution exposure from conception through age 18 years. The team also will acquire novel neuroimaging outcomes, including brain-amino-butyric acid and glutathione concentrations accompanied by anatomical and functional magnetic resonance imaging.

The team aims to determine the association between exposure to PM2.5 and TRAP during distinct developmental periods and the onset and persistence of mental health outcomes in adolescence; the association between exposure to PM2.5 and TRAP during distinct developmental periods and neuroimaging outcomes in late adolescence; and whether changes in brain volume, organization, metabolism, and function mediate associations between PM2.5 and TRAP exposure and mental health outcomes.

Recent Publications


Transient BPA release in Tritan drinking bottles has been reported and is likely due to surface contamination in the manufacturing process. In an important discovery for consumers, this study by CEG member Hong-Sheng Wang, PhD, et al. found that dishwashing -- versus handwashing with soap and water or mere rinsing -- was effective in eliminating BPA contamination.