

News at a Glance

August 23, 2018

CEG

Center for Environmental Genetics



Funded by NIEHS award P30 ES006096

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Save These Dates

Friday Sept 14, Kettering Research Building Atrium, 1:00-2:00 PM: Expert Panel & Ice Cream Social: **Reviewing Manuscripts for Journals: Perspectives from Basic Science, Clinical Medicine and Epidemiology**. RSVP required for ice cream\sherbet; click [here](#).

Weds Sept 19: Science Cafe: **Characterizing Air Pollution and its Health Effects in Cincinnati**, with Pat Ryan, PhD. Details [here](#).

The journal *EPIGENETICS* has published work by **Dr. Kelly Brunst**, an assistant professor of epidemiology and a CEG New Investigator Awardee (2018). Brunst and colleagues have used an epigenome-wide approach to study maternal stress and changes in DNA methylation of specific genes regulating placental function and, in turn, fetal development. Applying the revised Life Stressor Checklist (LSC-R) survey to a sample of more than 200 women, the team found changes in DNA methylation for 112 CpGs. The team also observed three clusters with differential methylation in response to high maternal lifetime stress. Lysine degradation appeared to be the most significant pathway associated with a mother's lifetime stress exposure. Lysine is an α -amino acid active in the biosynthesis of proteins and must be obtained from the human diet, since the human body cannot synthesize lysine. Lack of lysine can increase one's risk of developing anemia, impair the metabolism of fatty acids, and cause protein-energy deficiency, among other concerns. The findings by Dr. Brunst and colleagues are helping to illuminate some of the mechanisms by which adverse health outcomes develop in children born to mothers with increased lifetime stress exposure.



Brunst KJ, Tignor N, Just A, Liu Z, Lin X, Hacker MR, Bosquet Enlow M, Wright RO, et al. (2018). Cumulative lifetime maternal stress and epigenome-wide placental DNA methylation in the PRISM cohort. *Epigenetics*. 2018 Jul 12. [PMID: 30001177](#).

CEG Investigators Earn Major Research Funding Awards

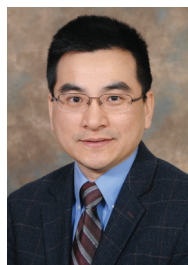


CEG Deputy Director **Susan M. Pinney, PhD**, and co-PI **Frank Biro, MD**, have received an R01 grant award from NIEHS for their **Longitudinal Study of Endocrine Disrupting Chemical Exposure and the Early Hormonal Milieu of Girls around the Time of Thelarche** (R01ES029133, \$394,748 total funds; 8/15/18 - 06/30/19). Pinney also recently received an R03 award for the study, **Headaches and Migraines: Pubertal Parameter and Hormone Predictors in Adolescent Girls**, from the National Institute of Child Health and Human Development (R03HD094236, \$86,674, 08/07/18 - 07/31/19).



CEG Associate Director **Alvaro Puga, PhD**, a Fellow of the American Association for the Advancement of Science (AAAS) will deliver the Keynote Address at the **2nd International Ah Receptor Symposium (AhR 2018)** in Paris, France, August 28-31.

Shouxiong Huang, PhD, an assistant professor in the UC Division of Environmental Genetics & Molecular Toxicology and a 2017 CEG pilot project awardee, has co-authored a meta-analysis in the journal of *Chronic Disease and Translational Medicine*, on air pollution and the etiology of respiratory disease. The article explores epidemiological evidence pointing to an association between pre- or peri-natal exposure to air pollutants and adverse birth outcomes such as preterm birth, lower birth weight, and lung developmental defects. The article further describes mechanistic evidence that supports the idea that air pollutants affect various cellular and molecular targets at early life stages.



Kim D, Chen Z, Zhou LF, **Huang SX**. Air pollutants and early origins of respiratory diseases. *Chronic Dis Transl Med*. 2018 Jun 7;4(2):75-94. PMID: 29988883. [PMCID: PMC6033955](#).

More Calendar Dates to Note

Thurs October 11: Third Annual Children's Environmental Health Summit, co-sponsored by the Kentucky Population Health Institute, the Kentucky Department of Public Health, and the Community Engagement Core of the Center for Environmental Genetics, et al. Georgetown College Conference Center, Georgetown, KY. Click [here](#) for details.

Friday November 2: CEG Annual Research Symposium, 9:00 AM - 2:30 PM, Kettering Research Building. Showcasing the Return on Investment in CEG Awardees.

