

UCSF Pregnancy Exposures to Environmental Chemicals (PEEC) Children's Center

The PEEC Children's Center is dedicated to improving children's health by identifying and preventing harmful environmental chemical exposures that occur during pregnancy. We conduct research to learn how exposure to environmental chemicals during pregnancy can impact healthy human development and whether this impact is magnified by exposure to chronic stress. We translate our findings into prevention-oriented action in clinical and policy arenas.

The PEEC Children's Center's projects include:

Project 1: The Impact of Environmental Chemicals on Early Placental Development

A healthy pregnancy starts with a healthy placenta, as the placenta orchestrates human development and nurtures fetal growth and may have a role in determining chronic disease later in life. Project 1 studies cells in a laboratory to learn whether and how environmental chemicals interfere with the healthy development of the placenta very early in pregnancy. We are researching whether exposure to environmental chemicals can interfere with the genes in placental cells that direct human development or can have other harmful impacts on placental cell function.

PIs: Michael McMaster and Susan Fisher. Other Key Personnel: Joseph Costello.

Project 2: The Impact of Environmental Chemicals on Mid-Gestational Placental Development

Healthy prenatal development starts with an *in utero* environment that is free of harmful environmental chemical exposures. Project 2 demonstrates an innovative chemical biomonitoring approach that ultimately can identify all of the chemicals to which pregnant women and their fetuses are exposed. It is also the first human study to investigate whether exposure to environmental chemicals has adverse effects on placental development that may lead to adverse effects on fetal development during the first two trimesters of pregnancy.

PIs: Tracey Woodruff and Michael McMaster. Other Key Personnel: Roy Gerona, Saunak Sen, June-Soo Park.

Project 3: Effects of Environmental Chemicals and Chronic Psychosocial Stress on Fetal Growth

A healthy childhood starts with healthy prenatal development, and an important indicator of healthy prenatal development is a normal birth weight baby. Project 3 evaluates how environmental chemicals and chronic psychosocial stress, due to factors such as poverty, food insecurity and discrimination, affect fetal growth and whether these factors explain, at least in part, current racial, ethnic and socioeconomic differences in birth weight.

PIs: Rachel Morello-Frosch, Marya Zlatnik and Naomi Stotland. Other Key Personnel: Roy Gerona, Saunak Sen, June-Soo Park.

Community Outreach and Translation Core (COTC)

The COTC will connect the PEEC Children's Center's researchers to an expanding community of children's health advocates, research scientists, reproductive and pediatric health care providers, patients, policy makers and the public. The COTC communicates key scientific findings to these audiences with the specific goals of advancing health care and prevention-based public policy.

Core Director: Patrice Sutton. Center Children's Health Specialist: Naomi Stotland. Other Key Personnel: Robert Gould.