

Center for Environmental Research and Children's Health

The mission of the Center for Environmental Research and Children's Health (CERCH) is to understand and reduce the risk of environmental threats to low-income children's health, locally and globally.

CERCH is world-renowned for examining and reducing environmental threats to children from economically disadvantaged families. Our work informs public policy at state, national, and international levels. Through community partnerships for research, education and capacity building, we identify key environmental inequities and generate sustainable solutions.

Protecting Children from Poisons – Reducing Exposures to Californian Children.

Our work provides scientific foundations to inform policy on poisons in our environment. CERCH research was instrumental in the State's groundbreaking 2019 decision to phase out chlorpyrifos, a dangerous neurotoxic pesticide. We provided expert testimony to the Senate Environmental Quality Committee to win reduced pesticide use near schools and childcare centers the state. Our research on flame retardants helped Governor Brown reform California's furniture flammability standards, reducing chemical flame-retardant use while maintaining fire safety.

Our groundbreaking work in childcare facilities also helped the State keep flame retardants out of nap mats used by young children, who are particularly vulnerable to harmful chemicals. Our work is used by international agencies such as the World Health Organization to protect health.

"Starting today, everything will change. I learned techniques on how to protect my children from pesticides exposure, my family will benefit in addition to people of my community."

- CHAMACOS trainee

Research

We lead the way in understanding children's exposure to poisons in the environment and their effects on health. Pesticides, flame retardants, heavy metals, and hormone disruptors in plastics, cosmetics, and cleaning products are some of the chemicals we work on. Our breakthrough findings show that exposure to these chemicals can increase the risk of neurodevelopmental disorders such as autism and ADHD, early puberty, reduced fertility, obesity, and cancer. Our research suggests early childhood adversity and neighborhood stress may interact to make the impacts of chemical exposures worse. Our findings also show that stress about deportation may contribute to poorer mental health in U.S. citizen youth living in immigrant communities.

CHAMACOS (The Center for the Health Assessment of Mothers and Children of Salinas) is our landmark study. It is the longest running longitudinal birth cohort study of pesticides and other chemical exposures among children in a farmworker community. CHAMACOS means "little children" in Mexican Spanish, which reflects the population we serve. Starting in 1999, we enrolled pregnant women living in California's Salinas Valley, one of

the most productive farming regions in the nation. We have followed these families for 20 years, measuring chemical exposures and assessing children's growth, health, and development. More than 600 children continue to participate in the study and will be followed until adulthood.

We have spearheaded cutting edge studies in other communities in the U.S. from populations exposed to environmental disasters such as living near an industrial explosion or around the World Trade Center. We have also investigated environmental exposures in the villages in South Africa, the fields of Costa Rica and Chile, and the factories of China.

Over the last 20 years we have obtained ~\$40,000,000 in extramural funding to support research and health education activities, including establishment of a biorepository storing over 350,000 samples to support scientific discovery. This biorepository is an invaluable resource for future generations of scientists. Sources of funding include NIEHS, EPA, NIH, NIOSH, Cal EPA (CARB, OEHHA, CDPR), UC Mexus, and the UC Breast Cancer Research Program.

Training

We train the next generation of environmental health researchers and advocates. CERCH has prioritized long-term empowerment, engaging youth in STEAM education and community action. These youth are not only UC Berkeley students, but include dozens of low-income high school youth of diverse backgrounds. We engage them as equal partners to conduct high-impact health research in their own backyards. With our support, the youth harness scientific findings, advance interventions and educate community members, the media, and policy makers.

Community empowerment

We work *with* and not *on* communities affected by environmental poisons. We engage our communities as partners in research, collaborating to identify environmental inequalities and solutions. Examples include cutting edge pesticide research and education campaigns such as educational murals, a radio novella series, and pesticide application courses.

Advocacy

Our work has major policy implications. We have published hundreds of scientific papers in top journals supporting policies to reduce chemical exposures to children in California, across the U.S., and globally. We have been featured in major media outlets, including the New York Times, New York Magazine, The Nation, and The Guardian, and intensively trained dozens of low-income youth on environmental health research and advocacy. We extensively mentor youth, and help them prepare college applications; nearly all go on to college, many in environmental or health sciences. We have given more than a thousand presentations, educating more than 30,000 stakeholders and community members. To generate large scale change, we provide public comment on

key legislation, testify before government bodies, and advocate for members of congress and other leaders to translate findings into sound, science-based health regulations.

The Future

We will continue our work to improve the health of children, locally and globally. We will work on many fronts: in the field, in the laboratory, and in the classroom here and abroad.

In the field. We plan to bring cutting edge neuroscience and neuroimaging to understand the impact of environmental toxicants on the developing brain.

In the laboratory. We will study the role of the microbiome, metabolomics, and epigenomics as mechanism of action of environmental poisons. Infrastructure investments will protect 20 years of rich data and biological samples and allow investigators, staff and students to transform raw data into actionable public health guidance and policy for the years to come.

In the classroom. We aim to bring STEAM (Science, Technology, Engineering, the Arts, and Math) education and engagement programs to California youth and educators. We will connect educators with cutting-edge research methods and findings, demonstrate the connections between human health and the environment, and inform California Next Generation Science Standards (NGSS) for middle and high schools. We will enhance curriculum with project-based learning, leveraging state of the art scientific grade equipment to help students synthesize complex scientific concepts using arts-based inquiry and present deliverables to enhance education of the broader community. Ultimately, we will build an environmental health training institute to bring these tools to California teachers, students, and beyond.

Please consider [making a gift of any size](#) to support the CERCH Fund, helping us improve the health of future generations!

THANK YOU!

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CERCH**