



Childhood Cancer
& the Environment



"In our work on childhood cancer, we have discovered that clinicians want to know that the science supports a sound basis for including environmental risk factors in discussions, and they want clear action items they can implement in practice."

—Mark Miller, MD, MPH, program Lead

A National Program* to Prevent Childhood Cancer Related to the Environment

*Information about the program below is not exhaustive, but provides a snapshot of CC&E achievements



WHAT WE DO & WHO WE ARE:

The **Childhood Cancer & the Environment Program** is a national program from the PEHSU Network to educate pediatric health care providers, parents, and caregivers about **environmental influences on childhood cancers**, such as leukemia. The program also **educates clinicians and families** on practical ways to both prevent childhood cancer as well as to **improve treatment outcomes and survivorship**.

The **Western States PEHSU** (based out of UCSF) leads the program, which began in 2022. There are **10 Champions** (1 in each PEHSU region) who work to increase environmental health literacy on childhood cancer among health care providers and communities. **Leading childhood cancer researchers** inform the content of the program. See who's involved below:



Mark Miller, MD, MPH
UCSF; WSPEHSU Region 9; Childhood Cancer & the Environment program Lead



Catherine Metayer MD, PhD, MPH, UC Berkeley, Leading Childhood Cancer Researcher



Joe Wiemels PhD, USC, Leading Childhood Cancer Researcher



Alan Woolf, MD, MPH, FAAP, FACMT, FAACT
Harvard Medical School, PEHSU Region 1 Champion



Perry Sheffield, MD, MPH, Icahn School of Medicine at Mount Sinai, PEHSU Region 2 Champion



Hannah Thompson, MD, MPH, Icahn School of Medicine at Mount Sinai, PEHSU Region 2 Faculty



Jinbing Bai, PhD, MSN, RN, FAAN, Emory University PEHSU Region 4 Champion



Emily Moody, MD, MHS, University of Minnesota Health, PEHSU Region 5 Champion



Erica Guerrero, MS, MPAS, PA-C, Texas Tech Health Sciences Center El Paso, PEHSU Region 6 Champion



Nikki Wood, DO, Children's Mercy Hospital, PEHSU Region 7 Champion



Laurie Halmo, MD, Children's Hospital Colorado, PEHSU Region 8 Champion



Vickie Leonard, RN, FNP, PhD, UCSF; WSPEHSU Region 9 Champion



MaryKate Cardon DNP, CPNP-PC, University of Washington, PEHSU Region 10 Champion



Omar Shakeel, MD, Baylor College of Medicine, Texas Children's Hospital, Program Partner



AN EXAMPLE OF WHAT WE DO:

"Training this group (promotores de salud and community health workers) is a catalyst for growth, learning, and development, **creating ripples of positive change** in the communities they serve."
- **Erica Guerrero, MS, MPAS, PA-C, PEHSU Region 6 Champion**



WHY WE STARTED: Research in the last 25 years has greatly expanded our understanding of risk factors for childhood cancer. This program grew out of Dr. Mark Miller's environmental health literacy work at UC Berkeley's Center for Integrative Research on Childhood Leukemia in the Environment in 2022. Funding support via **Trevor's Law**, brought about by the advocacy of brain cancer survivor Trevor Schaefer, made the program possible. A major goal has been to improve pediatric care providers' knowledge about environmental risks for childhood cancers **including exposure to pesticides, traffic related air pollution, tobacco, and solvents**. We also want to inform providers as well as their patients and the greater community about protective factors, including breast feeding, adequate folate early in pregnancy, and attending daycare. Community outreach has also been a focal point, with program Champions conducting trainings for promotores de salud and other community health workers. We have created a wide range of educational materials in English and Spanish to support the workshops and trainings. **This program fills a gap in education for health care professionals and communities about the effects of the environment on childhood cancers.**



AN EXAMPLE OF THE PROGRAM'S IMPACT:

In February 2024, Baylor College of Medicine/Texas Children's Hospital (BCM/TCH) hosts a **full day workshop** on Children's Cancer & the Environment in Houston as a kickoff event to develop a pediatric cancer and the environment consultative service.

Dr. Shakeel, with Dr. Nicole Wood (pediatric oncologist at Mercy Children's Hospital Kansas City) and Drs. Alan Woolf, Hannah Thompson, and Mark Miller (PEHSU faculty), create a **childhood cancer specific environmental health history intake form for clinicians**.

"I will start taking better environmental histories of families when they come in for consult and begin discussing **environmental exposure risk with families** and ways that they can mitigate future risk."

-BCM/TCH Workshop Attendee



Dr. Shakeel, director of the pediatric oncology survivorship clinic at BCM/TCH, conducts a needs assessment that finds that pediatric oncology faculty and staff are receptive to having a **consultative service to help providers address environmental health questions**.

In March 2025, program Champion Nikki Wood and Program Lead Mark Miller host a **full day workshop** with attendees from Children's Mercy Hospital in Kansas City. They also decided to develop a consultative service, housed in the pediatric oncology department.



IN THE MEDIA



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