

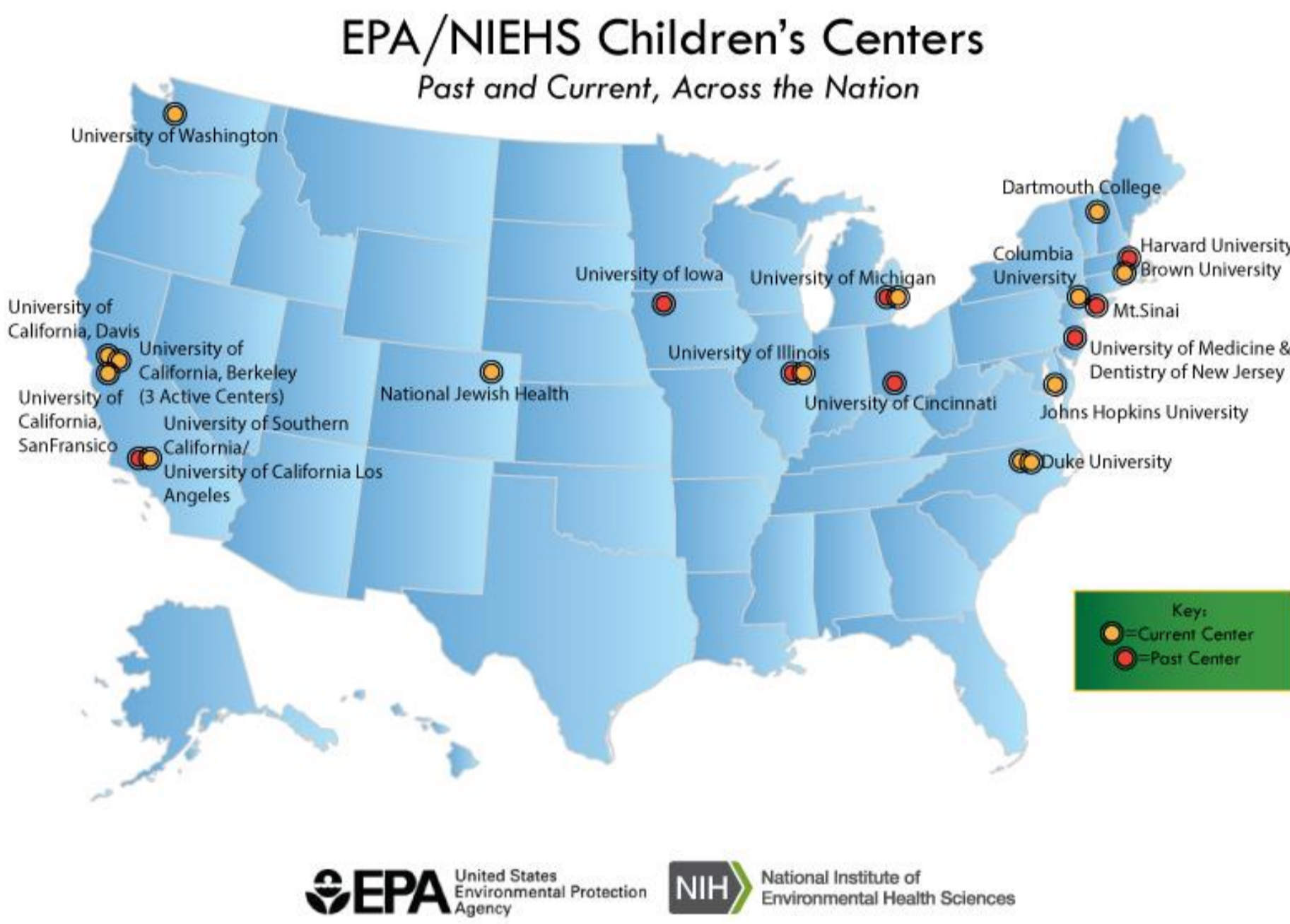
# The EPA/NIEHS Children's Environmental Health and Disease Prevention Research Centers – SHC 2.63

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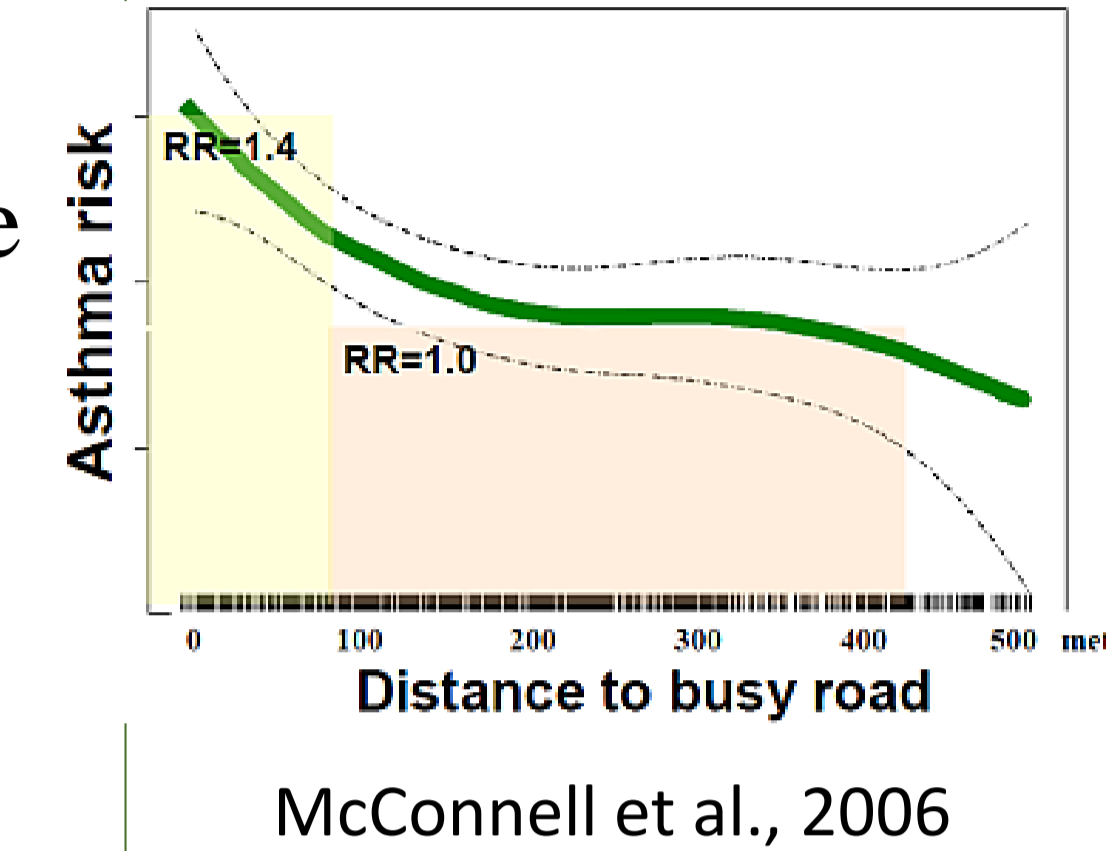
## Purpose/Utility of Research

The mission of the jointly funded EPA/NIEHS Children's Centers is to protect children from environmental threats and promote their health and well-being in the communities where they live, learn, and play. Since 1998, more than 20 Children's Centers and 40 awards have been made.



## Highlights - Asthma, allergy and children's health

- Traffic-related air pollution at schools and home may contribute to development of asthma in children. Residence within 75 meters (250 feet) of a major roadway associated with increased risk of asthma. *McConnell et al., 2006, 2010*
- Children exposed to higher levels of phthalates found in personal care and plastic products have elevated risk of asthma-related airway inflammation. *Just et al., 2012*



## Adverse health effects linked to flame retardant (PBDE) exposure

- Children with higher PBDE cord blood levels scored lower on mental and physical development tests at 12-48 and 72 months *Herbstman et al., 2010*
- Poorer attention, motor skills, and IQ scores in children *Eskenazi et al., 2012*



## Application & Translation



With more than 1,000 peer-reviewed publications, Children's Centers research cited as evidence in policy decisions to protect human health by limiting exposure to air pollution, pesticides and endocrine-disrupting chemicals.

**Columbia Children's Center** research findings and testimony on integrated pest management influenced the passing of:

- NYC Pesticide Reduction Law (Intro 329A), 2007
- Neighborhood Notification Law (Intro 328A), 2007
- NYC Health Code. Article 151, 2008

**EPA proposal for strengthened worker protection standard** for pesticides to protect agricultural workers and vulnerable groups including farmworker families cites Children's Centers research from UW and UC Berkeley/Eskenazi.



## Intended End Users

### Research Community

- e.g., Dartmouth College Children's Center

### Decision Makers

- Federal, State and local (e.g., FDA arsenic and rice studies)

### General Public

ConsumerReports

npr



## Lessons Learned

### Los Angeles Times

Proximity to freeways increases autism risk, study finds  
More research is needed, but the report suggests air pollution could be a factor.

December 16, 2010 | By Shari Roan, Los Angeles Times  
Children born to mothers who live close to freeways have twice the risk of autism, researchers reported Thursday. The study, its authors say, adds to evidence suggesting that certain environmental exposures could play a role in causing the disorder in some children.

"This study isn't saying exposure to air pollution or exposure to traffic causes autism," said Heather Volk, lead author of the paper and a researcher at the Saban Research Institute of Children's Hospital Los Angeles. "But it could be one of the factors that are contributing to its increase."



- Living near a freeway while pregnant and around the time of birth is associated with increased risk of autism in children. *Volk et al., 2011*
- Prenatal exposure to PAHs is associated with behavioral issues e.g., anxiety, depression, and attention problems. *Perera et al., 2012*
- PCB-95 exposure modulates calcium-dependent signaling pathway for growth of neuron dendrites in brain. *Wayman, 2012*
- Specific maternal antibodies that target fetal brain proteins or antigens linked to maternal autoantibody-related (MAR) autism. *Braunschweig et al., 2013*

## Connection to SHC Portfolio

The EPA/NIEHS Children's Centers research results in impactful research through outreach, communication and translation of research findings into sustainable strategies to reduce children's environmental exposures and decrease the incidence of environmentally-related childhood diseases.

This work supports the development of a systems level approach to understanding children's environmental exposures, health and environmental diseases.