

# NEWS IN FOCUS

**POLICY** China is using artificial intelligence to pick grant reviewers **p.316**

**POLITICS** Intolerance and funding concern scientists ahead of Indian election **p.317**

**GENETICS** Russian government embraces gene editing **p.319**



**EVOLUTION** Elusive microbes upend ideas about the shape of the tree of life **p.322**

BRENDAN MCDERMID/REUTERS



Children in New York City are exposed to a wide range of environmental pollutants.

## EPIDEMIOLOGY

# US environment agency pulls out of child studies

*Decision could end more than a dozen long-term projects on kids' environmental health.*

BY SARA REARDON

The Columbia Center for Children's Environmental Health has tracked the lives of hundreds of children in New York City since 1998. Scientists have collected samples of blood, urine and even the air in children's homes, starting when participants were in the womb, to tease out the health effects of chemicals and pollutants. The centre's findings influenced New York City's decision in 2018 to phase out diesel buses, and its staff members

teach schools and community groups about the harmful chemicals and pollution that kids encounter each day.

Now, the future of the Columbia facility and a dozen like it is in doubt. The centres' grants from the US Environmental Protection Agency (EPA), which has provided half of their funding for two decades, will expire in July — and the agency has decided that it will not renew its support.

The programme's other government sponsor, the National Institute of Environmental Health

Sciences (NIEHS), says that it cannot replace the funding that the EPA has historically provided. Scientists at the children's centres are increasingly worried that the EPA's withdrawal will force them to shut down decades-long research projects.

Studies of this length are rare and valuable, because they can reveal associations between environmental exposures early in life and health problems years later. And the mix of threats that children face changes over time. "Twenty years ago, what we were studying ►

► is not the same as what we're studying today," says Ruth Etzel, a paediatrician on leave from the EPA who specializes in children's environmental health. "We have to study children now, in their communities."

Many environmental-health researchers see the EPA's decision to cut funding for the children's centres as part of a push by President Donald Trump's administration to undermine science at the agency, which is responsible for the safety of US air and water.

"It works out perfectly for industry," says Tracey Woodruff, who runs the children's centre at the University of California, San Francisco. When weighing the harms of a chemical against its benefits, she says, "if EPA doesn't know, it counts for zero".

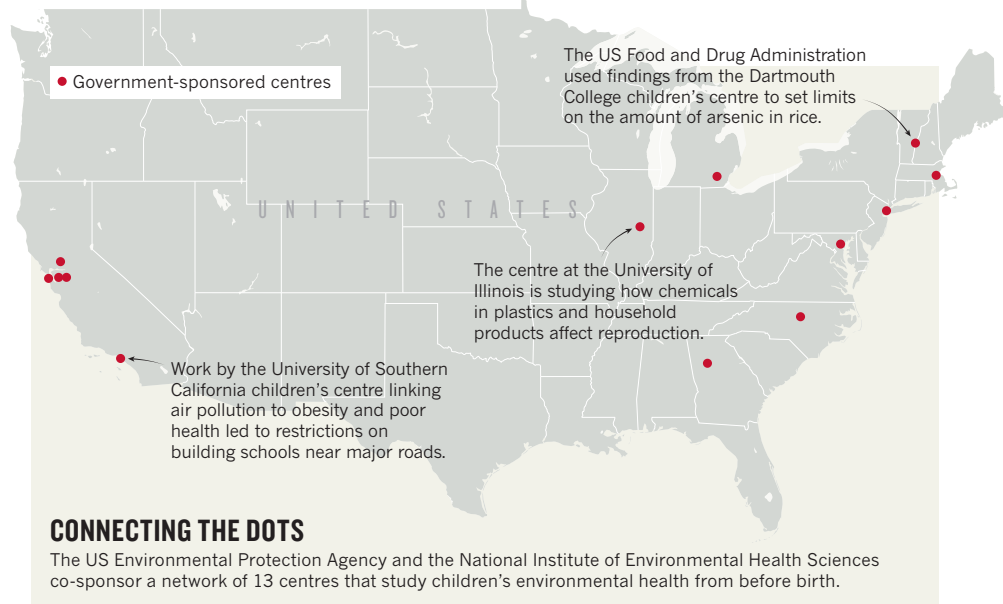
The EPA did not respond to multiple requests for comment on its plans for the children's centres or its work on children's environmental health more generally.

### HIDDEN LINKS

The 13 facilities supported by the EPA and the NIEHS are scattered in cities across the country and employ hundreds of researchers in disciplines such as toxicology, genetics and brain development (see 'Connecting the dots'). The centres' ability to follow people from before birth to adulthood has revealed surprising connections between common chemicals and health.

Research by the Columbia centre suggests that the widely used pesticide chlorpyrifos harms the development of children's brains. Chlorpyrifos is used to treat a broad array of food crops, and until 2001, it was legal in the United States for use indoors against insects such as cockroaches. In 2012, Columbia scientists reported that children who were exposed to high levels of the pesticide in the womb had lower IQs and altered brain structure compared to those with low exposure (V. A. Rauh *et al. Proc. Natl. Acad. Sci. USA* **109**, 7871–7876; 2012).

Last year, Hawaii became the first US state to ban agricultural use of chlorpyrifos — and



### CONNECTING THE DOTS

The US Environmental Protection Agency and the National Institute of Environmental Health Sciences co-sponsor a network of 13 centres that study children's environmental health from before birth.

cited the Columbia research. The centre's work is also at the heart of an ongoing lawsuit brought by environmental groups seeking to force the EPA to ban all uses of the pesticide.

"They're just jaw-dropping studies," says Lisa Satterwhite, a molecular geneticist with the children's centre at Duke University in Durham, North Carolina. "We could not have anticipated there would be this built-in natural experiment."

Each of the facilities also works with local groups to educate communities about the findings of their studies, many of which address environmental harms that disproportionately affect people in low-income neighbourhoods. "I cannot think of an equivalent network that could do the same work," says Aparna Bole, a paediatrician at Rainbow Babies and Children's Hospital in Cleveland, Ohio.

After the children's centres' long-term grants from the EPA and the NIEHS expire, the facilities will have until July 2020 to spend the remainder of the money. The additional cash that the NIEHS has scraped together will allow some of the centres to perform outreach, graduate students to finish dissertations and

the centres to wind down many of their other activities.

But Kimberly Gray, who manages the NIEHS's contribution to the centres, says that her agency cannot afford to support them on its own without making significant changes.

For now, she says, the NIEHS is trying to maximize the research that the centres have already completed, by supporting their community outreach, and looking for ways to keep their study cohorts going. The centres are also eligible to compete for NIEHS grants against other long-term epidemiological studies of all types.

Linda McCauley, who leads the children's centre at Emory University in Atlanta, Georgia, is spending her remaining money on community outreach. Grants from the US National Institutes of Health — the NIEHS's parent — or other funders could help her continue to do research, but the outreach programme at her centre has no other source of financial support.

"All these community stakeholders have been such critical partners for this work nationally and there's no funding," she says. "They're the ones being hurt the most." ■

SOURCE: NIEHS

### GRANTS

# AI is selecting reviewers in China

The tool is already saving time for the country's major grant funding agency.

BY DAVID CYRANOSKI

China's largest funder of basic science is piloting an artificial intelligence (AI) tool that selects researchers to review grant applications, in an attempt to make the process more efficient, faster and fairer. Some researchers say the approach by the National

Natural Science Foundation of China (NSFC) is world-leading, but others are sceptical about whether AI can improve the process.

Choosing researchers to peer review project proposals or publications is time-consuming and prone to bias. Several academic publishers are experimenting with AI tools to select reviewers and carry out other tasks. And a few

funding agencies, including some in North America and Europe, have trialled simple AI systems, some of which match keywords in grant applications to those in publications of other scientists to identify potential reviewers.

The NSFC is building a more sophisticated system that will crawl online scientific-literature databases and scientists' personal