



## National Healthy Schools Summit Report

# COVID, Climate, Children, and Schools

January 27-28, 2021

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## Acknowledgements

**We are deeply grateful to everyone who helped make the summit a reality.**

### **Sponsors**

First and foremost, we could not have done it without the summit sponsors whose logos appear below: thank you again!

### **Panelists and presenters**

We also extend our deep thanks to the panelists and presenters who generously shared their experiences, their expertise, and their ideas:

- Georges Benjamin, MD, Executive Director, American Public Health Association
- Laurie G. Combe, MN, RN, NCSN, President, National Association of School Nurses
- Curtis Cude, BS, Environmental Public Health Surveillance Program Manager, Oregon Health Authority
- Erika Eitland, MPH, ScD, Research Analyst, Perkins & Will
- US Senator Kirsten Gillibrand
- Esperanza Gutierrez, PhD candidate, RN, PHNA-BC, Rhode Island College School of Nursing
- Heather Jauregui, LEED AP BD+C, O+M, CPHC, Perkins Eastman
- Aaron Jobson, Principal and CEO, Quattrocchi Kwok Architects
- Melissa Jordan, MS, MPH, Director, Division of Community Health Promotion, Florida Department of Health
- Elisabeth Krautscheid, Managing Director, Collaborative for High Performance Schools
- Francine Locke, MS, Chief Sustainability Officer, County of Delaware, PA
- Mansel Adelbert Nelson, MS, Institute for Tribal Environmental Professionals
- Irene Nigaglioni, AIA, ALEP, President, IN2 Architecture
- Sean O'Donnell, FAIA, LEED AP, Perkins Eastman
- Janet A. Phoenix, MD, MPH, MS, Assistant Research Professor, Milken Institute School of Public Health, George Washington University
- Pamela Pugh, DrPH, MS, Vice President, Michigan State Board of Education
- Angana Roy, MPH, Senior Program Analyst, National Association of County and City Health Officials
- Randi Weingarten, President, American Federation of Teachers
- The Honorable Christine T. Whitman, President, The Whitman Strategy Group, Former Governor of New Jersey and US EPA Administrator, and Co-chair, The Aspen Institute K12 Climate Initiative

### **Volunteer facilitators**

We thank those who stepped up to be volunteer facilitators in the breakout rooms:

- Jeanie Alter, American School Health Association
- Claire Barnett, Healthy Schools Network
- Susan Goekler, Healthy Schools Network,
- Elisabeth Krautscheid, Collaborative for High Performance Schools

- Jeff Jones, Healthy Schools Network
- Francine Locke, County of Delaware, PA
- Linda Mendonca, DNP, Rhode Island College
- Mansel Adelbert Nelson, Institute for Tribal Environmental Professionals
- Nancy Vorsanger, Healthy Schools Network

### Support and technical assistance

Finally, our deepest thanks to Alex Naidoo, Healthy Schools Network program manager, who masterfully handled technical and organizational issues of the Zoom summit, and to Amy Murphy, our expert conference facilitator, for their invaluable efforts before and during the summit.

### Sponsors

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# COVID, Climate, Children, and Schools Virtual National Summit January 27-28, 2021

## Executive Summary

In January 2021, Healthy Schools Network hosted *COVID, Climate, Children, and Schools*, a facilitated national summit. Over two afternoons, more than 120 individuals heard from experts and considered new strategies and actions on the twin crises of COVID-19 and climate mitigation and resiliency in schools and the disproportional impacts on Black, Indigenous, and Latinx children. As the summit revealed, the two crises are intimately linked, especially as they impact the most vulnerable. Participants came from 25 states plus Washington, DC; they included representatives of federal agencies including the Environmental Protection Agency (EPA), the Centers for Disease Control (CDC), the Department of Education, and 65 other organizations.

The summit grew out of two earlier collaborations: a *Pandemic v. Schools* playbook for states to direct schools in creating and adopting infection prevention and control plans (co-released with 20 organizations) and a policy paper for the incoming Biden-Harris administration on how to “build back better” schools, endorsed by more than 20 organizations and delivered during the transition period to US EPA and the White House Council on Environmental Quality. Both build on public health policy statements adopted by the American Public Health Association. (See Appendix for the pandemic playbook, Biden policy paper, and APHA policies.)

Indeed, climate change and the pandemic have brought new attention to the dire conditions of the nation’s schools and schools’ lack of preparedness for both, especially to the terrible state of ventilation and indoor air quality. There are renewed calls at all levels for clean air and water, better ventilation and sanitation, and improved oversight of the nation’s K-12 schools. Also laid bare is the inequitable impact of the COVID and climate disasters: Black, Latinx, and Native American children are suffering disproportionately because the poorest schools are already in the worst condition and have the fewest resources to adapt or to recover.

As Pamela Pugh, vice president of the Michigan Board of Education, noted in the panel on equity and justice for children, Black students in her state are 70% more likely to live in a low-income area than whites, and 78% of children who have died of COVID during the pandemic are of color. In parts of predominately Latinx cities of Rhode Island, according to PhD candidate Esperanza Gutierrez, the pandemic has worsened already difficult conditions. Adults with jobs have to report for work, plus a large population of undocumented individuals do not seek medical care or access resources out of fear of deportation. And Mansel Adelbert Nelson of the Institute for Tribal Environmental Professionals, reported that in some Indigenous communities on the nation’s tribal lands, schools are the primary source of running water for the whole community.

Understanding that children are biologically and developmentally not just little adults and that schools are structurally and organizationally not just little offices, *COVID, Climate, Children, and Schools* brought together educators, public health and medical experts, architects, government officials, children’s environmental health advocates, and NGOs to consider a big question: How do we ensure equity and justice for children, especially children disproportionately affected by COVID and climate disasters? The first session, *Equity & Justice for Children*, addressed this question directly.

It was also central to the summit's technical sessions, all of which were followed by structured, facilitated breakout discussions:

- Build Back Better Schools - I: Indoor Air
- Build Back Better Schools - II: Climate Mitigation
- Environmental Public Health Systems for Children at Risk of or with Exposures in Schools
- Build Back Better Schools - III: Calming School Buildings

The primary focus of the summit was environmental quality inside the classroom. In more normal times, schools are where children spend a third of their young lives. Poor air quality, deferred or inadequate maintenance, misuse of cleaning products, lack of—or too much—sunlight, lead in school drinking water, siting: these all impact children's learning and behavior. The nation's asthma epidemic in poorly ventilated classrooms was, until the pandemic, the number-one cause of school absenteeism in many parts of the country.

Summit participants agreed that safe indoor air quality is a priority that has only increased as a result of COVID. In response to the nationwide push to reopen schools, several summit panels reviewed the current state of planning and design for healthy, energy-efficient classrooms. Elisabeth Krautscheid of the Collaborative for High Performance Schools (CHPS) introduced the concepts of schools becoming “zero net energy ready,” in line with state-level and nationwide efforts to greatly reduce the use of fossil fuels. Developing this theme in several workshops, a primary goal of the conference was to achieve “net positive educational environments” and to show that there is an opportunity to respond to the twin COVID and climate crises in ways that drive down operating costs *and* improve education outcomes.

The technical sessions tackled a wide range of interconnected issues. The sessions illustrated in so many ways how complex the COVID and climate issues are for all schools and their communities and for school children. Not only are there roles for public education and public health agencies, but also important roles for public environment, energy, and labor agencies at the federal and state levels. Clearly, strongly coordinated interagency programs are critical to operating schools and protecting children through and recovering from disasters.

In today's world, we face continuing and evolving health threats from an airborne infective virus and increasing numbers of superstorms associated with a warming climate. It is clear that deep preparation and recovery by K-12 schools and child care facilities that promote rapid, full reopening are essential for children's health, development, and education, and are essential for the well-being of their families and communities. Lessons learned: a national priority on school preparation and recovery efforts should be guided by carefully developed and communicated interagency strategies and supported by equitable funding adequate to the enormous task.

## Opening Remarks: Day 1, The Honorable Christine Todd Whitman

President, The Whitman Strategy Group, Former Governor of New Jersey and US EPA Administrator, and Co-chair, the Aspen Institute K12 Climate Initiative

Governor Whitman began by observing that there could not be a more important time to talk about COVID and climate, because the new administration wants to work on both issues. She noted all that children are missing when schools are closed and stressed the need for kids to safely resume in-person interaction. She also discussed the work of the Aspen Institute, citing its emphasis on school infrastructure. The message: as important as it is to get children back to school, we must give schools the tools to bring them back safely. That means prioritizing upgrades and repairs to improve school air, particularly in under-resourced communities, which will also save money.



Whitman cited the need to transition from gasoline and diesel school buses to electric vehicles and to address drinking water—another infrastructure issue, as many schools have lead pipes. She also stressed the need to look at career and technical education, starting with STEM education at the earliest levels. With job opportunities growing in the green energy sector, we need to look at how we prepare children for the job market of the 21<sup>st</sup> century.

**Whitman stressed the need for clear messaging on how a green and clean environment and a healthy economy do not conflict—that in fact a healthy economy *depends on* a clean environment.**

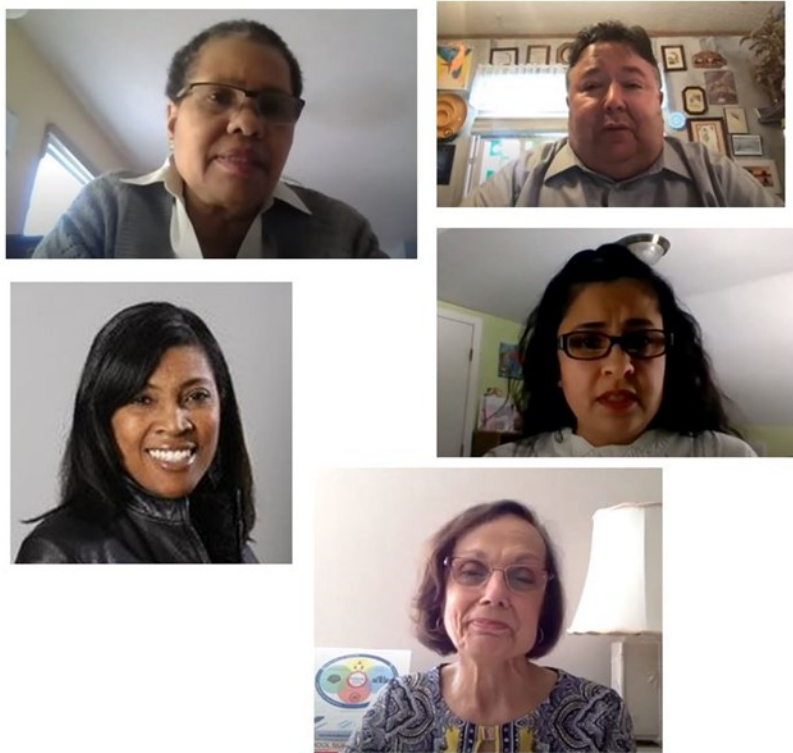
Responding to a question on how to best advocate for school infrastructure improvements,

Whitman stressed the need to listen to science, citing the new administration's willingness to do just that. She also stressed the need for clear messaging on how a green and clean environment and a healthy economy do not conflict—that in fact a healthy economy *depends on* a clean environment. This message must be delivered at the federal and state levels and reach school boards—all need to understand that a holistic approach benefits us all.

## Panel: Equity & Justice for Children

- Moderator: Janet A. Phoenix, MD, MPH, MS, George Washington University
- Pamela Pugh, DrPH, MS, Vice President, Michigan State Board of Education
- Laurie G. Combe, MN, RN, NCSN, President, National Association of School Nurses
- Esperanza Gutierrez, PhD candidate, RN, PHNA-BC, Rhode Island College School of Nursing
- Mansel Adelbert Nelson, MS, Institute for Tribal Environmental Professionals

This lead-off panel encapsulated the themes of the conference: COVID, climate, justice, and schools. Environmental health challenges are starker than ever, yet children do not face them equally—children of color suffer the worst impacts. The pandemic has shone a spotlight on this longtime injustice. Equity must be at the center of everyone’s work to overcome the effects of COVID, climate change, and all other environmental health hazards impacting children and their schools.



Pamela Pugh led off the discussion, offering several examples of disparate impacts and the failure to consider the needs of children at greatest risk. She pointed to a recent Wisconsin study of a school district that had been used to support the reopening of all schools. Yet the district was predominantly white and rural, with middle-income families and a low poverty rate. She also explained that at the height of the water contamination crisis in Flint, schools, unlike businesses, were told not to test their water regularly. Pugh also cited some alarming statistics: in Michigan, Black students are 70% more likely to live in a low-income area than whites. And 78% of children



who have died of COVID during the pandemic are of color. The ability of the country to return kids to school safely will depend on whether we address these inequities.

Laurie Combe offered observations based on her 27 years as a school nurse, stressing that safe school environments must include access to a school nurse. She noted that children of color and from under-resourced communities learn in the poorest conditions, exposing them to the widest array of health threats, including asthma, diabetes, mental health concerns, and obesity. Black children are four times more likely to be hospitalized with asthma and 10 times more likely to die of the disease than their white counterparts; meanwhile, children of color are more likely to live and attend schools near coal and other polluting plants. They are more likely to have elevated blood levels of lead and mercury.

The pandemic has amplified these disparities. Children of color face unequal access to testing and treatment and pressure to return to schools that lack rigorous mitigation measures. They are at increased risk of poor COVID-19 outcomes. The National Association of School Nurses holds that before schools can safely reopen, robust environmental protections must be in place and inequities addressed.

Esperanza Gutierrez spoke about challenges among Latinx populations, which are rapidly growing. The pandemic has worsened already difficult conditions, including unjust deportations. Adults with jobs have to report for work, plus a large population of undocumented individuals do not seek medical care or access resources out of fear of deportation. Non-English speakers struggle with in-home learning.

**The country's ability to return kids to school safely will depend on whether or not we address existing inequities.**

Gutierrez cited Central Falls, Rhode Island, as a stark example. Central Falls has the lowest-performing schools in the state. The city is densely

populated; two-thirds of its residents are Latinx, including many immigrants, most living in poverty. It leads the state in poverty and hospitalization rates. Fifty percent of the population has COVID. She cited the lack of progress in addressing these challenges and the need to provide services to keep everyone safe: school resources, food programs, and support for parents.

Mansel Adelbert Nelson has visited tribal schools across the nation. (There are 574 federally recognized tribes.) He has seen problems in old school buildings, many of which have deferred maintenance, and in brand-new facilities as well. He told a personal story: having to leave one new building after only 10 minutes because of its effects on his asthma. The school had no outside air coming in.

Nelson explained that Native American students have some of the lowest socio-economic indicators. Thirty percent of Navajo homes have no running water or electricity. Sometimes the only running water in a community is in the schools. But tribes are dependent sovereign governments, often with little or no control of the schools. In addition, schools have historically been used by the federal government to suppress native languages and destroy families and cultures. As a result, there is often an uneasy relationship between schools and families.

## Technical Session: Build Back Better Schools - I: Indoor Air

- Erika Eitland, MPH, ScD, Research Analyst, Perkins & Will

“Equitable K-12 schools start with the air that we breathe. When we build back better, indoor air must be part of that conversation,” began Erika Eitland, whose presentation explored threats to indoor air quality (IAQ), poor IAQ’s effects on health and learning, and steps to address COVID and other hazards in school air.

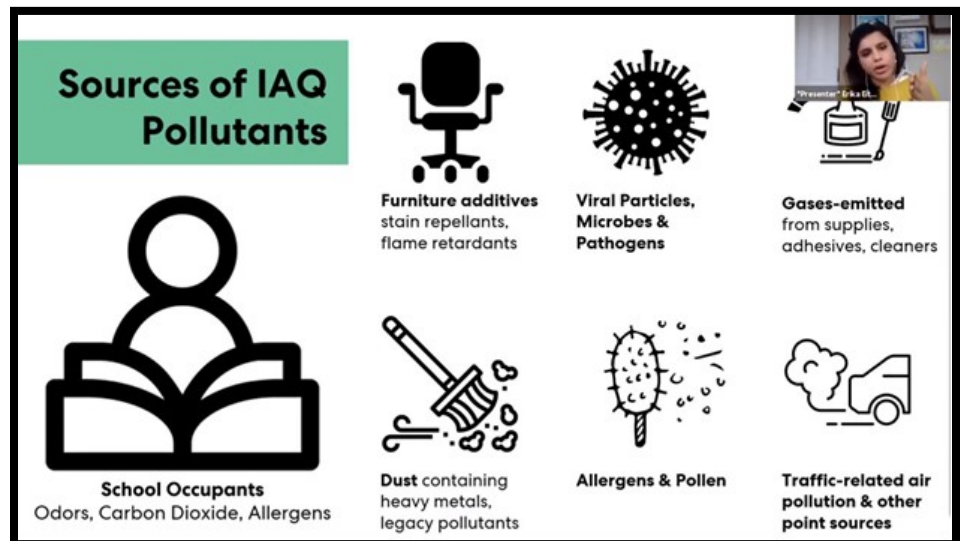
Eitland reminded attendees of the need for holistic thinking. The environmental health of schools is an environmental justice issue and an education crisis, so we must think across siloes. We have more than 30 years of data showing the effects of poor IAQ on children’s academic performance across many measures. However, if we only start thinking about IAQ when we see its effects on children’s test scores, we are thinking too late. COVID

is a dramatic illustration of the importance of IAQ, but the issue is not new. Eitland showed photos from the early 1900s, when schools opened windows and held classes outdoors in response to tuberculosis. More recently, measles and flu outbreaks, as well as high asthma rates, have underscored the pressing need to address IAQ.

Eitland offered a brief primer on school IAQ, then discussed the crucial role of ventilation, covering the spectrum of available measures, from opening windows and doors to filtration systems, and referring to the relevant ASHRAE standards (62.1, on ventilation, and 55, on thermal comfort). She reviewed the various considerations districts must weigh in choosing what to implement: cost, efficiency, maintenance. Despite ventilation’s importance, schools are chronically under-ventilated and under-maintained. The impact falls disproportionately on Black and Hispanic kids and on those who receive free or reduced-price lunches.

She also offered a “hierarchy of controls” based on the classic occupational health safety framework, of the following steps:

- increase outdoor air rates (with caveats about school siting and potential complications of opening windows),
- supplement with portable air cleaners, maintain HVAC systems, carefully consider the use of UV,
- clean and disinfect with care, do not cut facility budgets, watch for harsh chemicals, make cleaning easier by removing clutter,
- pursue other opportunities for schools of the future: changes ranging from touchless fixtures to outdoor classrooms.



**If we only start thinking about IAQ when we see how it affects test scores, we are thinking too late.**

The Q&A session focused on the role of architecture firms in equity and justice issues at school, including helping to develop metrics, introduce healthy

materials, and improve ventilation. It also considered the frequent advice on opening windows. That advice is simplistic and not always well founded. Building managers and others should consider all options such as air cleaners, filters, or box fans.

Themes from the breakout room included the importance of assessing school buildings to identify and prioritize needs and to clearly communicate rules and safe practices. Safe cleaning and disinfecting came up often; many participants cited the need to educate school staff to stop bringing in their own supplies.

## Remarks by US Senator Kirsten Gillibrand: Why This Work is Important



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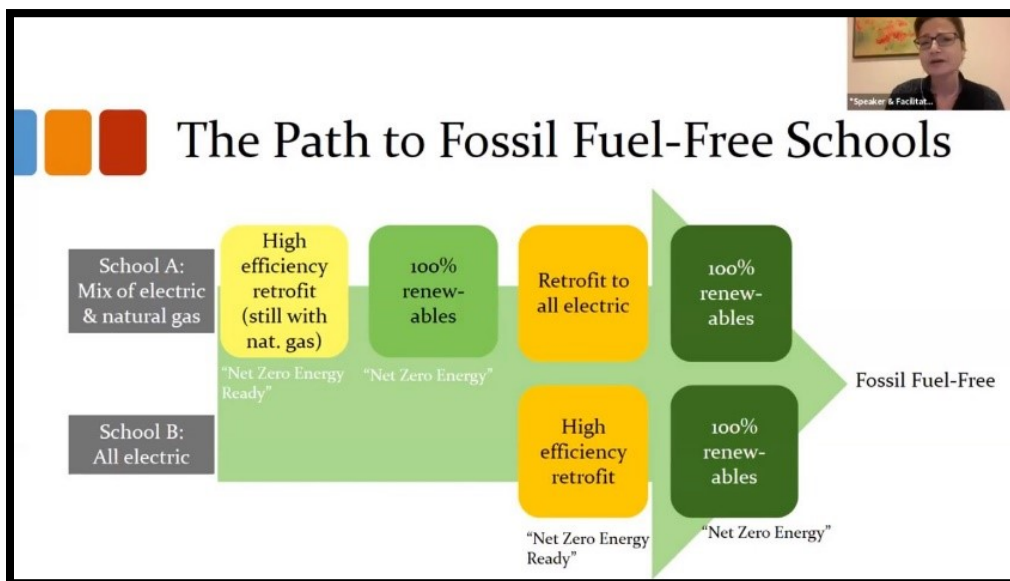
*I want to thank all of you for the critical work you do fighting for safer schools for our kids. One of my top priorities as a senator and as a mom is getting our kids back to school, where we know they can do their best learning and developing. But we can only do that if we ensure their schools are safe environments. That’s why your fight for the indoor air quality and the learning environment for our children has never been more important.*

*I have long been a supporter of Healthy Schools Network. And your fight—that every student has a safe and healthy environment—matters. Failing to act means failing these kids, and that is unacceptable.*

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## Technical Session: Build Back Better Schools – II: Climate Mitigation

- Moderator: Francine Locke, MS, Chief Sustainability Officer, County of Delaware, PA
- Elisabeth Krautscheid, Managing Director, Collaborative for High Performance Schools
- Sean O'Donnell, FAIA, LEED AP, Perkins Eastman
- Heather Jauregui, LEED AP BD+C, O+M, CPHC, Perkins Eastman



Organized by summit sponsor the Collaborative for High Performance Schools (CHPS), this session explored design and renovation strategies that help schools better respond to the effects of the climate crisis. These strategies save money and improve academic performance.

Elisabeth Krautscheid explained that climate mitigation is central to a healthy environment for children and to establishing equity in the school environment. The focus today is on reducing and eventually eliminating fossil fuels in schools, which means the goal must be high-efficiency retrofits (the official term is *zero net-energy ready*): retrofitting schools to be all electric, installing renewables, becoming fossil-fuel free. Training building operators is key. For instance, Krautscheid noted that HVAC systems are not designed to be turned off, and that turning them off will not make an old system more efficient. Advocacy must be focused on using equipment correctly.

Heather Jauregui, an architect, looked at ways to drive down energy consumption, exploring such considerations as daylighting, acoustics, and thermal comfort (drafts and heat loss are common in schools). She noted that while there is often a conflict between improving air quality and improving energy efficiency, that does not need to be the case. It is crucial to understand how the building is being used. HVAC and lighting are the big components, as well as kitchen equipment and IT.

Jauregui observed that building with the goal of net zero is seen by many as a distraction, so her firm undertakes "net positive education" to show that the process drives down operating costs *and* improves education outcomes.

Sean O'Donnell, also an architect, noted that coming out of the pandemic, the next generation of schools will embrace new ideas, such as stressing mental health and acting as community schools with expanded services. Schools will expand as the centerpiece of community resilience. But since every building is different, upfront assessment is key to a successful design process.



Many participants in the breakout rooms felt that taking advantage of sunlight was one of the more easily achievable goals. Several focused on the need to educate and involve parents and suggested ways to make the case for paying for mitigation measures. Another common theme was the challenges of mitigation in older, poorly maintained schools with few resources.

## Opening Remarks: Day 2, Georges Benjamin, MD

Executive Director, American Public Health Association

Dr. Benjamin addressed the twin challenges of COVID and climate disasters, which are hitting communities of color hard. He continued, “I shudder as we begin the hurricane season,” and asked, “How will we address these increasing risks to children in schools where environmental conditions are already not ideal?”

APHA surveyed state health agencies and found that very few had services for children, outside of medical services. Benjamin said that they need to think more broadly.

APHA’s policy statement on environmental public health systems for children (see Appendix) provides a road map of what could be done for children with exposures in schools, the subject of the technical session following his remarks. APHA is working closely with the Biden administration and hopes to see it take up these issues; for example, it would like to see EPA produce a long-overdue guideline for how pediatric environmental health experts might assist local agencies with on-site school investigations.



**How will we address these increasing risks to children in schools where environmental conditions are already not ideal?**



## Technical Session: Environmental Public Health Systems for Children at Risk of or with Exposures in Schools

- Moderator: Melissa Jordan, MS, MPH, Director, Division of Community Health Promotion, Florida Department of Health
- Curtis Cude, BS, Environmental Public Health Surveillance Program Manager, Oregon Health Authority
- Angana Roy, MPH, Senior Program Analyst, National Association of County and City Health Officials

Indicators of environmental public health in schools are beginning to get the attention they deserve.

The screenshot shows a presentation slide for the 'CSTE EH in Schools Workgroup'. The slide includes the CSTE logo and the text 'Launched Workgroup in September 2016' followed by two bullet points: '-2016 assessment on data sources and access' and '-2018 assessment on environmental sampling data'. Below this, there are three columns of information:

Syndromic Surveillance	Environmental Sampling	Policy Brief
<ul style="list-style-type: none"><li>• Develop and test a "school-related" query</li><li>• Explore Poison Control Center data</li><li>• Time study of health events following school closures</li></ul>	<ul style="list-style-type: none"><li>• Review new legislation and provide recommendations on drinking water testing with focus on lead</li><li>• Explore radon testing data for schools</li></ul>	<ul style="list-style-type: none"><li>• Document assessment results, pilot testing, and progress made by other subcommittees</li><li>• Publish workgroup recommendations as CSTE policy brief</li></ul>

At the bottom of the slide, it says 'Council of State and Territorial Epidemiologists'. A video inset in the top right corner shows Melissa Jordan.

In this panel, public health experts discussed the status of data and surveillance, the activities of public health departments, and ideas for better monitoring and tracking.

Melissa Jordan discussed

recent work by the Council of State and Territorial Epidemiologists (CSTE) through its work group on environmental public health at schools, established in 2016. After surveying CSTE members about what data they had access to and experience with, the work group formed three teams to pursue further work. One team drafted a policy brief (under discussion) that includes three overarching recommendations:

1. develop a robust surveillance system to identify and track environmental health risks in schools—necessary to address the lack of a standardized method for collecting or sharing data.
2. develop institutional tools or mechanisms to identify at-risk or vulnerable children,
3. conduct pilots of the proposed prevention, intervention, and tracking programs.

Jordan also discussed the absence of data on children's environmental health at school and how helpful it could have been in responding to COVID. Information on absenteeism is the biggest gap.

Next Curtis Cude, her colleague at CSTE, discussed the CDC-funded [National Environmental Public Health Tracking Program](#), which contains information on environmental hazards, exposures, and health effects, as well as population characteristics, but only limited information about children. CDC's state tracking program could potentially help in understanding school hazards and developing public health actions to create new protections for children.

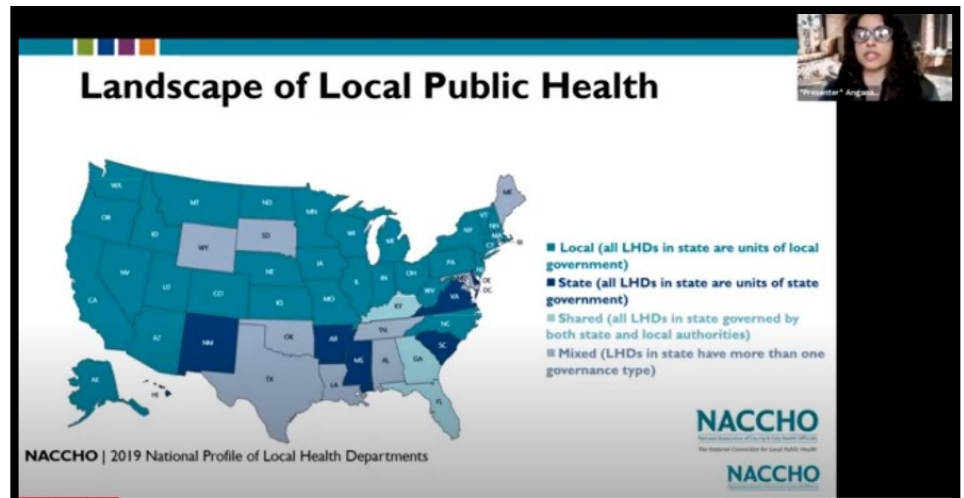


Angana Roy of the National Association of County and City Health Officials (NACCHO) reviewed the structure of public health departments and their services related to public environmental health at schools and day cares. She shared some results from the [\*National Profile of Local Health Departments\*](#), a census-style comprehensive study of local health departments

that NACCHO conducts every three years. In the latest version (2019), 72% of local health departments indicate being involved in regulating, licensing, or inspecting schools or day care facilities. Roy also described some other school-related efforts at NACCHO. She reported anecdotal evidence on challenges that health departments are hearing about from schools and child care, often relating to cleaning practices, enforcement, and trouble with conflicting guidance.

The panelists tackled several questions: What about PCBs? (Not much work to date.) Are school inspection reports public? (It varies.) What environmental data are currently collected on schools? (A limited amount, and collection is patchy—an observation shared by participants in this session’s breakout rooms.) Cude added that progress at schools should be acknowledged and publicized.

In the breakout rooms, participants explored ideas for harnessing parents’ pressure to secure more tracking and considered ways to generate more data, including through existing programs, and what additional data they would like to see. (Examples included data on absenteeism, molds, weather-related damage, fire safety, food inspections, and school evacuations or other sentinel events.) Also discussed: barriers to collecting and tracking data, including privacy concerns under existing laws and schools’ fear of potential legal issues. Another topic was how school personnel’s exposure is handled.



## Remarks by Randi Weingarten, President, American Federation of Teachers



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*If the powers that be had listened to Healthy Schools Network years ago, we'd be in better shape to reopen school buildings now because the infrastructure issues like ventilation would be taken care of.*

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Randi Weingarten, president of the American Federation of Teachers (AFT), offered remarks on the confluence of crises facing schools. The AFT represents 1.7 members, including K-12 teachers, paraprofessionals, faculty and staff in higher education, government employees, and healthcare professionals. Weingarten was frustrated that it had taken a pandemic to finally spark action on poor air quality and other environmental health threats—the same threats that summit participants have long fought to address. She noted that “if the powers that be had listened to Healthy Schools Network years ago, we’d be in better shape to reopen school buildings now because the infrastructure issues like ventilation would be taken care of.” But she also noted that today there is the opportunity to fix many of the longstanding problems in school infrastructure, stressing that AFT members were allies in this fight. She closed by underscoring the links among the pandemic and the climate, economic, and racial crises.

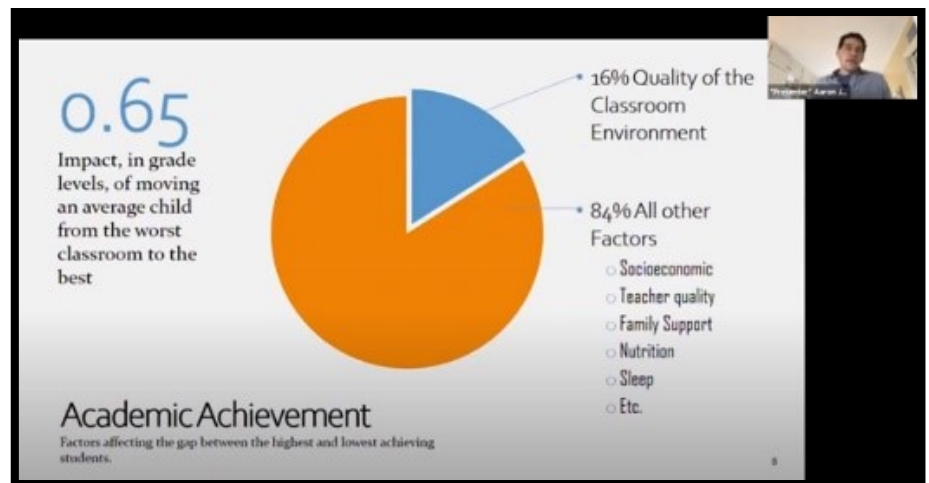
## Technical Session: Build Back Better Schools - III: Calming School Buildings

- Moderator: Elisabeth Krautscheid, Managing Director, Collaborative for High Performance Schools
- Irene Nigaglioni, AIA, ALEP, President, IN2 Architecture
- Aaron Jobson, Principal and CEO, Quattrocchi Kwok Architects

Organized by summit sponsor the Collaborative for High Performance Schools (CHPS), this session was moderated by CHPS Managing Director Elisabeth Krautscheid. Starting with the Goldilocks Principle—how to design schools that are “not too hot, not too cold, but just right”—she identified key elements such as lighting, noise, indoor air, thermal comfort, color, and textures. The session addressed the “why” behind calming schools: conventional institutional school design is daunting, especially for children with trauma (who need more space, quiet, and dimmer light) and stressful for children with anxiety and emotional disorders or autism (who do better in a calmer indoor environment).

According to Krautscheid, “A high-performance school buildings is low stress. When we design for the sensitive, we benefit everyone.”

Architect Aaron Jobson zeroed in on daylighting and finding its sweet spot at the intersection of economics, environment, and learning. The goal should be balanced daylight with no glare or flickering, along with restful color. Natural daylight can be augmented with smart electric lighting that teachers can control.



**Responsive Design**

“There’s no such thing as a “neutral” environment: your built environment is either helping you, or it’s hurting you.”

“...most of our experiences in the built environment are **nonconscious**. I use that word quite specifically. It’s not unconscious, because that suggests something that we’d be unable to access. **Nonconscious** refers to cognitions that we could access consciously, but mostly don’t.”

Sarah Williams Goldhagen

**WELCOME TO YOUR WORLD**

**HOW THE BUILT ENVIRONMENT SHAPES OUR LIVES**

**SARAH WILLIAMS GOLDHAGEN**

Fellow architect Irene Nigaglioni explained that responsive design is the concept of calming a building. It is becoming more common among school design professionals. The goal is to stimulate the brain the right way, for the environment is never “neutral”: it either helps or hurts. She illustrated design

options inside schools that promote safe and secure spaces (such as a mentoring zone and trellised walkway entry), inclusion (via seating arrangements and mounting art in open stairwells), and a sense of community (by creating semi-private gathering areas and seating along window walls with views). She also touched on biophilic design, which uses such techniques as natural colors, interior uses of natural products, capitalizing on views, and even pictures of plants to help bring nature indoors.

Follow-on questions and breakout room comments were about cost: both presenters indicated that as buildings are constructed or renovated, calming elements can be addressed individually and incrementally. The idea is to do the best you can with opportunities within the scope of work. Paint and color are by far the cheapest and easiest to start with. Another question was whether community engagement is important. Krautscheid said it is so important that CHPS requires it of all school design and construction projects.

## Appendix

[Summit Agenda](#)

[List of Speakers](#)

[Resources](#)

[Pandemic v. Schools: States Must Guide School Reopening, Slowing Virus](#) (report)

[Biden-Harris transition team policy paper](#)

[Towards Healthy Schools: National Data Summary Update 2021](#)

American Public Health Association Policy Statements

[Establishing Environmental Public Health Systems for Children at Risk](#)

[COVID and the Education Sector](#)



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