



Meeting Highlights



Air Quality, Climate Change and Health:

A Joint Meeting of the Healthy Communities Task Force and Climate Change Forum

Thursday, October 5, 2023

10:00AM–12:00PM

DVRPC Offices

190 N. Independence Mall West,

8th Floor Philadelphia, PA 19106

All presentations and related meeting materials are located on the HCTF website: <https://www.dvrpc.org/Committees/HCTF/>

Welcome and Introductions

Karen Cilurso, Associate Director of Livable Communities with the Delaware Valley Regional Planning Commission (DVRPC), opened the meeting by welcoming everyone to the first in-person Healthy Communities Task Force (HCTF) meeting in almost 4 years. She then provided a brief overview of DVRPC, the HCTF, and the Climate Change Forum (CCF).

Following this, Karen explained that creating safe and healthy spaces is a priority for planning professionals and that communities cannot thrive unless we implement strategies for mitigating and preventing health issues brought on by poor outdoor air quality, especially as the climate crisis continues to worsen. She noted that outdoor air quality has been a priority lately, especially after the extremely high particulate matter days we saw over the summer, as a result of the Canadian wildfires. During that period, Philadelphia experienced one of the worst air quality days since scientists began tracking fine particle pollution, with a max Air Quality Index (AQI) level of 431. Other causes of note are right in 'our backyard' and include emissions from transportation systems and industrial sites.

Karen emphasized how poor air days are felt most by vulnerable populations, such as children, elderly, the disabled, the uninsured, and those without adequate income. Collaboration is needed to better understand and address these challenges. She explained that the panel presentation today is packed with experts who are actively working on these issues, and will share their challenges, successes, and overall findings today.

Air Quality, Climate Change, and Health: A Panel Discussion of Regional Air Monitoring Studies, Strategies for Improving Community Health, and the Connections between Air Quality, Climate Change, and Health

Moderated by: Kelli McIntyre, MA MPH, Principal and Founder KMc Strategic Solutions, LLC

Panelists Include:

- Dr. Sheila Tripathy, Senior Research Scientist, Drexel Dornsife School of Public Health
- Dr. Joshua Stratton, Assistant Professor, Rider University Department of Earth and Chemical Sciences
- Russell Zerbo, Advocate, Clean Air Council
- Melissa Miles, Executive Director, New Jersey Environmental Justice Alliance

Following Karen's welcoming remarks, Amy Verbofsky, Manager of Healthy and Resilient Communities with DVRPC, introduced the panel moderator and HCTF Co-Chair, Kelli McIntyre. Amy described Kelli as a vocal champion for public health, safety and racial justice and noted that Kelli has been an active member of the HCTF since 2015 and co-chair since 2021. As the

moderator, Kelli opened the panel by first providing brief introductions for each panelist, Dr. Sheila Tripathy, Dr. Joshua Stratton, Russel Zerbo, and Melissa Miles. Full biographies were provided to attendees as well. She explained that each panelist would give brief individual presentations, followed by a panel discussion, and audience Q&A.

Dr. Tripathy opened their presentation by providing some historical background on the [Philadelphia Energy Solutions Refinery \(PES\) explosion in 2019](#). They shared a timeline of events from explosion, to advisory meetings, to auction, and eventually to Hilco taking ownership of the former PES site. Following this, there was some unknown decommissioning activity and related emissions. Dr. Tripathy noted that the explosion and subsequent decommissioning has had a lot of detrimental impact on the environment and has not been fully adequately addressed.

She then explained her involvement with a group called [Philly Thrive](#). Philly Thrive is an environmental justice grassroots organization, focused on South Philly They have campaigned for the "Right to Breathe" for all Philadelphians since 2015. Their main goals are: No Fossil Fuel Expansion, Health and Safety Over Profit, and a Green Economy that works for all. They are currently working on the Right to Thrive campaign, which aims to restore health and safety by cleaning up air, water, and soil.

Dr. Tripathy emphasized the importance and value of air monitoring to keep track of pollutant data. Air monitoring efforts around the refinery have been tracking pollutant levels, specifically benzene, which is detrimental to human health and a known carcinogen. Dr. Tripathy shared the results of their fence line air monitors, which showed that benzene levels around the site exceeded federal limits in 2020. They also recorded repeated spikes even after PES decommissioned the facility.

Dr. Tripathy then shared that Philly Thrive worked with the surrounding community in the Fall/Winter of 2022 to begin selecting air monitoring sites. Philly Thrive held many different types of meetings to plan site selection, including "All Thrive meetings", one on one conversations with locals, and meetings with their Clean Up circle on Zoom. She noted that their study was ongoing and encouraged attendees to visit [THRIVEairphilly.com](#) for more information, results from the study, and more information on community events. Attendees can also send an email to thriveair@gmail.com if they would like to stay in touch.

Dr. Stratton opened his presentation by explaining some of the best practices and challenges of low cost air monitoring. Dr. Stratton noted that reference monitors, the more robust monitors maintained year round by larger entities such as the Department of Environmental Protection (DEP), are important air monitoring tools. They provide reliable and validated data; however, with only 29 across New Jersey, they offer sparse geographical coverage. Low-cost sensors can allow communities, scientists, and residents to get information about areas not captured by the DEP monitors. He noted that the DEP monitors can be used as references to calibrate low-cost sensors and that the EPA also offers universal calibration for [PurpleAir](#) monitors.

Dr. Stratton then explained sensor selection; site selection and deployment; data quality, management, and interpretation; and workload/cost can present challenges to planning and implementing a low-cost air monitoring project. He noted that low-cost sensors are often sensitive to temperature and humidity. Additionally, peer review literature with findings are often behind paywalls and aren't always written for the public, especially when written in complex scientific language. Sensor locations and the height at which they are placed are also very important. NJDEP has specific guidelines that can be a helpful resource for sensor deployment.

Dr. Stratton then shared about considerations for analyzing data quality. He noted that it can be challenging to obtain average to high frequency collections (intervals of one minute or less), as opposed to intervals of 15 minutes, 30 minutes, or one hour. Community groups can be helpful in this process by making sure sensors are calibrated by comparing the data to references, and using math formulas to normalize the data. The GitHub EPA sensor toolkit is a helpful resource for averaging and collecting data. Additionally, for data visualization, there are many open access tools available to help with this, such as GIS, Python, R, EPA RETIGO, Wind Rose, and more.

Dr. Stratton also explained that community partnerships are important, but partnerships with other organizations can be very helpful to offset costs incurred and balance the workload. His presentation with resources listed is available on the DVRPC website. Following his presentation, Dr. Stratton thanked everyone and passed it over to Russell Zerbo.

Russell briefly introduced himself, and then opened his presentation by sharing a series of data visualizations depicting the change in air quality data over the past 25 years, noting how air quality has changed over time and varied from season to season. He then explained that the [Clean Air Council](#) (CAC), with the EPA, received funding to place more than 60 PurpleAir PM and VOC monitors at homes and businesses in areas of concern along the I-95 corridor in parts of Philadelphia and Delaware counties. In addition to installation, the CAC and partners will provide community outreach and education on monitor use and reporting pollution events. They are working with residents and stakeholders to demand increased mitigation measures and reduction from harm.

Russell then transitioned to speaking about flooding and stormwater, and its relation to air pollution. He told the audience about current advocacy actions that involve utilizing the city's federal Hurricane Ida funding, the Army Corps Levee Proposal in the Eastwick neighborhood, the cleanup/redevelopment of the former PES oil refinery site, the Philadelphia airport expansions, 6100 Passyunk and 3060 S 61st sites, and also working on tracking rainfall to compare it to FEMA rainfall estimates. He also noted a few community-based projects involving neighborhood cleanups, green infrastructure such as rain gardens and green buffers, and a program starting up "Friends Of" community groups as well as appointing block captains to help out with efforts on a neighborhood scale.

Russell shared information about one specific initiative, called the Climate Resilient Communities project whose aim is to better address climate change threats to communities near flood-prone and polluting industrial sites in Southeast Pennsylvania. It also aims to develop local green infrastructure projects to mitigate climate risk and protect our communities from other threats like the urban heat island effect and flooding.

Following this, Russell shared a series of policy and program initiatives related to environmental air quality and public health. PA House Bill No. 1275, which was introduced in May 2023 is focused on riparian buffer restoration, which can help remediate pollution. He also shared about the Ozone Season Free Transit Grant Program, which, if funded, would provide free SEPTA rides to residents on Ozone action days. This would help to keep cars off the road and reduce additional ground level ozone. Russell also encouraged folks to get involved with public hearings surrounding these issues, and noted the [Clean Air Council](#) as a source for more information. His presentation slides can be found on the DVRPC website. Russell can be reached at rzerbo@cleanair.org.

Melissa Miles, Executive Director of the [New Jersey Environmental Justice Alliance](#) (NJEJA), introduced herself and opened her presentation by emphasizing the importance of giving careful consideration and attention to Environmental Justice communities, which are often low-income communities of color facing a legacy of environmental pollution. These communities often face unique situations that are not always considered with standard environmental or public health policies. Specifically, Melissa referenced the poor air quality from the Canadian wildfires, where public health officials told residents to keep their windows closed during the peak AQI days. People in older homes and homes without air conditioning were faced with the difficult decision of closing their windows and exposing themselves to the danger of indoor air pollutants and/or excessive heat or breathing the PM2.5-heavy smoke from the wildfires.

Melissa provided an overview of the NJEJA, including their work advocating for communities, and how they collaborate with organizations and communities across New Jersey to achieve this. She highlighted one of NJEJA's recent efforts to encourage EPA to regulate heavy-duty vehicles, specifically near the Port of NY/NJ and how detrimental these vehicle emissions are to air quality.

She then explained that environmentalists' vision of a better world can sometimes clash with the community vision, and how it is important to recognize that and work with it. Because NJEJA tries to prioritize this notion, they work hard to work on projects that are based on and prioritize community input. Their perspective works with the lived reality households on things like energy pain points, and then move to broader issues like pollution and solutions like green energy.

One particular stance NJEJA takes is an opposition to carbon credit markets. They also don't focus on carbon reduction. Melissa explained that carbon credit markets are a particular issue of harm to marginalized communities that originate from well-meaning environmental policies. They do not generate benefit, and do not help local communities who are experiencing the

harm firsthand. Often overburdened communities participating in carbon markets have worse outcomes. Likewise, many environmental infrastructure bills can also pose false solutions as well. Overall, it is important to truly listen to community members firsthand, and utilize their perspectives to guide work.

Panel: Q&A

Moderated by: Kelli McIntyre, MA MPH, Principal and Founder KMc Strategic Solutions, LLC

Following the presentations, Kelli opened the panel discussion by asking **what localized air monitoring studies tell us and how they differ from government-managed stations that are more spread out. Kelli also asked the panelists to discuss what goes into choosing locations, how communities use the data once it's collected, and how they can translate the data into actionable information?**

Dr. Tripathy explained that when placing monitors, it is important to listen to community concerns. It is also important to compensate and hire community members who support these projects. It all depends on the various needs of who you are working with.

Dr. Stratton added that he has worked with students and connections through schools and the government to build a community around data collection. Reference monitors help, but having additional monitors can also help analyze upwind and downwind effects, which can provide valuable information to neighboring communities. He expressed that managing big data is still a challenge, but having a community helps.

Dr. Tripathy noted that Philly Thrive has been a part of community benefits agreements, and obtained sponsorships to help with events and projects. They noted when considering action following data analysis, it is important to not make plans or projects that suggest or necessitate behavioral changes of residents, as it is not effective nor their responsibility.

Melissa added that data is very important, and serves to make the invisible, visible as well as quantifiable. She noted NJEJA's truck counting efforts in New Jersey made the issue of truck traffic on neighborhood streets more visible, which can encourage folks to stay civically engaged. She emphasized the importance of community partnerships, education, and engagement in preparing and developing actions. Additionally, she noted it is vital to be prepared for when political change opportunities arise.

Kelli then asked a few questions about respiratory diseases. **Respiratory diseases like asthma and chronic obstructive pulmonary disease (COPD) are the ones that are generally associated with poor air quality. Are those the primary diseases that you consider in your studies? Are there other health impacts from poor air quality that we should be considering?**

Dr. Tripathy concurred that respiratory issues are a big issue, and noted that benzene and other particulates from fires are very dangerous since they cross the blood-brain barrier. Benzene is carcinogenic, causes cardiovascular disease, increases respiratory issues, and leads to a number of cognitive impacts. More research is still needed on the full extent of the impact. She noted she works on exposure science, and collaborates with epidemiologists to develop research plans on these issues.

Kelli then asked a few more general questions about climate change. **Can you explain how climate change affects air quality? What are the pathways in which climate change can lead to worse air quality? How does poor air quality affect climate change?**

Melissa answered by noting the racial and economic segregation of New Jersey. Political and social forces impacts which neighborhoods get trees, which are important climate mediators. Russell noted that in Longside, New Jersey, a historically black community, a new PGW station was built, and a concerned resident has been reaching out because there have been several fires there in the last few years. Similarly, Georgetown, Delaware, is home to a facility that makes chicken scrapple. Russ explained it is collateral damage of carbon trading impacts. In Southern Delaware, they have a facility to convert chicken manure to methane. Of course, the facility necessitates trucking, and generates truck emissions on top of dangerously high methane emissions. The emissions detecting technology doesn't get manufactured anymore, which is a huge issue of concern for those in the area.

Kelli then asked a question about next steps. **How do we convert interest into action?**

Melissa shared how residents are aware of issues at first, but they can become invisible after they get used to them, even though pollutants persist, and even worsen, in the environment. She emphasized the importance of educating people that “the smell is not their neighbor, it is literally the sewage treatment plant,” for example. Melissa also noted that if you come with problems to a community, you must also bring along some solutions. Melissa shared a personal anecdote of how she used to have climate anxiety, but organizers kept inviting her to events and over time she saw the health effects first hand in her community. She recounted that many environmental justice (EJ) folks get active after seeing something bad happen.

Russell expressed that it is important to encourage people to contact their local decision makers, and to build those relationships over time. He encouraged attendees to contact them when good things happen too, so they know your name. Find the things you love and protect those, then build from there.

Kelli then asked about a new EJ law directed to Melissa. **In 2020, New Jersey passed a landmark Environmental Justice Law that requires the New Jersey Department of Environmental Protection (NJDEP) to issue permit denials for new facilities that cannot avoid disproportionate impacts on overburdened communities or serve compelling public interest. Can you tell us more about this law and how it came to be? What role advocacy played into shaping this law? How is implementation and enforcement going?**

Melissa noted that the new EJ law came out of an extensive process of community engagement. NJEJA has workshops for how to engage with government entities like DEP, and also teaches people how to testify. They have initiatives that involve paying participants, she herself used to be a paid community organizer. She also recommended that when entering a community, partner with local anchor community organizations for best results. Getting the work done involves managing partnerships and resources.

Melissa also added that the EJ law took a lot of work, and noted it was tied to the goals of the BLM movement. It is currently implementing well so far, but have encountered a few challenges, and they plan to continue to lean on community organizations for their support.

Russ noted with stipends, it's important to be able to continuously defend them over time, to maintain longevity despite those who question their importance.

Lastly Kelli, asked a question about next steps for action. **What is the biggest thing that individuals, communities, and/or local governments can do to improve air quality?**

Russ reiterated the importance of calling your decision makers. Melissa noted that community cohesion is important, as people are being harmed and resources are not finite. She said that we must stop filling needs with consumption and unnecessary stuff. Russell also noted that traffic choices are important– parking is the single highest land use in Philadelphia.

DVRPC Air Monitoring Alerts

Stacy Bartels, Manager, Office of TDM Strategy and Marketing, DVRPC

Stacey greeted everyone and noted that she recently transitioned into this work, and works on the Air Quality Conformity process. She gave a breakdown of what AQI alerts mean, and how they are displayed by color. She noted that weather conditions play a role in the determining of these alerts, and they note populations of concern at each level. One example she gave was children as a vulnerable population, and how their smaller lungs are less effective at filtering out pollutant particulates.

Stacey explained that there are a number of different ways air quality alerts are sent out. They don't send out alerts for lesser days, when the level is at Green or Yellow levels. The alerts are typically sent out around 3pm. DVRPC doesn't send alerts themselves, but you can sign up for the alerts on DVRPC's websites. DVRPC partners with AirNow, and sends EnviroFlash alerts over email. Stacey also uses social media, websites, and other media outlets (e.g. television) to get the word out. Additionally, relationships exist with other entities like weather stations, meteorologists, and other Transportation Management Areas (TMAs). She then noted that there are other organizations that focus on high risk populations such as [Resolve Philly](#), who communicates about these alerts in populations with large numbers of Spanish speakers. Her presentation slides can be found on the DVRPC website.

Closing

Amy Verbofsky, Manager, Healthy and Resilient Communities, DVRPC

Following Stacey's presentation, Amy thanked all the participants, speakers, and moderator for great presentations and discussion. She then thanked everyone who made the event possible, and expressed that she took away a lot to think about from this meeting, and it was a good reminder of how important clean air is. She also expressed how great it was to hear how folks are working with communities across the region in different ways, and hope participants leave with more of a push to continue empowering residents.

Following this, Amy encouraged folks to look into the fliers out front, and apply for the HCTF Co-Chair position to serve in an advisory role for the HCTF, alongside Kelli McIntyre. Anyone who is interested should speak with Amy or follow up via email or submit a nomination form for themselves or pass it along to someone else.

Additionally, Amy shared information about a [DVRPC 2050 Long Range Plan survey](#), and explained that it is also a raffle with a chance to win one of 20 \$50 gift cards. Additionally, DVRPC will be conducting community outreach for the Long Range plan in a number of communities across the region, and folks should stop by and say hi if they see us.

Lastly, Amy announced that our next air quality meeting will be on Indoor Air Quality and Health and will be held virtually in early 2024. Following this, she thanked everyone and reminded everyone about lunch taking place following this meeting.