

# **Environmental Health Tracking and Biomonitoring Advisory Panel Meeting October 10, 2023**

**1:00 P.M. – 3:30 P.M.**

***Via Microsoft Teams***

Environmental Health Tracking and Biomonitoring Advisory Panel Meeting  
October 10, 2023

Minnesota Department of Health  
Environmental Health Tracking and Biomonitoring  
PO Box 64975  
St. Paul, MN 55164-0975  
1-800-205-4987  
[health.biomonitoring@state.mn.us](mailto:health.biomonitoring@state.mn.us)  
[www.health.state.mn.us](http://www.health.state.mn.us)

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## Agenda Overview

**Date: 10/10/2023**

### Welcome & Agenda

**1:00 p.m.**

Chair Lisa Yost will welcome attendees to the meeting. Panel members are invited to introduce themselves. Lisa will give an agenda overview.

### Wildfire Smoke Meteorology and Forecasting at the MPCA

**1:10 p.m.**

Matt Taraldsen from the Minnesota Pollution Control Agency will give an overview of how meteorologists are working to improve forecasting for wildfire events and communicate proactively about what Minnesotans can expect and do to protect their health on air alert days. Panel members are invited to ask questions.

### Wildfire Smoke and Asthma ED Visits During the 2021 Wildfire Season – Preliminary Analysis

**1:50 p.m.**

MDH Environmental Epidemiologist Kathy Raleigh will present a preliminary analysis of health impacts looking back at the unprecedented wildfire season and smoke events in 2021. This will focus on asthma ED visits to better understand the magnitude of the health burden. Next steps will focus on specific populations and geographical regions to identify disparate impacts and inform public health messaging. Panel members are invited to ask questions.

**2:20 p.m. Discussion**

#### Questions for Panel

- Building on the statewide analysis, what geographical regions and/or populations should we focus on?
- How can we tailor analyses to ensure that the results are useful and actionable for communities and partners?

### Healthy Kids Minnesota Updates and Next Steps

**2:40 p.m.**

MDH Biomonitoring staff Fathi Ahmed and Jessica Nelson will present updates on recruitment and elevated case response for Healthy Kids Minnesota 2022, and will look ahead to Healthy Kids Minnesota 2023 and a new grant application. Panel members are invited to ask questions.

## Public Comments, Audience Questions, New Business

**3:20 p.m.**

## Motion to Adjourn

**3:30 p.m.**

## Wildfire Smoke Meteorology and Forecasting at the MPCA

### Speaker Biosketch

Matt Taraldsen is supervisory meteorologist with the Minnesota Pollution Control Agency. He oversees the Risk Evaluation and Air Modeling Unit – the unit responsible for air quality index (AQI) forecasts and air quality alerts across the state of Minnesota. Prior to joining MPCA he has worked in state government with Minnesota Information Technology Services (MNIT), the private sector at Esri, and the federal government as a forecaster and instructor in the National Weather Service. He has a Bachelors Degree in Meteorology from St. Cloud State University and a Masters of Geographic Information Science – emphasis in Land and Atmospheric Sciences from the University of Minnesota.

MPCA AQI forecast and air quality alerts can be found on the MPCA website at [Air Quality Forecast \(https://www.pca.state.mn.us/air-water-land-climate/air-quality-forecast\)](https://www.pca.state.mn.us/air-water-land-climate/air-quality-forecast).

## Wildfire Smoke and Asthma ED Visits During the 2021 Wildfire Season – Preliminary Analysis

### Background on Presentation

Minnesota is experiencing an increase in poor air quality days with events such as wildfires. The impact of wildfire smoke is projected to increase and is correlated with climate change. Wildfire smoke is a complex mixture that contains fine particles and adversely impacts lung and heart health, among other effects.

In the summer of 2021, many Minnesotans experienced the effects of wildfire smoke. The aim of this project is to evaluate the overall increase in asthma emergency department (ED) visits during a specified air quality index (AQI) alert exposure period in 2021 compared to the asthma ED visits in reference years.

Findings will be used to build broader awareness of these outcomes, identify populations and areas most impacted, and message to communities and policymakers to help inform pollution prevention and health promotion policies and actions.

### Questions for Advisory Panel

- Building on the statewide analysis, what geographical regions and/or populations should we focus on?
- How can we tailor analyses to ensure that the results are useful and actionable for communities and partners?

# Healthy Kids Minnesota Updates and Next Steps

## Healthy Kids Minnesota Program Update

Healthy Kids Minnesota is a U.S. Centers for Disease Control and Prevention (CDC) funded program partnering with Early Childhood Screening (ECS) programs at local public health agencies, school districts, and tribal nations to recruit preschool-age children for environmental chemical exposure screening. The program will rotate in five regions in the state (see map), focusing on one non-Metro and one Metro region per year. Our goal is to reach 250 – 300 children per community in each program cycle.



### Healthy Kids Minnesota 2021

As discussed at prior meetings, the first program cycle worked with recruitment partners in Minneapolis and Southeast Minnesota to recruit 453 children with urine samples collected. The final mailing of individual results will go out by the end of the year, and data analyses are underway (preliminary results were presented at the June 2023 Advisory Panel meeting).

### Healthy Kids Minnesota 2022

Recruitment for our second program cycle, which ran from August 2022 through August 2023, is now complete. Thanks to the hard work of our recruitment partners in Northeast Minnesota and St. Paul, we were successful in recruiting 540 children total with urine samples collected, with 612 families agreeing to participate. Table 1 shows the breakdown by recruitment site.

**Table 1. Healthy Kids Minnesota 2022 recruitment outcomes**

HKMN 2022 Partner	Total families approached	Families who agreed to participate	Children with samples collected	Private well test kits given out
St. Paul Public Schools	463	334	303	N/A
Duluth Public Schools/St. Louis County	189	163	136	33
Cloquet Public Schools/Carlton County	95	78	71	27
Cook County Public Schools/Cook County	38	28	28	15

Healthy Kids Minnesota 2022 partner staff are asked to complete an exit survey, and we have a final debrief meeting to celebrate all the hard work and recruitment success. We will incorporate their feedback into process improvements for future recruitment cycles.

Testing has identified 39 children with urine results for one of three metals (arsenic, manganese, and mercury) above exposure-based follow-up levels. This includes 28 arsenic



cases, nine manganese cases, and one mercury case. MDH staff have been calling families to share the results, answer their questions, ask about possible sources of exposure, and offer a free urine re-test and other advice/interventions to reduce exposure.

The first results mailing to all families will go out in October/November, with all materials translated into four languages (Hmong, Karen, Somali, Spanish).

## Healthy Kids Minnesota 2023

Recruitment for our third program cycle is underway with two partners in Central Minnesota, and we are continuing outreach and discussions with potential partners in the West/Southwest Metro and additional sites in Central Minnesota.

- We have established partnerships and financial contracts with Wadena County Public Health and Todd County Public Health (also partners from the 2018 Healthy Rural and Urban Kids Project). MDH trained field staff and recruitment started in August 2023. For both of these sites together, recruitment numbers stand at 53 children recruited with urine samples collected.
- A partnership has been approved by the Bloomington Public Schools School Board, and we have submitted a financial contract for approval. We hope training will occur in late October, allowing recruitment to begin in November.
- We have had promising discussions about a joint partnership with Shakopee Public Schools and Scott County Public Health as our second West/Southwest Metro site and are working to finalize details and submit financial contracts for approval.
- We are hoping to offer the program in the St. Cloud area but have so far been unsuccessful in establishing a partnership there. Stearns County Public Health is helping to make connections with school districts in the area and we are hopeful to establish a partnership this fall.

## Looking Ahead

We have just begun Year 5 of our 5-year CDC cooperative agreement. We anticipate that a new Notice of Funding Opportunity (NOFO) will be announced early in the new year, with a spring due date. We plan to re-apply for the funding opportunity and will discuss and gather feedback from the Advisory Panel at the upcoming February 2024 meeting.

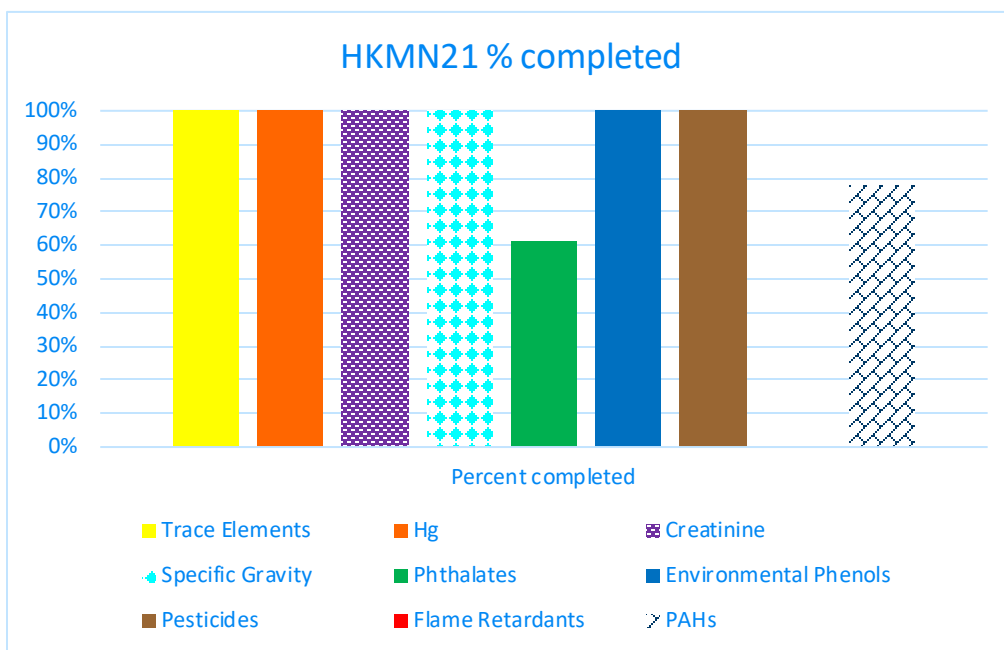
## Healthy Kids Minnesota Laboratory Update

### Laboratory analysis for Healthy Kids Minnesota 2021

- 453 samples have been collected and received by the PHL for Healthy Kids Minnesota 2021.
- Creatinine and specific gravity analyses have been completed for all samples.
- Pesticides analysis has been completed for all samples.

- Environmental phenols analysis has been completed for all samples.
- The analysis of phthalate and plasticizer metabolites has begun. We anticipate completion by October 31, 2023.
- The analysis of PAH metabolites has begun and we anticipate completion by October 31, 2023.
- The method development and validation for flame retardant metabolites is complete, and the validation paperwork is under review. We anticipate beginning sample analysis the week of October 9, 2023 and completing analysis by December 15, 2023.

**Figure 1. Percent of 453 samples analyzed for each method in Healthy Kids MN**



### Laboratory analysis for Healthy Kids Minnesota 2022

We have collected 539 samples for HKMN22 and completed analyses for trace elements and urine mercury for 537 of them. Creatinine and specific gravity have been completed for 512 samples. As speciation has been ordered for 91 samples and completed for 89 samples.

Analysis for pesticides and environmental phenols will begin this fall. Analyses for phthalates, flame retardants, and PAH metabolites will begin as the analyses for the HKMN21 samples are completed.

### Recent Articles/Presentations

- Jessica Nelson, Erin Batdorff, Michael Xiong, John Gilkeson, Lisa Strong, Sheila Amenumey. *Urine Mercury Biomonitoring: Development of State Exposure Guidance, Intervention and*

*Testing Protocols, and Case Examples* [presentation]. International Society of Exposure Science Annual Meeting 2023, August 27-31, 2023, Chicago, IL.

- Jessica Nelson, Suad Salad, Iftu Hunte, Sheila Amenumey, Carin Huset. *Feedback from Minnesota Families on Report-back Methods for their Child's Biomonitoring Results* [presentation]. International Society of Exposure Science Annual Meeting 2023, August 27-31, 2023, Chicago, IL.

## Section Overview: Other Information

This section contains documents that may be of interest to panel members.

- Upcoming Advisory Panel meeting dates
- Environmental Health Tracking and Biomonitoring Advisory Panel Statute
- Advisory Panel roster
- Biographical sketches of Advisory Panel members
- Biographical sketches of staff

## Upcoming Advisory Panel Meeting Dates

Advisory Panel meetings in 2024:

- February 13, 2024
- June 11, 2024
- October 8, 2024

Unless otherwise announced, these meetings will take place from 1 - 4 pm.

*via Microsoft Teams*

## 144.998 ENVIRONMENTAL HEALTH TRACKING AND BIOMONITORING ADVISORY PANEL STATUTE

Subdivision 1. **Creation.** The commissioner shall establish the Environmental Health Tracking and Biomonitoring Advisory Panel. The commissioner shall appoint, from the panel's membership, a chair. The panel shall meet as often as it deems necessary but, at a minimum, on a quarterly basis. Members of the panel shall serve without compensation but shall be reimbursed for travel and other necessary expenses incurred through performance of their duties. Members appointed by the commissioner are appointed for a three-year term and may be reappointed. Legislative appointees serve at the pleasure of the appointing authority.

Subd. 2. **Members.** (a) The commissioner shall appoint eight members, none of whom may be lobbyists registered under chapter 10A, who have backgrounds or training in designing, implementing, and interpreting health tracking and biomonitoring studies or in related fields of science, including epidemiology, biostatistics, environmental health, laboratory sciences, occupational health, industrial hygiene, toxicology, and public health, including:

(1) At least two scientists representative of each of the following:

- (i) Nongovernmental organizations with a focus on environmental health, environmental justice, children's health, or on specific chronic diseases; and
- (ii) Statewide business organizations; and

(2) At least one scientist who is a representative of the University of Minnesota.

(b) Two citizen panel members meeting the specific qualifications in paragraph (a) shall be appointed, one by the speaker of the house and one by the senate majority leader.

(c) In addition, one representative each shall be appointed by the commissioners of the Pollution Control Agency and the Department of Agriculture, and by the commissioner of health to represent the department's Health Promotion and Chronic Disease Division.

Subd. 3. **Duties.** The advisory panel shall make recommendations to the commissioner and the legislature on:

- (1) Priorities for health tracking;
- (2) Priorities for biomonitoring that are based on sound science and practice, and that will advance the state of public health in Minnesota;
- (3) Specific chronic diseases to study under the environmental health tracking system;
- (4) Specific environmental hazard exposures to study under the environmental health tracking system, with the agreement of at least nine of the advisory panel members;
- (5) Specific communities and geographic areas on which to focus environmental health tracking and biomonitoring efforts;

- (6) Specific chemicals to study under the biomonitoring program, with the agreement of at least nine of the advisory panel members; in making these recommendations, the panel may consider the following criteria:
- (i) The degree of potential exposure to the public or specific subgroups, including, but not limited to, occupational;
  - (ii) The likelihood of a chemical being a carcinogen or toxicant based on peer-reviewed health data, the chemical structure, or the toxicology of chemically related compounds;
  - (iii) The limits of laboratory detection for the chemical, including the ability to detect the chemical at low enough levels that could be expected in the general population;
  - (iv) Exposure or potential exposure to the public or specific subgroups;
  - (v) The known or suspected health effects resulting from the same level of exposure based on peer-reviewed scientific studies;
  - (vi) The need to assess the efficacy of public health actions to reduce exposure to a chemical;
  - (vii) The availability of a biomonitoring analytical method with adequate accuracy, precision, sensitivity, specificity, and speed;
  - (viii) The availability of adequate biospecimen samples; or
  - (ix) Other criteria that the panel may agree to; and
- (7) Other aspects of the design, implementation, and evaluation of the environmental health tracking and biomonitoring system, including, but not limited to:
- (i) Identifying possible community partners and sources of additional public or private funding;
  - (ii) Developing outreach and educational methods and materials; and
  - (iii) Disseminating environmental health tracking and biomonitoring findings to the public.

Subd. 4. **Liability.** No member of the panel shall be held civilly or criminally liable for an act or omission by that person if the act or omission was in good faith and within the scope of the member's responsibilities under section 144.995 to 144.998.

## Environmental Health Tracking & Biomonitoring Advisory Panel Roster as of January 2023

Panel Member	Panel Member
Jay Desai, PhD, MPH Chronic Disease and Environmental Epidemiology Minnesota Department of Health 85 E. 7 <sup>th</sup> Place St. Paul, MN 55164 651-201-5882 <a href="mailto:Jay.Desai@state.mn.us">Jay.Desai@state.mn.us</a> MDH appointee	Jill Heins Nesvold, MS American Lung Association of Minnesota 490 Concordia Ave St Paul, MN 55103 651-223-9578 <a href="mailto:Jill.heins@lung.org">Jill.heins@lung.org</a> Nongovernmental organization representative
Thomas Hawkinson, MS, CIH, CSP Stantec Consulting Services Inc. 7500 Olson Memorial Highway Suite 300 Golden Valley, MN 55427 763-252-6987 <a href="mailto:tom.hawkinson@stantec.com">tom.hawkinson@stantec.com</a> Statewide business organization representative	Ruby Nguyen, PhD Univ. of MN, School of Public Health Div of Epidemiology & Community Health 7525A 1300 S 2 <sup>nd</sup> St, Suite 300 WBOB Minneapolis, MN 55454 612-626-7559 <a href="mailto:nguyen@umn.edu">nguyen@umn.edu</a> University of Minnesota representative
Sarah Kleinschmidt, PhD 3M Company 3M Center, 220-6W-1 St. Paul, MN 55144 651-736-5485 <a href="mailto:sekleinschmidt@mmm.com">sekleinschmidt@mmm.com</a> Statewide business organization representative	Sona Psarska, MS Minnesota Pollution Control Agency Water Assessment Section 520 Lafayette Road St Paul, MN 55155-4194 651-757-2781 <a href="mailto:Sona.Psarska@state.mn.us">Sona.Psarska@state.mn.us</a> MPCA appointee



Environmental Health Tracking and Biomonitoring Advisory Panel Meeting  
October 10, 2023

Panel Member	Panel Member
Jenni Lansing, MS, REHS City of Minneapolis Health Department – Environmental Programs 505 4th Ave S. Room 520 Minneapolis, MN 55415 612-709-9977 <a href="mailto:Jenni.Lansing@minneapolismn.gov">Jenni.Lansing@minneapolismn.gov</a> At-large representative	Eileen Weber, DNP, JD, PHN, BSN, RN Univ of MN, School of Nursing (active retiree status) 10623 Nyberg Ave S Hastings, MN 55033 651-276-1730 <a href="mailto:eileenokeefeweber@gmail.com">eileenokeefeweber@gmail.com</a> Nongovernmental organization representative
Rajinder Mann, PhD Minnesota Dept. of Agriculture Pesticide & Fertilizer Management Division 625 Robert St N St Paul, MN 55155-2538 651-201-6208 <a href="mailto:Rajinder.mann@state.mn.us">Rajinder.mann@state.mn.us</a> MDA appointee	Lisa Yost, MPH, DABT Ramboll Environ Local office 479 Iglehart Ave St Paul, MN 55101 651-470-9284 <a href="mailto:lyost@ramboll.com">lyost@ramboll.com</a> National business organization representative
Zeke J. McKinney, MD, MHI, MPH, FACOEM HealthPartners Occupational and Environmental Medicine/Institute Univ. of MN, School of Public Health HealthPartners St. Paul Clinic 205 S. Wabasha St. St. Paul, MN 55107 <a href="mailto:zeke@umn.edu">zeke@umn.edu</a> At-large representative	

**Vacant Seats**

- Minnesota Senate appointee
- Minnesota House of Representatives appointee

## Biographical Sketches of Advisory Panel Members

**Jay Desai** is the Manager of the Chronic Disease and Environmental Epidemiology Section within the Division of Health Promotion and Chronic Disease at MDH. The Section includes the Environmental Epidemiology, the Minnesota Cancer Reporting System, and the Sickle Cell Data Collection program. It also includes the Long-Term Surveillance of Chronic Disease and Disabilities Annex, a program designed for response and recovery in emergency situations such as the COVID-19 epidemic. Jay received his Epidemiology doctorate from the University of Minnesota, is a chronic disease epidemiologist, and has worked in academic research and public health practice at the University of Minnesota, HealthPartners Institute, and the Minnesota Department of Health since 1993. He has a strong interest in diabetes, diabetes prevention, obesity, cardiovascular disease, chronic kidney disease, gout, cancer prevention, sickle cell disease, their underlying behavioral risk factors, and social determinants of health. He is also interested in implementation science and health equity. At MDH Jay spent 16 years as the epidemiologist for the Minnesota Diabetes Program. At HPI he worked on primary care clinical decision support; using EMR's for diabetes, cardiovascular disease, and obesity surveillance; diabetes prevention in low income individuals, and HPV vaccination in underserved communities. Jay is also a standing member of the NIH Healthcare and Health Disparities study section.

**Tom Hawkinson** is the Senior Industrial Hygienist for Stantec Consulting Services Inc. (formerly Wenck Associates) in Golden Valley, Minnesota. He completed his MS in Public Health at the University of Minnesota, with a specialization in industrial hygiene. He is certified in the comprehensive practice of industrial hygiene and a certified safety professional. He has worked in EHS management at a number of Twin Cities based companies, conducting industrial hygiene investigations of workplace contaminants and done environmental investigations of subsurface contamination, both in the United States and Europe. He has taught statistics and mathematics at both graduate and undergraduate levels as an adjunct and is on faculty at the Midwest Center for Occupational Health and Safety, which is a NIOSH-sponsored education and resource center at the University of Minnesota's School of Public Health.

**Sarah Kleinschmidt** is an epidemiologist with more than 20 years of experience in population-based epidemiologic research and infectious disease clinical trials. She joined the 3M Company in 2016 and serves as an epidemiologist within the Corporate Occupational Medicine Department where she evaluates the health experience of employee groups. Prior to joining 3M, Dr. Kleinschmidt was an occupational epidemiologist for DuPont in Wilmington, DE and taught epidemiology at the University of Delaware as an Adjunct Instructor. She has also held research positions at the University of Iowa, Illinois Department of Public Health, and Southern Illinois University School of Medicine. She earned a B.S. and M.S. in biology from the University of Illinois at Springfield, and a M.S. and Ph.D. in epidemiology from the University of Iowa with specialized training in both infectious disease and occupational epidemiology.

**Jenni Lansing** is the Sr. Environmental Research Analyst for the Minneapolis Health Department – Environmental Programs. She has been with the City for 10 years and during that time her work has included community air monitoring, pollution reduction projects with businesses, and

drinking water protection at transient noncommunity water systems. Ms. Lansing has a B.S. in Fisheries and Wildlife Conservation Biology from the University of Minnesota - Twin Cities and a M.S. in Environmental Sciences from the University of Colorado.

**Rajinder Mann** is a pesticide program manager for the Pesticide and Fertilizer Management Division of the Minnesota Department of Agriculture. He has been with the department for more than 10 years. His work includes overseeing pesticide and fertilizer-related technical programs that include registering pesticides and fertilizers, conducting special registration reviews of pesticides, developing and promoting agricultural chemicals best management practices (BMPs), and analyzing water quality monitoring data for pesticides. Raj has a PhD in entomology with specialized training in pesticides. Raj has also worked on insect vectors during his tenure at the University of Florida.

**Zeke McKinney** is a board-certified Occupational and Environmental Medicine (OEM) physician who works at the HealthPartners Clinic in St. Louis Park, MN. He is additionally board-certified in Public Health & General Preventive Medicine, Clinical Informatics, and Lifestyle Medicine. He completed all of his medical training here in Minnesota. His professional interests are in preventing work-related illness/injury, improving data-driven decision-making in clinical contexts, environmental toxicology, health equity, environmental justice, public safety medicine, managing complex impairment/disability, and increasing the health literacy of patients and communities. He practices clinical occupational and environmental medicine in the Twin Cities, and he is one of few clinicians in Minnesota who evaluates work and community-related environmental toxicologic exposures. He is the Minnesota physician contact for the Pediatric Environmental Health Specialty Units (PEHSU), a national resource for environmental medical information in partnership with ATSDR and CDC.

**Jill Heins Nesvold** serves as the National Director of Lung Health for the American Lung Association. Her responsibilities include program oversight and evaluation related to asthma, chronic obstructive lung disease (COPD), influenza, and quality improvement. She holds a master's degree in health management and a short-course master's degree in business administration. She has published extensively in a variety of public health areas.

**Ruby Nguyen** is an assistant professor at the University of Minnesota School of Public Health Division of Epidemiology & Community Health. She received her PhD in Epidemiology from Johns Hopkins University. Ruby's research focuses on maternal, child and family health; the etiology of reduced fertility; pregnancy-related morbidity, and infertility and later disease. Currently, Ruby is conducting a longitudinal study examining the role of endocrine disrupting chemicals in child development. From 2016-2017, Ruby was Co-Principal Investigator of a statewide prevalence study investigating violence against Asian women and children.

**Sona Psarska** is a research scientist at the Minnesota Pollution Control Agency predominantly working on human health risk assessment projects. Among her responsibilities are maintaining various risk-based values and providing human health risk assessment support to remediation and other agency programs. She has a Master of Science in Land and Atmospheric Science from the University of Minnesota. Prior to joining the MPCA, she worked in environmental consulting

where, among other projects, she worked on complex pollutant fate and transport evaluations and risk assessments for industrial clients.

**Eileen Weber** is a nurse attorney and Clinical Associate Professor Ad Honorem at the University of Minnesota School of Nursing (active retiree status). She founded the Upper Midwest Healthcare Legal Partnership Learning Collaborative. She earned her Doctor of Nursing Practice degree in Health Innovation and Leadership in 2014 from the University of Minnesota. She earned her RN diploma from Thomas Jefferson University Hospital in Philadelphia, PA, her BSN summa cum laude from the University of Minnesota, and her JD in the founding class of the University of St. Thomas School of Law in Minneapolis. Her clinical experience and past certifications have largely been in urban critical care and emergency nursing. She has served as vice-president of the Minnesota Nurses Association, earning awards for political action and outstanding service. She represented nursing on the Minnesota Health Care Commission, was a regular editorial writer for the St. Paul Pioneer Press and an occasional op-ed contributor for the Star Tribune. She founded Friends of Grey Cloud and worked with environmental leaders at the local, regional, state and national levels to protect Lower Grey Cloud Island from harmful development and to conserve the Grey Cloud Sand Dune Prairie. She has extensive experience in legislative lobbying, community activism, and political campaign management. Her scholarly work is focused on the intersection of law, public policy, and interprofessional healthcare practice and education.

**Lisa Yost** is a Principal Consultant at RAMBOLL ENVIRON, an international consulting firm. She is in their Health Sciences Group, and is based in St. Paul, Minnesota. She completed her training at the University of Michigan's School of Public Health and is a board-certified toxicologist with expertise in evaluating human health risks associated with substances in soil, water, and the food chain. She has conducted or supervised risk assessments under CERCLA, RCRA, or state-led regulatory contexts involving a wide range of chemicals and exposure situations. Her areas of specialization include exposure and risk assessment, risk communication, and the toxicology of such chemicals as PCDDs and PCDFs, PCBs, pentachlorophenol (PCP), trichloroethylene (TCE), mercury, and arsenic. Lisa is a recognized expert in risk assessment and has collaborated in original research on exposure issues, including background dietary intake of inorganic arsenic. She is currently assisting in a number of projects including a complex multi-pathway risk assessment for PDDD/Fs that will integrate extensive biomonitoring data collected by the University of Michigan. She is also an Adjunct Instructor at the University of Minnesota's School of Public Health.

## Biographical Sketches of Staff

**Fathi Ahmed** is currently the Program Manager with MN Biomonitoring. She received a bachelor's degree in Public Health with concentrations in Community Health and Public Policy from St. Catherine University. Fathi worked in the Biomonitoring program in 2016-2017 as a Student Worker on the MN FEET study as she was getting her B.S. in Public Health. Since then, she has done work in different public health, community engagement, and research positions. These include work with The Beautywell Project, SoLaHmo, the University of Minnesota, and the International Institute of Minnesota. Fathi has recently re-joined the Biomonitoring team as the new Program Manager in January 2023.

**Sheila Amenumey** is currently the Biomonitoring Epidemiologist at MDH. Sheila collaborates with the Biomonitoring Program Director and key stakeholders leading the various biomonitoring projects including Healthy Kids Minnesota, the statewide project focused on children's environmental health. She completed her MPH in Maternal and Child Health and PhD in Water Resources Science (Water Quality Hydrology Emphasis) at the University of Minnesota. Prior to her work with the biomonitoring program, Sheila worked with the Maternal and Child Health Section at MDH. Her role as the Maternal and Child Health Epidemiologist involved leading and collaborating with external partners in conducting program evaluation across multiple federal adolescent health grants, and assisting them in monitoring program outcomes and achievement of their health and education goals for the youth they serve. Before coming to MDH, Sheila conducted water quality research at the University of Minnesota to determine the impact of agriculture on water quality.

**Jessie Carr** supervises the Environmental Epidemiology Unit at MDH and is the Principal Investigator for the Environmental Public Health Tracking program. Jessie received her MPH from the Mailman School of Public Health at Columbia University and DrPH from the University of Pittsburgh, where her training and research focused on exposure assessment, GIS and spatial statistics, community-engaged research methods, and environmental health disparities. Prior epidemiology studies have examined social susceptibility to air pollution exposure in chronic disease etiology and adverse birth outcomes.

**Carin Huset** has been a research scientist in the Environmental Laboratory section of the MDH Public Health Laboratory since 2007. Carin received her PhD in Chemistry from Oregon State University in 2006 where she studied the fate and transport of perfluorochemicals in aqueous waste systems. In the MDH PHL, Carin provides and coordinates laboratory expertise and information to program partners within MDH and other government entities where studies require measuring biomonitoring specimens or environmental contaminants of emerging concern. In conjunction with these studies, Carin provides biomonitoring and environmental analytical method development in support of multiple analyses.

**Tess Konen** graduated from the University of Michigan's School of Public Health with a master's degree in Occupational Environmental Epidemiology. She completed her thesis on the effects of heat on hospitalizations in Michigan. She worked with MN Tracking for 2 years as a CSTE Epidemiology Fellow where she was project coordinator for a follow-up study of the Northeast Minneapolis Community Vermiculite Investigation cohort. She currently is an epidemiologist

working on birth defects, pesticides, and climate change, and is developing new Disaster Epidemiology tools for MDH-HPCD.

**Jessica Nelson** is Program Director and an epidemiologist with MN Biomonitoring. She works on design, coordination and analysis of biomonitoring projects, and has been the Principal Investigator for the Healthy Rural and Urban Kids, MN FEET and PFAS studies. Jessica received her PhD and MPH in Environmental Health from Boston University School of Public Health where her research involved the epidemiologic analysis of biomonitoring data on perfluorochemicals. Jessica was the coordinator of the Boston Consensus Conference on Biomonitoring, a project that gathered input and recommendations on the practice and uses of biomonitoring from a group of Boston-area lay people.

**Kathy Raleigh** is an epidemiologist for MN Tracking. She completed her PhD in Environmental Health at the University of Minnesota's School of Public Health and her MPH in Environmental and Occupational Health at the University of Arizona. She has worked on a variety of environmental health projects including: pesticide exposure in children, occupational asthma, mercury exposure in women and children, and occupational exposure to PFOA. Prior to coming to MN Tracking, Kathy was working on maternal and child health projects both internationally with USAID and, more recently, at MDH. She will also be working on the coordination and collection of hospital discharge data, including heart disease and asthma surveillance projects for MN Tracking with a focus on health disparities.

**Deanna Scher** is an epidemiologist in the Environmental Epidemiology Unit. Since joining MDH in 2007, she has led a variety of studies to assess exposures to, and health impacts from environmental contaminants, particularly among at-risk and vulnerable populations. She currently serves as Chair of the MDH Institutional Review Board and the U.S. Environmental Protection Agency's Children's Health Protection Advisory Committee. Deanna received her Ph.D. in Environmental Health Sciences from the University of Minnesota, School of Public Health, where her research focused on methods to integrate biomonitoring and biological plausibility into pesticide risk assessment and epidemiology studies.

**Blair Sevcik** is an epidemiologist with MN Tracking at the Minnesota Department of Health, where she works on the collection and statistical analysis of public health surveillance data for MN Tracking. Prior to joining MN Tracking in January 2009, she was a student worker with the MDH Asthma Program. She received her Master of Public Health degree in epidemiology from the University of Minnesota School of Public Health in December 2010.

**Lynn Treadwell**, Minnesota Public Health Data Portal Coordinator, is an experienced digital communications leader with a solid understanding of websites and application development, social media and digital marketing communications in the health and government sectors. Lynn brings over 10 years of experience in developing optimized online user experiences and digital communications to the position. She will provide stewardship to Minnesota's public health data portal focusing on audience understanding and interactive development best practices. Lynn has an AAS in graphic design, attended the School of Journalism at University of Minnesota and has a mini-Master's in Marketing from St. Thomas University.