

UNIVERSITY *of* WASHINGTON

Public Health

THE MAGAZINE OF THE SCHOOL OF PUBLIC HEALTH

TOGETHER WE ARE READY

Community trust and health infrastructure are necessary to prepare for future public health crises

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NAVIGATING A PATH FORWARD, TOGETHER



Dean Hilary Godwin

Nearly three years since the COVID-19 pandemic began, we find ourselves at another crossroads. We are still grappling with COVID-19 and the legacies of structural racism and also need to turn our attention both to the health impacts of climate change and to ensuring that hard-won policy gains and legal rights to reproductive health services are not eroded. How do we chart a path forward?

At the University of Washington School of Public Health (UW SPH), these past three years have taught us valuable lessons in how we can support public health amidst the most challenging of circumstances. The solutions may lie in our partnerships with each other.

BUILDING IN SUPPORT IN ANTICIPATION OF FORTHCOMING CHALLENGES

We learned from our partners at the Somali Health Board (see pages 16-21) on the importance of constant communication with communities to understand their needs, pivot quickly and provide appropriate resources during times of crisis. In our School, we created new instructional teaching assistant positions to help faculty navigate the complexities of in-person and online teaching, including hybrid modalities. On the research front, we have taken note of the pervasive inadequacies of public health data systems and are investing in our own IT systems so our researchers can achieve maximal impact.

RE-COMMITTING TO SELF-CARE AND GROUP WELLNESS

To do the important work of public health, we need to bring our best selves. Doing this is HARD — it requires intentionality and community. At UW SPH, we've invested in a mental health specialist who supports students with direct services and trains our faculty on how to facilitate mental health check ins with students during challenging times (see pages 14-15). We've also created an "access and advocacy coordinator" role to help students navigate the various resources available to them.

MAINTAINING HOPE AND FINDING JOY

The ability to imagine a light at the end of a very long tunnel — even when we can't see it — is core to what makes us human. Public health work is essential, and we do this work knowing that collectively, we make a difference in people's lives. As you read the stories of impact in this issue of the UW School of Public Health magazine, I hope the work that our students, staff and faculty are doing brings you joy. These are stories of people who have persevered during difficult times, have supported each other, and have brought light into the lives of others.

I am grateful to every one of you for the work that you do and the positive changes that you are creating to build a world of healthy people. Stay strong and be well.

Hilary Godwin
Dean, UW School of Public Health

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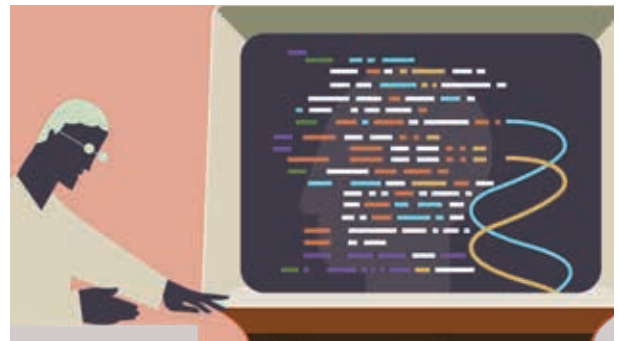
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Community trust and health infrastructure are necessary to prepare for future public health crises

WE DESERVE CLEAN AIR NOW

Together, researchers and communities improve air quality across Washington state

WRITTEN BY STARRE VARTAN
PHOTOS BY MARK STONE

It's not just textbooks and homework woes that unite schoolkids of the sunny Yakima Valley with their counterparts in rainy Seattle's urban neighborhoods. They have air pollution in common too.

Despite dramatically different landscapes, both areas of Washington state struggle with air contaminants that can negatively affect children's health. That's why scientists at the University of Washington Department of Environmental & Occupational Health Sciences (DEOHS) are measuring air pollution, studying its impacts, and testing possible solutions.

With that scientific evidence, the researchers are collaborating with community partners to mitigate health repercussions — helping our youngest and most vulnerable breathe easier.

Air pollution doesn't just smog up the skies. When people breathe particulate pollution generated by vehicle and aircraft engines, industry, or biomass burning, fine particles (called PM2.5 for their size) can irritate lungs, and ultrafine components can move into the bloodstream, settle into organs, and even impact the brain. Over time, PM2.5 can affect respiratory and heart health.



Lianne Sheppard, a professor in DEOHS and biostatistics, has linked long-term exposure to PM_{2.5} with neurological effects in the elderly. In a recent study, she and her colleagues found that people who lived in places with higher exposure to fine particulate matter air pollution had a higher incidence of dementia.

She also plans to look at the impact of ultrafine particles (the tiny PM_{0.1}). “These are potentially more toxic because the smaller the particles are, the potentially deeper they can get into your body,” she says. “The emerging understanding is that there’s a lot more of them out there than we realize.”

HELPING KIDS WHO HAVE ASTHMA

Catherine Karr is a practicing pediatrician, an environmental epidemiologist and a DEOHS professor. She has a firsthand understanding of the impact of poor air quality on kids, not just from transient events like wildfires, but from daily exposures such as car and truck emissions.

“One of the things I commonly encounter in my everyday clinical practice is kids with asthma, which is a really important and unfortunately common chronic disease for children,” Karr says.

The impacts of air pollution start early. Karr has researched both how prenatal exposure to air pollutants

“People have started to think that in addition to writing a prescription for asthma medications, maybe we should be writing prescriptions for HEPA air cleaners.”

CATHERINE KARR

Professor in the UW Schools of Public Health and Medicine

can affect whether kids eventually get asthma and how air quality affects kids who already have the disease.

The working theory for air pollution causing asthma is that pollutants a pregnant person breathes in set off a series of inflammatory processes that compromise a fetus’s immune system development.

“Individuals who are pregnant and have higher exposure to air pollutants, particularly traffic-related air pollutants like particulate matter and nitrogen dioxide, are more likely to have children who later develop asthma,” says Karr.

The science connecting poor air quality with exacerbation of asthma in kids with the disease is long-established, so Karr has focused on solutions.

“While we slowly wait for policy and science to move along to improve air quality in general, are there things that individuals or families can do that might improve their child’s asthma status so kids can do all the things that a kid wants to do?” she asks.

That question led her to helm an intervention study in the Lower Yakima Valley of central-eastern Washington, which has some of the worst air quality in the country due to animal agriculture emissions, wood-burning stoves, and traffic and agricultural equipment sources, all combined with a local climatic condition that traps bad air in the valley on certain days.

Karr brought the UW’s scientific and research expertise to the Yakima Valley Farm Workers Clinic, whose patients are majority-Latino, and listened to what local experts told her about their needs: asthma interventions such as education and HEPA air cleaners that improve quality of life for kids. Karr then designed a randomized study that provided some families of children with asthma ages 6–12 with air cleaners for their homes along with education, and a control group of families with asthma education alone.

While the condition of kids from both groups improved, those with the HEPA air cleaners in their homes had greater progress. Karr’s team not only gave the air cleaners to kids in the control group at the end of the study, but also disseminated the study’s findings to



Dr. Catherine Karr measures airway inflammation on a participant for the Home Air in Agriculture: Pediatric Intervention Trial. Photo by Lisa Younglove.



DEOHS Assistant Professor Elena Austin (right) discusses air sampling methods with State Rep. Tina Orwall (left) and former SeaTac Deputy Mayor Peter Kwon (center) during a visit to Highline Public Schools in 2020.

researchers and pediatricians to inform their management going forward.

CLEARING THE AIR IN SCHOOLS

UW researchers are also monitoring the air quality in the place kids spend most of their time outside their homes: schools.

Elena Austin, an assistant professor in DEOHS, determined that ultrafine particle pollution impacts communities under airplane flight paths within 10 miles of Seattle-Tacoma International Airport. Many lower-income residents and people of color live in these areas, making this additional air pollution burden an environmental justice issue.

According to Austin, jet fuel pollution from planes, as well as black carbon and air pollutants from roadways, infiltrates schools in these neighborhoods. “We partnered with schools in South King County and showed 50% infiltration of the pollutants into classroom spaces,” says Austin. The Washington state Legislature had funded the study, called MOV-UP, and the findings were significant enough that the legislature also funded Austin’s new project, called Healthy Air, Healthy Schools.

In the new project, Austin and her team carefully measured air quality under normal conditions, then installed portable HEPA air cleaners in classrooms. After the intervention, Austin says, “we were seeing approximately 10% of the outdoor particles in the indoor space. So it was a significant removal of particles.” The air cleaners reduced ultrafine particles from both trucks and planes.

Encouraged by the results, the two school districts

involved in the study purchased HEPA air cleaners for most of their classrooms.


The next phase of the project will expand the HEPA-air-cleaner testing to more schools in Seattle and central Washington and examine how effective they are over a year. Austin will also take more detailed measurements to better understand how air pollution impacts kids at school. “We’ll be looking at student performance in the classroom, and also hoping to look at some personal measures of lung function in the students,” she says.

Following several years of unprecedentedly large and intense wildfires in the Western U.S., with smoke sometimes blanketing entire states, most of us are more aware of air quality than we were in the past. A global pandemic caused by an airborne pathogen has only heightened that awareness.

It’s not often that research findings translate as quickly into action as they have in these projects at DEOHS. According to Mike Yost, chair of DEOHS, community involvement with the science is foundational to the work. “This connection between the community and scientists has to start early; you can’t just bring it at the end of the study,” he says. Community stakeholders can then provide input on the research and messaging “because you built those bridges and are talking the same language,” says Yost.

These conversations benefit both the scientist’s ability to do high-quality, meaningful research and the community’s power to make positive change. It also means legislators are more likely to fund interventions, which happened in this case.

Yost says, “Community involvement is the key to everything.”

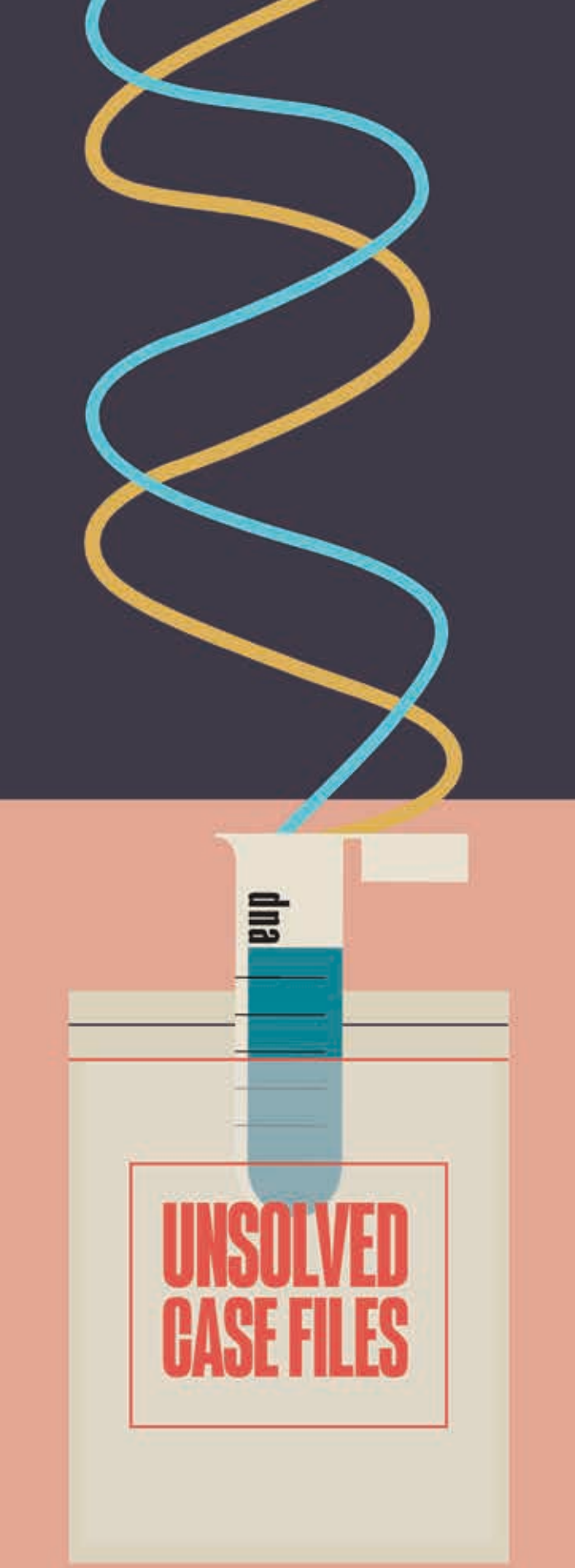
An illustration of a person with short blonde hair and glasses, wearing a light-colored long-sleeved shirt, looking towards the right. The person is positioned in front of a large, stylized background of the word 'DATA' in black, textured letters. Below 'DATA', the word 'GAPS' is written in the same style. The background is a solid light orange color. The person's hands are visible at the bottom, appearing to interact with a surface.

DATA GAPS

Together, we can solve cold cases with more advanced statistical analysis of DNA

WRITTEN BY ALLEGRA ABRAMO
ILLUSTRATION BY GABRIEL LOPEZ





When you grip a mug, open a door or grasp a knife, you leave behind skin cells containing your DNA.

Imagine that the same knife you used to slice zucchini for your dinner was later used in a crime. In addition to DNA from the victim and the perpetrator, your own genetic profile could very well be detected in samples obtained from the knife.

Investigators commonly find mixtures of DNA in a single forensic sample that contain various unequal contributions, like the DNA samples that could come from multiple people using one knife. Now, the development of technologies can reveal and identify smaller, previously undetectable amounts of DNA samples within the mixture, which enables more specific DNA identification.

But how do investigators determine whether DNA profiles in the evidence match a suspect's profile? That takes math — and sophisticated software to generate key statistics presented in court. The process gets even harder with cold cases, where older DNA profiles often didn't have refined levels of detail in the mixture.

That's where statistical geneticists like Bruce Weir and his colleagues at the University of Washington School of Public Health come in.

Weir, a professor of biostatistics and the director of the School's Institute for Public Health Genetics, developed the groundbreaking statistical methods used around the world to evaluate DNA evidence. Today, Weir and his colleagues are developing and refining statistical methods that will aid in solving cold cases, take advantage of new genetic sequencing technology, and improve how forensic DNA profiles are interpreted in cases with sparse genetic data. These efforts are helping forensic scientists, law enforcement and the courts use and accurately interpret increasingly sophisticated DNA profiling techniques.

"One of our missions in the School is to do things for general societal benefit," says Weir, who also directs the Summer Institute in Statistical Genetics, which he founded 27 years ago to train forensic scientists and researchers. "I think it is to everyone's benefit to have forensic science conducted and presented correctly."

"I think it is to everyone's benefit to have forensic science conducted and presented correctly."

BRUCE WEIR

Professor, Department of Biostatistics

CRACKING COLD CASES

Unsolved crimes, sometimes decades old, present extra challenges when it comes to comparing older DNA evidence with suspects' profiles. That's particularly true when evidence includes mixtures of DNA from more than one person, a common occurrence.

With such mixtures, one person usually contributes more DNA than others, Weir explains. For example, in sexual assault cases, most of the DNA comes from the victim and a smaller amount from the perpetrator. "That minor contributor's DNA might not be complete," Weir says. When portions of the DNA profile are not detected, that's called "dropout," which was harder to analyze in cold cases using previous methodologies.

Now Weir and colleagues at the FBI and the University of North Texas have developed software that allows those old, incomplete profiles to be used. With the new software, analysts can say, "Well, there is still a strong association between the suspect and the evidence, even when we take into account the dropout," Weir says. That can help the defense as well as the prosecution, he notes.

Weir first developed statistics to interpret DNA mixtures back when genetic evidence took off in the early 1990s and calculations were done by hand. In fact, he testified in the first major case where such mixture analysis was used: the murder trial of O.J. Simpson. In recognition of his contributions to forensic science and population and quantitative genetics, Weir was elected as a Fellow of the Royal Society of London in 2021.

A paper on the new mixture analysis software has been published in a peer-reviewed journal, and forensic scientists in the U.S. and abroad are using the software.

"The software could be very useful to us," says Sean Carhart, DNA technical leader for the Washington State Patrol's crime laboratory. "It may allow interpretation of older data, particularly more complex DNA mixtures, that is not otherwise feasible."

TAPPING ADVANCES IN GENETIC SEQUENCING

Labs today can measure genetic variation in large portions of the human genome quickly and inexpensively in a process called "genetic genealogy," enabling consumers to locate distant relatives and learn about their health risks from sites such as 23andMe and Ancestry.com. Forensic science has just begun to employ these large, public data sets, most famously in the use of such consumer sites to find suspects via their relatives.

Instead of obtaining exact DNA sequences, forensic analysts currently examine just 20 places, or loci, across the genome, counting the number of times short DNA sequences are repeated at each site. The number of repeats at each of 40 total sites (one set inherited from each



Bruce Weir, professor in the School of Public Health's Department of Biostatistics.

parent) varies from person to person, allowing forensic scientists to assess matches based on the length of those repeats.

The next frontier is sequencing the genome at those 20 sites. That finer-grained data could aid with interpreting mixtures, and even distinguish between twins. It could also reveal that a suspect's DNA does or does not match the evidence, Weir says. "So it can protect the innocent and make things look stronger against the guilty," he says.

But first, for that wealth of sequencing data to be useful, methods for evaluating potential matches have to be updated. That's the focus of Sanne Aalbers, a Ph.D. candidate working with Weir. Aalbers, who also has a background in forensic science, is working under a National Institute of Justice grant she was awarded to develop population estimates for expanded genetic profiles. The estimates are required to calculate DNA matches. She is also considering the practical implications of her work, interviewing forensic scientists to assess how they understand and use the models she's developing.

"I'm excited about the opportunity to combine both theoretical/quantitative research with qualitative research," Aalbers says. "This is entirely due to the interdisciplinary nature of my Ph.D. program in Public Health Genetics, which allows me to sort of bridge that gap between theory and practice."



How Washington state's agricultural and food access sector withstood the pandemic

Together, we can create a more equitable, resilient and economically viable food system

WRITTEN BY KELSEY E. THOMAS
PHOTO BY JOSHUA TRUJILLO



Volunteers prepare food for delivery to homes of people in need at the University District Food Bank in Seattle, Washington on Dec. 16, 2020.

“The U.S. emergency food system is chronically underfunded. Historically, we haven’t invested in the infrastructure consistently. So when an emergency comes along, public investments are often not enough because the infrastructure hasn’t been built.”

JENNIFER OTTEN

Associate Professor, Department of Environmental & Occupational Health Sciences

In the early days of March 2020, Seattle-based anti-hunger nonprofit Northwest Harvest raided their food stores meant for as late as July to create boxes of shelf-stable food for vulnerable populations sheltering in place.

Two months later, farmers in eastern Washington and the Skagit Valley rushed to donate 1 million pounds of potatoes that would have gone to waste because of restaurant shutdowns and the reduced demand for french fries.

Meanwhile, in every corner of the state, consumer habits were shifting. People started ordering online, sanitizing every package or shopping primarily at farmers markets, feeling that local produce might be safer.

One thing was clear: While the impact of COVID-19 was felt differently across Washington state’s food system, it was felt everywhere.

A report from researchers at the UW School of Public Health found that disruptions triggered by the pandemic pushed the state’s food system close to breaking, but not collapse. In both the agricultural and food access sectors, researchers attributed this resiliency to organizations’ and farmers’ ability to adapt, innovate and collaborate quickly. It was also sustained by increased government support, including \$100 million in aid and support programs from Washington state public agencies.

Led by Associate Professor Jennifer Otten and Assistant Professor Sarah Collier, faculty in the School’s Nutritional Sciences Program, the assessment analyzed input from over 14,000 participants across 10 studies conducted throughout the pandemic. Participants ranged from farmers and ranchers to policymakers and community leaders in food access. The report’s findings show what is needed to create a more equitable, resilient and economically viable food system.

“The U.S. emergency food system is chronically underfunded,” Otten says. “Historically, we haven’t invested in the infrastructure consistently. So when an emergency comes along, public investments are often not enough because the infrastructure hasn’t been built.”

Food producers feel the impact

Given the diversity of Washington’s agricultural sector — representing more than 300 crops and employing about 140,000 workers — it’s not surprising that producers felt COVID-19’s impacts differently. Farmers, ranchers and growers in eastern Washington, and BIPOC and military veteran farmers, tended to experience a greater financial impact compared to other food producers in the state. Most grappled with shifting market demands, supply chain issues and higher operational costs, which were also felt unevenly.

Farmers were already facing other challenges, from worker shortages to wildfires and heat waves related to climate change. Despite this, many farmers discovered new opportunities to collaborate.

In one cross-sector collaboration, dubbed EastWest Food Rescue, volunteers transported truckloads of potatoes, onions and other produce that farmers otherwise couldn’t sell to areas of the state with high food insecurity. While many farmers have long been interested in such initiatives, the costs and other barriers to setting them up are high. Farmers and consumers would benefit if programs created during the pandemic that link farmers and food access are continued — or even expanded — going forward.

“There’s this hope across farmers, food retailers and food access organizations for more centralized efforts to form these networks,” Collier says. “But farmers need the help of other organizations to make it happen. That’s not a financial burden they can typically afford to prioritize.”

Food access inequities exacerbated

The pandemic laid bare the extent to which many Washingtonians live on the edge of food insecurity, especially among lower-income and historically marginalized populations, including BIPOC and immigrant households. Before the COVID-19 pandemic,

approximately 1 in 10 Washington state households reported food insecurity; during the pandemic, one quarter to one third of respondents reported food insecurity, the report found.

During the pandemic, use of public assistance dramatically increased, including SNAP, WIC and food banks. While local anti-hunger organizations and the state government sprang into action to fill needs, the system remains vulnerable, Otten says.

The early months of COVID-19 saw food banks scrambling to distribute food safely through new means such as pre-packed boxes. Supplying that food presented challenges, as food pantries had shifted over the past decade to focus on fresh food and shopper-driven selection models. Pantries also experienced a dramatic drop-off in donations because of household consumer demand for shelf-stable items, and food banks initially refused to take household donations because of food safety uncertainty at the time.

“We were clearing out all of our warehouses,” says Christina Wong, director of policy and advocacy at Northwest Harvest. “We have a program that gives kids backpacks with shelf-stable food when the school year closes, and we even unbundled all of those to put the food into boxes.”

Food banks and government programs did not always meet the needs of the most vulnerable populations. Throughout the pandemic, 20% to 28% of survey

respondents who receive food assistance indicated too much paperwork was involved. A third also reported that their benefits were not sufficient to meet their needs. According to Wong, some food banks’ policies also add barriers to access, such as limited hours or requiring ID. These are crucial learnings because for many families, the end of COVID-19 won’t mean the end of food insecurity.

The pandemic highlighted changes that could lead to longer-term stability. It advanced the conversation around universal school meals and contributed to remote registration for WIC and an initiative to use SNAP funds online at select retailers. And partnerships between established anti-hunger organizations and grassroots, BIPOC-led groups have increased.

Moving forward, all sectors of the food system can turn weaknesses into opportunities for a more resilient network.

“Beyond personal nutrition, food is a human rights issue and a natural resource,” Otten says. “In the same way, it’s an occupational health issue because we want to make sure that the people who are growing, serving and preparing our food are also well taken care of. All of these different pieces of public health come together around food.”



Learn more about the School of Public Health's Food Systems, Nutrition, and Health Major at: nutr.uw.edu/undergraduate/foodsystems

WASHINGTON SNAPSHOT

12th

Washington's ranking among all U.S. states in total agricultural sales

2,000+

Washington restaurants closed permanently in the first six months of the pandemic

3.4%

The increase in the cost of food in 2020, the largest change since 2011

22%

Of non-Hispanic Black households and 17% of Hispanic households experienced food insecurity, as compared with 7% of white households

13%

Of Washington state's economy is agriculture

50%

Of the state's agriculture land will change hands in the next 20 years as farmers retire

13%

Of Washington farmers are military veterans

42%

Of Washington farmers are female

Mental Health Matters

Together, we can heal from the trauma of COVID-19

WRITTEN BY KATE STRINGER
ILLUSTRATION BY LEA HIDAKA



Since the pandemic, many professors in the University of Washington School of Public Health have shifted to starting class with a check-in.

Sometimes professors ask students what color best matches their emotions. Other times, they ask what brings students energy, or they begin class with a few minutes of calm breathing. While the professors are not trained mental health therapists, they are finding ways to support their students' well-being.

Now that we've transitioned to living with COVID-19, what comes next for our mental health? More people reported struggling with anxiety, stress, and other adverse mental health outcomes during the pandemic compared to before it. Multiple studies have found that often individuals from marginalized backgrounds are experiencing the worst outcomes and because of staffing shortages, mental health workers are unable to serve a spike in demand.

Yet researchers and practitioners say we are also resilient, and that in the face of stress and trauma, most people can adapt. Practitioners even discovered innovations in how they delivered mental health that could address inequities in access.

That's why, as we recover from the pandemic, researchers and practitioners say we need to take a community-based approach to mental health. In other words, to help all of us heal our mental health, we all need to collectively practice well-being.

"COVID-19 is having observable effects on mental health, there's no doubt about that," said Michele Bedard-

Gilligan, a psychologist at UW Medicine and an adjunct associate professor in global health. "People are incredibly resilient and adaptable. We can cope even when things feel intolerable. Most of us can do that, but there's going to be some of us who are more vulnerable and for whom it's more challenging."

Community-based mental health support can happen anywhere: schools, businesses, sports teams, places of worship or book clubs, said Jen Nguyen. Nguyen is a mental health counselor at the UW Counseling Center and a liaison to several schools in the Health Sciences (including the School of Public Health), who provides consultation to faculty and holds mental health workshops for students.

Integrating community-based care can look like check-ins with students at the beginning of class, a once-a-week guided meditation in the office, or even encouragement that employees use their vacation time, she said. Creating a culture where it's okay to talk about mental health can combat stigma and embolden us to support the well-being of ourselves and each other.

"You don't necessarily need to see a mental health professional to help with what's going on, but you need someone to listen and relate to you," Nguyen said.

IMPACT OF INEQUITIES IN MENTAL HEALTH

While we all experienced the same pandemic, we did not all experience it the same way — especially when it came to our mental health.

“It’s been devastating on people’s wellness,” said Deepa Rao, clinical psychologist and vice dean at the School. “We’ve all experienced varying degrees of trauma, some milder, others more severe.”

Population groups with existing health disparities were more likely to experience the worst of this trauma.

Arjee Restar, an assistant professor of epidemiology, studied how the pandemic impacted trans communities’ mental well-being. Looking at 76 countries, Restar and fellow researchers found an increased prevalence of depressive symptoms, anxiety and suicidal ideation since the pandemic began. This may have been due to a lack of access to gender-affirming care and socioeconomic loss, according to findings published in PLoS ONE and the British Medical Journal Global Health.

“The COVID-19 pandemic has immensely widened disparities in negative mental health outcomes and inequities in access to gender-affirming care among trans communities all around the world,” Restar said.

The impact on children and young adults has also been troubling. The American Academy of Pediatrics and two other major medical organizations have declared a national state of emergency in children’s mental health, citing rising numbers of emergency department visits for mental health crises.

In addition, adults with severe mental illness saw worse symptoms related to isolation and anxiety, said Dr. Lydia A. Chwastiak, who works in psychiatry at UW Medicine and as an adjunct professor in global health. Some of her patients had relied on resources like food assistance agencies

and human services departments, which closed at the beginning of the pandemic, leaving many without help.

Public health workers were also affected. More than half of the public health workforce reported at least one symptom of post-traumatic stress disorder as a result of the COVID-19 pandemic, from data collected in partnership with the Northwest Center for Public Health Practice.

HOPE FOR OUR MENTAL WELL-BEING

The pandemic also forced us to rethink how mental health care is delivered, leading to surprising innovations that could improve access long term.

When the pandemic began, Associate Professor India Ornelas transitioned her program Amigas Latinas Motivando el Alma, or ALMA, online. ALMA is a community-based approach to addressing mental health

disparities for Latina immigrants, disparities which were also exacerbated by the pandemic.

The women met on Zoom over six weeks and learned strategies for coping with stress: using practices that came naturally, practicing yoga, mindfulness, or breathing techniques, and building community within their group.

Ornelas found the program was just as impactful on the women’s mental health as when it was delivered in person. This indicates an opportunity to expand the program to Latinas in rural areas.

“During the pandemic, we are becoming more aware of how important mental health is,” Ornelas said. “We need public health solutions to mental health that are not just health care solutions.”

Traditional counseling sessions also transformed. Telehealth services for mental health, which hadn’t been popular before the pandemic, became widely used at UW Medicine, Bedard-Gilligan and Chwastiak said.

Therapists could reach patients in rural areas. Patients didn’t have to fight traffic and pay for parking. Bedard-Gilligan was able to assist patients struggling with something in their home environments to confront problems in real time, rather than assigning homework.

“That’s where some of the creativity has come in. The way we deliver mental health care will stay with us,”

Chwastiak said. “We’ve uncovered innovative strategies to expand reach and access to services.”

People also began finding mental health support shared online, such as meditation apps and yoga videos. Bedard-Gilligan recalled a friend who mentioned how helpful a podcast was that reminded her that “thoughts are not facts.”

“I thought, wow, that’s a therapy technique I do with my clients and you got that from a one-hour podcast,” Bedard-Gilligan said.

As the pandemic seemed to cause more divisions and disagreements, perhaps there’s one thing that may unite us going forward: mental health does matter.

“If you don’t have good mental health and well-being, it’s hard for you to contribute to society,” Ornelas said. “We know it impacts people’s everyday lives, their productivity at work, their parenting, their physical health. During the pandemic we are becoming more aware of how important mental health is.”

Encouraging communities to support mental health, helping people engage in self-care, training more mental health care workers, providing equitable access, addressing mental health stigma, and giving ourselves time to heal are “going to take everything we’ve got,” Rao said. “It’s not going to be easy. It’s going to take a lot of flexibility and grace with ourselves and each other.”

“It’s not going to be easy. It’s going to take a lot of flexibility and grace with ourselves and each other.”

DEEPA RAO,

Clinical Psychologist and Vice Dean,
UW School of Public Health

TOGETHER

WE ARE READY

WRITTEN BY KATE STRINGER

PHOTOS BY THE SOMALI HEALTH BOARD

For years, Ahmed Ali, executive director of the Somali Health Board, has advocated for the health of Somali residents in King County, Washington. So, when COVID-19 hit, Ali asked public health leaders to bring mobile testing sites to Somali neighborhoods.

Public health leaders were skeptical that people would show up, but Ali knew his community well: to get residents tested required meeting them where they were.

Ali and his team set up two testing sites in neighborhoods south of Seattle. They informed families they could get free tests, hand sanitizer, masks and even diapers. Volunteers from the Somali community translated or answered questions.

Over a weekend, 2,500 people were tested. The effort was so successful, these neighborhood pop-up testing sites became a model for public health leaders to reach communities. Later, the Somali Health Board partnered with University of Washington School of Public Health researchers to study barriers to testing and used the results to improve vaccine distribution.

“The moral of the story is that public health needs to understand and appreciate the organizations who are on the ground and serving the communities,” Ali says. “How do we structure that moving forward to make sure they get the resources they need?”

While the Somali Health Board was a success story in supporting its community during the pandemic,

the larger public health system was not prepared for COVID-19. Understanding community needs, combating misinformation and distributing vaccines equitably took months, if not years, to develop.

There’s much we can learn from this experience to help us through the next public health crisis. Students, alumni, researchers and community partners who have been supporting their neighborhoods during the pandemic have some solutions so that equity is centered, communities are resourced and public health systems are trusted.

They’ve found that preparing for the next pandemic also makes us better prepared to support public health every day.

PUBLIC HEALTH REQUIRES ALLIANCES

Pandemics are not going away. The past 20 to 30 years have seen a dramatic increase in the frequency, severity and reach of infectious disease epidemics, the vast majority of which originated in animals: West Nile, SARS, bird flu, H1N1 influenza, MERS, Ebola, Zika, and now, of course, COVID-19.

Instead of tackling pandemics in a reactionary way, it’s time to be proactive. The UW Alliance for Pandemic Preparedness, led by Professors Judith Wasserheit and Peter Rabinowitz, gathers experts across the UW to collaborate with partners in Washington state and in low-



Community trust and health infrastructure are necessary to prepare for future public health crises

and middle-income countries to design, coordinate and translate research to strengthen pandemic preparedness, response capacity and other related activities. Wasserheit advocated for creating this united front long before COVID-19 began, and at a time when experts didn't view pandemics as a priority.

"If we want to prevent and respond to pandemics, we need to understand why and how viruses with pandemic potential emerge and spread, and what combination of countermeasures works best in each kind of community," Wasserheit says. "We have got to have a much more strategic, integrated system to deal with the next pandemic — one that proactively coordinates our efforts in several critical areas."

These strategic areas include:

- Assessing the risk of emerging new or recurring infections that have pandemic potential, and the risk of local and national spread
- Developing, testing and delivering biomedical innovations (like vaccines, drugs and diagnostic tests)
- Designing, evaluating and implementing policy and behavioral interventions (like masks)
- Strengthening workforce capacity
- Coordinating communication to share rapidly evolving information clearly and in a timely way

New infectious diseases have emerged as humans and animals have come in closer contact through population growth, intensifying agricultural production, global travel, climate change and habitat destruction.

That's why Alliance for Pandemic Preparedness members are playing key roles in the U.S. Agency for International Development's Discovery & Exploration of Emerging Pathogens – Viral Zoonoses, or DEEP VZN project, being led by Washington State University. UW researchers are partnering with in-country teams in Africa, Asia and Latin America to sample animals and humans to detect new pathogens with pandemic potential. The project will also identify drivers of disease emergence.

"This calls for a whole new approach to infectious diseases and pandemic preparedness," Rabinowitz says. "We have to think about a lot of different factors converging in the way we are producing food, conserving ecosystems and coexisting with animals in shared environments. We need sophisticated, integrated approaches to these complex events that are happening."

In considering our preparedness for future pandemics, Wasserheit and Rabinowitz are optimistic about new technology to assess risk, sequence viruses, develop vaccines, diagnostics, and therapies, and track pathogens around the world. More work is needed, however, to understand our changing relationship with animals, food production and climate change, and bring communities

together without sowing division.

“My hope is that we continue to build on the positives and all that we have learned from COVID as we come through to the other side of this pandemic,” Wasserheit says. “I’m pretty optimistic about this.”

PUBLIC HEALTH REQUIRES TRUST AND STRONG COMMUNICATION

About a year into the pandemic, scientists created vaccines. They made them faster than any vaccine in history. They used cutting-edge mRNA technology. They were highly effective in preventing disease. But as Jen Nelson, affiliate professor of biostatistics put it, that was not enough.

“There is so much that has to go around that one piece of amazing science to solve the problem,” Nelson says. “You have to be able to communicate; that’s what you need to build trust.”

Communication was one of the biggest challenges of the pandemic. Misinformation abounded about the origin of the virus, the creation of vaccines, and the best ways to keep oneself safe. Misinformation led to global discrimination, division and mistrust.

Nelson works as a biostatistician with the Food and Drug Administration and the Centers for Disease Control and Prevention (CDC) on vaccine safety and effectiveness. During the pandemic, she served in a working group that made safety recommendations to the CDC. She reviewed data — electronic medical records, COVID-19 health apps, doctor or patient reports, and statistics from partnering countries — for any issues that might have arisen pertaining to vaccine safety.

While the data indicated the vaccines posed minimal risk, Nelson and her fellow scientists weighed how to communicate their confidence in the vaccine’s safety, while also being cautious in case future issues arose. If they were too confident and something went wrong, that could erode public trust. But if they were too cautious, people might not feel safe getting a vaccine.

Some researchers wanted better communication about how the scientific process was working behind the scenes to evaluate safety and inform policy. When rules about wearing masks changed based on new research, some people saw that as indecisive leadership. In reality, that was the scientific process at work gathering more information and leading to better-informed decisions.

“Sometimes you make a decision that is not the optimal decision, but they are formed based on the best information at the time,” says Brandon Guthrie, associate professor of global health and epidemiology and a member of the UW Alliance for Pandemic Preparedness. “It’s as much art as science, figuring out how to communicate effectively to a general audience.”

Guthrie helped lead an Alliance effort, in collaboration

with the Washington State Department of Health, to produce the COVID-19 Literature Situation Report, a daily digest summarizing the latest COVID-19 research for local and state public health professionals. The digest had more than 5,600 subscribers.

Guthrie says he hopes that in future pandemics or emergency situations, more policy decisions can be made based on the latest and most accurate data. He says research showed it was safe to open schools in the fall of 2020 with minimal transmission, yet many schools remained closed to in-person learning while restaurants, gyms and bars opened.

PUBLIC HEALTH REQUIRES HEALTH EQUITY AND COMMUNITY KNOWLEDGE

After their successful pop-up COVID-19 testing sites, the Somali Health Board used its successful model for vaccinations.

At one of these events, a group of Muslim Somali women approached then-undergraduate Ayan Mohamed and asked if there was a private place where they could get their vaccines. Mohamed led them to such an area and answered their questions. Afterward, one woman returned to Mohamed, thanked her and said a prayer for her.

“There’s a lack of understanding of what BIPOC [Black, Indigenous and people of color] communities go through and what disparities are exacerbated in pandemics,” says Mohamed, now a Master of Public Health student. “How are you going to know what a community is going through if members are not given a space or voice to speak on their experiences?”

The COVID-19 pandemic exacerbated health disparities experienced by communities of color. Some were more likely than white populations to get COVID-19, be hospitalized for severe illness or die, according to the Washington State Department of Health.

Through a grant from the UW Population Health Initiative, a research partnership between the Somali Health Board and the UW School of Public Health investigated health equity barriers the King County Somali community faced during the pandemic. They found that misinformation, distrust of medical institutions and a lack of transportation were barriers to testing.

However, having members of the Somali community present at testing events helped build trust. Students like Mohamed could translate for people who didn’t speak English and address concerns.

“People are most likely to trust information that comes from experts who look like them or are part of their community,” says Sabrina Ebengho (Public Health-Global Health, ’21), who was a policy and data coordinator at the Somali Health Board. “But that representation needs to be accompanied with built trust and continued community presence and engagement so the community can trust that



#IDIDMYPART



“We need to resource community-based organizations and follow their lead because they are so much more agile and have expertise.”

KESHET RONEN

Assistant Professor, Department of Global Health

you have their best interests in mind.”

While the study was on the Somali community, the findings have implications for how public health leaders can better work in partnership with groups that have historically faced marginalization, says Keshet Ronen, assistant professor of global health, who helped lead the research in partnership with Ahmed Ali.

“There’s a pattern of communities knowing what’s up, figuring out a solution, and eventually public health infrastructure catches up with it,” Ronen says. “We need to resource community-based organizations and follow their lead because they are so much more agile and have expertise.”

In addition to Ebengho, students Nasra Mohamed, Najma Abdi, Ayan Mohamed, Asiya Ahmed and Andrea Scallon, as well as School of Public Health faculty Kate West, participated in the research.

Students found that bringing an anti-racist lens to research like this is critical to addressing historical trauma.

“When you do research in marginalized spaces, how do you have an anti-racist perspective?” says Abdi, an undergraduate student. “In terms of shifting power, it’s about including the voices of the community in the work you want to do.”

PUBLIC HEALTH REQUIRES STRONG INFRASTRUCTURE AND CONSISTENT SUPPORT

Chronic underfunding of public health infrastructure means that emergencies divert professionals’ critical everyday work and cause disruptions across the system, says Janet Baseman, professor of epidemiology at the UW School of Public Health.

When Eliza Ramsey began her Master of Public Health program, it was six months into the pandemic. She began tracking food-borne illnesses with the Washington State Department of Health, filling in for epidemiologists who had been diverted to responding to the virus. With limited staff, food-related illness cases and outbreaks couldn’t be traced as quickly as needed.

Ramsey and Baseman, who is also the co-director of the Washington state-based Integrated Food Safety Center of Excellence, are now working on a study to understand how COVID-19 disruptions affected food-borne disease surveillance.

“We want public health to be resourced well enough so that foundational public health services needed in our communities are not pushed to the side every time there is a pandemic or other emergency,” Baseman says. “This is important for population health, for our communities, not just for the functioning of the public health system.”

Some of the answers to how we can support public health infrastructure long term can be found in the Centers of Excellence model, Baseman says.





The Integrated Food Safety Center of Excellence that Baseman co-leads is one of five regional centers in the nation focused on surveillance of food-borne illnesses. The centers were created by the Food Safety Modernization Act in 2011, when Congress recognized food safety was so important that it required coordinated surveillance and prevention activities. The law called for partnerships between academic institutions and public health departments, and supported this partnership with funding.

The partnerships create an ecosystem where community health professionals collaborate to address public health crises, whether that's food-borne illnesses or pandemics.

The centers also train the future workforce, including students like Ramsey, who, post-grad, will help build the next generation of data infrastructure with a state department of health. Ramsey says she hopes students can be viewed as a valuable resource in public health, even beyond pandemics.

"I feel immensely grateful that as a student at the UW, I have this opportunity to work in a space that I ultimately want to go get hired in," she says.

PUBLIC HEALTH REQUIRES MEETING PEOPLE WHERE THEY ARE

Communities throughout the U.S. responded very differently to the COVID-19 pandemic. Some embraced vaccines and mandates while others rejected them. Division ran deep.

VillageReach is one organization that found ways to build trust between communities and public health institutions. As Erin Larsen-Cooper (MPH, '12) puts it, building trust requires meeting people where they're at, geographically and philosophically.

Larsen-Cooper is a director and team lead at

VillageReach, a nonprofit that improves health care access globally. When the pandemic hit, Larsen-Cooper and her team of other School of Public Health alums pivoted their work to support Washington state's local health jurisdictions.

"A big lesson we learned is the need for hyperlocal context," says Emily Gibson (MPH, '21), health systems associate at VillageReach. "We hear a lot from counties [outside of Seattle], 'We are not like King County.' Folks want us to know their barriers are different."

Julia Guerette (MPH, '19), data analytics manager at VillageReach, helped local health departments use ZIP code-level data to understand their community's vaccine uptake, identifying where language barriers or a lack of transportation could cause barriers to access.

Some communities didn't trust their local health departments, but instead trusted police, fire departments or clergy. Knowing this, health workers could collaborate with trusted messengers to encourage their community to get vaccinated or wear masks.

"We have an opportunity now to call people in and build up public health institutions as trusted parts of communities," Gibson says. "The way we can be most successful is making people feel called in and not alienated. If they have a hard time connecting with all the recommendations, we can find where they do connect."

Building a pipeline of trust, health infrastructure and good relationships — and doing it now — supports community health, whether or not there's a public health crisis.

"The solutions we're working on today should be here tomorrow," Guerette says. "Public health is still going on outside of COVID; all these other problems we've had for decades, we still need to address. How do we build systems that are sustainable, and not just for COVID?"



GUARDIANS OF OUR SPACES

Together, let's view custodians as public health workers who keep communities healthy and safe

WRITTEN BY EVALYNN FAE TAGANNA ROMANO, MPH, MSW '21

Custodians at the University of Washington begin their day with a 4:30am breakfast delivered by Evalynn and made possible by community fundraising as an appreciation for their commitment to campus health. Photo courtesy of Evalynn Fae Taganna Romano.

By the time I was born, my father had been a hardworking custodian at the University of Washington for 13 years. My mother, an immigrant from the Philippines, began as a part-time UW custodian a couple of years later and transitioned to full-time the following year. My grandmother eventually emigrated from the Philippines to care for me while my parents worked from 4:30 p.m. to 1 a.m. When I was old enough to attend school, I did not see my parents much during the week due to our schedules. My mother enrolled me in half-day kindergarten so that she could spend time with me before she went to work. My gratitude for their sacrifices has stayed with me into adulthood.

On March 23, 2020, Governor Jay Inslee announced the “Stay Home, Stay Healthy” order. Because my mother is considered essential staff, she did not have the option to stay home. At the time, protection from COVID-19 was uncertain and campus custodians were not immediately provided personal protective equipment. As I worried for the health of my mother and her colleagues, I noticed appreciation efforts focused on health care workers on social media. I began fundraising among friends and family to build awareness and recognition for custodians.

One week after the statewide order, I delivered breakfast and thank-you notes to my mother and over 30 of her colleagues. Before I knew it, it became a weekly effort to

serve all UW Seattle campus custodians. This simple act of acknowledgment has transformed into The Custodian Project.

The Custodian Project is a community-driven, volunteer-led advocacy project. Through appreciation efforts, arts and education, it aims to uplift custodian voices and wisdom, foster understanding and respect, and change culture and material conditions for custodians at the UW and beyond. This culture shift includes viewing custodians as public health workers and guardians of our spaces who keep communities healthy and safe.

As a graduate student in the Master of Public Health program, I learned about the value of community-based participatory research approaches in advancing health equity and, in particular, the photovoice method (photography-based storytelling). I thought it would be a perfect way to partner with custodians to illuminate their experiences during the pandemic. Using photovoice, I heard stories of fear of COVID-19 infection, uncertainty due to confusing guidelines and vaccine eligibility, lack of respect from people on campus, and physical demands of the work.

Building upon the trust I developed with custodians, I connected with the UW Building Services leadership to share what I learned. For example, after a custodian revealed a photograph of their damp surgical mask from

a half day of work, we advocated for the provision of two masks per day. Our partnership over the last two years has established worker-centered solutions, including linguistically accessible COVID-19 resources, such as supporting custodians' vaccine scheduling and creating an educational video.

Here are some of the great things that The Custodian Project has been able to accomplish, all of which were based on needs identified by custodians:

ON-GOING POLICY CHANGE, COMMUNITY ORGANIZING AND DIRECT SERVICE IMPACTS

- Supporting others in winning hazard pay and wage increases
- Organizing a letter-writing campaign to Governor Inslee to include custodians in early vaccine eligibility
- Fundraising over \$40,000 to support identified needs, including grocery gift cards, masks and comfortable shoes

COMMUNITY BUILDING

- Creating a safe space for custodians to share experiences and ask difficult questions
- Connecting with other people who have friends and family who are custodians
- Providing consultation for those who would like to replicate aspects of the project for their custodians

SHIFTING MINDS AND CULTURE

- Raising awareness and inspiring action through photography exhibits, writing and working with the press to highlight experiences of custodians
- Encouraging acknowledgment and recognition of custodians; coordinating hundreds of thank-you notes
- Organizing a community event to honor and celebrate custodians

The project continues to evolve based on custodians' needs. Countless people have shared how The Custodian Project has moved them, their friends, and their family to think about the people who clean their spaces and how to show them deeper respect and care. Building personal relationships with custodians has provided a unique insight into the complexities of custodial work. I hope that this project mobilizes individuals and organizations to intentionally create a culture of care and policies centered on custodial workers' voices and essential contributions.



The Custodian Project is a community-driven, volunteer-led advocacy project. For more information visit: thecustodianproject.com



Alumna Evalynn Romano holding boxes of pastries donated by Macrina Bakery. Photo courtesy of Evalynn Fae Taganna Romano.



The Super Garbage Can. "Nurses have a stethoscope to save lives; us, we have those equipments to kill germs." Photo by UW Custodian Georgina Tabasan during photography-based storytelling sessions in September and October 2020.

The benefits of gender-affirming care

Together, we can make health care inclusive for trans youth

WRITTEN BY KATE STRINGER

There's a reason families across the country drive hundreds of miles to Washington state so their children who are trans can access gender-affirming care: extensive studies have found that this care benefits mental health. As state governments pose challenges to gender-affirming care, researchers, practitioners and students at the UW have been working to document the importance of holistic and inclusive health care services for transgender and nonbinary people.

A new study published in *JAMA Network Open* by first-author Diana Tordoff, a Ph.D. graduate of the Department of Epidemiology, shows that access to puberty blockers and gender-affirming hormone therapy mitigates negative mental health outcomes.

The study — led by senior authors Drs. Kym Ahrens and David Inwards-Breland at Seattle Children's Gender Clinic — found that having access to hormones and puberty blockers for youth ages 13 to 20 was associated with a 60% lower odds of moderate to severe depression and a 73% lower odds of self-harm or suicidal thoughts compared to youth who did not receive these medications over a 12-month period. This adds short-term insight into what was already known about the long-term benefits of gender-affirming care.

These findings are in line with the multiple medical professional organizations, such as the Endocrine Society, the World Professional Association for Transgender Health and the American Academy of Pediatrics, that maintain expert standards of medical care for trans youths, including the impact of gender-affirming care on mental health. They also align with extensive studies finding reductions in suicidality, depression and anxiety and improvements in mental well-being for trans youth.

This is critical for understanding how to support the mental health of trans youth, who face significant

disparities compared to their cisgender peers. Data from The Trevor Project's 2022 National Survey on LGBTQ Youth Mental Health found that two-thirds of transgender and nonbinary youth reported experiencing symptoms of depression, more than half seriously considered suicide, and nearly 1 in 5 transgender and nonbinary youth attempted suicide.

"It's not just about accessing care; it's about accessing it in a timely fashion," says Tordoff. "Delays in prescribing puberty hormones or blockers may in fact worsen mental health symptoms for trans young people."

Youth who initiated care but hadn't received hormones or puberty blockers by three to six months after their first medical appointment were two to three times more likely to experience depression and suicidality compared to the start of their care, researchers reported. Benefits are also time sensitive: in a sample of trans adults, access to gender-affirming care in adolescence is associated with lower odds of suicidal ideation as compared to initiating that same care in adulthood, according to a 2022 study in *PLOS ONE*.

These findings are important given the time it takes for a young person to access gender-affirming treatment. Insurance claim denials and lack of access to providers competent in trans health care are some of the factors that can delay treatment for months, if not years.

Public policy can also be wielded to limit access to care. Last year, Alabama passed one of the most restrictive laws in the nation against gender-affirming care, making it a felony to prescribe puberty blockers and hormones to minors. A similar Arkansas law and a Texas order are being challenged in court. Other states have been considering similar restrictions. Nearly a third of trans youth are at risk of losing access to gender-affirming care, according to a report published in March 2022 from the Williams



Institute at UCLA School of Law.

“It is vital to note that almost virtually none of these proposed anti-trans policies include transgender and nonbinary people’s voices. Nor do they utilize rigorous evidence-based research and data that sample transgender and nonbinary people — a statement of true non-neutrality bias rooted in transphobia,” says Arjee Restar. Restar is an assistant professor of epidemiology and a new faculty member in the School of Public Health who studies inequities in health outcomes and access, particularly those experienced by transgender and nonbinary communities.

Restar points out that medical, legal, psychological or social affirmation of one’s gender identity can be protective factors for adverse health outcomes for trans communities. Even changing one’s name and gender marker on a driver’s license can have an impact.

Arin Collin, a fourth-year UW medical student and one of the researchers on the JAMA Network Open study, has seen the impact gender-affirming care can have, both through her research and through working directly with trans patients in medical settings.

“For a significant portion of the transgender community, gender-affirming medical care is literally lifesaving,” Collin says. “When you limit these interventions for reasons that are not medical, you’ve done unnecessary harm to a group of folks that are already disproportionately experiencing that harm.”

Disparities already exist when it comes to who can access care, especially for those who live in rural areas. Nearly 7 in 10 rural transgender adults were denied transition-related surgery by insurers. More than 1 in 5 transgender people of color who live in rural areas travel 100 miles or more to see their transgender-related health care provider, according to a report by Movement

Advancement Project.

Washington is one of two dozen states that require insurance providers to pay for medically necessary gender-affirming care, thanks to a rule that went into effect last year to prevent insurance providers from denying coverage for these services.

EJ Dusic, a Ph.D. student in the Institute for Public Health Genetics, advocated with students across the UW in support of this updated rule, as part of a project for the class Advocacy for Health Professionals.

“I suggested that we take on gender-affirming care for trans people because it’s something I have personally experienced and something that I am investing my work in for my dissertation,” Dusic says. “Working as a group of interdisciplinary scholars was impactful because we could say what kind of care we wanted our patients to receive.”

They learned how to add their voice to the legislative process by participating in the public comment period. The group consulted with those who created the law, so they could write an informed statement in support. They also developed an infographic on the importance of gender-affirming care to educate their communities.

“Ultimately my purpose as a public health researcher is to not only study the things we’re interested in, but to influence how policy is going to be shaped and provide data that will support a more equitable health care system,” Dusic says.

You are not alone. The Trevor Project provides counselors and support for LGBTQ youth; call 866-488-7386 or text “START” to 678-678.

The Lifeline provides 24/7 free and confidential support for people in distress, prevention and crisis resources for you or your loved ones and best practices for professionals in the United States; call 988.

Research briefs

A breakthrough to speed COVID-19 vaccine research

UW researchers made national headlines when they discovered that measuring certain markers in blood could determine protection against COVID-19 after vaccination.

These markers may enable researchers to speed prediction of how well a new COVID-19 vaccine would work, before or without conducting large-scale, time-consuming clinical trials.

“Our data support that these markers can be used to predict vaccine efficacy,” said Peter Gilbert, a professor of biostatistics in the UW School of Public Health. Gilbert, who led the breakthrough, anticipates that a clinical trial employing the markers to test future uses of vaccines might require only hundreds instead of thousands of participants.

The findings arose from analysis of blood-draw data collected during Moderna’s large clinical trial to test its COVID-19 mRNA vaccine. Gilbert and his colleagues homed in on antibodies — small proteins involved in the immune system’s response to the vaccine — and found that concentrations of certain types of antibodies tended to be lower in vaccinated people who later got COVID-19 than in those who didn’t. Their data analyses supported that higher antibody levels can serve as markers of greater protection against COVID-19.

“It’s definitely a seminal study in the cumulative body of evidence that these markers can be used to make certain vaccine-related decisions,” Gilbert said.

The work has already influenced research. Based in part on the findings, the Food and Drug Administration approved a streamlined study design known as “immunobridging” for Moderna’s tests of its vaccine in children. The findings are also shaping decisions on COVID-19 mRNA vaccine boosters.

“Measurement of these markers is one of the pillars of evidence that is being used by advisory committees to guide their recommendations of when to change the virus strains inserted into the vaccines and which strains to use,” Gilbert said.

He and his colleagues, including Affiliate Associate Professor of Biostatistics Youyi Fongare, are now testing whether the same markers apply to COVID-19 vaccines that, unlike the Moderna and Pfizer vaccines, are not mRNA-based. They recently reported findings that the same markers do in fact hold for Johnson & Johnson’s non-mRNA vaccine.

“This brings us one step closer to one of our ultimate long-term goals, which is a marker that can predict protection across vaccine platforms,” Gilbert said.



Supporting rural public health staff with data

Health disparities affect the well-being of people in rural communities, but many rural public health professionals lack the resources and access to data for addressing these challenges.

To help close that gap, the Northwest Center for Public Health Practice, housed in the UW School of Public Health's Department of Health Systems and Population Health, partnered with public health agencies to build an online resource called Solutions in Health Analytics for Rural Equity across the Northwest (SHARE-NW).

SHARE-NW features dashboards that put key data that they requested at the fingertips of rural public health professionals, supporting them in their efforts to identify and communicate health inequities with community members and decision or policymakers. Aimed at rural professionals in Washington, Alaska, Idaho and Oregon, the website provides local data across the region and in several public health topics, including obesity, mental health and violence prevention. It also includes free



training resources to support public health staff who lack data experience.

SHARE-NW was developed with extensive input from rural public health professionals to ensure it meets their needs. Ultimately, it could aid data-driven decision making and bolster requests for funding to improve the health of rural communities.



Pandemic worsens food insecurity for tribal communities

A survey of people from 26 of the 29 federally recognized native tribes in Washington state shows that these communities faced a rise in food insecurity during the COVID-19 pandemic.

Washington's tribal communities have long faced food insecurity and food access barriers due to the history of colonization and their displacement from native lands. According to the new study, the pandemic exacerbated these challenges through high levels of unemployment and disruptions to traditional food access and gatherings.

The study was part of the ongoing Washington State Tribal Food Project, which is led by researchers at the

Northwest Portland Area Indian Health Board, Tacoma Community College and the UW. The research partners worked together again in 2022 to expand the survey to Oregon and Idaho tribes and re-surveyed Washington tribes to learn about changes over time.

"The goal of the project is for trusted tribal leaders, tribal communities, and others with information for advocacy and change to improve food security and well-being in their communities," said Jennifer Otten, food systems director and associate professor in the UW Department of Environmental & Occupational Health Sciences and the Nutritional Sciences Program. "We're proud of the work our team did in support of Washington tribal communities."

Research briefs

Setting the stage for global pediatric Shigella vaccines

Every year, a type of bacteria known as Shigella causes an estimated 60,000 deaths of children under five. Shigella is a leading cause of childhood diarrhea, and infection may trigger life-threatening complications and long-term health and nutritional problems.

Now, Patricia Pavlinac, assistant professor of global health at the UW School of Public Health, is leading an international collaboration to better understand the incidence and impact of Shigella diarrhea. Funded by the Bill & Melinda Gates Foundation, the Enterics for Global Health (EFGH) Shigella surveillance study is setting the stage for large clinical trials of promising Shigella vaccines.

“Understanding the underlying disease burden and preparing laboratory and clinical teams to identify and characterize children with Shigella diarrhea are critical steps to ensure the rigor of future vaccine trials,” Pavlinac said. “Moreover, when a vaccine is proven to be safe and efficacious, policymakers will need to weigh the cost against the benefit, and EFGH will be generating data to inform that value proposition.”

Pavlinac and her colleagues in Bangladesh, the Gambia, Kenya, Malawi, Mali, Pakistan and Peru have established a multi-country surveillance network. At each site, researchers will determine the incidence of Shigella diarrhea in children under three and collect additional key metrics, including children’s disease severity, outcomes and costs to families and health care systems.

“EFGH investigators are world experts in pediatric diarrhea,” Pavlinac said. “They contribute not only scientific expertise around the important research questions that need to be answered in this field, but also bring tremendous experience of managing children with diarrhea and implementing rigorous research studies, including vaccine trials.”

The findings should enable EFGH sites to hit the ground running when vaccine trials launch — which could begin as soon as 2024. Ultimately, Pavlinac and her EFGH colleagues hope the study will accelerate rollout of Shigella vaccines for children in low- and middle-income countries.

“Having such a wide network of collaborators ensures that we are collating diverse perspectives on how best to address Shigella and how to collect data that is maximally likely to make an impact of reducing the burden of childhood diarrhea,” Pavlinac said.



Debt harms health and well-being

Unsecured debt — such as credit card debt, student loans, or medical debt — increasingly harms people’s health and well-being in the U.S., according to a policy statement co-authored by Anjum Hajat, associate professor of epidemiology at UW School of Public Health in collaboration with Kirsten Wysen from Public Health – Seattle & King County and Elizabeth Sweet from University of Massachusetts Boston.

The statement, published through the American Public Health Association (APHA), outlines this complex and growing problem, highlighting adverse health impacts including anxiety, depression, and high blood pressure, while also exploring issues such as unfair lending practices that disproportionately affect women, people of color and other populations.

Nonetheless, mounting evidence supports specific strategies for addressing debt and its public health



effects. Drawing from that evidence, the authors recommend 13 action steps. For instance, they call on the federal government to reduce current levels of debt in coordination with new policies to protect consumers from taking on excess debt. They also urge health departments to intervene in financial policies and products that harm health, and they suggest that health care providers refrain from ownership or investments in debt collection agencies.

Such efforts could ultimately improve mental and physical health outcomes for Americans.

Joining forces to build coastal disaster resilience

UW researchers have partnered with other Pacific Northwest scientists and coastal communities on a novel research initiative that aims to build resilience to earthquakes, tsunamis and climate-change hazards — including coastal erosion and flooding.

Based at Oregon State University and co-led by the UW, the new Cascadia Coastlines and Peoples Hazards Research Hub integrates the perspectives and knowledge of communities near the Cascadia Subduction Zone, an offshore fault that could one day cause a megaquake.

“Our hope is to have a better understanding of the hazards coastal communities face; the strengths and vulnerabilities of their built, social and natural environments; and how communities can best prepare,” said Nicole Errett, assistant professor of environmental and occupational health sciences and part of the hub’s leadership team.

Errett and her colleagues will collaborate with tribes, government officials, community leaders, residents and other stakeholders to develop culturally relevant risk-mitigation strategies. This work will include identifying disparities in vulnerability to hazards and engaging underrepresented populations.

“It’s about joining forces with communities and being guided by what they need,” Errett said.



COMMUNITIES DISRUPT MASS INCARCERATION

Together, we can center community voices to address structural racism

WRITTEN BY KATE STRINGER
GRAPHIC BY ELIZAR MERCADO

When Brandie Flood and Tara Moss intercept someone on the brink of arrest, they have one central question for that person: “What do you need?”

They ask because, when the illness is generational trauma, racism and poverty, arresting someone is not going to address symptoms like trespassing or stealing. Community-rooted care, however, might be the antidote.

Flood and Moss work with LEAD, a Seattle-based program that provides individuals with resources to address multiple social determinants of health (e.g., housing). In doing so, they are working to disrupt mass incarceration of racialized minorities.

Dr. Mienah Z. Sharif, an assistant professor of epidemiology at the University of Washington School of Public Health, is learning from people like Flood and Moss and developing strategies for partnerships. Sharif is a new faculty whose studies include racism’s impact on health across a lifetime as well as how racism operates in systems like scientific research. Throughout her work, she centers community voices.

Sharif’s partnerships with communities don’t always look like traditional academic projects based on narrow scopes or timelines. Instead, she is building relationships that recognize projects will evolve based on what community partners prioritize.

“In order to advance anti-racism goals, we [public health professionals] must be willing to unlearn how we have grown comfortable with doing our work, including considering how racism permeates the systems we work within. One part of doing this is becoming comfortable recognizing how little we know,” says Sharif. “It’s more than lending a voice to communities. It’s stepping back and passing the mic over.”



Clockwise from top left: Brandie Flood, Jamie Garcia, Hamid Khan, Tara Moss, Mienah Z. Sharif.

SEATTLE PARTNERS: LEAD

Sharif studies incarceration, one of many interconnected systems like immigration and education, through which racism systematically oppresses racialized communities. The U.S. incarcerates more adults and youth than any country in the world, and the consistent overrepresentation of racialized minorities is glaring. A 2020 report from Washington ACLU and UW researchers says the state’s prison population has nearly quadrupled since 1980. Washington was the first state to enact — and still upholds — the excessively punitive “three strikes” law that disproportionately targets people of color.

LEAD was a response to the U.S. government’s decades-old “war on drugs,” which systematically detained racialized minorities. LEAD addresses disparities through

a multi-sector, harm-reduction approach by providing people with access to services like employment or health care to prevent interactions with law enforcement and reduce recidivism in King County.

After intercepting people who otherwise would have faced arrest, Flood and Moss first ask how they can help rather than prescribing a fix. One person had an untreated speech impediment, which was so embarrassing to the individual that it led to alcoholism. Another was the third generation in their family to be unhoused in Seattle. Another was being denied lifesaving surgery until they were sober.

“Physical and mental health challenges are at the heart of what’s going on with our folks,” says Flood, who describes the work as “helping people who don’t have people.” Flood is the director of community justice at REACH, a harm-reduction organization connecting individuals experiencing chronic homelessness, substance use and health conditions to services.

LEAD is backed by research showing participants in the program were better able to obtain housing, employment and legitimate income compared to the month before they participated. Costs were much lower than if they had participated in a “system as usual” approach, and individuals were less likely to be arrested.

“We take public health and safety concerns seriously for the community while also acknowledging that the criminal legal system can further harm individuals,” says Moss, the co-executive director of programs at the Public Defender Association. “Disproportionately people of color are going to be over-incarcerated and -arrested. LEAD was designed to address this situation head-on.”

Sharif, Moss and Flood hope that research can amplify the need for social programs to prevent and reduce racialized patterns in incarceration.

LOS ANGELES PARTNERS: STOP LAPD SPYING COALITION

Relationships built on community listening are inspired by Sharif’s training in the Public Health Critical Race Praxis, developed by Drs. Chandra Ford and Collins Airhihenbuwa, described as a “self-reflexive, race-conscious” approach to health equity work.

Hamid Khan, a community organizer of the Stop LAPD Spying Coalition, has worked with researchers around the country but says his partnership with Sharif is unique.

“Traditionally, in our own experiences with academic institutions, the relationship starts as being extractive and ends as being prescriptive,” Khan says. “But our relationship with folks like Mienah is completely flipping the script. Rather than being extractive, it’s more generative.”

Incarceration causes major health disruptions

to communities by pulling apart families, causing intergenerational trauma, and subjecting prisoners to inhumane conditions, Khan says. It also causes emotional harm from fear of constant surveillance.

“We talk about ‘virtual carcerality,’ the way the system is constantly tracking you,” Hamid says. “If you are constantly considered a suspect body, then you know the emotional trauma that a person goes through by feeling suspicious.”

“For us to strive toward health equity, we have to look at who is systematically deprived of opportunities to lead healthy lives.”

DR. MIENAH Z. SHARIF

Assistant Professor, Department of Epidemiology

Jamie Garcia, a community organizer with the Coalition and an acute care nurse in L.A.’s Boyle Heights neighborhood, has firsthand knowledge of how incarceration and public health are linked. “We need to stop seeing public health as a systemic failure,” Garcia says. “We need to see how public health is working exactly as it is to reinforce poverty, deprivation and banishment, and choosing to create conditions where Black, Indigenous and people of color fail and have worse impacts and violence inflicted on them.”

Through their partnership with the COVID-19 Task Force on Racism and Equity, (co-led by Drs. Chandra Ford and Bitu Amani), the Coalition and Sharif center their conversations on surveillance and the many ways in which public health data can be weaponized to harm communities. Another critical piece of their conversations is the international dimensions on racism, a perspective that informs Sharif’s work, and which she intends to mainstream through her work at the UW. Surveillance and policing are only two examples of this approach. For example, Sharif collaborates with the Coalition on webinars and teach-ins and one topic discussed is how many of the U.S. government’s surveillance systems being used to track and control people of color are often piloted first by the military in other countries like Iraq and Afghanistan.

“For us to strive toward health equity, we have to look at who is systematically deprived of opportunities to lead healthy lives,” Sharif says. “We are not witnessing new public health crises. Our systems were designed to oppress certain groups and maintain the dominance of others. Throughout history, racism is a fundamental driver of these inequities.”

Sharif is eager to collaborate with faculty, students and partners throughout Seattle on an anti-racist agenda that has community and social justice at its core.

New faculty

LISTED ARE NEW FACULTY APPOINTMENTS SINCE OUR LAST MAGAZINE PUBLICATION.



WENDY BARRINGTON

Associate Professor, Epidemiology and Health Systems and Population Health



EMILY SUSAN HOVIS

Assistant Teaching Professor, Environmental & Occupational Health Sciences



ALISSA BILFIELD

Assistant Teaching Professor, Environmental & Occupational Health Sciences, and core faculty member in the Nutritional Sciences Program



DEREK JENNINGS (Quapaw Nation, Dehiga Sioux and Sac and Fox, Anishinaabe)

Assistant Professor, Health Systems and Population Health



JOAN CASEY

Assistant Professor, Environmental & Occupational Health Sciences



MICHELLE JOHNSON-JENNINGS (Choctaw Nation)

Professor, Health Systems and Population Health and School of Social Work



DIANA CEBALLOS OCHOA

Assistant Professor, Environmental & Occupational Health Sciences



EDWARD KASNER

Assistant Teaching Professor, Environmental & Occupational Health Sciences



PIA CHAPARRO

Assistant Professor, Health Systems and Population Health



SARAH KNERR

Assistant Professor, Health Systems and Population Health



NICOLE ERRETT

Assistant Professor, Health Systems and Population Health



JUDIT MARSILLACH LOPEZ

Assistant Professor, Environmental & Occupational Health Sciences



STEPHANIE FARQUHAR

Professor, Health Systems and Population Health



ARIANNA MEANS

Assistant Professor, Global Health



ERICA REEL FUHRMEISTER

Assistant Professor, Environmental & Occupational Health Sciences



JULIANNE MEISNER

Assistant Professor, Global Health



YIJIE GENG

Assistant Professor, Environmental & Occupational Health Sciences



FERDINAND MUKUMBANG

Assistant Professor, Global Health



RESHAM PATEL

Assistant Teaching Professor, Environmental & Occupational Health Sciences



YANFANG SU

Assistant Professor, Global Health



ARJEE RESTAR

Assistant Professor, Epidemiology



ANJULI WAGNER

Assistant Professor, Global Health



KESHET RONEN

Assistant Professor, Global Health



KATHLEEN WEST

Assistant Teaching Professor, Health Systems and Population Health



ANDREA ROTNITZKY

Professor, Biostatistics



KATIE WILSON

Assistant Teaching Professor, Biostatistics



CORALYNN SACK

Assistant Professor, Environmental & Occupational Health Sciences



TING YE

Assistant Professor, Biostatistics



SIMON SANDH

Assistant Teaching Professor, Epidemiology



RABI YUNUSA

Assistant Teaching Professor, Health Systems and Population Health, Global Health



JEANIE SANTAULARIA

Assistant Professor, Epidemiology



MIENAH SHARIF

Assistant Professor, Epidemiology



MONISHA SHARMA

Assistant Professor, Global Health

JOIN OUR FACULTY

The UW School of Public Health is one of the nation's premier schools of public health. Located in Seattle, a high-tech, global health hub, the School was established in 1970, enrolls 1,900 students and employs about 250 primary and joint faculty members. The School is recognized worldwide for its strength in public health research. In fiscal year 2020, the SPH faculty was awarded more than \$200 million in external funding for research and training from federal, state, and local governmental agencies, as well as private foundations.



To learn more about faculty career opportunities at the School, visit: sph.uw.edu/careers/faculty

News and announcements



Dean Hilary Godwin, and Alumni Impact Award winner Joyce Tapley.

Joyce E. Tapley, MHA, named 2022 Alumni Impact Award winner

The University of Washington School of Public Health named Joyce Tapley (MHA, '90) as the 2022 Alumni Impact Award winner, the highest recognition the School gives to alumni who have a demonstrated record of impactful service and achievement across public health disciplines and settings. Tapley is a 30+ year veteran in the health care industry and has been the Chief Executive Officer of Foremost Family Health Centers since 1998, which provides comprehensive health services to communities in the Dallas-Fort Worth metroplex, regardless of their ability to pay. She hosts the monthly podcast, Healthcare Chat with Joyce Tapley, which covers the intersectionality of health care, social issues and public policy.



A new name for the Department of Health Services

As of July 2021, the Department of Health Services has a new name: the Department of Health Systems and Population Health to better encapsulate the department's research and teaching domains.



Jerry Cangelosi, associate dean for research, and Elizabeth Kirk, interim associate dean for education.

New leadership

The University of Washington School of Public Health (SPH) is pleased to announce two new leadership appointments: Jerry Cangelosi as associate dean for research, and Elizabeth Kirk as interim associate dean for education. Cangelosi will work with internal and external stakeholders in SPH to foster the research enterprise in SPH, and Kirk will provide vision and oversight for educational activities across the School.

SPH joins SOPHAS

The University of Washington School of Public Health has joined the Schools of Public Health Application System (SOPHAS). Prospective students may use SOPHAS to apply to our unique MPH programs: Environmental Health Sciences, Epidemiology, Global Health, Health Systems and Population Health, Nutritional Sciences and Public Health Genetics.





Celebrating the 10th anniversary of the Public Health-Global Health major

The Public Health-Global Health major (previously known as the Public Health major) celebrates its 10th anniversary! The PH-GH Major serves a diverse student body with approximately 75% of students identifying as BIPOC, and 40% first-generation students. Enrollment has also grown from 140 students in 2011-2022 to 600 students per year. For more information, visit: sph.uw.edu/phgh/anniversary



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