

CITY HEALTH

THE CUNY SPH YEAR-IN-REVIEW

2019

BRIEFS

Urban Agriculture
Aiding Puerto Rico
Alumni Update

FEATURED STORIES

Mental Health in Vietnam
The Power of Genomics
HIV Testing in Africa



HEALTHY CITIES IN A HEALTHY WORLD



DEAN
Ayman El-Mohandes

DIRECTOR OF
COMMUNICATIONS
Barbara Aaron

COMMUNICATIONS
AND MARKETING
MANAGER
Ariana Costakes

DIGITAL
COMMUNICATIONS
MANAGER
Sumana Chandra

CONTRIBUTING WRITERS
Lisa Kosan
Andrea Kott

CONTRIBUTING
PHOTOGRAPHER
Diane Bondareff

DESIGNER
Jon Kalish

FACEBOOK, TWITTER,
AND INSTAGRAM
@CUNYSPH

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CONTENTS

3 Dean's Welcome

BRIEFS

- 5 Harvesting the Data of Urban Agriculture
Professor Nevin Cohen
- 6 Picking up the Pieces
Students Noelle Fries and Tejasvi Kallam assist in Puerto Rico
- 8 Partnership with Physicians for Reproductive Health
Turning doctors into reproductive rights champions
- 10 Using Social Science to Improve Community Health
Jasmine Drake
- 11 Mentoring Beyond the Academic Space
Alexis Pozen and Jennifer Lee
- 12 Honoring Social Justice at the Apollo
Commencement 2018

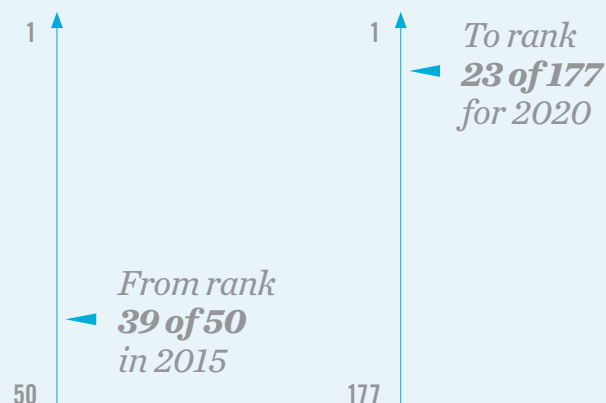
FEATURED STORIES

- 17 Lifting the Fog of Depression in Vietnam
Victoria K. Ngo develops research and clinical training capacity
- 21 Levi Waldron Shares the Power of Genomics
Closing the gap between data availability and usability
- 24 Thinking Outside the Blue Box
Bringing HIV testing and care to truck drivers in Africa
- 28 Vapers, Beware of the Vapors
Ilias Kavouras dispels the myths and exposes the risks of e-cigarettes
- 33 Battling the Consequences of War
Refugee and immigrant mental health

RESEARCH REPORT

- 39 Selected CUNY SPH research highlights from the past year

We dramatically improved our ranking in the latest *US News & World Report* survey of public health schools and programs.



We are the top **public** school of public health in the region.



In New York State we are ranked **2nd** overall.



We are the youngest school of public health in the **top 25** nationwide.



Nationally, we rank **12th** out of **120** public schools and programs.

Dean's Welcome



Dear colleagues,

We're delighted to bring you this new edition of *City Health*, the CUNY Graduate School of Public Health and Health Policy year-in-review. In this issue we showcase some of the innovative and groundbreaking research conducted by our faculty, as well as the achievements of our students and alumni as they devise solutions to health inequity in communities across the globe.

As always, the theme of social justice runs through everything we do, from developing tools that allow other health scientists to learn from the wealth of publicly available genomic data to creating programs that teach physicians to be reproductive health advocates. The articles about our work in Vietnam, Africa, and among refugees from the Middle East reflect the centrality of culturally sensitive public health practices and the continuous adaptation that is so essential to the success of population health interventions.

We have exciting news to share about our newest ranking among graduate schools of public health. In late 2015, our school began its transition from a consortial model scattered across four CUNY campuses to its current status as an independent graduate school, inaugurating a period of dramatic growth and enhancement of our research and educational programs. During the same period, we surged in the *U.S. News & World Report* ranking, from 39 out of 50 in 2015 to 23 out of 177 in 2020. We are now the top public school of public health in the region. This new ranking reflects how our colleagues in academic public health view our progress.

It is a timely moment to acknowledge the generosity, hard work, and deep commitment of the faculty, staff, students, friends, and partners who contribute every day to the success of our school.

With my very best wishes,

A handwritten signature in black ink, appearing to read 'Ayman El-Mohandes'.

Ayman El-Mohandes, MBBCh, MD, MPH

DEAN

The background of the entire page is a photograph of a city skyline, likely New York City, with various skyscrapers and a construction crane visible. The image is heavily tinted with a solid blue color. Overlaid on the left side of the image is the word "Briefs" in a large, white, serif typeface.

Briefs

Harvesting the Data of Urban Agriculture

FOOD-ENERGY-WATER (FEW) METER
READY FOR THE GROWING SEASON



Associate Professor Nevin Cohen's research focuses on policies and practices that better support socially just, healthy, and economically viable urban and regional food systems.

URBAN AGRICULTURE CONTINUES TO EXPAND worldwide, yet researchers still lack reliable empirical data to assess the effects on urban ecosystems, population health, and social equity. CUNY SPH Associate Professor Nevin Cohen and colleagues from six other research institutions have begun a three-year interdisciplinary participatory research project to address this gap by measuring urban agriculture practices in five cities over two growing seasons. This winter, the research team, along with urban farmers and gardeners, identified the data to be collected and designed the Food-Energy-Water (FEW) Meter, a digital platform through which to aggregate and share this information. As spring planting gets underway, farmers and gardeners in Dortmund, Gorzow, London, Nantes, and New York will begin populating the FEW Meter with detailed information about their growing practices.

The project aims to identify relevant urban agriculture metrics and indicators and to co-design a process for reliably collecting data on garden and farm activities, from irrigation and fertilization to harvesting and post-harvest food distribution. The urban agriculture projects are diverse, ranging from allotment gardens and micro-farms to community gardens. The New York City Farms at NYCHA project, six large-scale urban farms at dense NYCHA developments, are farmed by young NYCHA residents trained and supervised by the non-profit Green City Force.

The data collected by the farmers and gardeners will be aggregated in a digital database called the Food Energy Water (FEW) Meter. Visualizations of resource flows and garden/farm outputs will enable the growers and researchers to monitor the efficiency and effects of food production and related farm-based activities and compare their practices over two growing seasons and to those in other cities. Data analysis by the research team will include a material flow analysis, estimates of production efficiency, and assessments of health risks and benefits, complemented by surveys to measure motivations of and behavioral changes among the garden and farm practitioners. One objective is to model the resource flows of farms and gardens, enabling comparison of the urban metabolism of urban agriculture and opportunities to improve efficiency and reduce negative environmental and health effects. Another is to model city-scale effects of urban food production on the nexus of food, energy, and water through material flow analysis and life cycle assessment. This research will enable planners, policymakers, and practitioners to design urban farming and gardening systems to optimize resources and produce environmental and social benefits.

The FEW Meter project is one of 15 selected through an initiative to support collaborative teams of academics and practitioners to develop innovative solutions to the resource challenges facing cities called

the Sustainable Urbanisation Global Initiative (SUGI)/Food-Water-Energy Nexus. SUGI was organized by the Belmont Forum and the Joint Programming Initiative Urban Europe and the 15 projects are funded by the national science agencies in participating countries. Dr. Cohen's colleagues are from the following institutions: Adam Mickiewicz University in Poznań (Poland); Poznan University of Life Sciences (Poland); Research Institute for Regional and Urban Development (Germany); School of Architecture, University of Kent (UK); AgroParis-Tech (France); IRSTV (France); and the University of Michigan, School of Natural Resources and Environment (USA). ■

This research will enable planners, policymakers, and practitioners to design urban farming and gardening systems. ”

Picking up the Pieces

CUNY SPH STUDENTS AND FACULTY
REBUILD HOMES DESTROYED BY
HURRICANES IN PUERTO RICO



MPH candidates Tejasvi Kallam (left) and Noelle Fries each spent two weeks in Puerto Rico with CUNY Service Corps, helping repair damage caused by hurricanes Irma and Maria.

HURRICANES IRMA AND MARIA DEVASTATED the island of Puerto Rico in 2017, leaving roughly two-thirds of the population without electricity and roughly one-third of the population without clean water. Cities such as San Juan and Ponce have seen significant recovery since, thanks to federal funds and international attention, but residents in many rural areas are still living with the damage caused by the consecutive storms.

As part of a commitment by New York State to assist in recovery efforts in the wake of Hurricanes Irma and Maria, approximately 250 CUNY students traveled to Puerto Rico via the CUNY Service Corps Puerto Rico program to help repair and weatherize damaged homes in the towns of Barranquitas, Loíza, Toa Baja, Orocovis, Santurce and Río Grande.

CUNY SPH students and faculty, including Associate Dean for Research Michele Kiely and MPH candidates Noelle Fries and Tejasvi Kallam, were deployed for two weeks over the summer to work with nonprofits engaged in helping rebuild the devastated country.

Volunteers worked with one of three organizations—Nechama, Heart 9/11 and All Hands and Hearts—currently providing disaster relief on the island. Volunteers were assigned teams and work sites, and were dealt

new work assignments each day, including installing corrugated galvanized iron (CGI) panels on the roofs of the families' homes to protect them from future weather events. Students like Fries relished the opportunity to get their hands dirty on the jobsites.

"Physical labor, especially carpentry, has always been an incredible reprieve for me creatively and viscerally," Fries said. "It was really incredible to learn how to build a CGI roof and to be trusted to do carpentry at those heights."

Associate Dean Kiely chaperoned a team of students from City College, Hunter College, Queens College, Medgar Evers College, College of Staten Island, Bronx Community College, Hostos Community College and Lehman.

"I met people from Spain, Poland, Canada, Ireland, Scotland, England, and Italy, as well as all over the US," Kiely said, noting that the diverse group had no problem working together as a unit.

"Everyone was amazingly supportive of one another. My team quickly seemed to coalesce and be able to anticipate each other's needs."

Students had the unique opportunity not only to bond with fellow students and volunteers from across the globe, but also to get to know the families that lost everything in the storms.

"By the end of the two weeks, we had not only created a great relationship with our family but even the neighbors were greeting us, engaging in warm conversations, and asking us to come back to work on their roofs," said Fries. "I still stay in touch with the family via WhatsApp."

Having survived a natural disaster herself—the Indian Ocean Tsunami in 2004—Kallam jumped at the opportunity to help affected families in Puerto Rico.

"Our team worked on Victoria's house, and my heart broke into a million pieces because losing her home completely took a toll on her," Kallam told *City Health*. "Every house in Puerto Rico has an appalling story to tell."

Some students, returning stateside after two weeks, promptly decided to go back and continue to volunteer with the organizations participating in the recovery efforts, said Kiely.

"I think the students found it life changing," she said. "It was an amazing experience and I would go again in a heartbeat."

"Working in scorching heat under the tropical sun gave me more ideas and inspiration to do something more for the betterment of societies and communities in need," said Kallam. "Working with CUNY Service Corps gave me immense pride at the end of the day." ■



PHOTO: Lorie Schaul

“

*Every house in
Puerto Rico has
an appalling
story to tell.*

LEFT: Blue tarps cover damaged roofs in San Juan, Puerto Rico. The tarps were installed by the US Army Corp of Engineers as part of Operation Blue Roof. BELOW: Garbage piled up outside a house in Vega Alta after Hurricane Maria. Residents in more rural areas have had to wait much longer for aid than those in urban areas.



PHOTO: iStock/alejandrophotography

The faculty research team behind the Leadership Training Academy evaluation.

FROM LEFT TO RIGHT: Professors Diana Romero, Lynn Roberts, Heidi Jones, Meredith Manze, Alexis Pozen and Chris Palmedo.

NOT PICTURED: Postdoctoral fellow Amy Kwan.

Partnership with Physicians for Reproductive Health

TURNING DOCTORS INTO REPRODUCTIVE RIGHTS CHAMPIONS

WITH CONSERVATIVE LAWMAKERS FOCUSED ON undermining hard-won advances in reproductive rights in the United States, informed and authoritative advocates to defend those rights are needed more than ever.

To meet this urgent need, Physicians for Reproductive Health (PRH), an organization founded by doctors seeking to improve access to comprehensive reproductive health care, has run the Leadership Training Academy (LTA) for the past 15 years. The LTA prepares physicians to become lifelong leaders in reproductive health care and abortion advocacy, garnering support from policymakers to enact positive change. The program, funded by an anonymous benefactor, has trained over 300 Fellows.

With the goal of delivering the most effective program in physician leadership and advocacy for increased access to contraception and abortion, and the normalization of abortion training as a standard part of medical education, the program is due for a rigor-



THE LTA PREPARES PHYSICIANS TO BECOME LIFELONG LEADERS IN REPRODUCTIVE HEALTH CARE AND ABORTION ADVOCACY, GARNERING SUPPORT FROM POLICYMAKERS TO ENACT POSITIVE CHANGE. ”

ous evaluation. After a competitive proposal process, a team of researchers at CUNY SPH was selected to design and conduct the evaluation. The wealth of diverse, relevant experience among its faculty made the school the optimal candidate for the project.

The research team includes faculty from three departments at CUNY SPH (Community Health and Social Sciences; Epidemiology and Biostatistics; and, Health Policy and Management) and boasts an interdisciplinary mix of substantive and methodological expertise. Associate Professors Diana Romero and Heidi Jones (co-PIs) and Assistant Professors Meredith Manze and Lynn Roberts bring deep experience in reproductive and sexual health and rights, including teaching in CUNY SPH's specialization in Maternal, Child, Reproductive and Sexual Health (MCRSH) for both master's and doctoral students. Associate Professor Chris Palmedo contributes expertise in communications and social marketing. Alexis Pozen, Assistant Professor of Health Policy and Management, will be conducting a cost analysis of the project and Dr. Amy Kwan (doctoral alum) is the project director.

During this two-year mixed-methods evaluation, the team will collect data from LTA alumni via a retrospective survey and in-depth interviews. They will also conduct a randomized, controlled trial of 2019 LTA applicants and compare groups over a two-year period through surveys at four points in time and in-depth interviews. Members of the research team will collect observational data at each of the program's three in-person trainings and six webinars regarding educational approaches, how

content is received by participants, engagement in applied media, and policy advocacy and leadership activities. Cost analysis, social media analysis, and interviews with key stakeholders will also be conducted.

The evaluation will identify the aspects of the LTA program that are associated with specific advocacy and leadership outcomes and develop a strategy for strengthening the existing curriculum. The overall project will also inform development of a theoretical framework for physician advocacy and leadership training.

“What makes this project exciting is the opportunity to partner with colleagues involved in the development and implementation of the LTA to assess its impact, inform components of its curriculum, and hone the theoretical framework of change that is best suited to LTA's programmatic goals,” says Romero.

“This evaluation provides us with a unique opportunity to contribute methodologically to the development of measures for advocacy work as well as to explore ways to measure and analyze data on the use of social media for advocacy,” adds Jones.

The evaluation should be complete by September of 2020.

“We hope the study results will present a clear assessment of the impact that the LTA has had on physician-trainees' skill-set as reproductive health advocates and leaders generally, and as spokespersons regarding the importance of access to abortion more specifically,” Romero says. “The results can then be used to improve the program and motivate Fellows to actively promote these services across the country.”

STUDYING REPRODUCTIVE HEALTH AT CUNY SPH

The Maternal, Child, Reproductive, and Sexual Health (MCRSH) specialization is available to MPH and DPH students in any concentration, and provides students with sociological, political, familial, and biological contexts that shape maternal, child, reproductive, and sexual behaviors and health outcomes across the life-span; and with practical experience in research, program implementation, and/or policy developed to reduce MCRSH-related disparities and promote health. Graduates will be able to apply population health approaches to addressing MCRSH-related health issues in government, health care, private, and non-profit health agencies and research settings. Learn more at sph.cuny.edu/academics/specializations.

In 2018, Planned Parenthood of New York City (PPNYC) partnered with CUNY SPH to unveil the Joan Malin Reproductive Justice Fellowship in Public Health. The fellowship, named in honor of PPNYC's President and CEO from 2000 to 2017, was created to support a graduate student in developing their theoretical knowledge and practical skills in applying a sexual and reproductive justice lens to address disparities in sexual and reproductive health in New York City. Learn more at tinyurl.com/PPNYC-CUNYSPH.

Using Social Science to Improve Community Health

JASMINE DRAKE
WORKS TO ERADICATE
HEALTH DISPARITIES



JASMINE DRAKE, THE 2018 RECIPIENT OF THE Dean's Award for Commitment, has dedicated her career and studies to solving the public health disparities in her community and beyond. Growing up in the South Bronx, she witnessed first-hand the pressing health challenges her neighbors faced, such as lack of access to nutritious food or facilities and opportunities for physical activity.

During her undergraduate studies at the University of Virginia, Drake traveled to the Dominican Republic with Alternative Spring Break, a student run organization, where she volunteered instructing residents of San Juan de la Maguana, a poor town near the border with Haiti, in practicing proper dental hygiene. The experience awakened her passion for public health and shaped her career trajectory for years to come.

After completing her undergraduate studies in 2013, she spent two years working for AmeriCorps, at a health clinic back home in the Bronx and later with the New York City Parks Department. The work applying public health strategies on the ground in an urban setting helped prepare her for her MPH studies.

During her graduate studies at CUNY SPH, Drake worked as a Community Health Organizer for Montefiore Medical Center, helping to shape how New York City public high school students receive health education in the classroom. She coordinated reproductive health classes, cooking classes, and fitness classes for students and parents.

She says the MPH program helped her really understand the public health needs of the population she was working with, particularly when she took an Adolescent Health course with Professor Lynn Roberts.

"I learned that adolescents are agents of their own health and can make healthy decisions," she says.

Reducing childhood obesity and ensuring that children have access to proper nutrition and physical activity opportunities is one of her passions. During her last year at CUNY SPH, Drake served as Program Coordinator for the Fund for Public Health NYC, a nonprofit that works in conjunction with the New York City Department of Health and Mental Hygiene to improve the health of individuals, families, and communities across the city. In that role, she helped public and charter schools create wellness policies that target nutrition and physical activity.

She also worked with CUNY SPH Professor Terry Huang on the PARCS study, an exciting collaboration with the New York City Parks Department focused on exploring the relationship between neighborhood environment and community health.

Upon graduation, Drake relocated to Maryland for a job at the Howard County Health Department. As the Program Manager, she runs the tobacco enforcement initiative, educating middle and high school students on tobacco use prevention and the harmful effects of tobacco products including e-cigarettes. She works with retired police officers conducting compliance checks at retailers to ensure they are not selling tobacco products to minors. She also serves as the Project Engagement Coordinator for the CAREAPP project, which aims to improve access to social support services and resources for clients through a web-based tool.

"Health disparities can be eradicated independently of income," she says. "We all want to be healthy and live prosperous lives, no matter where we come from."

Within the next year or so, Drake plans to apply for DPH programs to continue her studies in the public health field, preferably on the east coast. "I am enjoying living in the DC area but I do miss NYC," she added. ■

"Adolescents are agents of their own health and can make healthy decisions," says Drake.

PHOTO: iStock/Jon Chica Parada



Alexis Pozen Takes Mentoring Beyond the Academic Space

GUIDING THE PUBLIC
LEADERS OF TOMORROW



Doctoral student Jennifer Lee with her faculty mentor, Assistant Professor Alexis Pozen.

EARNING A DOCTORATE CAN BE GRUELING, as CUNY SPH doctoral student Jennifer Lee will attest. Students juggle coursework, research, and crafting their dissertations often whilst navigating the most momentous years of their career.

A good faculty mentor may steer a student towards the successful completion of their degree. An exceptional faculty mentor helps the student realize their full potential in the academic sphere and beyond. Dr. Alexis Pozen is known to be one of them.

Pozen, Assistant Professor of Health Policy and Management, enabled Lee to surmount the academic and personal challenges she encountered on the road to completing her doctor of public health degree.

As Lee's dissertation committee chair, Pozen has been a tireless ally for Lee, both in the classroom and in real world settings where research and life intersect.

"I've gone through personal things during school and she was always there for me," Lee explains. "She goes above the call of duty. That is so meaningful and impactful for my training at CUNY SPH."

Lee's doctoral work centers on the house ball community—an underground subculture that offers a gender non-conforming, sexually expansive space welcoming of some of the most marginalized members of the LGBTQ community. The community comprises alternative family-like units of appointed mother and father-figures who head houses of members referred to as

"children." The parental figures help the children overcome the physical and mental health consequences of the marginalization LGBTQ individuals often face, such as societal stigma, discrimination, and denial of civil and human rights.

"I want to look for opportunities for home-grown intra-ventions—initiatives grown organically from within the community," says Lee describing the goal of her research. "My work is really rooted in social justice and human rights work."

Lee credits Pozen's rigor and teaching style with enhancing the quantitative aspect of her research.

"She's helped me develop my consciousness and understanding of public health, specifically with quantitative tools and my ability to build on and really interpret and critique methods in health services research."

Lee, who identifies as a member of the house ball community, says Pozen's support helped ground her when she felt unsure about conducting research so close to home.

"How do I find someone at my school who is able to understand the nuances of my community?" Lee wondered.

Pozen's ability to connect with her students beyond her role as an academic advisor has fostered the kind of mentor-mentee relationship that has allowed Lee to benefit from her guidance and flourish as Lee launches her own academic career.

"She has truly had a tremendous impact on my knowledge, my skills, my confidence,

and my ability to conduct research on my own," says Lee. "She shows up outside of the academic space. She came to a ball to support me and to understand me, what I am doing, and my community."

Pozen, who has been teaching at CUNY since 2014, serves as the methodological expert in quantitative training on Lee's dissertation committee, but her understanding of the needs of her mentees goes beyond the technical. She says graduate students are great to work with because they are self-motivated.

"They are not just here to get a degree, they are here to do interesting research and really move the public health field forward," Pozen says.

Lee says Pozen has been essential in navigating the challenges life throws her way, helping encourage and support her.

"With her support I have been able to focus on the things that drive me as a researcher," she says. "She has allowed me to grow as an academic and a person where I'm able to do research that matters to me and is important to my community." ▣



Graduates and their families mingle under the Apollo Theater marquee following 2018 Commencement.

Honoring Social Justice at the Apollo

CUNY SPH CELEBRATES
ITS SECOND COMMENCEMENT
AT THE APOLLO THEATER

THE CUNY GRADUATE SCHOOL OF PUBLIC Health and Health Policy held its second Commencement on Thursday, May 31 at the historic Apollo Theater in Harlem, honoring this year's graduates of the school's master's and doctoral programs.

Alyse Gamble opened the ceremony with a rousing rendition of the national anthem, and Dean Ayman El-Mohandes welcomed the graduates, faculty and honorees with some timely advice.

"You are graduating during a very challenging time when the public health workforce is tested by socio-political winds that endeavor to prioritize the interest of the few over the good for all and threaten the stability of public health structures that have been well established for decades," Dean El-Mohandes said. "Cynicism during these times is an easy and seductive escape, but ... our mission is to inspire hope and promote resilience. This may be a more challenging path but is aligned with our drive to allevi-

ate pain and desperation even under the most difficult circumstances. As the world relies on us to promote health and prevent disease, we in public health are trained to do so under all conditions."

Cecile Richards, former president of the Planned Parenthood Federation of America and the Planned Parenthood Action Fund, delivered the keynote speech and was awarded an honorary doctorate for her relentless lifelong efforts to increase affordable access to reproductive health care and to build a healthier, safer world for women and young people.

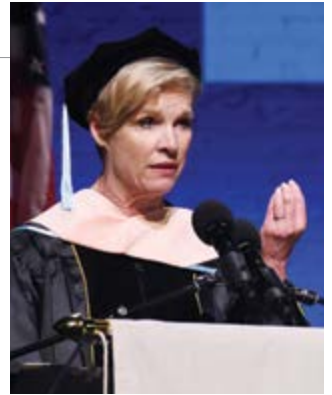
Richards called upon the graduates to keep in mind what inspired them to enter the public health field in the first place as they advance in their careers.

"You came to CUNY because you chose to apply your brilliance and your energy to public health and there is no more noble and urgent calling," Richards said. "As graduates you are probably all headed into very differ-

“

AS GRADUATES YOU ARE PROBABLY ALL HEADED INTO VERY DIFFERENT CAREERS AND FUTURES BUT YOU'RE UNITED BY THIS IMPORTANT BELIEF ... THAT HEALTHCARE IS NOT A PRIVILEGE, IT IS A FUNDAMENTAL HUMAN RIGHT AND WE HAVE TO STAND UP FOR THAT EVERY SINGLE DAY.

– Cecile Richards



ent careers and futures but you're united by this important belief... that healthcare is not a privilege, it is a fundamental human right and we have to stand up for that every single day. We have to hold that truth up because it's being tested and threatened every single day... You're going to have to create the social change we need and you're going to have to make some trouble.”

Outgoing CUNY Chancellor James B. Milliken also addressed the graduates as one of his last acts of duty. He lauded SPH's role in combating social inequities by promoting and facilitating access to quality healthcare and nutrition for all.

“CUNY is much more than the sum of its parts, but this part, the School of Public Health, fills me with great pride and optimism,” Milliken said. “Optimism because of you, for a future that will be more equitable, more peaceful, more inclusive, and more successful than today and that's what will make this city and this country great for everyone.”

Sergio Matos, co-founder and executive director of the Community Health Worker Network of NYC, was presented with the Champion of Public Health Award. In his acceptance speech, Matos said his mother's dying wish was for him to attend college and that CUNY made that wish a reality. In addition to congratulating the graduates, he also thanked their families and loved ones for enabling their graduate



Dean Ayman El-Mohandes
and Distinguished
Professor Denis Nash.

studies with their assistance and support.

“CUNY is a very special place in that ... people come to CUNY with a valuable life history, a life history that contributes to the development of their education and future professional abilities,” Matos said. “And that’s why I think it’s so important to congratulate you, certainly for having achieved this enormous milestone, but also those members of your family and support systems that have made that possible for you.”

Once the graduates from the master’s and doctoral programs were presented with their diplomas, Dean El-Mohandes encouraged them to take out their smartphones and capture the moment with a selfie.

“This is a moment you should document,” Dean El-Mohandes said. “You will take many pictures today; with your professors, with your dean. You will take other pictures with your family and friends after the ceremony ... This picture represents your personal achievement. No one can take this moment away from you. Bring this picture back when you feel that you need encouragement and when you need to find your inner sunshine, your inner strength and your inner hope. Congratulations, this moment is yours.” 📱



Dean Ayman El-Mohandes addresses the class of 2018. FRONT ROW FROM LEFT: Former Chancellor James B. Milliken, CUNY Trustees Henry T. Berger and Una S. T-Clarke, and keynote speaker Cecile Richards. BELOW: The new graduates take a selfie to capture the moment.



WATCH THE COMMENCEMENT ONLINE

A recording of the commencement event can be viewed at: bit.ly/SPH-grad18



Featured Stories



Lifting the Fog of Depression in Vietnam

DEVELOPING RESEARCH AND CLINICAL TRAINING CAPACITY

People don't see the value of getting treatment if they need to be working in the fields to feed their family.
PHOTO: Phong Nguyen

IN THE TWO YEARS SINCE LONG'S WIFE DIED, he slowly drifted away from his life as a farmer in his small Vietnamese village. He wasn't able to work. He couldn't get out of bed. Neighbors worried that his two young children were being neglected.

Long had become an alcoholic, but his underlying depression wasn't diagnosed until a community health worker, concerned about his isolation, took him to the community health clinic to get assessed for depression. A nurse trained in the symptoms of clinical depression referred him for counseling through the Vietnam Multicomponent Collaborative Care for Depression (MCCD) program, which launched in 2009.

Victoria K. Ngo, Ph.D., the program's lead director and Associate Professor of Community Health and Social Sciences at CUNY SPH, was supervising staff when Long came in.

"At first he wasn't interested in treatment at all," Ngo said. "He said he didn't have the time." But together they calculated that depression had cost Long several thousand hours of productivity over the last few years and that treatment would only take about ten hours of his time over six weeks.

"When we put it that way, it changed his mind," she said. "I remember it was a pro-

found moment for him, how he was stuck, and nothing was working for him, and here was an alternative to make a change. It opened him up."

For Ngo, community mental health care is personal. Her motivation comes from her own family's suffering from depression, anxiety, and the trauma of being refugees.

"When I was two, after the war, we left Vietnam in the middle of the night," she said. They were stranded at sea for days until an Argentinian boat deposited them in a refugee camp in the Philippines. They spent six months there before landing in Los Angeles.

"Many Vietnamese who fought on the American side were put in re-education camps, which was prison basically, and my father didn't feel he could live like that," Ngo said. "Dad had never been more than a few miles off the shore but knew he needed to get on the boat and go. For refugees you take what you can. Two items of clothing and one bag of rice and hope you make it."

The oldest of four children, Ngo found ways to support immigrants while she was in college, which led to work on community mental health issues. She went on to earn her master's and doctoral degrees in clinical psychology from Vanderbilt University. She has expertise in developing, evaluating,



Victoria K. Ngo, PhD is Associate Professor of Community Health and Social Sciences at CUNY SPH and the lead director of the Vietnam Multicomponent Collaborative Care for Depression

and implementing evidence-based treatments, such as cognitive behavioral therapy, for depression, anxiety, and trauma in diverse communities in the United States and abroad. Since 2000, she has worked to develop research and clinical training capacity and infrastructure in Vietnam.

“Effective treatment for depression exists and yet there’s a huge treatment gap in Vietnam and other low- and middle-income countries,” Ngo said. “People don’t understand what depression is or how to deal with it. There’s no place for them to turn.”

Screenings and non-drug treatment options for common mental health disorders were virtually nonexistent in Vietnam just a handful of years ago, at a time when the World Health Organization estimated that as many as 99 million people worldwide suffered from depression.

Ngo’s MCCD team started with a three-year demonstration project in twelve sites in Da Nang and Khanh Hoa provinces, then conducted ongoing adaptations and studies. They are wrapping up an innovative project funded by Grand Challenges of Canada that integrates depression care with micro-finance services in March 2019 and are currently funded by NIMH to compare models for depression care scale up for 54 communities throughout the country.

The program needed to address the shortage of mental health professionals and the lack of access to treatment, Ngo said. She integrated mental health care with primary healthcare at the community level, and introduced task shifting, in which nurses and doctors who generally treat lacerations or administer immunizations are established as care managers who oversee treatment, provide mental health screenings, psychoeducation, problem-solving therapies and behavior activation, and coordinate care.

The general practitioners are responsible for diagnosis, medication assessment, and treatment, according to Ngo. A visiting psychiatrist provides weekly supervision on site. Individuals with more severe mental illnesses are seen by a psychiatrist or referred to the psychiatric hospital. Community health workers provide community education, follow-up care, and sometimes provide the brief depression therapy.

Within the first year, the MCCD team recognized their patients were being held back by a general lack of information about mental illness and the cultural bias against seeking help. To overcome these hurdles, they enlisted community partners, organized public awareness campaigns, invested time with medical staff to ensure their com-

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People don’t understand what depression is or how to deal with it. There’s no place for them to turn.



Clients of the LIFE-DM program develop fulfilling life skills to help them cope whilst generating income for their families. PHOTOS: LIFE-DM

mitment to supporting the new program, and allowed word-of-mouth to build trust in their program.

Ultimately, a randomized controlled study of 475 participants comparing MCCD to treatment with antidepressant medication alone showed the MCCD to be “very effective,” Ngo said, “with very large gains in the reduction of depression over time.” She said the results overwhelmingly support the more comprehensive approach to mental health care favored by MCCD, namely the focus on psychoeducation, behavioral and problem-solving skills, and the ability to self-manage one’s mood. The program resulted in improvements in depression symptoms, functioning, and healthy behaviors.

MCCD is being implemented in three provinces with studies underway focused on how best to support the local healthcare providers. The emphasis now is on implementation science, Ngo said, not just on what is effective in the treatment of depression but how to support implementation and sustain programs.

“There’s a seventeen-year gap between the research showing a treatment is effective to it actually being implemented in the field,” she said. “Isn’t that crazy?”

MCCD spawned another successful program that targets women with depression

who are at or below the poverty level, both high-risk groups. The Livelihood Integration for Effective Depression Management (LIFE-DM) project was developed by Ngo and two other Vietnamese colleagues, Dr. Trung Lam and Tam Nguyen, who has worked with Ngo, the co-principal investigator, on community projects since 2006.

“Vicky is good at bringing knowledge in,” Nguyen said. “The next step is to transfer what works, scale it up and roll it out.”

Nguyen is also the Country Director of BasicNeeds Vietnam, the main implementation lead for LIFE-DM. BasicNeeds is in charge of building capacity, implementation, raising public awareness, and advocacy for the project.

LIFE-DM is active in two of Vietnam’s 63 provinces—Thua Thien Hue province and Da Nang city—and is shortly moving to three more, also with help from grantors NIMH and GCC. Nguyen laughed as she recognized they have a very long road ahead but continued with her sober message.

“Most of our patients are so poor, so poor,” she said. “Their priority is what to eat tonight, not is their depression treated.”

The women in LIFE-DM are eligible for a \$150 loan, a small sum that is meant to provide an exercise in budgeting rather than a cash infusion.

“Getting into debt is anxiety-provoking,” Ngo said. “We wanted this loan to be a trial, a way to practice financial skills.”

Together, Nguyen and Ngo worked to simplify the psychotherapy approach to treat depression and also used Ngo’s background in problem-solving skills to empower the women in the program to change their behavior, learn coping and communication skills, and overcome barriers to moving forward. The activities include mood monitoring, activity scheduling, and engagement in pleasurable and healthy activities. They repackaged depression care into a life- and family-focused program, which made it more acceptable.

“When we did that, we saw a huge need and a huge waiting list,” Ngo said. “The engagement was really remarkable. We were all floored by it. The results were even better than expected,” she said, citing an 80 percent reduction in depression and sustained increase of \$50 a month over an average baseline monthly income of \$95 at the start of the program.

Ngo supervised the first group and interviewed patients at six and twelve months. Additional sporadic visits allow her to see progress. “In the first group they don’t speak to each other, they’re nervous, teary, emotional, and resistant to being there.

They don't understand what depression is.

"We educate them in our first contact," Ngo said. "If they are achy, if they can't sleep or have a lack of motivation to do things, lack of concentration, that is what we call depression. We tell them it can impact how they function, family, work, health. Then they start sharing how hard it's been."

Once the women hear that they will learn skills for making a living and they get a loan, they are very interested, Ngo said. "But when they really start learning, they understand what they got is way more valuable than the \$150."

Participants interviewed after treatment report that the social support during group therapy is key to their success.

"They realize they are not alone," Ngo said. "They thought they were lazy. They didn't understand why they weren't getting out of bed. But they felt guilty to want to do anything for themselves."

"People don't see the value of getting treatment if they need to be in the fields or make money to feed the family," Ngo said. "It's seen as a luxury to be happy. They don't understand the link between emotional health and physical health."

For instance, she said, Mai always wanted to learn how to dance though she could barely will her body out of bed in the morning. Married to an alcoholic and struggling to feed her family, she had no idea she was depressed. Within a few weeks of beginning the LIFE-DM program, she started watching YouTube to learn dance moves and convinced a group of her girlfriends to join her. Now the 30 or so women wear matching T-shirts when they appear in flash mobs and community events, and volunteer at orphanages and hospitals.

Even Mai's husband, Thanh, has benefited from his wife's success. He uses the car they bought with her loan to provide rides to tourists. Ngo hired him during her last trip to Vietnam. "He said the family is so different now, in such a better place because of

the skills she learned and shared with him."

"The changes in people's lives are real," Ngo said, "not just numbers."

Phuong used her loan to buy coconuts and sell them in front of her home. She used money she earned to have her husband pick up more coconuts wholesale, then bought a cart for his motorcycle so they could sell even more. They became local distributors for other stands. Now they have a new car and are selling to restaurants and employing other people.

After Vuon's daughter was kidnapped fifteen years ago, she believed she was a useless person. Her husband blamed her for the disappearance and didn't understand his wife's sense of loss. Eventually diagnosed with depression, she joined the LIFE-DM group and felt better for sharing her story. Her communication with her husband has improved and he has become supportive, even washing dishes so she can attend group meetings. She used her \$150 loan to raise chickens and sell garden vegetables.

"This program is my heart," Ngo said.



The LIFE-DM marketplace, where participants can sell their produce and other goods.

PHOTO: LIFE-DM

"It's so beautiful, and the women who are part of it are so inspiring. They recite their lessons, they know they should do things even when they're not in the mood, they know the activities give you the energy you need, that the moment you want to withdraw is when you need to reach out and get help."

For now, Ngo's focus is on improving the quality and availability of mental health care, which includes her work with ThriveNYC, an \$850 million initiative in New York City created by First Lady Chirlane McCray, the wife of Mayor Bill de Blasio. Ngo is Deputy Director of the Center for Innovations in Mental Health at CUNY SPH, the academic arm of ThriveNYC that helps with research and evaluation.

"I'm trying to make connections between the work I'm doing overseas and here, using task-shifting again," she said. "We've already seen success with teachers, community leaders and peer advocates, pastors and in the criminal justice system."

And everything she's working on now reinforces her commitment to CUNY and her new role in public health. "I love that we are one of the largest agents of social mobility," Ngo said, citing a 2017 study of tax returns that revealed the City University system launched almost six times as many low-income students into the middle class and beyond as all eight Ivy League campuses, plus a handful of other top-tier schools, combined.

"CUNY really fits with my values and what I do," Ngo said, "being focused on immigrant communities and the underserved." ▣

THIS PROGRAM IS MY HEART. IT'S SO BEAUTIFUL, AND THE WOMEN WHO ARE PART OF IT ARE SO INSPIRING. ”

Levi Waldron Shares the Power of Genomics

CLOSING THE GAP BETWEEN DATA AVAILABILITY AND DATA USABILITY

AS THE PROMISE OF GENOMICS—early identification of disease risk, targeted treatment and better outcomes—has grown, so too have stores of publicly available genetic data. These data are voluminous and complex; so much so that scientists and health professionals, the very people who should be able to make the most use of them, often cannot. Dr. Levi Waldron is working to change that.

For more than 10 years, the Associate Professor of Biostatistics at CUNY's Institute for Implementation Science for Population Health has been pioneering mathematical methods to analyze vast public treasure troves of genomics data, generating new insights into human health, disease, and treatment. Using computer-driven algorithms, he is unraveling complicated genomics information to learn how the cell-changing dynamics between genes and the environment lead to illness; why some people but not others get sick or respond to treatment; and whether race, ethnicity or other socioeconomic indicators influence health outcomes. What's more, he is providing free download access to these algorithms and curated databases so that more scientists and health professionals can harness this genomics data to develop more precise diagnoses and treatments, especially of cancers, and even eliminate health disparities.

Waldron, 45, actually began his career in wood physics. After earning his Ph.D. from the University of Toronto, where he researched the leaching of toxic wood pre-





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THE DATA OFTEN REMAIN SITTING BECAUSE THEY'RE TOO DIFFICULT FOR MOST PEOPLE TO FIND, LET ALONE USE.

servatives, he decided to focus his fascination with genomics on cancer. During his postdoctoral studies at the University of Toronto and later at Harvard University's School of Public Health, he studied cancer genomics.

What Waldron found as he pored over large public repositories of genetic information, mostly from tumor samples from hospitals around the country, was an overwhelming amount of data that lacked standardization.

"The data have been contributed by thousands of different scientists in thousands of different ways," he begins. "They come from different technologies, have inconsistent structures, are annotated differently and are then put into repositories for scientists where they often remain sitting because they're too difficult for most people to find, let alone use."

For most scientists to be able to use the "thousands of freely available genomic and metagenomic sequencing profiles," he continues, "they have to be able to handle terabytes of data, and have access to computational resources and bioinformatics expertise. And, to combine and compare studies, they have to be able to standardize the way basic information is recorded."

Waldron's mission became clear: to close the gap between data availability and usability. In one project, the self-described bioinformatician and his team at CUNY have processed almost 10,000 microbiome profiles in a standardized, free, user-friendly

software package—published in *Nature Methods*—that allows scientists to immediately find and analyze data to study a variety of conditions, including mother-to-infant microbial transmissions, obesity, acne, and colorectal cancer.

"We're making data systemically more well behaved in a way that scientists can analyze it, and other software developers can make other new tools from it," he says.

In another of his current projects, which he began in 2013 during his postdoctoral days at Harvard, Waldron and his team are developing software to simplify the analysis of complex genomic data from a National Cancer Institute study called *The Cancer Genome Atlas*.

"The study remains challenging for many scientists to use because of its complexity," he says, referring to the collection of multiple genomic assays—10 to 15 types of genomic data for each of 33 cancer types—sampled from 11,000 patients. "We're working on a simplified representation of the study."

In particular, Waldron has been concentrating on understanding the role that genes play in forming subtypes of high-grade serous ovarian carcinoma and colorectal cancers, and in influencing patient outcomes. By identifying genetic subtypes of cancer, Waldron is seeking information not only about the ways in which cells become cancerous, but also why people with apparently similar tumors can respond differently to treatment.

THE CANCER GENOME ATLAS

BY THE NUMBERS

2.5 PETABYTES

Amount of data produced by TCGA—the equivalent of 212,000 DVDs.

THE DATA DESCRIBES

33 DIFFERENT TUMOR TYPES

10 RARE CANCERS

Based on paired tumor and normal tissue sets from 11,000 patients.

THE TEAM

20 CONTRIBUTING INSTITUTIONS

Across the United States and Canada.

SOURCE: cancer.gov/ccg

“You can imagine that two people’s disease might have different causes, courses and outcomes but you don’t know any of that just by looking at cells under microscope, so we’re studying genomes of those cells to understand more,” he says.

The aim of this increased understanding is to better identify risk factors for particular cancers, develop more accurate prognoses and targeted therapies, and predict outcomes.

“With a better ability to understand more about the nature of these subtypes, we hope to better identify the different causes of disease and improve treatments.”

In addition to publishing profiles of cancer genomic data, Waldron and his team, in collaboration with the New York City Department of Health and Mental Hygiene, have been profiling oral microbiome data from its Health and Nutrition Examination Survey (NYC HANES). By analyzing saliva samples from a racially and ethnically diverse sample of NYC adults, he is seeking greater understanding of diabetes, obesity and inflammatory markers, all indicators of poor health. He is also looking to understand how exposure to cigarette, hookah, e-cigarette, and secondhand smoke affect the normal bacteria of the oral cavity and by extension, overall health.

“Identifying microbial risk factors, including where risky microbes come from, or what allows them to thrive in some people’s guts, could have an implication for early detection and prevention of disease.”

What makes this project especially valuable public health-wise are the insights it

gleans on how the oral microbiome varies not only by habits such as smoking or mouthwash use but also by race, ethnicity, and other socioeconomic factors that could influence health outcomes and disparities.

“One finding is that there is more variation in the oral microbiome with respect to socioeconomic status than individual oral health behaviors,” Waldron says. “Oral microbiome variation is consistent with some known health inequalities with respect to race and ethnicity.”

Such inequalities are present in health as well as healthcare access and research, Waldron says. “In genomic studies of ovarian cancer, for example, African-American women are usually underrepresented, even though they’re overrepresented in prevalence of the disease and poor outcomes.”

He attributes this underrepresentation in part to the tendency of academic research centers to capture study participants from their immediate—often economically privileged—vicinities, which typically do not represent the whole population.

“It happens across so many kinds of diseases,” he says. “It’s a pernicious effect because it affects our understanding of diseases and the development of therapies.”

One way in which Waldron has attempted to make health outcomes research more representative is by combining data from underrepresented populations, despite small sample sizes.

“By combining underrepresented populations across multiple studies in meta-analyses, we tend to get a much

Because our databases are free and open, they leverage the creativity of other scientists to take it in directions I could never have anticipated.

”

better overall picture than you ever could from individual studies,” he says.

Waldron acknowledges that it is too early to see new treatments based on the databases that he and his team have published. Still, they are making headway in identifying early markers of elevated risk for colorectal cancer, and some scientists who have used the database have proposed alternative therapies for conditions such as acne.

“Because our databases are free and open, they leverage the creativity of other scientists to take it in directions I could never have anticipated,” he says. In the end, this is what he wants his work to do.

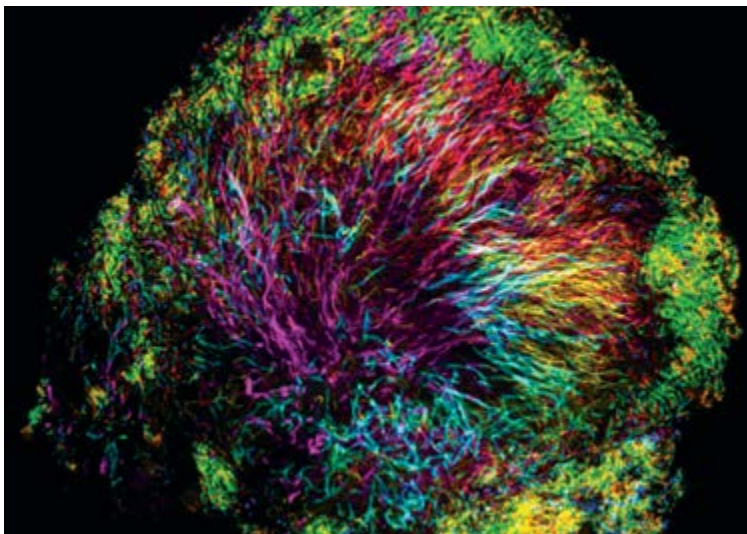
“My goal is to learn everything we can from genomic research to improve health outcomes.” ▣

A dental plaque microbiome visualization from 2016 published in *PNAS*. The “hedgehog” structure in human dental plaque, hybridized with a set of 10 probes, each labeled with a different fluorophore.

IMAGE: Courtesy of Jessica Welch, Marine Biological Laboratory, and Gary G. Borisy, The Forsyth Institute.

MICROBIOTA KEY

■ <i>Corynebacterium</i>	■ <i>Fusobacterium</i>
■ <i>Streptococcus</i>	■ <i>Leptotrichia</i>
■ <i>Porphyromonas</i>	■ <i>Capnocytophaga</i>
■ <i>Haemophilus/Aggregatibacter</i>	■ <i>Neisseriaceae</i>



Thinking Outside the Blue-Box

BRINGING HIV TESTING AND CARE TO TRUCK
DRIVERS IN SUB-SAHARAN AFRICA



Previously, tests required a drop of blood drawn from a patient. The innovation of self-testing kits which use a saliva sample created the opportunity for evaluating how much privacy factors into the overall screening equation.



Targeting truckers for HIV testing and care is essential to ending the epidemic in Sub-Saharan Africa. Drivers often have multiple sex partners—including sex workers—in different locations along their routes.

IN THE MID-2000s, RESEARCH BY THE WORLD Food Programme (WFP) found that transport companies in Sub-Saharan Africa had lost more than 50 percent of their truck drivers to HIV and AIDS. Due to the transient lifestyle associated with their profession, along with the high prevalence of HIV and AIDS in the region, an entire generation of truck drivers was at risk.

In light of this health crisis, the WFP and TNT, a commercial transport and logistics company, founded the North Star Alliance, a non-profit that runs a network of roadside clinics created out of blue-painted shipping containers located at truck stops across the continent. These clinics originally focused primarily on HIV counseling and testing (HTC) services but later expanded to offer a diverse menu of primary and secondary healthcare services.

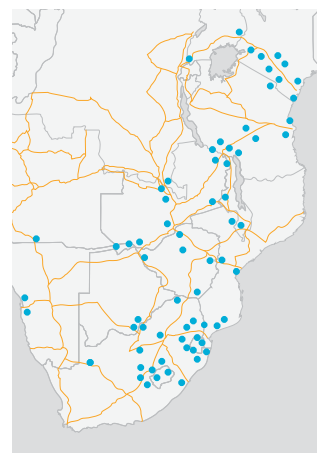
Elizabeth Kelvin, CUNY SPH Associate Professor of Epidemiology and Biostatistics and Interim Assistant Dean for Curriculum

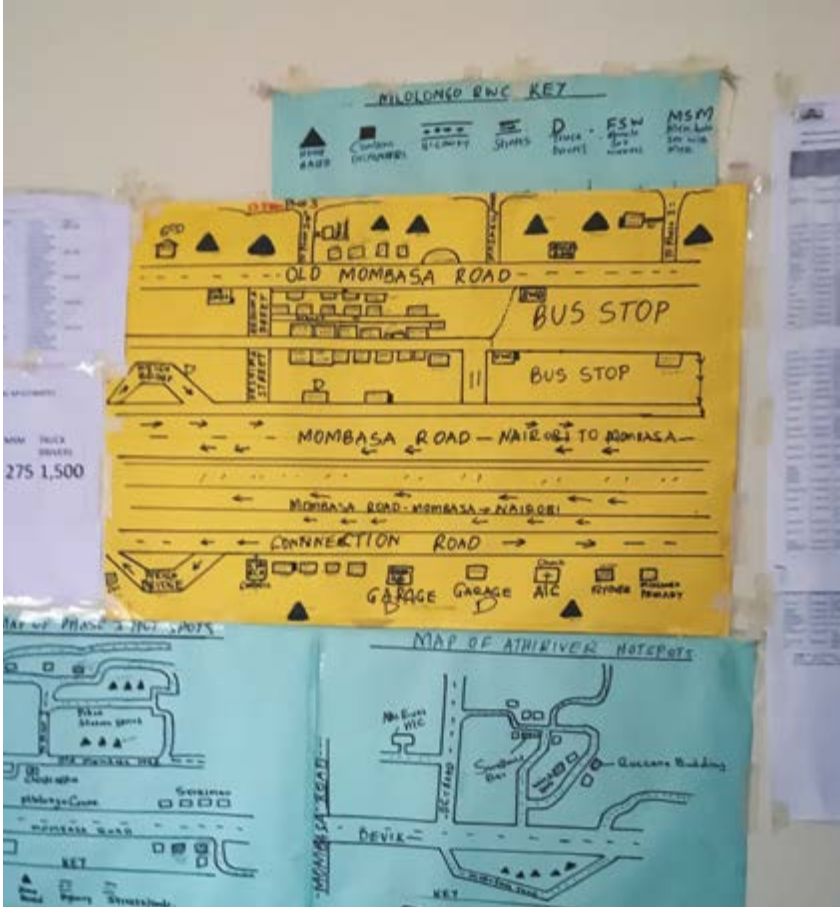
Innovation and Implementation, read about the “blue-box clinics” and was intrigued. She knew that stigma was a major factor preventing many people in the region from getting tested, and she wondered if truck drivers might be more likely to test if they could privately use an HIV self-test kit, such as the one recently approved by the FDA for use in the United States.

Kelvin consulted her colleague Gavin George, senior researcher at HEARD, a division of the University of KwaZulu-Natal in South Africa that conducts research on the socio-economic aspects of public health. They discussed designing a study on HIV self-testing among truck drivers with the North Star Alliance Southern Africa, which has its headquarters in Durban. Shortly thereafter, the International Initiative for Impact Evaluation (3IE) put out a call for proposals on HIV self-testing in Kenya, where the North Star Alliance East Africa headquarters are located and where they have eight clinics.

THE NORTH STAR ALLIANCE NETWORK

This map shows the majority of the Blue Box clinics and clinics established by North Star that are operated by other service providers.





MAPPING HOTSPOTS

Maps drawn by outreach workers of “hotspots” for sexual networks, where individuals are likely to engage in risky behaviors that can result in HIV transmission.



The North Star Alliance's roadside wellness clinics provide access to HIV testing and medication as well as general primary care.



PHOTOS: North Star Alliance

Doctoral student Elizabeth Ortiz and
Associate Professor Elizabeth Kelvin.



THOSE RECEIVING THE TEXT ABOUT SELF-TESTING WERE SIGNIFICANTLY MORE LIKELY TO COME TO A NORTH STAR CLINIC FOR HIV TESTING. ”

“So North Star in Southern Africa introduced us to Eva Mwai, the Regional Director for North Star in East Africa, and the rest is history,” Kelvin said.

The team was joined by Kaymarlin Govender from HEARD, Joanne Mantell from the HIV Center at the NYS Psychiatric Institute and Columbia University, and CUNY SPH doctoral student Matthew Romo, who served as the Project Director. They conducted a small trial in which 305 truck drivers were recruited from two North Star clinics in Kenya and randomized to be offered either the standard HIV test (a provider-administered rapid blood test) or a choice between the standard test and a rapid oral HIV self-test.

The researchers found that those in the choice arm were significantly more likely to test for HIV. However, as study participants had been recruited from clinic waiting rooms, the team still questioned whether making HIV self-testing available could increase the number of truck drivers coming

to the clinics for HIV testing. Therefore they conducted a second trial that took advantage of the North Star Alliance electronic health record system to select a sample of 2,262 Kenyan truck drivers who had a mobile phone number registered in the system and who had not been accessing HIV testing on a regular basis and randomized them to receive text message announcements about the availability of HIV self-test kits at North Star clinics in Kenya versus text reminders that HIV testing in general was available at the clinics. Those receiving the text about self-testing were significantly more likely to come to a North Star clinic for HIV testing.

One of the factors that puts truck drivers at risk for HIV infection is their patronage of sex workers. In 2016, the group conducted a similar trial among a sample of 2,196 female sex workers registered in North Star’s health record system and found similar increases in HIV testing rates among those receiving text messages about HIV self-testing.

Kelvin and her colleagues are currently

exploring mechanisms to make HIV self-testing available in the North Star Alliance East Africa clinic system and have submitted an Implementation Science grant proposal to the National Institute of Health to study the impact of various HIV self-testing program designs in this real-world healthcare setting.

North Star’s electronic health record system is unique in that it tracks the use of healthcare service in a multinational clinic system. The potential for the system as a resource for further health research is currently being explored by CUNY SPH doctoral student Elizabeth Ortiz, who is using data from the system to examine the burden of chronic disease among clients across the continent. Aside from HIV and AIDS, mobile populations are also at risk for noncommunicable diseases such as diabetes, hypertension and obesity.

Ortiz received the Dean’s dissertation travel award last year to travel to North Star Alliance headquarters in South Africa and Kenya in August to continue her research. She conducted site visits and interviewed clinicians to gain a better understanding of service delivery. She worked with data managers in the regional offices to review the electronic health record data that she will use for her dissertation.

“While I began working with the electronic health record extracts in New York, it was helpful to meet with my research partners on-site to address data quality issues,” Ortiz said.

The research is mutually beneficial, Ortiz says, because the findings could help inform the North Star Alliance’s programming going forward. ■

Vapers, Beware of the Vapors

ILIAS KAVOURAS DISPELS THE MYTHS
AND EXPOSES THE RISKS OF E-CIGARETTES



Professor Kavouras' research is focused on uncovering the effects of chemical contaminants on human health.

THEY WERE TOUTED AS SAFE TOBACCO alternatives. They would help smokers quit and discourage non-smokers—especially young people—from taking up the habit in the first place. Yet, e-cigarettes, also known as e-cigs, vapes, e-hookahs, vape pens or cigalikes, may in fact be more harmful than conventional cigarettes. What's more, they are attracting an alarming and growing number of young customers, whose regular vaping exposes them to dangerous levels of nicotine and an array of toxic and potentially carcinogenic chemicals that could endanger their health. Because it is not known what harmful chemicals e-cigarettes contain, it has been virtually impossible to assess their long-term health impact—until now.

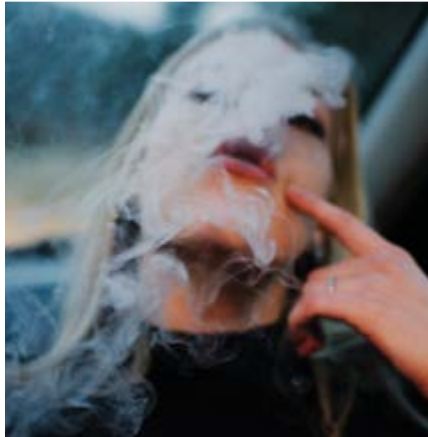
Dr. Ilias Kavouras, Professor of Environmental, Occupational, and Geospatial Health Sciences at CUNY SPH, and colleagues recently published a study assessing the toxicity of e-cigarette vapors. The study, which appeared in the March 2018 issue of

Inhalation Toxicology, found that specific aspects of e-cigarette use, including device brands and types, flavorings, puffing patterns, and voltage/heat level, profoundly influence and often increase the toxicity of vapors that e-cigarettes emit and that users inhale.

“The younger you are when you use e-cigarettes, the more chemicals will enter your body and interact with still-developing vital organ functions, which is why young people are at higher risk than adults,” says Kavouras. “E-cigarettes are marketed as safer than tobacco smoking but youngsters who use them may be inhaling carcinogens. They may not produce tar like tobacco but they're not safe.”

A VAPING EPIDEMIC: WHAT'S THE DRAW?

Vaping has reached epidemic proportions among youth. A December advisory from the U.S. surgeon general estimated that e-cigarette use among high-school students increased by 900 percent between 2011 and



MORE HIGH SCHOOL STUDENTS CHOOSE E-CIGARETTES OVER CONVENTIONAL CIGARETTES, AND THEIR USE EXCEEDS THAT OF ADULTS. ”

2015 and by 78 percent in 2018. The Centers for Disease Control and Prevention (CDC) reports that more high school students choose e-cigarettes over conventional cigarettes, and their use exceeds that of adults. Compared to 3.2 percent of U.S. adults who used e-cigarettes in 2016, more than two million U.S. middle and high school students had used e-cigarettes in the past 30 days, the CDC says. From 2011 to 2017, e-cigarette use among high school students rose from 1.5 percent to 11.7 percent, and from 0.6 percent to 3.3 percent among students in middle school.

Curiosity and the perception of e-cigarettes' relative harmlessness entice children and teens, the surgeon general's advisory notes. But the biggest draw is their extensive variety of flavors—more than 7,700—including fruit, candy, tobacco, mint, coffee, and alcoholic cocktails, like strawberry daiquiri.

“You step into a vaping store and it's like stepping into a candy store,” Kavouras says. “The packaging and flavors are very attractive to kids.” Some stores make their own flavors, using unregulated ingredients of questionable quality, he adds.

In November, in an effort to make vaping less popular among young people, the U.S. Food and Drug Administration ruled that flavored e-cigarettes may only be sold in closed off-areas, inaccessible to teenagers. Earlier that month, a proposal to ban the products entirely was leaked, prompting Juul Labs to announce it would stop selling most of its flavored e-cigarettes in retail stores and promoting its products on social media.

At a January public hearing, FDA Commissioner Dr. Scott Gottlieb threatened to ban e-cigarettes altogether if companies, namely Juul, didn't stop marketing their products to minors.

“I'll tell you this,” Gottlieb said. “If the youth use continues to rise, and we see sig-

nificant increases in use in 2019, on top of the dramatic rise in 2018, the entire category will face an existential threat.”

These are not the first attempts to clamp down on e-cigarettes. In August 2016, the FDA said that it would subject e-cigarettes to the regulations of the Family Smoking Prevention and Tobacco Control Act, requiring, among other things, that manufacturers provide the FDA with detailed information about the ingredients in their products. So far, however, the FDA has only required manufacturers to disclose the quantity of nicotine in their products—a requirement that many ignore, Kavouras says.

“It's taken many years for the FDA to decide they have the authority to regulate e-cigarettes but they haven't regulated anything yet,” he says.

Last spring, more than a half-dozen public health groups, joined by pediatricians, sued the FDA for delaying regulation of e-cigarettes. In the meantime, Kavouras notes, “the market is exploding.”

CUSTOMIZATION INCREASES RISK

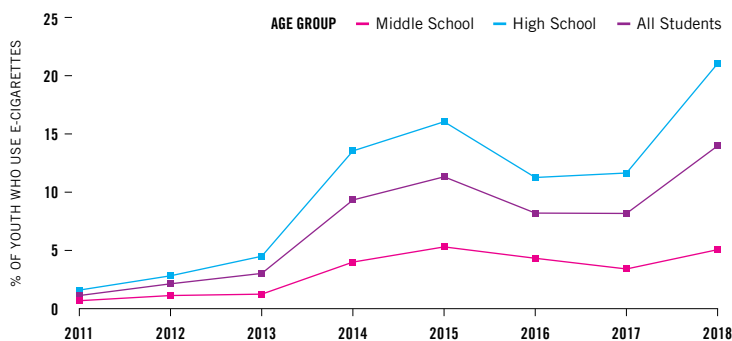
Little is known about the long-term health effects of e-cigarettes because little is known about their ingredients. Kavouras' study found that, in addition to their specific ingredients, it is e-cigarettes' customizability—users' ability to enhance personal satisfaction by increasing operational voltage, incorporating different flavor additives or alternating puffing patterns—that makes them so dangerous. Individually or together, these variables compound the toxicity of the mist they produce, which settles deep into the lungs of vapers and bystanders alike.

Although e-cigarettes don't produce a steady smoke stream, they do produce secondhand smoke in the form of exhaled vapors that linger in closed spaces. Moreover, because people believe e-cigarettes to be safe, they smoke in places where traditional smoking is forbidden, like commuter trains and restaurants, exposing others to secondhand vapors.

“There are harmful components in e-cigarette vapors that users are inhaling, and some of these are carcinogenic,” notes Kavouras, who has spent his career, including his post-doctoral years at the Harvard

GROWTH IN E-CIGARETTE USE

E-cigarettes are very popular with young people. Their use has grown dramatically in the last five years. Today, more high school students use e-cigarettes than regular cigarettes. The use of e-cigarettes is higher among high school students than adults.



SOURCE: National Youth Tobacco Survey 2011-2018. Note: In 2014, changes were made to the e-cigarette measure to enhance its accuracy.

T.H. Chan School of Public Health, studying the health effects of environmental toxins, such as air toxics and ozone pollution, nanoparticles embedded in paints, and polynuclear aromatic hydrocarbons in residences. To conduct his research on e-cigarettes, he used sophisticated methods that his research team developed, as well as partnerships at Harvard.

In his analysis, Kavouras identified four groups of chemicals in the liquid that e-cigarettes contain: nicotine, solvents (mostly propylene glycol and glycerin), flavor additives, and preservatives. Nicotine comprises only five percent of e-cigarette liquid, far less than that of regular cigarettes, but it poses multiple risks, including addiction, (a 2010 Surgeon General's report deemed it as addictive as cocaine and heroin) and at the very least, damage to cardiovascular, respiratory, renal, and reproductive health.

Because e-cigarettes have inefficient nicotine-delivery systems, young users tend to take more frequent, longer and harder puffs to get the desired dose, subjecting their developing brains to the risk of nicotine over-exposure, as well as chemicals and volatile organic compounds which, when heated and vaporized, become toxic.

"Once you heat the e-liquid, byproducts through the thermal breakup of the solvents, flavors and other chemical in the e-liquid are produced," Kavouras explains.

Propylene glycol and glycerin (the most

abundant ingredients in e-cig liquids) are deemed safe in food products but inhaling them may be harmful. Furthermore, when heated they produce benzene and formaldehyde, which can, among other things, cause damage to the liver, kidneys, and central nervous system.

"These byproducts are not in the original e-liquid but are formed through heating," Kavouras says. "The more you use an e-cigarette, the more vapor and chemicals you are going to inhale. The fact that you have formaldehyde and benzene in there is alarming by itself because they are known human carcinogens."

Increasing e-cigarettes' voltage—and thus, heat—is another strategy that teens use to maximize their intake of nicotine and overall vaping satisfaction, and that also intensifies the concentration of chemical byproducts, Kavouras says.

"The higher temperatures you use to heat e-liquids, depending on their flavors, the more likely you are to generate greater quantities of these chemicals."

For example, he found that raising an e-cigarette's voltage from 2.2 to 5.7 volts generated 1500 times more particle mass, 2000 times more propylene glycol, 2700 times more glycerin, 2300 times more nicotine, 11 times more benzene, and two times more toluene. Higher voltages also generated more particles, a finding that he says is particularly important since most e-cig-

arette users use advanced devices that allow them to adjust voltage.

Flavor additives, which comprise only five percent of e-cigarette liquid, are also potentially dangerous because they often contain the chemical diacetyl, which is linked to serious lung disease. And, as Kavouras' study revealed, additives such as aldehydes, ketones and esters cause different flavors, when heated, to produce different quantities of volatile organic compounds. The tobacco flavored liquid, for example, generated more than seven times greater particle mass than the menthol flavor, while the menthol flavor generated four times more benzene and two times more toluene than the tobacco flavor. E-cigarette type also affected emissions, Kavouras found. Disposable designs generated more small particles and the highest amount of benzene, compared to pre-filled and refillable designs.

A CHANGING MARKET

Despite the FDA's attempts to regulate e-cigarettes, their market continues to grow. Understanding the health risks may dissuade potential smokers but manufacturers are still not disclosing their health information, Kavouras says.

"The whole risk assessment process needs to be done and that takes time and a huge amount of resources. Toxicological studies that do exist have large discrepancies largely because there are no standards regulating the generation and characterization of e-cigarette emissions."

Complicating matters is the ever-changing makeup of e-cigarettes. "The technology is changing, e-liquids are changing, and markets are evolving," Kavouras adds. Newer and more potent mixtures are rapidly coming onto the market, with some sellers custom-mixing e-liquids, combining more or less nicotine and a range of other ingredients, whose interaction is unknown.

"The market is only 15 years old and changing very rapidly, so it's difficult for scientists to catch up and make conclusions because it takes time and money to do risk assessment evaluations."

Kavouras hopes his ongoing research will close this critical information gap, even though he knows he has just begun to scratch the surface.

"The fact that these chemicals are there at the levels we're finding is of great concern," he says. "We're trying to understand what else is in there, other than what we've already found." ■



A high-end vaporizer module surrounded by an assortment of e-liquids. Attractive product design makes them appear right at home alongside other personal devices, such as mobile phones, and helps create the illusion that they're safe to use.

Battling the Consequences of War

A FORUM ON THE REFUGEE AND IMMIGRANT MENTAL HEALTH CRISIS IN THE MIDDLE EAST

THE AL-KINDI TEACHING HOSPITAL IN ALEPPO, where Dr. Fouad M. Fouad trained in surgery, now lies in ruin, an unfortunate casualty of a series of airstrikes that, over the past six years, partially or completely destroyed sixty of Syria's hospitals.

Fouad fled the Syrian conflict in 2012 along with millions of his fellow countrymen. He put down roots in Lebanon and now heads the Refugee Health Program at the Global Health Institute at the American University of Beirut.

Ongoing conflict in the Middle East has yielded a wave of refugees seeking asylum in neighboring countries, Europe, and elsewhere. These travelers escaped the ravages of war, left behind their ancestral homes, and made sometimes treacherous journeys to their country of asylum. Their trauma is often compounded by the stress of starting over in an unfamiliar and often hostile new environment.

Refugee populations are at considerable risk of developing mental disorders, including anxiety, depression, and post-traumatic



An aerial view of Za'atri refugee camp, host to tens of thousands of Syrians displaced by conflict, near Mafraq, Jordan. PHOTO: United Nations



stress disorder, but mental health care is frequently inaccessible.

In September, the CUNY Graduate School of Public Health & Health Policy's Center for Immigrant, Refugee, and Global Health (CIRGH) hosted an international panel of mental health experts to address clinical and empirical perspectives on Arab refugee mental health and discuss strategies for building capacity for culturally competent treatment and reducing barriers to access.

"Syria is the largest displacement crisis globally," Fouad said. "Fifty-three percent of the Syrian population is now displaced and around 51 percent are under 18."

The humanitarian aid system is not equipped to meet the mental health needs of these refugees, Fouad said. Displaced Syrians have high rates of clinic-reported psychosocial distress such as anxiety and depression, and admissions of Syrians into Lebanese psychiatric hospitals substantially increased after the war began in 2011.

Fouad said that unfortunately, many mental health programs and interventions for refugees focus solely on PTSD, ignoring preexisting mood and anxiety disorders and substance abuse.

"The trauma of war can exacerbate existing mental health disorders," Fouad said.

"A lot of effort should be put towards recovery and prevention of long-term manifestations of trauma."

Fouad warned that mental health providers working with refugees may overlook depression and anxiety in patients due to their cultural idioms of distress, or the way distress is verbalized in certain communities.

"Mental health providers need to be able to understand the patient's culture to an extent and how they explain their symptoms."

Dr. Ceren Acaturk, Associate Professor at Istanbul Şehir University in Turkey, worked with residents of a refugee camp near the city of Kilis to create a mental health intervention program tailor-made for Syrian migrants suffering from PTSD and depression.

Together with her colleagues, Acaturk conducted a study weighing the effect of eye movement desensitization and reprocessing (EMDR), a form of psychotherapy in which the patient is asked to recall distressing images while generating one type of bilateral sensory input, such as side-to-side eye movements or hand tapping, on participants living in the camp. During the course of the study, Acaturk and her team conducted one-on-one interviews with refugees about their struggles.

"We wanted to understand the problems they have and how they express them and what are the solutions they think would help them," Acaturk said.

The research team then held focus groups with religious and community leaders and conducted cognitive interviews about the proposed treatment methods.

Finally, the researchers trained three psychologists in EMDR and, with the help of translators, they provided one-on-one individual sessions with patients with PTSD. The psychologists and translators were matched by gender with their patients, according to recommendations from the focus groups. Sessions were held near a day-care facility so participants' children would be cared for during the sessions.

The researchers performed three assessments of the participants, one before the intervention, one after and one a month later. They found that after the treatment, the intervention group had significantly

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Syria is the largest displacement crisis globally—Fifty-three percent of the Syrian population is now displaced and around Fifty-one percent are under 18.



Syrian refugee Mahmoud, 15, in the underground shelter where he lives with his family in El Akbiya, Lebanon. They fled Syria in the early morning hours after a bomb fell on a nearby house.



Illustrations from the Problem Management Plus (PM+) guide published by the World Health Organization depict gender-matched one-on-one interviews.

“

We didn't want to do the study, publish the paper and forget about it. We wanted to continue our health strategy.

lower scores on the Harvard Trauma Questionnaire. Acaturk noted that the majority of Syrian refugees in Turkey reside in urban areas, not in camps, so the program will need to be adapted to accommodate patients in an urban setting.

Acatürk and her team have since signed on to two projects funded by the European Union's Horizon 2020 Research and Innovation program: STRENGTHS and REDEFINE.

“We didn't want to do the study, publish the paper and forget about it,” she said. “We wanted to continue our health strategy.”

The STRENGTHS project will train Syrian refugees to administer a mental health intervention called Problem Management+ (PM+), which was developed by the World Health Organization (WHO), to fellow Syrian refugees.

The REDEFINE project is unique in that it seeks to prevent the onset of mental disorders in refugees with psychological distress through psychological intervention. It will also be tailored to people who may not be able to attend in-person sessions.

“The WHO says—and I agree with them—that we need to target people who are difficult to reach,” said Acaturk. “So through audio recorded consultations and illustrated booklets we aim to reach more people.”

Many refugees in the Middle East and Africa are finding their way across the Mediterranean or by land to European

destinations. Dr. Charles Cange, Assistant Professor of Public Health in the Department of Health Sciences at Lehman College and member of CIRGH, presented on the convoluted routes asylum-seekers commonly take to arrive safely and legally in their destination countries.

“There are different stages of trauma,” said Cange, a co-organizer of the event. “A lot of times folks are coming into this journey with a trauma from home. It might be sexual abuse, it might be torture, it might be something else. Sometimes they don't have trauma initially, but the journey itself can become a trauma.”

Crossing the Mediterranean from Northern Africa to Europe is treacherous, Cange said. The International Organization for Migration reports that 3,100 people died attempting the journey in 2017, but Cange's own research puts the number closer to 5,000.

Trauma-informed services may help these refugees better integrate into their asylum countries and encourage feelings of acceptance, Cange said.

“They feel alone,” he said. “There's a lot of loneliness. A lot of times they're coming by themselves and they feel lost and they feel hopeless and they feel alienated.”

Over the course of his research, Cange has been exploring how refugee service providers respond to trauma in migrants and the prevalence of trauma-informed mental health services in Italy and France. He

found that trauma-informed psychological services for refugees is prevalent in Italy but lacking in France.

Both countries could benefit from more federal funding for refugee service-focused programs, Cange said. He recommends that both countries train refugee service providers on trauma-informed care and the types of trauma their clients are likely to have.

LGBTQ migrants are an often-overlooked subset of Arab refugees. For the past few years, Calle Brunell, a clinical psychologist, has been working with asylum-seeking LGBTQ migrants from the Middle East and Northern Africa at the Mansmottagning sexual health clinic in Stockholm, Sweden.

All over the world, LGBTQ people are targets of violence, discrimination and persecution. “Instead of a single catastrophe, many report a life characterized by violence,” Brunell said.

He told the story of a patient, “Niki,” a transgender woman from Egypt. The abuse started for her at an early age. Growing up in Cairo, she was verbally, physically, emotionally and sexually assaulted, predominantly by members of her own family.

“When harassment takes place at home, in school, in the religious community and at work, the individual is left without professional support from healthcare or juridical systems, nor can they find more informal emotional support amongst family and relatives,” Brunell said.

Brunell’s clients have often made arduous journeys through many countries to reach Sweden, facing harassment and abuse along the way. Once arrived at their destination, they’re often met with racism and islamophobia as well as homophobia or transphobia. The uncertainty of the asylum process only adds to his patients’ stress, he said.

“The asylum process can itself be seen as ongoing trauma,” Brunell said. “The longer you stay in it, the worse it gets. My patients have to be sheltered sufficiently from its effects.”

The clinic offers safe spaces in collaboration with NGOs, but more importantly, Brunell says, opportunities to process their experiences through therapy.

Through her work with Dr. Brunell, Niki was able to put aside her trauma and focus for the first time on her trans identity. She had always felt “different” but lacked the terminology in Arabic to express her feelings. Through therapy, Brunell says, Niki was finally able to find words to describe her experience and to place her identity in a wider context. She transitioned from a gay man to

a transgender woman within a few months.

“It was like watching that sudden and delicate blossoming of cherry trees down by the opera house in May,” Brunell said.

Refugee mental health service providers, academics and migration authorities should show more concern for LGBTQ migrants, Brunell said, as they have suffered incomprehensibly in the pursuit of a better life and the realization of their true selves.

For Niki at least, her desires weren’t too different from those of the majority of the world’s refugees. “She just wanted to lead a safe life, she told me, to work and to love,” Brunell said. “That’s all.”

Dean Ayman El-Mohandes congratulated the presenters for going beyond the headlines to bring an evidence-based public health approach to the plight of refugees.

“It has been an honor for us to bring this international group of academics and clinicians to share the insights they have gained through their hands-on work with refugee populations,” said El-Mohandes, noting that this forum reflected CIRGH’s mission to advance scholarship, practice and understanding of the transnational policies, programs, institutions and ethos that influence global health.

“We are continuing to work with Dr. Fouad and the other presenters to bring their deep experience with refugee communities into our classrooms.”

THE ASYLUM PROCESS CAN ITSELF BE SEEN AS ONGOING TRAUMA. THE LONGER YOU STAY IN IT, THE WORSE IT GETS. ”



Clinical psychologist Calle Brunell works with LGBTQ migrants from the Middle East and Northern Africa seeking asylum in Sweden.

BELOW: Refugees arriving at Zakany Railway Station in Hungary, on the way to Germany.

PHOTO: iStock/csakisti





Research Report



Re-thinking Alzheimer's disease therapeutic targets using gene-based tests

Alzheimer's disease (AD) is a devastating condition with no known cure. Existing drugs only alleviate symptoms. Given repeated and costly drug failures, CUNY SPH Professor Mary Schooling and colleagues assessed whether approved and investigational AD drugs are targeting products of genes strongly associated with AD and whether these genes are targeted by existing drugs for other indications which could be re-purposed.

Schooling and her team identified genes strongly associated with late-onset AD from the loci of genetic variants associated with AD at genome-wide-significance and from a gene-based test applied to the most extensively genotyped late-onset AD case (n = 17,008)-control (n = 37,154) study, the International Genomics of Alzheimer's Project. They used three gene-to-drug cross-references, Kyoto Encyclopedia of Genes and Genomes, Drugbank and Drug Repurposing Hub, to identify genetically validated targets of AD drugs and any existing drugs or nutraceuticals targeting products of the

genes strongly associated with late-onset AD.

A total of 67 autosomal genes were identified as strongly associated with late-onset AD. Existing approved or investigational AD drugs did not target products of any of these 67 genes. Drugs for other indications targeted 11 of these genes, including immunosuppressive disease-modifying anti-rheumatic drugs targeting PTK2B gene products.

The researchers found that approved and investigational AD drugs are not targeting products of genes strongly associated with late-onset AD. However, other drugs targeting products of these genes exist and could perhaps be re-purposing to combat late-onset AD after further scrutiny.

"This study shows the value of systematically searching bioinformatics resources to discover new leads concerning the prevention or treatment of complex diseases," Schooling said.

Kwok, MK, Lin Lin, S, Schooling, MC. Re-thinking Alzheimer's disease therapeutic targets using gene-based tests. *EBioMedicine*, Volume 0, Issue 0.



Hazardous air quality in New York City nail salons

In 2016, New York State put forth regulations to improve indoor air quality in nail salons by requiring the business owners to install local exhaust ventilation systems. In advance of the full implementation of the rules by 2021, Brian Pavilonis, Assistant Professor at CUNY SPH, led a pilot study to establish reliable and usable baseline indoor air quality metrics to determine the feasibility and effectiveness of the requirement. The findings were published in *The Journal of Occupational and Environmental Hygiene*.

Pavilonis and his team measured carbon dioxide and total organic volatile compounds (TVOC) in ten nail salons in Manhattan, Queens, and the Bronx. Concentrations of TVOC varied between nail salons with an almost tenfold increase in concentrations observed in salons with poor ventilation.

"In order to reduce airborne concentrations of TVOC, nail salons need to continuously use their HVAC system and not recirculate air," Pavilonis said.

Pavilonis B, Roelofs C, Blair C. J. Assessing Indoor Air Quality in New York City Nail Salons. *Occup Environ Hyg*. 2018 Mar 1:1-23. doi: 10.1080/15459624.2018.1447117

Acceptability of a prophylactic vaginal ring as an HIV prevention method

Dana Watnick, a doctoral student at CUNY SPH, authored a study examining the use of pre-exposure prophylaxis in the form of a vaginal ring as an HIV prevention method for women.

Through a randomized placebo-controlled trial of a tenofovir disoproxil fumarate intravaginal ring, Watnick and colleagues assessed the acceptability of the product among its users through in-depth interviews with 18 women in New York City during and after 14 days of continuous use. The results were published in the journal *AIDS and Behavior*.

The women reported that the ring was comfortable with few side effects, regardless of whether they received the active ring or the placebo ring. However, interest in future use of the ring by this cohort was modest.

"Most women wouldn't even consider ring use because they didn't think they were at risk for HIV," Watnick said.

Watnick's findings suggest that future studies should continue to identify and address individual and relationship factors that influence acceptability, early in the product development process.

"In order to develop these rings so that that women might actually use them, it is crucial to understand what makes these rings acceptable or not to women," Watnick concludes.

In April 2018, Watnick was awarded a \$20,000 American Fellowship by the American Association of University Women (AAUW) to fund her dissertation work on the acceptability of a vaginal ring to prevent HIV and pregnancy.

Watnick D, Keller MJ, Stein K, Bauman LJ. Acceptability of a Tenofovir Disoproxil Fumarate Vaginal Ring for HIV Prevention Among Women in New York City, *AIDS & Behavior* (2018) 22: 421.



Improvements in fitness bring improvements in attendance among high-poverty NYC students

In high-poverty, urban school districts in the United States, only one in four youth ages 12-15 meet international physical activity recommendations. This raises concern given a well-established link between youth physical activity and health, and potential associations with school academics and attendance. One-fifth to one-third of students in high-poverty, urban school districts do not attend school regularly, missing around six school days per year.

In a study published in *The Annals of Epidemiology*, Dr. Emily D'Agostino, a CUNY SPH doctoral alum, and Dr. Katarzyna Wyka, Assistant Professor of Epidemiology and Biostatistics, observed six cohorts of New York City public school students from 2006 to 2012 to test the association of fitness changes and attendance across

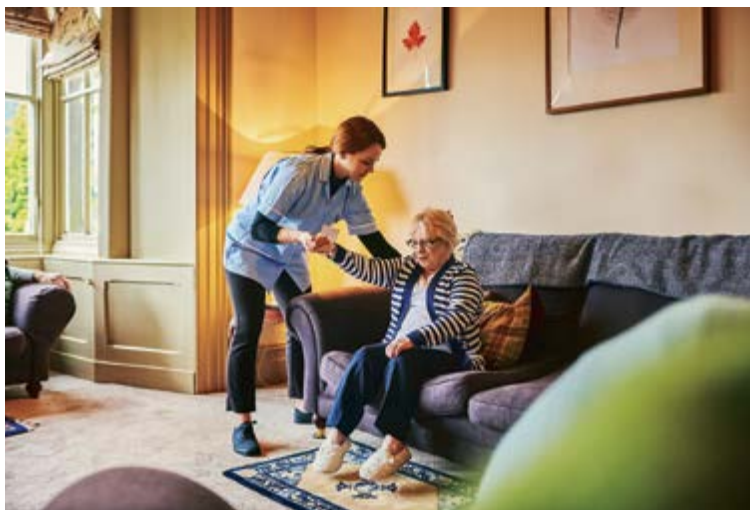
gender and poverty subgroups.

The team found that, among girls attending schools in high poverty areas, greater improvements in fitness the year prior were associated with greater improvements in attendance. Girls with a large increase in fitness (greater than 20 percent) demonstrated 10.3 percent fewer days absent per year compared with those who had a large decrease in fitness.

"We hope that further research will examine the potential for school-based physical activity programs to improve attendance, particularly in high poverty neighborhoods," D'Agostino said.

D'Agostino EM, Day SE, Konty KJ, Larkin M, Saha S, Wyka K. The association of fitness and school absenteeism across gender and poverty... *Annals of Epidemiology* Volume 28, Issue 3, March 2018.





“We’re on our own”: home health care workers report inadequate support from employers

Home health care work is not only physically demanding, but also emotionally taxing. Home care workers do an enormous amount of emotional labor to keep clients feeling safe, calm and happy. This work can be rewarding but also very stressful. The stressful aspects often go unrecognized and are not necessarily reflected in job descriptions, training, or pay.

CUNY SPH researchers Emily Franzosa, a graduate of the doctoral program, and

Assistant Professor Emma Tsui led a study examining home health workers’ perceptions of the emotional effects of caring work, how they cope and how they would like to be supported by their employers. The findings were published in *The Gerontologist*.

The health care aides responded that more connection with their supervisors and the care team, as well as structural supports like paid time off, more control over their

Genetic determinants of telomere length in African American youth

Telomeres are DNA-protein structures that play a vital role in maintaining DNA stability and integrity. Telomere length (TL) is an important biomarker of aging and overall health, but has been mostly studied in adult populations of European or Asian ancestry. Previous studies identified 34 TL-associated genetic variants recently used as genetic proxies for TL.

CUNY SPH Professor Luisa N. Borrell was one of the senior authors of the first genome-wide association study of TL among African American youth, published in the journal *Scientific Reports*. The study notes that the lack of research on factors affecting TL in pediatric and non-European populations creates a knowledge gap in the scientific understanding of gene-environment interactions regulating telomeres.

Borrell and colleagues measured TL from whole blood samples of 492 healthy African American youth (between 8 and 20 years old) and were unable to replicate either the 34 reported genetic associations found in adults or the six genetic associations found in European children. The study also identified novel genetic associations with TL that have not been identified in previous studies. The findings suggest that genetic markers of TL are not generalizable across all populations.

“Our results underscore the importance of examining genetic associations with TL in diverse pediatric populations such as African Americans and call attention to include Hispanic pediatric populations, an admixture population when it comes to ancestry, in TL studies,” said Borrell.

Further telomere research is needed in pediatric populations from diverse ancestral backgrounds, Borrell said.

Zeiger AM, White M, Eng S, Oh SS, Witonsky J, Goddard PC, Contreras MG, Elhawary JR, Hu D, Mak ACY, Lee EY, Keys KL, Samedy LA, Risse-Adams O, Magaña J, Huntsman S, Salazar S, Davis A, Meade K, Brigrino-Buenaventura E, LeNoir MA, Farber HJ, Bibbins-Domingo

schedules, and access to counseling and mental health benefits would help them better cope with job-related stress.

“Overwhelmingly, aides told us that they loved their jobs and their clients, but they needed more support,” Franzosa said. “If we’re going to retain a skilled, qualified workforce that can meet the needs of our aging population, we need to acknowledge aides’ emotional labor, and build that into the way we train workers and supervisors, design care plans, and pay for care.”

Franzosa E, Tsui EK, Baron S. “Who’s Caring for Us?”: Understanding and Addressing the Effects of Emotional Labor on Home Health Aides’ Well-being. *Gerontologist*. 2018 Aug 17. doi: 10.1093/geront/gny099.

Study finds family-cap policies are an ineffective approach to welfare reform

Federal welfare reform legislation enacted in 1996 was designed to discourage poor women from bearing children by allowing a family-cap policy prohibiting the increase in cash assistance when a new child was born into a family. While there was some initial backlash claiming the legislation violated reproductive and human rights, in the ensuing two decades concerns about the policy have not been loudly raised.

A study co-led by CUNY SPH Associate Professor Diana Romero and Madina Agenor, Assistant Professor at Harvard University's T.H. Chan School of Public Health, surveyed

officials from the 24 states that implemented family-cap policies about their opinions on the policy's status, implementation, effectiveness, benefits, and disadvantages. Their findings were published in the *Journal of Poverty and Social Justice*.

The study found that most officials feel the policy's administrative burden and negative economic impact on poor families outweigh its potential benefits. Analysis of the interviews suggest that the inclusion of the family-cap policy among other welfare reforms was "more symbolic and punitive than substantive." This study provides empirical support to criticisms of the family-cap policy that were raised shortly after the passage of the welfare reform legislation.

Romero, D., & Agénor, M. (2018). Twenty years post US welfare reform and state family caps aka child exclusion: An overdue assessment. *Journal of Poverty and Social Justice*, 26(2), 151-171.



Racial and gender discrimination among teens exposed to dating violence

Teen dating violence (TDV) is an urgent public health concern associated with a range of lasting mental, sexual, and behavioral health consequences. Studies have revealed high rates of dating violence and sexual coercion among youth of color, with several studies finding black female teens reporting the highest rates of victimization among all demographic groups.

Dr. Lynn Roberts, Assistant Professor of Community Health and Social Sciences, led a study examining the combined associations of racial and gender discrimination and TDV. The findings were published in the journal *Ethnicity and Disease*.

Roberts and her colleagues applied the Critical Race Theory framework, which asserts that racism is ubiquitous in the lives of people of color, and intersectionality, which recognizes that social identities are interdependent and mutually constitutive, to better understand the disparate impact of TDV on Black female teens.

The study suggests that adolescents reporting both racial and gender discrimination were 2.5 times more likely to experience dating violence than those who did not report racial and gender discrimination. The researchers recommend that future studies of TDV should examine the relationship between experienced racial and gender discrimination, while controlling for correlates at the individual and family levels, in order to understand and address the impact of TDV.

"I am hoping that our findings will open up more pathways for public health researchers and practitioners to consider and explore intersectionality, a central tenet of Critical Race Theory, in their research and interventions," Roberts said.

Roberts, Lynn, Mahader Tamene, and Olivia R. Orta. The Intersectionality of Racial and Gender Discrimination among Teens Exposed to Dating Violence. *Ethnicity & Disease*, 2018. doi:<https://doi.org/10.18865/ed.28.S1.253>.



Neighborhood “greening” may lead to gentrification and displacement

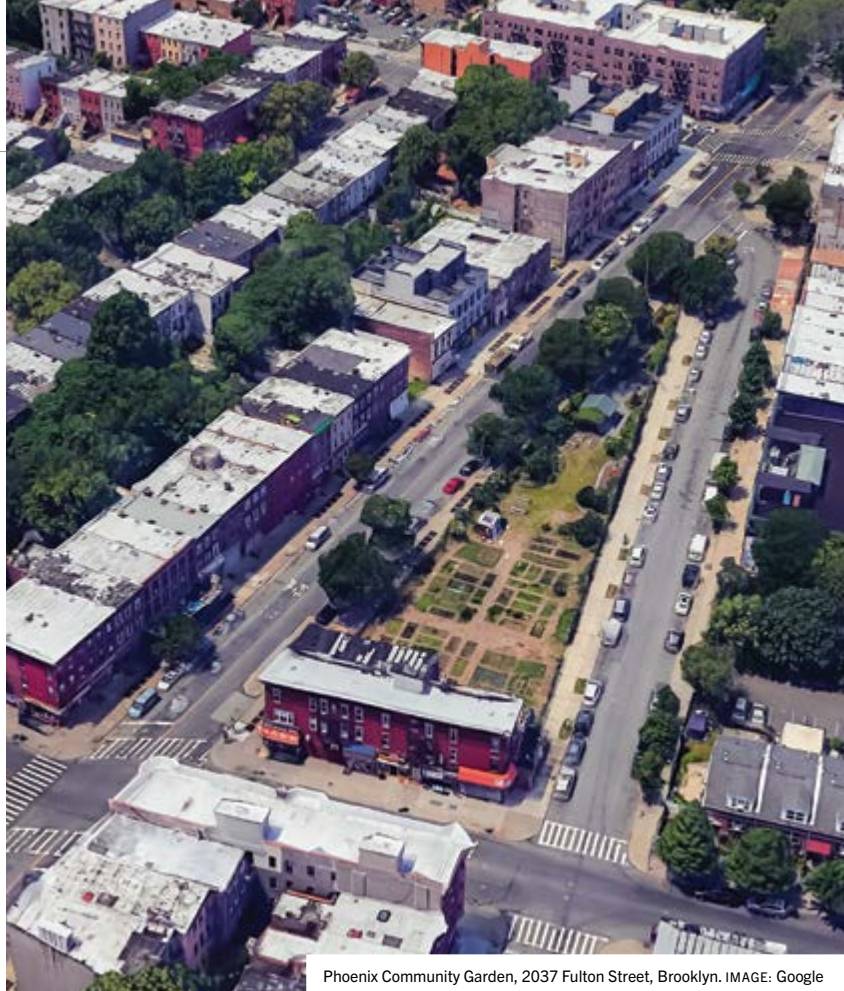
Many post-industrial cities have areas of vacant and derelict land (VDL) which can have negative health and environmental impacts on nearby residents. VDL is located predominantly in poorer neighborhoods, posing a disproportionate risk upon these communities. Repurposing these areas into green spaces and community gardens may mitigate the risk of health and environmental hazards, but they may also result in unintended adverse impacts on the community, particularly displacement stemming from rises in property values due to new-found developer interest in the area.

Using Brooklyn, New York as a case study, CUNY SPH Associate Professor Andrew Maroko and Professor Juliana Maantay of Lehman College examined whether proximity to community gardens in less affluent neighborhoods is associated with an increased likelihood of gentrification. The results were published in the *International Journal of Environmental Research and Public Health*.

The researchers used Geographic Information Systems and two spatial methods to determine the potential impact of proximity to community gardens in lower-income areas. The researchers found that proximity to community gardens is associated with significant increases in per capita income over the five years study period, which is indicative of areas undergoing gentrification. This has implications for environmental justice because existing lower-income residents are likely to be displaced after their community is improved environmentally.

“We think community led responses to environmental equity issues are extremely important, and our concern is the possibility that the very things which a community can do to improve their local environment may ultimately contribute to their displacement from it,” said Maroko.

Juliana A. Maantay and Andrew R. Maroko, Brownfields to Greenfields: Environmental Justice Versus Environmental Gentrification. *Int. J. Environ. Res. Public Health* 2018, 15(10), 2233; doi:10.3390/ijerph15102233



Phoenix Community Garden, 2037 Fulton Street, Brooklyn. IMAGE: Google



The perception of PrEP as an excuse for promiscuity

Since the FDA approved the use of Pre-Exposure Prophylaxis (PrEP) in 2012 to reduce the risk of HIV infection in the event of exposure, the drug's uptake among gay and bisexual men has been met with conflict, stemming from the perception that those who take the drug are promiscuous and engage in risky sexual behaviors.

A study co-authored by CUNY SPH Professor Christian Grov and Mark Pawson, doctoral candidate at the CUNY, sought to deconstruct the moral debate surrounding biomedical HIV prevention and the complex ways in which PrEP and PrEP users are defined within the gay and bisexual communities. The findings provided important insight into the norms and values that shape the perception of PrEP as

being either a useful tool to prevent HIV or a harmful practice encouraging promiscuity and “irresponsible behaviors” among its users.

“Both perceived and experienced stigma of PrEP users are significant barriers to PrEP uptake,” Grov said. “Data show that the number of PrEP users has increased year-over-year since being approved, but uptake is still not commensurate with the need.”

The CDC recently estimated that as many as 1-in-4 gay and bisexual men would benefit significantly from the protection PrEP provides.

Pawson M, Grov C. 'Its just an excuse to slut around': Gay and Bisexual Mens' Constructions of HIV Pre-exposure Prophylaxis (PrEP) as a Social Problem. *Sociology of Health & Illness*. 2018. doi:10.1111/1467-9566.12765.



Exploring the social epidemiology of the microbiome

The microbiome is emerging as a factor for many diseases for which there are known health disparities, pointing to the opportunity for investigation of this new area of biology in social and population health research. While recent research establishes the importance of the microbiome for human health, data on how the social environment shapes the microbiome is limited.

Jennifer Dowd, Associate Professor of

Epidemiology and Biostatistics at CUNY SPH, and recent MPH graduate Audrey Renson published a paper describing potential mechanisms of the social epidemiology of the microbiome. The review appeared in the journal *Current Epidemiology Reports*.

In the paper, the researchers laid out the many factors that shape the microbiome in humans, such as social relationships, socioeconomic status, and health behaviors.

“While research in this area is still very new, we found evidence of the importance of early life exposures, psychosocial stress, and the built environment in influencing the microbiome,” said Dowd. “We argue that broader consideration of how the social environment shapes the microbiome over the life course is needed to understand variation in the microbiome and ultimately how to intervene on it.”

Dowd JB, Renson A. “Under the Skin” and into the Gut: Social Epidemiology of the Microbiome. *Curr Epidemiol Rep*. 2018;5(4):432-441.

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