So when all this is over
—and as we said, it will end, we will get over coronavirus
—but there will still be health disparities...

— Dr. Anthony Fauci
It has been a year since the U.S. entered a state of national emergency due to COVID-19. We hope that readers are safe and well and, that by the time many of you see this, the crisis will finally be abating. Certainly COVID-19 is a reminder of how central health policy is to the functioning of our body politic, and therefore how important it is as a topic for research, teaching and service. Here at CHW, we feel fortunate to continue our programs in these vastly changed circumstances.

Many of our faculty have pivoted from their own research to focus on the crisis. For example, Alin Coman was awarded a Rapid Response Research grant from the National Science Foundation to study how anxiety influences how we process information about COVID-19. Alex Ploss has developed a mouse model that can be used for research on the physiological effects of SARS-CoV-2. Jessica Metcalf and Bryan Grenfell have stepped up their efforts both to track COVID-19 and to educate the public about epidemiological models of transmission. Janet Currie is working on the effects of the pandemic on drug overdoses. Betsy Armstrong is working on ethical ways to provide maternity care in a global pandemic. Students also turned to COVID-19 inspired work.

Our extraordinary CHW affiliates have continued to be honored for their scholarship. For example, Ruha Benjamin was named a leader in data science at the Sadie T.M. Alexander Conference for Economics and Related Fields. Kate Ho was awarded the Frisch Medal in economics for her work on the relationship between health insurer competition and patient welfare. Daniel Notterman and Noreen Goldman won a grant from the National Institutes of Health to study the effects of early life adversity on the evolution of cardiovascular health risks. Ramanan Laxminarayan became a Fellow of the American Academy for the Advancement of Science, and Marta Tienda was named a Phi Beta Scholar.

In addition to our permanent faculty, we usually have an active program of faculty visitors and postdoctoral fellows representing many disciplines and home institutions. Our visitors program was impacted by COVID-19 but we still managed to host scholars from around the world. (See pages 9-11.)

The undergraduate certificate program in Global Health and Health Policy (GHP) continued to be one of the most popular on campus (or perhaps more accurately these days, in cyber-space). Our students did remarkable work in 2020, contributing to scholarly publications and research conferences, and being recognized for their academic excellence and contributions to campus life. Some of the many highlights are described on page 15. Our senior thesis prize winners Rachel Kasdin, Elisabeth Slighton and Alexandra Wilson wrote about stigma associated with racism and homelessness in Trenton’s health care system; patient and provider approaches to inflammatory bowel diseases; and developing a computational model of an organism used to make biopharmaceuticals and biofuels. These topics showcase the breadth of GHP students’ interests and expertise.

While all of our GHP certificate students participate in summer internship and research opportunities, CHW also sponsors fully funded Internships in Global Health which are open to any Princeton student with interests in health policy. Students were unable to travel in the summer of 2020, but with help from our partners and affiliates we were able to offer more than 50 virtual internships and funded senior thesis projects at short notice. On pages 27-32, students present their experiences as research interns during the pandemic. Kasey Bowyer writes about researching how air pollution disproportionally affects African American neighborhoods in New Jersey, Brigitte Harbers analyzes data for NYC Health + Hospital’s Special Pathogens Program, Tanzina Islam discusses her experience analyzing remote methods of obtaining consent, Kamila Radjabova talks about remote research she conducted at the University of Malaya, Nanako Shirai discusses her summer research on kidney transplantation in Japan, and Yehuda Sinaga discusses using flight data to track COVID-19 risk in Sub-Saharan Africa.

In 2020 our small but active graduate level Health and Health Policy (HHP) certificate program continued under the leadership of Sanyu Mojola. One event the students especially appreciated was a career workshop, which featured four alumni from the program. Each speaker discussed his or her health-focused careers path, ranging from domestic (e.g., policy work for the Philadelphia Department of Public Health) to international (e.g., working for Doctors Without Borders in South Africa), and provided advice to current student participants. We plan to make this an annual event. In a graduate policy workshop led by Heather Howard, several HHP students participated in drafting a report for the state of Maine, addressing its planned transition to a state-based health marketplace. This was the ninth annual policy workshop in a series focused on state-level health care reforms.

We continually work to improve our communications and outreach. Please visit us at chw.princeton.edu, and follow us on Facebook (@CHWPrinceton), Twitter (@PrincetonCHW) and Instagram (Princeton_CHW).

Best regards,

Janet Currie
CHW Co-Director
Henry Putnam Professor of Economics & Public Affairs

Kate Ho
CHW Co-Director
Professor of Economics
The Center for Health and Wellbeing (CHW) fosters research and teaching on diverse aspects of health and wellbeing in both developed and developing countries. The Center’s goals are to understand the determinants of health and wellbeing; investigate the role of public policy in shaping the quality of people’s lives; and educate undergraduate and graduate students who aspire to careers in health and health policy.

In 2000, former Princeton Professor and current President of Brown University Christina Paxson founded CHW to create a home for interdisciplinary scholarly collaboration and education around topics in health at Princeton University. Today, CHW is a thriving and vibrant community with a tremendous capacity for health-focused research. The Center, led by Co-Directors Janet Currie and Kate Ho, and Associate Director Gilbert Collins, supports its associates and students through grants, certificate programs, mentorship and events.

Housed within the School of Public and International Affairs (SPIA), the Center offers two certificate programs: the undergraduate Global Health and Health Policy (GHP) certificate and the graduate Health and Health Policy (HHP) certificate.

Also under the CHW umbrella are the Program on U.S. Health Policy, which sponsors research and activities addressing aspects of domestic health care and health policy, and the State Health and Value Strategies Program, a Robert Wood Johnson Foundation-funded program assisting states with health reform implementation. For 16 years, CHW was home to the National Institute on Aging Roybal Center, also called the Center for Translational Research on Aging, which sponsored numerous pilot projects by researchers from Princeton University and worldwide on the topic of aging until its conclusion in May 2020.
A YEAR LIKE NO OTHER – CHW REACTS

When the Princeton community left campus for spring break in 2020, few fathomed what the months ahead had in store. An initial delayed start to the second half of the term escalated into a closed campus, travel restrictions, online classes, restricted activities and barriers to research. Without the ability to travel or work together in person, faculty, staff and students alike had to get creative, and be flexible, to accomplish their goals.

Emergent situations have a way of exposing the flaws in systems, institutions and expertise. The COVID-19 pandemic touched every corner of the globe and had far-reaching effects on nearly every aspect of daily life. A dramatic decrease in mobility, access and economic activity intensified the already staggering impact of the loss of life and health due to the disease. Few had intimate experience observing a novel disease response take shape and, with so many unanswered questions, it was difficult to see clearly through the fog. In the U.S., increased awareness of the outsized impact of COVID-19 on communities of color and an ongoing series of high-profile cases of police brutality and race-based crime led to calls for social justice and widespread protests. With increased awareness came a heightened sense of urgency for research and thought leadership. In response, many CHW affiliates shifted their research efforts in order to address these pressing questions.

CHW affiliate Alin Coman was awarded a Rapid Response Research grant from the National Science Foundation to study how anxiety influences how we learn and share information about COVID-19. The investigation assigns subjects to interact with either a high or low information transmission network and then measures knowledge and anxiety levels. Is there a relationship between accurate information and the experience of anxiety? Do high levels of anxiety affect how one shares or spreads information and misinformation? How does individual-level knowledge affect one’s ability to reduce negative emotions? This research will help to measure the impact of confronting and combating misinformation on both anxiety and acquisition of accurate COVID-19 information.

CHW affiliate Ruha Benjamin’s research explaining how data can be intentionally exploited and misrepresented through narrative spurred the creation of a “Pandemic Portal” to address the convergence of COVID-19 outcomes and systemic racism. The Pandemic Portal examines and distributes narratives and data regarding COVID-19 related to communities of color in order to “shrink the space between data and interpretation by providing context, limiting the ability for stories and narratives to deflect the truth.” The Portal team has created robust depositories of information and tools in different communication and media sectors. Tools include story maps, a zine, webinars, toolkits, infographics, reports, visual data tools, mapping tools and assessments. The team also developed playbooks on subjects such as education, Black maternal mental health during COVID-19, tenant rights and collective organizing, mourning and mental health, mutual aid, community organizing around policing, and COVID-19 testing and treatment.

The accomplishments and work of CHW affiliates, staff, associates and students in 2020 exemplified the hallmarks of CHW — vision, ingenuity and collaboration — as a vehicle for shaping public policy. What follows is a selection of contributions and stories highlighting how the people of CHW not only adjusted to the unprecedented disruption, but thrived — accomplishing great things in the study of the emerging pandemic while continuing their work on the social determinants of health.
CHW-FUNDED COVID-19 AND DISPARITIES RESEARCH BY CHW AFFILIATES

“Designing Evidence-Based and Ethical Maternity Care during the COVID-19 Pandemic”
Principal Investigator: Elizabeth Armstrong  Sociology and School of Public & International Affairs (SPIA)

Principal Investigator: Ruha Benjamin  African American Studies

“The Judicialization of COVID-19 in Brazil”
Principal Investigator: João Biehl  Anthropology

“Development of Serological Assays (Antibody Tests) to Quantify Anti-SARS-CoV2 Humoral Immunity”
Principal Investigator: Alexander Ploss  Molecular Biology

“Living in Pandemic Times: The U.S. Epidemic Experience in Historical Perspective”
Principal Investigator: Keith Wailoo  History and SPIA

“Silent Burdens: The Need to Strengthen Surveillance in Resource-Poor Settings”
Principal Investigator: Jessica Metcalf  Ecology & Evolutionary Biology and SPIA

OTHER COVID-19 AND DISPARITIES RESEARCH BY CHW AFFILIATES

“Treatment of Mental Illness in the American Adolescents Varies Widely Within and Across Areas”
Principal Investigator: Janet Currie  Economics and SPIA

“Deaths of Despair and the Future of Capitalism”
Principal Investigators: Anne Case and Angus Deaton (both emeritus), Economics and SPIA

“Dynamics in a Simple Evolutionary-Epidemiological Model for the Evolution of an Initial Asymptomatic Infection Stage”
Principal Investigator: Bryan Grenfell  Ecology & Evolutionary Biology and SPIA

“Epidemiology and Transmission Dynamics of COVID-19 in Two Indian States”
Principal Investigator: Ramanan Laxminarayan  High Meadows Environmental Institute

“The Thick Skin Bias in Judgments About People in Poverty”
Principal Investigator: Eldar Shafir  Psychology and SPIA

(Left to right) Keith Wailoo is the Henry Putnam University Professor of History and Public Affairs. Eldar Shafir is the Class of 1987 Professor in Behavioral Science and Public Policy, Professor of Psychology and Public Affairs; and the Inaugural Director, Kahneman-Treisman Center for Behavioral Science & Public Policy at SPIA. Bryan Grenfell is the Kathryn Briger and Sarah Fenton Professor of Ecology and Evolutionary Biology and Professor of Public Affairs at SPIA.
THE DOUBLE PANDEMIC: HEALTH POLICY COURSE PIVOTS TO ADDRESS COVID-19 AND SYSTEMIC RACISM

As Heather Howard, a lecturer in public affairs, was planning for her fall course “Health Care for Vulnerable Populations in the U.S.,” she considered not one but two pandemics. And she knew she had to retool the course, which she has taught since 2018, to seize the moment.

“We had two pandemics converging: COVID-19 and the reckoning with racial injustice,” said Howard, who is also the director of State Health and Value Strategies with Princeton’s Center for Health and Wellbeing (CHW). “Students were hungry to bring these issues into the classroom.”

With a grant from Princeton’s 250th Anniversary Fund for Innovation in Undergraduate Education, Howard redesigned the course curriculum to examine the intertwining dynamics of COVID-19 and systemic racism — shifting the focus from state health policy generally to policy addressing health disparities exacerbated by the pandemic.

The course fulfills a requirement for students who are majoring in the Princeton School of Public and International Affairs (SPIA), allowing juniors to explore inequities within the American healthcare system and propose policy solutions for the state of New Jersey.

Restructuring a course in real-time to reflect ongoing events

As a central theme of the course, students investigated how the pandemic has disproportionately affected communities of color. They studied how states have responded to COVID-19 — from expanded access to testing and health insurance to supporting struggling “safety net” providers — along with the role of federalism, or federal-state relations.

To reflect the evolving nature of the pandemic, Howard — a former commissioner of health and senior services for New Jersey — developed innovative strategies that would work in a virtual learning environment. Each week, students tackled a specific topic through robust discussion, debate and exercises. For example, they took a shot at balancing the California budget to further their understanding of fiscal constraints facing states. And they analyzed state, county and local COVID-19 data to uncover racial and ethnic disparities in disease outcomes.
Each student also pursued independent research on a policy issue related to COVID-19 or health equity in New Jersey, culminating in group policy proposals, which the class presented to more than a dozen officials at the New Jersey Department of Health via Zoom.

“I am so proud of the work they did,” Howard said. “Each topic was compelling, and I was impressed by their ability to dive deep and grapple with the challenges and tradeoffs in implementing health policy, especially during a pandemic.”

Reseaching the impact of COVID-19 — from migrant workers to Black mothers

Emma Davis, a member of the Class of 2022 and SPIA concentrator who is also pursuing a certificate in gender and sexuality studies, delved into the problems affecting nursing homes and other long-term care facilities, from staff shortages to care requiring close contact and lack of personal protective equipment.

“The lack of a strong federal response allowed states to shape policies according to their populations and resources, but it also led to avoidable mistakes,” Davis said. “There is clear evidence, for example, that if these facilities were warned earlier about the threat of COVID-19, actions could have been taken sooner to prevent spread.”

Looking ahead, Davis has lined up a summer internship at the State Department and is considering a career in policy to help the nation’s vulnerable populations.

“My family is quite involved with the food movement, so I focused my project on how the pandemic has affected agriculture, food insecurity and migrant labor in New Jersey,” said Jacob Barber, a member of the Class of 2022 and SPIA concentrator who is also pursuing two certificates in Global Health and Health Policy and Statistics and Machine Learning.

He found that New Jersey mandated COVID-19 testing in long-term facilities, for both staff and residents, but farms could opt out of testing their workers. His policy recommendations included a compulsory COVID-19 testing program for New Jersey farms, educational materials related to the pandemic that account for language and literacy barriers, and enforceable safety measures and quarantine procedures.

Turquoise Brewington, a member of the Class of 2022 and SPIA concentrator who is also pursuing certificates in Spanish and African American studies, focused on COVID and birth equity. Her proposals sought to improve outcomes for Black mothers by expanding Medicaid coverage for home births and midwives to make them more affordable and accessible.

“Black women in New Jersey are seven times more likely to die in childbirth than White women,” she pointed out. “And the pandemic has only worsened this crisis.”

Brewington plans to expand on her research for her senior thesis. “The course definitely clarified my interest in combating health disparities, particularly within the area of maternal health,” she said.
CHW affiliates are Princeton University faculty members and lecturers from diversified disciplines in the natural sciences, social sciences and humanities. CHW affiliates teach health-focused courses, advise students in health-related research and mentor students on internships and careers in global health.

SAMPLING OF CHW AFFILIATE AWARDS & HONORS IN 2020

Ruha Benjamin was named a leader in data science as part of #BlackinDataWeek at the 2021 Sadie T.M Alexander Conference for Economics and Related Fields. Dr. Benjamin was also a member of the first cohort of Freedom Scholars, an initiative by the Marguerite Casey Foundation and Group Health Foundation supporting progressive academics at the forefront of movements for economic and social justice.

Anne Case and Angus Deaton’s book, “Deaths of Despair and the Future of Capitalism,” appeared on the longlist for the Financial Times and McKinsey Business Book of the Year award. It was also on the list of “100 Notable Books of 2020” by the New York Times. Dr. Case was elected to the National Academy of Sciences to recognize her distinguished and continuing achievements in original research.

Alin Coman was awarded a Rapid Response Research grant from the National Science Foundation to study how anxiety influences how we learn and share information about COVID-19.

Andrea Graham was elevated to Fellow at the American Academy for the Advancement of Science to recognize her work advancing ecological and evolutionary immunology.

Kate Ho was awarded the Frisch Medal, one of the most prestigious awards in economics. The medal was awarded in recognition for her work on the 2017 paper “Insurer Competition in Health Care Markets,” which examined the relationship between insurer competition, negotiated hospital prices, consumer premiums and patient welfare.

Daniel Notterman and Noreen Goldman were jointly awarded a four-year grant from the National Institutes of Health’s National Heart, Lung, and Blood Institute to conduct a study on heart health, genetics and social determinants among vulnerable children to better understand the role of early life adversity in the evolution of cardiovascular health and disease.

Ramanan Laxminarayan was named 2020 distinguished alumnus by the Department of Economics at the University of Washington. He was also elevated to the rank of Fellow of the American Academy for the Advancement of Science in recognition of his work in economic epidemiology and the spread and control of antimicrobial resistance.

Marta Tienda was the commencement speaker for the December 2020 Ph.D. virtual commencement for her alma mater, Michigan State University. She was also named a Phi Beta Scholar.
CHW’s visiting scholars program arranges for researchers to devote either an academic year or semester in residence at Princeton. They spend this time focused on research, discussion and scholarly collaborations concerning the determinants of physical, mental and emotional wellbeing along with the effect of public policy on health and wellbeing. Visiting researchers are specialists in various health-related fields, including medicine, psychology, biology, epidemiology, economics, sociology and related social science disciplines. These researchers’ engagement was largely virtual in 2020.

2020 VISITING SCHOLARS

Veronica Grembi  Visiting Fellow

Dr. Grembi is an Associate Professor of Economics at the University of Milan Department of Economics. Previously, she held appointments as an Assistant Professor at the Copenhagen Business School and Associate Professor at the University of Reggio Calabria. Her primary fields of interest are health economics, political economy and public economics. By applying quasi-experimental identification strategies, she addresses research questions regarding legal rules in the healthcare sector (e.g., medical malpractice), cost allocation in the litigation process, public policies on the decisions of subnational governments (e.g., fiscal rules) and political bias in the judicial decision-making process (e.g., Constitutional Courts). Currently, she is exploring the role of patients in affecting medical treatment selection and the migration of physicians within Europe. She was awarded a Fulbright Scholarship (cohort 2019/20) to visit CHW.

Emmanuel Henry  Visiting Fellow

Dr. Henry is a Professor of Sociology at University Paris-Dauphine/ University Paris Science and Letters (Université PSL). His work explores relationships between
scientific knowledge (and ignorance), expertise, and public policy in the field of public health — primarily regarding occupational and environmental health.

Prior to visiting CHW, Dr. Henry led the research program INDEX, granted by the French National Research Agency, which explored the independency of expertise in the field of public health. He co-edited “Dictionnaire Critique de L’Expertise: Santé, Environnement, Travail,” a dictionary of expertise, and is the author of two other books: “Amiante: un Scandale Improbable. Sociologie d’un Problème Public,” exploring the issue of asbestos in France and “Ignorance Scientifique et Inaction Publique. Les Politiques de Santé au Travail,” examining the role of ignorance and undone science in the production of public inaction in the area of occupational health.

Dr. Henry is currently pursuing research projects in two areas. The first concerns the regulation of chemicals and how scientific knowledge and expertise shape public policies dealing with toxins and hazards. This work addresses the ever-evolving frontier of how the proliferation of toxic products in the general environment impacts environmental health. Dr. Henry is finalizing his own book’s publication on the subject and was part of a research team, which recently published “Residues: Rethinking Chemical Environments” in Engaging Science, Technology, and Society. His second project is a social study of the tools developed within epidemiology to measure the effects of work and environment on the public’s health, particularly population attributable fractions and other types of impact measures. He is particularly interested in how these tools were built, how they are used, and their effects. This research seeks to contribute to understanding what types of issues the field of epidemiology is currently well-positioned to address, in addition to identifying gaps where the field is less prepared.

Adrienne Lucas Visiting Research Scholar

Adrienne Lucas is an Associate Professor of Economics in the Lerner College of Business and Economics at the University of Delaware, a Research Associate of the National Bureau of Economic Research (NBER), an affiliate of the Abdul Latif Jameel Poverty Action Lab (J-PAL), a Non-Resident Fellow at the Center for Global Development (CGD), and a Research Network Member of Innovations for Poverty Action (IPA). She is a development economist specializing in the economics of education and disease. Her current research focuses on the importance of information in school choice decisions, using existing school system personnel and resources to increase student learning and external validity across contexts. Dr. Lucas has published research on malaria, free primary education, HIV/AIDS, secondary school choice, the return to school quality, teacher incentives and improving early primary school literacy. Prior to joining the University of Delaware, she was an Assistant Professor of Economics at Wellesley College. She received her Ph.D. and A.M. in Economics from Brown University and her B.A. in Economics from Wesleyan University.

W. Bentley MacLeod Visiting Fellow

W. Bentley MacLeod is the Sami Mnaymneh Professor of Economics, Professor of International and Public Affairs and an affiliated Law Faculty at Columbia University. He is a specialist in organizational economics and its application to problems in education, health and employment. Current projects include incentives and school choice and the economics of performance pay and the economics of physician diagnostic choice.

Dr. MacLeod’s recent publications in health include “Diagnosis and Unnecessary Procedure Use: Evidence from C-sections” in the Journal of Labor Economics; “Understanding Doctor Decision Making: The Case of Depression Treatment” in Econometrica; and “Provider Practice Style and Patient Health Outcomes: The Case of Heart Attacks” in the Journal of Health Economics, all joint with Janet Currie.

In 2020, Dr. MacLeod served as the American Law and Economics Association’s vice president and will serve as president in 2021. He is the past president of the Society
of Institutional and Organizational Economics, a fellow of the Econometric Society since 2005 and fellow of the Society of Labor Economists since 2012.

Dr. MacLeod’s teaching career began with a two-year stint teaching mathematics and physics at Okundi Secondary School in Nigeria, an experience that led to his interest in economics. Between completing his Ph.D. and his current appointment at Columbia University, Dr. MacLeod taught at Queen’s University, Université de Montréal, Boston College, University of Southern California, California Institute of Technology and Princeton University. He has held one-year visiting positions at CORE in Belgium, Institute for Economic Analysis in Barcelona, the Russell Sage Foundation in New York City, the Institute for Advanced Studies in Princeton, NJ and the California Institute of Technology. In addition, Dr. MacLeod served as program director for personnel and behavioral economics for the IZA in Bonn from 2003 to 2007.

Dr. MacLeod holds a B.A. (with distinction) and an M.S. in Mathematics from Queen’s University, Kingston, Canada, and a Ph.D. in Economics from the University of British Columbia, Vancouver, Canada.

Mark G. Shrime  Visiting Research Scholar

Mark G. Shrime, M.D., M.P.H., Ph.D., F.A.C.S., is the founder and director of the Center for Global Surgery Evaluation at the Massachusetts Eye and Ear Infirmary and an Assistant Professor of Otolaryngology and of Global Health and Social Medicine at the Harvard Medical School.

He is the author of seminal papers on the global burden of surgical disease, the financial burden facing surgical patients and the number of people who cannot access safe surgery worldwide. He served as a co-author on the Lancet Commission on Global Surgery.

Dr. Shrime graduated summa cum laude from Princeton University in 1996 with an A.B. in molecular biology. After taking a year to teach organic chemistry in Singapore, he received his M.D. from the University of Texas in 2001. Medical school was followed by a residency in otolaryngology at the joint Columbia/Cornell program in Manhattan, followed by a fellowship in head and neck surgical oncology at the University of Toronto in 2007. He completed a second fellowship in microvascular reconstructive surgery, also at the University of Toronto, in 2008. He was the first to identify a novel independent prognostic indicator in head and neck cancer.

To date, he has worked and taught in Liberia, Sierra Leone, Guinea, Benin, Togo, Congo, Haiti, Saudi Arabia, Cameroon and Madagascar. In May 2011, he graduated with an M.P.H. in global health from the Harvard School of Public Health, where he was a finalist for both the Albert Schweitzer Award and the HSPH Student Recognition Award. In May 2015, he received his Ph.D. in health policy from Harvard University, with a concentration in decision science.

Dr. Shrime’s research is supported by the Damon Runyon Cancer Foundation and by an anonymous donation to the Center for Global Surgery Evaluation. He received research support from the GE Foundation’s Safe Surgery 2020 project and the Steven C. and Carmella Kletjian Foundation. He is currently the Principal Investigator on a randomized controlled trial of financial incentives for surgical patients in Guinea and the Principal Investigator on a prospective extended cost-effectiveness analysis of maxillofacial surgery in West Africa.

Dr. Shrime’s academic pursuits focus on surgical delivery in low- and middle-income countries; he has a specific interest in the intersection of health and impoverishment. His work aims to determine optimal policies and platforms for surgical delivery that maximize health benefits while simultaneously minimizing the risk of patients’ financial catastrophe. In 2018, he was awarded the Arnold P. Gold Humanism in Medicine Award by the American Academy of Otolaryngology-Head and Neck Surgery.
University. Dr. Dursun earned his Ph.D. in Economics from Louisiana State University and holds a B.S. degree in Business Administration and Finance from Marmara University.

August Gorman  Postdoctoral Research Associate

Dr. Gorman’s work focuses on impairments to agency and its implications for theorizing in normative domains. A Postdoctoral Research Associate in Values and Public Policy at CHW and the University Center for Human Values, they are currently exploring the theoretical grounding for and societal impact of different wellbeing measures for people with mental health conditions. Dr. Gorman holds a Ph.D. in Philosophy from the University of Southern California and was previously a Postdoctoral Fellow at Georgetown’s Kennedy Institute of Ethics.

Arbel Griner  Postdoctoral Research Associate

Dr. Griner uses her multidisciplinary training in social medicine, anthropology and social studies of science and technology to produce a nuanced critical perspective of how ideas of pathology, normality and health are conceptualized in contemporary neuroscience and how these ideas are integrated into medicine, public health and ethical debates. She received her Ph.D. in Collective Health from the Institute for Social Medicine of the State University of Rio de Janeiro. In her dissertation, Dr. Griner scrutinized the claims of neuroscientific theories about biological affectivity and examined how they are appropriated by biomedical practices and bioethical regulation. She is now interested in looking more carefully into the use of biotechnology, more specifically pharmaceuticals, as treatment resources for so-called affective and gender-based pathologies in Brazil’s public health clinics.

Heidi Morefield  Postdoctoral Research Associate

Dr. Morefield’s teaching and research interests include the histories of technology, capitalism, public health and international development. Her first book, “Developing to Scale: Technology and the Making of Global Health,” examines the techno-centric structure of global health
practice through the history of the concept of “appropriate technology.” Her work illustrates how questions of technological scale have fundamentally shaped global health practice today, focusing on how certain technologies have been defined as more or less “appropriate” for the global south based on assumptions about gender, race, culture and environment. Dr. Morefield’s work has been supported by the National Science Foundation, the National Library of Medicine/National Institutes of Health, the Ford Presidential Foundation, the Society for Historians of American Foreign Relations and the Rockefeller Archive Center. Her work has been published in Diplomatic History, The Washington Post and Circulating Now. She received her Ph.D. in History of Medicine from Johns Hopkins University in 2019.

Sebastián Ramírez Hernández  Postdoctoral Research Associate

Dr. Ramírez’s research involving internally displaced persons in his native Colombia explores the role of healthcare services in efforts to remake ideas of home and citizenship in the aftermath of violence. His dissertation elucidates how official networks of aid and restitution for victims of war are remade in the uprooted everyday efforts to claim their rights and remake their lives. He is starting a second project investigating how survivors of social cleansing campaigns forge mental health support networks through artistic projects commemorating the loss of family and friends. Dr. Ramírez received a B.A. from Queens College CUNY in Anthropology and Psychology and his Ph.D. in Anthropology from Princeton University.

Lindsay Stevens  Postdoctoral Research Associate

Dr. Stevens works primarily in the fields of health, gender, reproduction, science and technology, and the environment. Dr. Stevens researches the cultural ideas and assumptions about gender, class and race that get infused in medicine — especially reproductive healthcare. She is currently writing a book manuscript tracing the contemporary Western idea of the “planned pregnancy” through public health policy, medical practice and lived experience. Dr. Stevens earned her Ph.D. in Sociology from Rutgers University and her B.A. in Political Science from Kenyon College. Her research was supported by the Society of Family Planning and she has received awards from the Medical Sociology and Body & Embodiment Sections of the American Sociological Association.

Jonathan Zhang  Postdoctoral Research Associate

Dr. Zhang is an empirical economist with research interests in health economics, public finance and applied microeconomics. Much of his research has focused on the opioid epidemic, specifically the long-term patient outcomes due to physician practice variation in prescribing. He obtained his Ph.D. in Economics from Stanford in 2020 and will be at Princeton University for one year before heading to McMaster University as an Assistant Professor in Economics.

Esmée Zwiers  Postdoctoral Research Associate

Dr. Zwiers is an applied microeconomist working mainly in the fields of labor economics, family economics and health economics. She is particularly interested in the influence of childhood circumstances in the child’s human capital formation, which was also her dissertation topic. Dr. Zwiers earned her Ph.D. in Economics from Erasmus University Rotterdam and the Tinbergen Institute. She also holds B.S. and M.S. degrees in Economics from Erasmus University Rotterdam.
GLOBAL HEALTH AND HEALTH POLICY CERTIFICATE

Faculty Directors: Andrea Graham Professor of Ecology & Evolutionary Biology and Jessica Metcalf Associate Professor of Ecology & Evolutionary Biology and International Affairs

Introduced in 2008, the Global Health and Health Policy (GHP) certificate program has grown into one of the more popular undergraduate certificate programs on campus. The program puts global health under an interdisciplinary lens, emphasizing determinants, consequences and patterns of disease across societies; the role of medical technologies and interventions in health improvements; and the economic, political and social factors shaping domestic and global public health.

Passionate students are attracted to the GHP’s close-knit campus community where issues in global health policy are brought to life by renowned faculty who blend coursework with hands-on experience. The program currently enrolls students from 17 diverse departments, including Molecular Biology, Anthropology, Ecology and Evolutionary Biology, the School of Public and International Affairs (SPIA), Neuroscience, History, Chemistry and Spanish and Portuguese, among others.

To complete the GHP certificate, students must complete two core courses and four GHP approved health-related electives; conduct an approved field-based or lab-based research project during the summer between their junior and senior year; and write a senior thesis in their department of concentration addressing or relating to global health and health policy in an interdisciplinary manner.

2020 GHP Students by Major

- **Natural Sciences**: 48%
  - Molecular Biology
  - Ecology & Evolutionary Biology
  - Neuroscience
  - Chemistry

- **Social Sciences**: 41%
  - Anthropology
  - Public & International Affairs
  - Sociology
  - Psychology
  - Politics

- **Humanities**: 8%
  - Spanish & Portuguese
  - History
  - Architecture
  - East Asian Studies

- **Engineering**: 3%
  - Chemical & Biological Engineering
  - Electrical Engineering
GHP STUDENT AWARDS AND ACCOMPLISHMENTS

**Molly Aguina ’22 Sociology**
Ms. Aguina presented at the Connective Tissue Oncology Society’s 2020 Virtual Annual Meeting. Her first-authored abstract and poster titled “Incidence of SARS-CoV-2 in Pediatric Oncology Clinic at the Epicenter of the Pandemic” concluded that vulnerable, immunocompromised pediatric patients can be protected from COVID-19 without deferring treatment. Ms. Aguina co-authored a second poster, “Regorafenib in Relapsed Metastatic Osteosarcoma in an Adolescent,” which recommends further research on the benefits of regorafenib for progressive metastatic osteosarcoma in adolescents.

**Jaeyoon Cha ’21 Molecular Biology**
Ms. Cha authored a preprint based on the work started in her CHW-funded internship at the Oxford University Clinical Research Unit in 2019. The paper, “An Evaluation of Progress Towards the 2035 WHO End TB Targets in 40 High Burden Countries,” contextualized and assessed WHO’s progress towards reducing tuberculosis’s global burden by 90 percent by 2035.

**Sirad Hassan ’20 SPIA**
Ms. Hassan was recognized for her contributions to campus life with a 2020 Spirit of Princeton Award. The award recognizes those who have demonstrated a strong commitment to the undergraduate experience through dedicated efforts in student organizations, athletics, community service, religious life, residential life and the arts. Ms. Hassan also appeared on the Jeopardy! quiz show’s 2020 College Championship.

**Kenzo Lacuarta ’22 Ecology & Evolutionary Biology**
Mr. Lacuarta, working for the Sextant Foundation, contributed to the literature review of a National Academy of Medicine report “2030: Next Steps to Healthcare Climate Leadership.” The report reviewed critical factors regarding the U.S. healthcare sector’s carbon footprint and offered the next steps and solutions to reduce the sector’s contribution to climate change.

**Madeleine Winter ’22 History**
Ms. Winter received a 2019-20 Shapiro Award for Academic Excellence. This highly coveted award, endowed by President Emeritus Harold Shapiro, is presented to the top 3 percent of underclass students to recognize their outstanding academic achievement and intellectual pursuits. She was also selected as an undergraduate fellow for the History Dialogues project by the Global History Lab. The History Dialogues project is a six-month course teaching oral history methods and culminates in an original oral history research project. Ms. Winter’s project explored how COVID-19 affected relationships with healthcare services within an Afro-Caribbean community in New York City.
2020 SENIOR THESIS PRIZE

As a capstone experience, all GHP students complete a thesis or final paper centered on a global health theme. The GHP Senior Thesis Prize recognizes the most outstanding theses written by students earning the certificate. Three awardees were selected in 2020.

Rachel Kasdin  Sociology
“The Crisis of Stigma: Young Adults’ Negotiation of Racism and Homelessness in Trenton’s Health Care System”

Elisabeth Slighton  Anthropology
“Organic Local Theorists: A Patient and Provider Ethnography of Inflammatory Bowel Diseases”

Alexandra Wilson  Molecular Biology
“Establishing a Computational Model of the CO2-Concentrating Mechanism in Chlamydomonas Reinhardtii”

GHP CERTIFICATE COURSE HIGHLIGHTS

All GHP certificate students are required to take Critical Perspectives on Global Health and Health Policy and Epidemiology. Students also choose four electives from a pre-approved list. Below is a sampling of the 66 elective courses offered by 33 departments this year.

Access to Health: Right, Privilege Responsibility
Agriculture, Human Diets and the Environment
Antibiotics: From Cradle to Grave
Diseases in Children: Causes, Costs and Choices
Drug Discovery in the Genomics Era
Ecology and Epidemiology of Parasites and Infectious Diseases
Epigenetics in Neuroscience and Behavior
Food, Drugs and Society
Global Air Pollution
The Neurobiology of Stress
Born in the U.S.A.: Culture and Reproduction in Modern America
Disability, Difference and Race
Health Psychology
Medical Anthropology
Immune Systems: From Molecules to Populations
Introduction to Water Pollution Technology
Bioethics: Clinical and Population-Level Biotechnology
The Birth of Biomedicine: Bodies, Physicians and Patients in Classical Antiquity
Eliminating Suffering: Netflix, Drugs and Spiritual Practice
Health Reform in the US: The Affordable Care Act’s Origins, Impact and Uncertain Future
Health, Education and Work in Latin America
Health, Race and Power in Africa in the Digital Age
Inequality, Health and Health Care Systems
Infection: Biology, Burden, Policy
Literature and Medicine
Medicine and the Mind: A History of Psychiatry from the Asylum to Zoloft
Planetary Health: A Critical History
Race, Drugs and Drug Policy in America
Seeing Health: Medicine, Literature and the Visual Arts
CHW Health Scholars, selected through a rigorous application process, receive two years of mentorship, opportunities and financial support. Health Scholars are advised by program faculty and assist in planning health policy seminars and lectures where they meet and interact with distinguished speakers in intimate settings. The students receive financial support to pursue health-related internships or independent research the summer before their senior year. Finally, they are expected to write health policy-related senior theses.

The Class of 2022 joins returning scholars from the Class of 2021: Obiageri Amaechi (Psychology), Mary DeVellis (Anthropology), Doruntina Fida (Anthropology), Katherine Leggat-Barr (SPIA), Angelika Morris (Medical Anthropology), and Jonathan Wang (Molecular Biology).

The six Class of 2022 Health Scholars are:

**Jacob Barber**, a SPIA concentrator pursuing certificates in GHP and Statistics & Machine Learning, plans to study how demographic heterogeneities in vaccine hesitancy impact the spread of COVID-19 and how vaccine distribution policy should address these differences.

**Abigail Drummond**, an Ecology and Evolutionary Biology concentrator pursuing a GHP certificate, plans to explore how parasite life cycles may have changed, and are changing, because of socioeconomic inequalities. She hopes to identify predictors of increased parasite burden and to explore determinants of innate immunity and exposure risks.

**Matthew Lee**, a Medical Anthropology concentrator pursuing certificates in GHP and Chinese Language and Culture, plans to analyze narratives around the spread of COVID-19 among Asian-American populations, including health inequity arising from racial, socioeconomic and political contexts.

**Mayowa Oke**, a Neuroscience concentrator pursuing a GHP certificate, plans to examine racial disparities in addiction treatment by analyzing differences in addiction recovery for Black and White drug addicts.

**Grace Simmons**, a Neuroscience concentrator pursuing a GHP certificate, plans to research the media's impact on the public perception of Hikikomori, or severe social withdrawal, and the lived experiences of diagnosed individuals.

**Sandra Yang**, an English concentrator pursuing a GHP certificate, plans to investigate the Asian-American/Pacific Islander experience during COVID-19 and the ways that racial discrimination, mental health stigma, and other intersecting environmental factors have translated into health consequences amidst the pandemic.
GHP ALUMNI REFLECTIONS

As an undergraduate in the Ecology and Evolutionary Biology department, Emma Glennon ’15 had many interests. She loved fieldwork, analytical problem solving and an enthusiasm for the environment, health and social justice. Now a post-doctoral fellow at the University of Cambridge, Dr. Glennon credits the materialization of these interests into a career to a commitment to being present and open to broad perspectives, a skill she first honed while in the GHP program.

While at Princeton, Dr. Glennon entered the GHP certificate program to satisfy an overarching interest in health. Through the program, she expanded her understanding of the social determinants of health in a way that still influences her work today. She describes her current work as “quantitative, really methodological” and goes on to say, “it’s really important to have a more critical perspective. To have some sort of contextual and theoretical understanding of the wider processes that cause and comprise health, and also the systems that respond to it.” Courses such as Epidemiology, Critical Perspectives in Global Health and Disease Ecology provided Dr. Glennon with opportunities to experience health and wellbeing from a spectrum of approaches, “There are very quantitative, very methods-based classes and then there’s more holistic, more critical, and not necessarily a solutions-focused classes where you just really dig into the messy realities.” These two approaches co-exist in her work today, and she describes them as being “foundational” and “unique,” especially in terms of social constructs influencing health.

A Global Health Scholar, Dr. Glennon traveled to Bangladesh in 2014 to create a model illustrating links between long-term climate variation, human behavior and cholera. Although quantitative and fieldwork-based, her thesis got her thinking through the interplay of climate and social factors and disease. This thesis work was the basis for Dr. Glennon’s application, and eventual acceptance to, the Fulbright Scholar Program. There was, however, one hitch when the program in Bangladesh was canceled shortly before her Fulbright research began. Thankfully, she was able to find an alternate supervisor and program to study antibiotic-resistant infections with CHW affiliate Ramanan Laxminarayan in India.

In 2016, Dr. Glennon was awarded the prestigious Gates Cambridge Scholarship. The Gates Cambridge Scholarship, established by Bill and Melinda Gates in 2000, is awarded yearly to 40 Americans and 55 people from other countries. Scholars receive full funding for their graduate work at Cambridge and also benefit from a community of collaborators and access to special programs throughout their studies. There, Dr. Glennon studied veterinary medicine and infectious disease, using mathematical models to study ways diseases move through populations. Her work explores infectious diseases from an ecological perspective, looking at ways humans affect the population dynamics of fruit bats and how these interactions create environments at risk for bat-borne viruses, such as Ebola, rabies and other emerging pathogens.

Today, Dr. Glennon is in the first year of a four-year post-doctoral fellowship at the University of Cambridge where she is working on a project, Universa, which seeks to make epidemiological analysis more accessible and more informative — especially in contexts where there is limited information, technology or diagnostic resources. Dr. Glennon and her collaborators are “committed to solving growing health problems ethically, equitably, and fearlessly.” All code, tools and software associated with the project are universally available; “Too many technological gains have been to the benefit only of the few who can afford them.” Their first project is user-friendly free software to assist public health officials in tracking symptom data in order to detect outbreaks.

The Universa project is another leap towards realizing the big idea Dr. Glennon started forming in her GHP years, “how the methods of social science, and even social epidemiology, are very different from the methods of, say, disease ecology or more quantitative types of epidemiology. Trying to develop methods that acknowledge and disentangle this is my longer-term project.” Dr. Glennon sees this question as pivotal for the field of epidemiology moving forward: how to measure wellbeing and disease as we enter an era where disease and disease emergence will be driven by humans.

When asked about her advice to future GHP certificate students, Dr. Glennon encourages them to allow space for diversity, perspectives, and openness. “I think it can be easy, especially when you are a student and you’ve got a goal in mind, to come with your perspective, your preconceptions,” she says. She describes feeling the urge to resist unfamiliar ideas and challenges, but that these experiences proved the most valuable. “I think coming at it with an open mind and being willing to be wrong, be willing to be challenged and willing to acknowledge your limitations. I think all of that really, really helps get the most out of it.”
CHW-SUPPORTED STUDENT ACTIVITIES

In addition to funding graduate and undergraduate research projects and summer internships, CHW supports student-led opportunities, organizations and conferences to enhance individual understanding in their areas of interest. The COVID-19 pandemic forced the cancellation of nearly all in person CHW-funded student activities. Only one, the Science Olympiad, went forward as planned in February before restrictions were put in place in March.

The Princeton University Science Olympiad invited nationally ranked teams of 6th-12th graders from across the U.S. to compete in 23 science-based events. Princeton students with experience as Science Olympiad competitors devised, supervised and judged all events.

The majority of Science Olympiad events are pencil-and-paper tests, known as “Study” events. Events include: Disease Detective, Water Quality, Designer Genes, and Anatomy and Physiology, among others. The tests challenge competitors to learn about subjects that are not typically taught in-depth at the high school level. Princeton committee members painstakingly wrote these subject matter tests under the Science Olympiad National Tournament Committee’s rules and regulations. Many of the study events were accompanied by a laboratory practical where competitors carried out a guided experiment, requiring students to gather and analyze their own data and familiarized themselves with standard laboratory materials and techniques such as titrations and spectroscopy.

The student committee also managed logistics, coordination and even provided stipends for deserving teams. The planning committee hopes to inspire the next generation of scientists and engineers and serve as an example for Princeton students as they give back to the high school science community that, for many, launched their interest in STEM.

“Learning is a lifelong endeavor, and we hope that our tournament can stimulate students’ desire to hone their problem-solving skills, which will serve them well in whatever field they choose to eventually pursue.”

– Princeton University Science Olympiad Annual Report
HEALTH & HEALTH POLICY CERTIFICATE

Program Director: Sanyu Mojola  Professor of Sociology and Public Affairs and Faculty Associate of the Office of Population Research

Since 2003, CHW’s Health and Health Policy (HHP) certificate program has prepared graduate students for health-related careers in both the public and not-for-profit sectors. The program was developed as part of Princeton’s ongoing commitment to teaching and researching health and health policy. HHP leverages the best of what CHW and Princeton have to offer: world-class global and domestic health coursework; partnerships with faculty and thought leaders who are redefining the field; graduate research support; and connection to, and support of, a vibrant multidisciplinary community through collaboration, conferences and events.

While most students who join the HHP program are MPA and MPP candidates from the School of Public and International Affairs, the certificate is open to all graduate-level students at Princeton. Future and current medical professionals who have completed the certificate cite the value of examining the drivers of health disparities not taught in medical school. Other alumni, such as Ph.D. scientists, say the program lends richness to their studies.

“2020 exposed and reinforced the critical role health policy, and health policy leaders, play in a well-functioning society,” says HHP Program Director Sanyu Mojola. “We are pleased to be playing such an important role in shaping and guiding current and future leaders at Princeton.”

HHP COURSE SPOTLIGHTS

The HHP curriculum is designed to offer graduate students insight into the contexts that create health disparities while exposing them to an interdisciplinary approach by which these issues can be addressed. All HHP students take two core courses: Epidemiology, and Public Policy Approaches to Health and Health Care. Certificate candidates also choose from a curated array of approved health-related electives such as Poverty, Health and Inequality in the World; Social Determinants of Health; Maternal and Child Health: Culture, Controversy and Policy; Challenges in State and Local Health Policy; and Vaccination Policy and Epidemic Dynamics.

**Spotlight: Public Policy Approaches to Health and Health Care**

Professor Janet Currie’s Public Policy Approaches to Health and Health Care course looks at different health systems and the economic and administrative structure used to set and pursue goals. This year, several exciting guest speakers visited the virtual classroom, including:

- **Carolyn Daniels**  Senior Executive Services Director of the Office of Research Initiatives at the New Jersey Department of Health
- **Robert Kasdin**  Senior Vice President, Chief Financial Officer and Chief Operating Officer for Johns Hopkins Medicine
- **Judith Glassgold**  Director of Professional Affairs at the New Jersey Psychological Association
- **Alyssa Sharkey**  Maternal and Child Health Specialist for UNICEF’s Regional Office for South Asia
Students in the course are required to prepare a policy brief inspired by their expertise and interests. In fall 2020, students submitted briefs addressing the following topics: primary care physician workforce shortages; policy options to expand advance care planning in primary care settings for Marylanders over 65; family planning policy options in Ethiopia in response to Global Gag Rule changes; policy analysis and recommendation on the Medicare Merit-based Incentive Payment System (MIPS) reform; ending the multiple drug-resistant tuberculosis epidemic; improving value for end-stage renal disease patients in California; integrating medication-assisted treatment into Massachusetts criminal justice system in the FY2022 budget; expanding scopes of practice for advanced practice nurses in NJ; electronic medical records in Africa; and self-managed abortion.

The combination of topics, perspectives and exposure to issues facing health systems builds a solid base from which HHP students can launch their careers.

**Spotlight: Policy Workshop**

HHP students clamor to take part in Heather Howard’s yearly policy workshop. Workshop participants are tasked with solving real-life policy, operational and political challenges in implementing the coverage expansions, delivery system reforms and other innovations resulting from the Affordable Care Act (ACA).

The workshop client is a state taking a unique approach to an element (or elements) of ACA implementation. This year, participants researched and produced a report for the State of Maine on its planned transition to a State-Based Marketplace. The students made policy recommendations in five topic areas: enrollment periods, displaying Clear Choice plans, auto-renewal, integration with MaineCare and planning for future legislative and administrative changes.

Many alumni cite this course as a pivotal experience both in shaping their careers and in providing a tangible perspective on how the work they do can shape people’s lives.
HHP POLICY CAREERS

The HHP program hosted an exciting career event in 2020 featuring four program alumni: Julia Hill, MPA ’10 from Doctors without Borders; Emily King, MPA ’15, Budget Analyst at the U.S. House of Representatives Budget Committee; Alyssa Wilson Leggoe, MPA ’04, Deputy Director of the Office of Maternal and Child Health and Nutrition at USAID; and Josh Roper, MPP ’17 from the Philadelphia Department of Public Health.

Moderated by Director Sanyu Mojola, the alumni touched on topics big and small through questions submitted by current students. Each panelist shared their paths to the field of public health, highlighting how they were able to enter and influence the field using their own combination of interests and strengths. The alumni discussed how the COVID-19 pandemic has affected their work, and how lessons from the pandemic have put a spotlight on other prevailing challenges such as the effect of intellectual property and patents on the distribution and accessibility of medicines. The panel advised participants on the ins and outs of moving within organizations, how to prepare for and respond to changes in political leadership, and the differences between working for governmental and non-governmental organizations. The panelists offered practical advice on what to expect in the workforce; how to target skills to develop and expand; and the ways in which their policy background and education helped them contribute in unique, and recognizable, ways at work.

In response to this event’s success, benefiting attendees and panelist alike, the HHP program will produce similar events annually.
When Josh Roper MPP ’17 applied to the Princeton MPP program, a health policy career was not his exclusive focus. He knew he wanted to pursue public interest work and continue to use his law degree, but how exactly? He had a longstanding interest in health, medicine and racial and social justice. Should he pursue a career in government? Non-profit work, perhaps? Fate intervened when, between applying to Princeton and starting on campus, Josh began work as a Public Policy Attorney and Senior Policy Advisor for the Philadelphia Department of Public Health. By the time he entered the MPP program in 2016, his enthusiasm for health and health policy had only grown, stimulated by the challenging nature of the public health work he experienced at the Department of Public Health. “I had some familiarity with public health before I started working for the Department, but I did not fully appreciate just how complex and cutting-edge a lot of the work is.”

Last year, Josh took on a new role as the Policy Director for the Department’s Division of COVID-19 Containment. “In response to the pandemic, (the Department of Public Health) set up an entirely new division, the Division of COVID-19 Containment. It houses a lot of the COVID response work that the city’s doing.” He continues, “It’s a huge undertaking, and it’s been very impressive to see it unfold.” His work in the field of COVID-19 containment has been heavily influenced by Dr. Adel Mahmoud’s Global Challenges of Infection, Burden and Control course, which he took as part of his HHP requirements. “The class was incredibly interesting and relevant, and it was full of lessons and warnings that pretty much everyone should hear. And Professor Mahmoud was such a kind person and thoughtful teacher. Obviously, the content of the class has become even more relevant recently.”

Josh credits the HHP program with guiding him towards other coursework he relies upon in his current work. “One of the benefits of the HHP certificate that might be less apparent is, at least in my experience, there are a couple of classes that I wouldn’t have seen as obvious choices had I not been pursuing the certificate. And I feel like they complemented my other coursework well and really rounded out the experience.” One such class is CHW affiliate Keith Wailoo’s Cultural Politics of Medicine, Disease and Health. “It was such an unfamiliar perspective. Maybe I had thought about it before taking the class, but I had not really explored health through this cultural, political, historical lens in the way that historians like Professor Wailoo do. (It helped me take) a longer view of the political landscape of medicine and health in the U.S. and think about how what’s happening now is shaped by that history. And I found it very relevant to public health work, which is often intertwined with cultural and political issues.”

CHW affiliate and SHVS Director Heather Howard’s Affordable Care Act (ACA) Workshop and Challenges in State and Local Health Policy have also influenced Josh’s career. Josh was somewhat unfamiliar with the intricacies of the ACA and Medicaid when he joined the ACA Workshop course during their second meeting, just in time to hear the announcement that the state they would be workshoping, and visiting, was Hawaii. It was a pleasant surprise, and it was an enriching and satisfying experience to research and report on policy mechanisms to secure health insurance coverage for people living in Hawaii under the Compacts of Free Association (COFA). Recently, the workshop team heard that their 2017 report had served as a helpful resource for those advocating on behalf of COFA citizens, and Director Howard updated the team to share the good news when Congress restored Medicaid eligibility for COFA citizens.

When asked to advise incoming HHP students, Josh focused on the amount of high-quality, interesting coursework he was able to access in just one year. “The classes I took, in addition to being great opportunities for skill building, felt like they coalesced into a greater whole that added valuable context and framing to my work. I’m really glad I chose to get the HHP certificate.”
HOME-BASED GLOBAL HEALTH INTERNSHIPS: PERSEVERING DURING THE PANDEMIC

CHW sponsors a robust Internships in Global Health program, encouraging students to probe a myriad of health topics affecting the developed and developing world, from pediatric obesity to special pathogens. Last fall, the CHW team looked forward to expanding this initiative with more compelling, hands-on opportunities than ever before. Dozens of Princeton students were selected for fully funded summer internships, some with longstanding partners and others with brand new affiliates in the United States and overseas.

The onset of COVID-19, and its impact on health and safety, changed everything.

Border closures, rising infection rates and other effects of the emerging pandemic prompted Princeton to impose travel restrictions and other measures to protect students and the campus community. Accordingly, as the university transitioned to distance learning, CHW worked with its partners to reimagine its 2020 internship program. Many internships were successfully modified to virtual formats, while faculty members stepped in to create additional health-focused opportunities. In total, CHW funded nearly 30 remote global health internships along with 20 remote senior thesis research projects.

Thanks to the collaborative fortitude and flexibility of students, staff and faculty, CHW’s Internships in Global Health program continues to thrive. Participants have engaged in meaningful work at the forefront of public health practice and policy. A few of these unique experiences are highlighted in the following pages.
Maya Eashwaran ‘21 United States Agency for International Development (USAID)

Maya Eashwaran, a Politics concentrator, was anticipating a summer in Stockholm, Sweden when COVID-19 derailed her internship with a pro-democracy think tank. “I was searching for another opportunity, and knee-deep in research for my Junior Project about access to reproductive health in South Texas, when I received an e-mail about global health internships,” she said, noting how her budding interest in public health and health policy inspired her to apply for a position with USAID. The internship was initially based in Washington, D.C. but adapted to a remote structure as a result of the pandemic.

Maya joined the Neglected Tropical Diseases Division, within the agency’s Bureau for Global Health, as a Health Communications and Public Affairs intern. The position has allowed her to contribute to USAID’s work fighting tropical diseases that can be eradicated or controlled through safe, effective health interventions. “It has been so interesting to dive into this sector of global health,” remarked Maya. “The internship has broadened my understanding of these ancient, potentially devastating diseases, how they impact different populations, and the challenges of assisting developing countries.”

Maya was involved with creating communications campaigns, website and social media content, graphics and various articles for the program. “I’ve learned how to talk about complicated, very scientific topics in a way that everyone can understand,” she noted. “These are solid skills that I will take with me.”

In a sense, Maya considers her change in plans a stroke of luck. “Traveling to Sweden would have been great, but this internship came at a really good time for me, as I try to figure out what’s next,” she added. “The internship reaffirmed my interest in pursuing a master’s degree in Public Health following my graduation next spring.”

Katherine Leggat-Barr ‘21 Covid 19 & Demography

Katherine Leggat-Barr, a School of Public and International Affairs concentrator, GHP certificate candidate and CHW Health Scholar, had planned to work on her senior thesis this summer, examining the effectiveness and availability of mental health care for recently arrived refugees and asylum seekers in Portland, Maine. Unfortunately, the coronavirus put those aspirations on hold, so she applied for an independent research project under the guidance of Noreen Goldman, Princeton Professor of Demography and Public Affairs, and embraced a new challenge. Specifically, Katherine was charged with exploring how Covid-19 affects Native American communities in the United States.

“As a pre-med student, I’ve always loved research — clinical and academic — and was very interested in studying this particular population. Professor Goldman helped me hone two main research questions: Why are Covid-19 mortality rates higher for Native Americans than other U.S. populations, and why do these rates vary between states?” Katherine is gathering data and investigating variables that account for these inequities, such as living situations, reservation status, and pre-existing health conditions.

As an unanticipated benefit, the project’s demographic focus expanded Katherine’s skill set, as the bulk of her prior research has been qualitative. “This internship has taught me a lot about crunching numbers,” she said. “Through collaborative relationships with Professor Goldman and the graduate student involved in my project, I’ve learned that coding isn’t so scary and that data is a powerful research tool.”

Katherine has also valued the chance to address a vital, timely health issue. “I feel like my work is really important... answering critical questions and confronting health disparities facing Native Americans,” she added. “The experience has been empowering, helping me figure out what I want to do in the future. I’ve focused on being a clinician, but this internship has shown me a whole other side of research that is exciting!”
Naomi Shifrin ’21  The Global Fund

The Global Fund, a Geneva-based international organization dedicated to fighting AIDS, tuberculosis, and malaria, offered an ideal internship opportunity for Naomi Shifrin, a rising senior studying Sociology and pursuing certificates in Statistics and Machine Learning, African Studies, and Values and Public Life. Her remote position was focused on measuring the scope and quality of the partnership’s investments in community health systems across countries in Asia and Africa.

Profoundly struck by global health disparities, Naomi was inspired by the organization’s community-based approach to disease control and prevention. “The Global Fund, while international, has teams working in each country to ensure their programs are driven and implemented by and for the people they serve, which is phenomenal,” she noted. “I conducted a qualitative and quantitative analysis on the impact of cash transfers, to determine if giving money to folks with HIV and TB, conditional on a specific health or educational behavior, plays a role in reducing disease burden, improving health indicators, and targeting the social determinants of health.”

While Naomi had hoped for an immersive experience in Geneva, she gratefully conducted research from her home in New York City and participated in virtual “coffee dates” with representatives from health-minded agencies around the world. “Those conversations were so enriching — academically, professionally and personally,” she said.

“The work was a huge privilege,” said Naomi, who plans to devote her career to illuminating truths about the intertwining, systematic inequalities that contribute to the world’s most pressing problems. “I hope that my work can affect hearts and minds, and ultimately policy, to facilitate changes that close wealth gaps and prevent inequities. At the Global Fund, I’ve learned that there are many ways to fight injustice.”

Sandra Yang ’22  Le Bonheur Children’s Hospital Pediatric Obesity Program

Sandra Yang, a pre-med student concentrating in Molecular Biology and pursuing a GHP Certificate, was headed to China for cancer research at Zhejiang University until her summer internship was canceled due to COVID-19. She then pivoted to a position supporting the health and welfare of veterans based in Sunderland, England, but that opportunity was withdrawn as well. Disappointed yet undeterred, Sandra eventually took matters into her own hands by contacting the hospital where she interned in 2019 and asked if they could use some extra help. Her perseverance was rewarded.

As a second-year intern for Le Bonheur’s Pediatric Obesity Program/Healthy Lifestyle Clinic in Memphis, Tennessee, Sandra analyzed data for a research project evaluating the safety and efficacy of a potential treatment for obesity in children. Additionally, she worked with the University of Tennessee Health Science Center’s Neuroscience Lab to explore possible interventions for phantom limb pain, studying gene expression changes related to amputation in flies with hope that a similar model could be applied to humans. Her duties were entirely remote and vastly different than last years’ experience, though equally valued.

“Last summer, I split my time between the lab and the clinic, shadowing a pediatric endocrinologist and other specialists as they treated patients,” she described. “This time, I worked on the back end of research, searching literature, collecting and interpreting data, and writing papers based on our findings. It’s the nitty-gritty part of research… sometimes a struggle, but always fascinating.”

“I could be playing a role in bringing a new drug into practice, helping pediatric patients in the future,” she explained. “With the fly project, I feel like we’re on the verge of finding something significant that could help people experiencing amputation trauma.”

This summer’s internship bolstered Sandra’s aspirations of becoming a doctor and changed her perspective on research, unveiling the magnitude of scientific discovery and its impact on medicine. She added, “The possibility of having publishable results — and knowing my research can make a difference — is really exciting.”
SUMMER INTERNSHIP HIGHLIGHTS: IN THEIR OWN WORDS

Through GHP’s many partnerships worldwide, students gain hands-on experience with some of the world’s leading global health practitioners. Students consistently find these summer experiences transformative or life-changing. Due to COVID-19, all internships were remote in 2020.

Kasey Bowyer ’21  Neuroscience

This previous summer, the summer of 2020, I worked as a part-time research assistant with Dr. Janet Currie and Dr. Adriana Corredor-Waldron in the Economics department at Princeton University. The research that I worked on focused on understanding how African American neighborhoods in New Jersey are disproportionately affected by climate change, specifically air pollution. Previous research from Dr. Currie found that the Clean Air Act has significantly closed the national gap of air pollution between White and non-White communities since 2000, but still, many African American communities and communities of color live in neighborhoods and zip-codes that are adjacent to many pollution-causing bodies, such as highways or electrical power plants. Dr. Currie’s and Dr. Corredor-Waldron’s current research seeks to find a more specific relationship between air pollution, neighborhood demographics and childhood health issues in New Jersey.

My first task as a research assistant in the lab was to determine if the current geocoding algorithms in ARC_GIS were consistent with the old geocoding algorithms. This comparison was necessary (1) to ensure that previously geocoded data matched the new geocoded data and (2) to conclude if previously unmatched geocoded data would now match under the more recent ARC_GIS geocoding algorithms. As I was fairly new to working with ARC_GIS, I met with Princeton’s Geographic Information Systems librarian Tsering Wangyal Shawa numerous times to help me understand how to use ARC_MAP and ARC_GIS for the geocoding tasks that I needed to perform on the data sets.

After determining that the previously geocoded data was consistent with the newly geocoded data, I geocoded the remaining data sets. First, I used the existing geocoded addresses and, for individuals of the same year, assigned the longitude, latitude and geoid of one of their addresses to any addresses that had not been geocoded. For the remaining individuals without geoids, I ran their addresses through ARC_MAP and ARC_GIS. However, a small portion of the geocoding was not successful, largely due to misspellings or typos of individuals’ addresses. To correct these, I ran the failed geocoded addresses through a USPS algorithm that attempts to fix slight typos in addresses. I incorporated parallel processing to run this algorithm through my computer and Princeton’s Nobel computer clusters more efficiently. For the addresses that had been fixed, I ran these changed addresses through ARC_MAP and ARC_GIS once more to attempt to geocode the data and compiled these geocoded addresses to the already geocoded data sets.

As of now, I am continuing to work with Drs. Currie and Corredor-Waldron in my senior year at Princeton. I am now working on using the geoids of the individuals to assign corresponding air pollution data that was found using satellite technology. I will then use this to better understand how air pollution is correlated with health differences in childhood between White neighborhoods and predominantly African American neighborhoods.

Brigitte Harbers ’22  Molecular Biology

Analyzing Data from Secret Shopper Drills for the NYC Health + Hospital Special Pathogens Program

This past summer, I had the privilege of gaining hands-on experience in public health policy, specifically infectious disease policy. My internship in the NYC Health + Hospital’s Special Pathogens Program began on June 15th. For eight weeks, I got to take part in the analysis and development of policy for infectious disease control, specifically for the COVID-19 pandemic. My responsibilities included drafting information and tip
Having gone into this internship to explore the public health policy field, I was pleasantly surprised to find that my interest in infectious disease policy has only grown. A career goal of mine is to bridge the gap between the biomedical understanding and curing of infectious diseases and the public policy approach of developing effective strategies to prevent future public health emergencies. Much like the Cholera outbreak in Victorian England, both medical expertise and policy application were required to rid London of the disease and prevent another wave from devastating its citizens. Through this experience with the NYC Health + Hospital's Special Pathogens Program, I witnessed firsthand such a balanced and innovative approach to public health and one that I look forward to continuing to make a path with passion in both the biological and policy fields.

Tanzina Islam ’21

This past summer, I had the opportunity to work with the neurology departments at the Montefiore Medical Center and the Albert Einstein College of Medicine under the guidance of the PICS (Princeton Internships in Civic Service) program. I mainly worked alongside Dr. Solomon Moshé and Dr. Daniel Correa on projects regarding their involvement in the Epilepsy Bioinformatics Study for Antiepileptogenic Therapy (EpiBioS4Rx) trial, a research collaboration that aims to identify candidate antiepileptogenic treatments as preventative measures for epilepsy. I specifically was involved in the Public Engagement Core (PEC) aspect of the trial, which aims to reduce barriers and obstacles to clinical trial participation, enabling researchers and clinicians to adjust clinical trial methods to fit the needs of potential participants and their families. These ideas
of expanding access and ensuring inclusivity are central themes and objectives of the projects I worked on during this internship.

The bulk of my summer was spent on a systematic review that aimed to analyze the use of remote methods of obtaining consent (i.e., through telephone or video conferencing) from critical care patients for clinical research participation. In thinking about the relevance of this topic, not only do remote methods of consent enable the inclusion of a broader sample of individuals by reducing geographic and language barriers, but they also enable the continuation of clinical research during the pandemic in light of recently implemented social distancing guidelines. My contribution was mainly designing the review and initiating the search process. This entailed outlining the inclusion and exclusion criteria as well as identifying the best search phrases that would capture the relevant studies. After a few trials and modifications, we limited our search to include studies conducted after 2005 (when 67% of the U.S. population had access to the internet) in which remote consent was obtained from a critical care population.

We conducted these searches on the PubMed, Embase and Web of Science online databases and then pooled the results for further review. The work I completed this summer helped lay the foundation for the continuation of this review, which will prove significant not only for vulnerable populations but also for the new landscape of the pandemic.

When I went into this internship, I had goals of improving my research and communication skills while engaging in impactful activism. I am grateful to be able to say that I truly feel I achieved these goals on a greater level than what I thought possible. More specifically, in addition to strengthening my skills in online database searches, reference managing, and oral presentations, I was also able to engage in remote activism. At the start of my internship, especially in the climate of the pandemic, I felt that I was not engaging with current issues to incite change as much as I could have been. Through this experience, I was able to collaborate on advocacy pieces highlighting disparities in access to paid sick leave and telehealth services in the Bronx. For me, this was the best part of this internship because I was able to engage in a remote form of activism to address issues impacting the community that not only bears a disproportionate burden of inequality, but that I also grew up in. At first, it was a challenge to merge these two distinct identities — an undergraduate at Princeton University and a low-income Bronx resident. However, as I engaged in these writing collaborations, I learned to stop delineating these two identities as separate individuals. Instead, I embrace the ability to use my privilege as a Princeton student to encourage change at home.

In this regard, this experience has encouraged me to connect with the Bronx on a different level, enabling me to continue to consider ways I can advocate for the community that has made me who I am today. The perspectives, understandings, and ideas I have gained while working on these projects will certainly shape my personal and academic development. That is, these core ideas of expanding access and ensuring inclusivity have become and will remain integral aspects of roles I play within my communities and my professional plans.

Kamila Radjabova ’21

During the summer of 2020, I participated in a remote research study at the University of Malaya under the mentorship of Professor Sajaratulnisah Othman and Dr. Rumana Saifi. The research focused on the topic of HIV prevention in vulnerable populations. The research goal was to come up with a new behavioral model for safe-sex decision-making among partnerships with positive HIV diagnoses. My responsibilities included qualitatively analyzing interview transcripts of intimate partners of HIV-positive men who inject drugs (MWID) and writing a research paper proposing a behavioral model for consistent condom usage in these partnerships. The paper concluded that the decision to use condoms was affected by variables such as social support, societal stigma, education, economic opportunity, and helplessness. Additionally, the Theory of Planned Behavior (TPB), a well-known behavioral model in clinical prevention, was analyzed according to how well it fits the qualitative data and a more fitted behavioral model was proposed.

Initially, the research team and I expected the qualitative data analyses to fit into the TPB, but the data we gathered did not fit within the limitations of the model. The TPB assumes a linear decision-making process and does not consider that it can change over time. Additionally, it does
not account for other variables that factor into behavioral intention and motivation, such as fear, threat, mood or past experience. The newly proposed model in the paper suggests a decision-making process that can reverse back to the initial motivations prior to decision-making (which may change over time) and, as a result, change the decision over time. It also accounts for the experiences of fear and mood through the variable of societal stigma.

The study analyzed nine transcripts of females with intimate partners who are HIV positive and drug users for the methodology. This information was taken from a bigger study looking at HIV non-disclosure among men who inject drugs. This already published study used a mixed method of qualitative and quantitative analysis, where they surveyed and interviewed men and then interviewed their intimate partners. Additionally, I had a chance to interview one female intimate partner of an HIV+ MWID and one transgender partner of an HIV+ MWID. The interviews of the females only happened under the pretense that their partner had disclosed his HIV status to them, agreed to let them be interviewed, and the woman agreed to be interviewed as well. It would be unethical to interview intimate partners prior to HIV+ disclosure. These qualifications made it difficult to access this hidden population of women, and as a result, the study only analyzed ten female transcripts.

The best part of the experience was interviewing the female partner of an MWID and the transgender woman. It put a lot of the bigger challenges I read in the transcripts into a real-world context and helped me understand the larger themes discussed in my paper. I did, however, struggle with the online interview format and the use of a translator.

This experience was very useful to my future career goals because I plan to work with vulnerable communities that have been disproportionately affected by diseases and/or epidemics. Many of these populations are at risk because of their inability to access proper care and seek intervention. There is care available to treat diseases most of the time, so why does healthcare access and wellbeing become so difficult to maintain? What can be done about it? I want to spend my career dealing with questions of this sort and this experience contributed to that curiosity of mine.

Nanako Shirai ’21

This summer, I had the opportunity to research kidney transplant in Japan, and around the world, with Professor Amy Borovoy of the East Asian Studies Department. Professor Borovoy was still in the early stages of thinking about what to study specifically and was open to molding the project to my interests.

The kidney is an important organ for blood filtration and waste excretion. An able-bodied person typically has two on either side of their abdomen. One of the most
devastating kidney diseases is chronic kidney disease (CKD) which eventually leads to kidney failure. Sadly, this disease is present in 15% of all US adults and, within those that have CKD, 38% are older than 65 years old (CDC.gov). There are two main treatments for advanced-stage kidney disease: kidney dialysis, an external blood filtering machine, and organ transplantation. Kidney organ transplantation is unique in that there can be both deceased and living donors since one only needs one kidney to function. Professor Borovoy mentioned early on that Japan was an intriguing country to study since it offers a disproportionate amount of kidney dialysis treatment but does not perform a lot of organ transplantation. As a treatment, organ transplantation is better because kidney dialysis treatment requires hospitalization and is more expensive. In addition, a key characteristic of advanced renal disease is its prevalence in older populations; and Japan presents an interesting case study since it has the highest percentage of citizens above 65 (a staggering 28.2% of the total population is above 65 years old, according to the Population Reference Bureau in March 2020).

The shortage of organs available for organ transplantation is not unique to Japan. In 2008, representatives from 78 countries drafted the Declaration of Istanbul. There, they asked that governments take action to increase the number of deceased donors to maximize their potential as organ donors and to decrease the burden, or pressure to donate, placed on living donors (which are typically relatives).

After this preliminary research, I decided that I would be most interested in doing a historical analysis of kidney transplantation, creating a dataset that compiles statistics on kidney transplantation from countries around the world, and then also studying what the Japanese government is currently doing to address the deficiency in organs available for transplantation. I also, ideally, wanted to look into statistics on kidney dialysis. Professor Borovoy provided a wonderful outline for me to follow to reach these goals — however, in the end, because she wanted me to follow up on several points from the data collection process and because she and I wanted to spend more time on doing the background research necessary to really understand the phenomenon, I, unfortunately, was not able to make a database with information about kidney dialysis statistics. However, as I am personally invested in this topic, I have talked to Professor Borovoy about continuing to research throughout the school year.

As a Molecular Biology major, the best part of the experience was learning how to research in the social sciences. I learned that I really enjoy analyzing the specific words a piece of legislation uses. I also learned that I am interested in learning how to provide more accurate translations. (I am taking an introductory translation class this semester!) The biggest challenge that I faced was learning to time manage. With the internship being remote, it was harder to stick with a schedule every day. I think that this experience has helped me begin to think more about what specialty I might want to pursue in the future as I aspire to become a doctor. It was invaluable to research the underlying social and cultural conditions that affect treatments of kidney disease. While there is a significant focus on the biological aspect of the disease in medicine, this internship reminded me that disease is truly the result of a multitude of factors.

Yehuda Sinaga ’20 Ecology & Evolutionary Biology

Using Flight Travel to Determine COVID-19 Import Risk in Countries across Sub-Saharan Africa

Until now, many of the recorded cases and mortalities have been in higher income and higher latitude countries, including China, European countries and the United States. The spread of COVID-19 to lower latitude, lower middle-income countries is not a question of if, but when. The eventual spread to these countries may result in higher cases and mortality than we have seen thus far. These countries, especially those in Sub-Saharan Africa, do not have the medical infrastructure and resources to support the response. By collecting arrival data to major cities in Sub-Saharan Africa from flight databases, a tier-list of areas based on elevated risk can suggest where resources of intervention should be localized. In order to achieve this, we would need to compile the amount of arrivals and analyze the level of risk based on the coronavirus situation in travelers’ countries of origin. Furthermore, in order to account for the risk that is determined by the current infrastructure in place, qualitative data in the form of remote interviews would be gathered. Finally, at the end of the research period, the risk model created by flight data would be compared to the actual infection rate and spread.

The qualitative research part of the project required a temporal breakdown of the amount of cases worldwide.
This had to include data from South Saharan African (SSA) countries, but also potential origin countries, which would necessitate a worldwide scope of the outbreak before it reached SSA. The temporal breakdown of the number of cases worldwide was reported by the CDC, Johns Hopkins and Our World Data. The maps of case concentration were determined using the database from these sites. Virtually every amount for each country is under-representative of the real total amount of cases. Regardless of the interpretation that it may be intentional or not, under-representation is bound to occur due to patients’ unreported cases, uneven diagnosis of the disease and other unforeseen clerical issues. Flight data is compiled by OAG, a third-party data site that specializes in international air travel. Although flights to, from, and within the US are reported by the Federal Aviation Administration, other countries do not always have a reliable agency to report travel data. Therefore, to negate discrepancies in reporting flight data, OAG provided a reliable source. Furthermore, to continuously determine the validity of the flight data gathered in bulk through OAG, we used an independent flight tracker website, FlightRadar24 (which has limitations to single, specified flights). Thus far, we have accomplished gathering the amount of cases and corresponding flight data but are still in the process of analyzing flight data, creating a risk map and working out a mathematical representation of the data.

Considering the information we knew about the amount of COVID-19 cases and the role of travel restrictions on risk, we made two distinct hypotheses:

1. A greater number of travelers departing from a city where the amount of coronavirus cases is greater will result in a higher risk of outbreak. Conversely, a lower number of travelers departing from a city where the coronavirus cases are smaller will lower the risk of outbreak. Therefore, the number of travelers departing from countries of elevated coronavirus cases is directly proportional to the resulting number of cases and deaths in the low- and middle-income countries in question. Conversely, a later response in restricting international flight travel, specifically arrivals, will result in a higher risk of outbreak. Therefore, the amount of time it takes for a government intervention to place a travel restriction will be directly proportional to the number of coronavirus cases and deaths in the LMIC in question.

After the results of our research, the aforementioned hypotheses needed to be modified to better fit the reality of the diversification of Sub-Saharan Africa’s geography, economies, climate and response. Although the amount of flights indelibly drives the risk of outbreak, it works in tandem with other varying factors that skew direct proportionality.

Some of the excitement in working on this research project lends to the fact that the work was pertinent to major current events. Even though we were working with bulk data, it still felt tangible. It was also amazing to see how powerful mathematical modeling is in analyzing past patterns to determine future possibilities. That is not to say that this project did not present its own set of challenges. For one, working with a third-party private organization that provides databases, OAG, was a new experience. At times, excitement for the project was stifled as there was a very long back and forth just to get simple ideas and demands out. Of course, we must consider the impact COVID-19 had on how employees and different departments were delocalized, and time zones in different offices created a delay. We always maintained respect for people’s occupancy, but it began to be more of an inconvenience as time went on.

Nonetheless, it was an invaluable experience that was enlightening, and I otherwise would not have learned. In the future, we will follow up with continued monitoring of the outbreak by processing both future flight data and case outbreak and further mathematical modeling to compare the eventual total amount of cases. Considering the differing factors of the SSA region, interviews with local health workers to determine the varying response and allocation of resources would be a great step towards understanding the impact of not only flight travel but also regional variance towards disease outbreak.
RESEARCH & ADVOCACY

CHW-FUNDED RESEARCH

The Center for Health and Wellbeing funds innovative and groundbreaking health-focused research in the natural sciences, social sciences and humanities. Both affiliates and graduate students are eligible to apply for funding. Following is a list of projects supported in 2020, with additional details about a few highlighted projects.

2020 CHW-Funded Affiliate Projects

“Designing Evidence-Based and Ethical Maternity Care during the COVID-19 Pandemic”
Principal Investigator: Elizabeth Armstrong  Sociology and School of International & Public Affairs (SPIA)

Principal Investigator: Ruha Benjamin  History

Principal Investigator: João Biehl  Anthropology

“Investigating the Impact of Medicaid Disenrollment on Child Health”
Principal Investigator: Janet Currie  Economics and SPIA

“Silent Burdens: The Need to Strengthen Surveillance in Resource Poor Settings”
Principal Investigator: Jessica Metcalf  Ecology & Evolutionary Biology and SPIA

“Treatment and Prevention of HCMV Infection by Telomerase Inhibition”
Principal Investigator: Daniel Notterman  Molecular Biology

“Development of Serological Assays (‘Antibody Tests’) to Quantify Anti-SARS-CoV2 Humoral Immunity” and “Characterization of Host Responses to Usutu Virus Infection Across Different Vertebrate and Insect Species”
Principal Investigator: Alexander Ploss  Molecular Biology
“Trumplandia: Race, Health, and the Politics of Refusal”
Principal Investigator: Carolyn Rouse  Anthropology

“Regulated Revenues and Firm Behavior: Evidence from a Medicare Overhaul”
Principal Investigator: David Silver  Economics and SPIA

“Selling Menthol: Visualizing Big Tobacco’s Targeted Market Strategies” and “Living in Pandemic Times: The U.S. Epidemic Experience in Historical Perspective”
Principal Investigator: Keith Wailoo  History and SPIA

Project Spotlights

“Designing Evidence-Based and Ethical Maternity Care During the COVID-19 Pandemic”
Principal Investigator: Elizabeth Armstrong  Sociology and SPIA

The COVID-19 pandemic is a dire public health crisis that has overwhelmed society and pushed severe morbidity and mortality to the top of the public agenda. Yet even as hundreds of thousands of Americans have fallen ill and almost 100,000 have died, nearly one million babies have been born in the US since the onset of the pandemic, often in the same hospitals struggling to care for the seriously ill and dying. This project seeks to understand how hospitals and healthcare providers have reconfigured maternity care in response to the novel coronavirus and the experience of giving birth during the pandemic for women and their families. There are three components, beginning with a comprehensive review of the emerging biomedical and epidemiological evidence on the perinatal consequences of COVID-19. Second, the project offers an overview of the public discourse around birth and maternity care during the pandemic in social media and the popular press. Third, the research incorporates in-depth, intensive interviews with two distinct groups with firsthand knowledge of and experience with maternity care during the pandemic: health care providers, including obstetricians, midwives, labor and delivery nurses, nurse managers, doulas and lactation consultants; and women who have given birth in the U.S., particularly in COVID-19 hot spots, since March 2020. The ultimate goal of this research is to craft policy guidelines for evidence-based and ethical maternity care during epidemic disease outbreaks and other natural and human-made disasters.

Principal Investigator: Ruha Benjamin  History

The global spread of a microscopic virus has placed the ravages of racism and inequity under the microscope. The emerging data, however, do not speak for themselves. Those who draw attention to racial health disparities may reinforce narratives that pathologize those most vulnerable to COVID-19. Such narratives often fail to examine how pre-existing social conditions produced by capitalism, racism, and colonialism determine life chances. This project tracks, synthesizes and situates the data on the pandemic’s racial dimensions within historically and sociologically grounded interpretative frameworks. The aim is to create a Pandemic Portal housed at the JUST DATA Lab, which will serve as a resource for ongoing research, teaching, and public engagement, encouraging deeper reflection on how the “pandemic is a portal” for creating a new world in which we can all thrive.
“The Judicialization of COVID-19 in Brazil”
Principal Investigator: João Biehl  Anthropology

The COVID-19 pandemic has highlighted the precariousness of our systems of preparedness and the forms of structural violence that exacerbate vulnerability, rates of mortality, and disparities in care. This project focuses on the courts’ role in enforcing pandemic control measures and guaranteeing basic rights, including access to intensive care treatment, as Brazil faces the perfect storm of health, economic, and political crisis. Drawing upon mixed methods approaches, combining legal and media analysis, ethnographic and epidemiologic perspectives, we explore first, the judicialization of ICU bed distribution during the COVID-19 pandemic in Brazil; second, how civil society actors and public defenders are responding to the COVID-19 threat to protect vulnerable and marginalized populations and support the right to health; and third, the combined threat of forest fires and COVID-19 upon the precarious health system of the Amazon region.

We will build a legal and media database and an ethnographic archive, highlighting cohesive and polarizing strains in political responses towards community-led responses, the role of civil society and the actions of the judiciary. From this evidence, we will draw out an analysis relevant for Brazil and place it within a comparative context of trends globally.

“Silent Burdens: The Need to Strengthen Surveillance in Resource Poor Settings”
Principal Investigator: Jessica Metcalf  Ecology & Evolutionary Biology and SPIA

Health systems in countries in sub-Saharan Africa face extreme resource limitations and disruptions due to COVID-19. Of note, these disruptions include an urban exodus and interruptions to crucial routine health services such as measles vaccination and malaria diagnosis and treatment. By leveraging our experience in modeling, infectious disease and data collection in rural communities, we propose to use Madagascar as a case study to pilot approaches to improve tracking of COVID-19 trajectories in vulnerable rural populations and reinforce crucial health systems by identifying high priority areas and programs. Our objectives are to use existing and novel data streams (e.g., mobile phone data) to more rapidly identify potential hotspots. Additionally, we seek to implement (while following all social distance protocols) laboratory and computational training to address overly centralized testing resources in Madagascar. Through collaboration with Madagascar’s health authorities, we aim to integrate science and policy-making to better monitor the direct and indirect burdens of COVID-19.

“Development of Serological Assays (‘Antibody Tests’) to Quantify Anti-SARS-CoV2 Humoral Immunity”
Principal Investigator: Alexander Ploss  Molecular Biology

There is emerging evidence that SARS-CoV2 stimulates humoral immune responses in patients. Currently, there is a critical shortage of accurate testing to determine how wide-spread anti-SARS-CoV2 immunity is in the general population. It is further unclear which fraction of exposed individuals develop neutralizing antibodies and how anti-SARS-CoV2 (neutralizing) antibody titers correlate with factors such as age, pre-existing co-morbidities and disease severity. It is our goal to develop serological assays that would be suitable to answer these and related questions.
2020 CHW-Funded Graduate Research Projects

“Improving Healthcare Quality in India” and “The Effects of Improved Public Healthcare on Patient and Informal Provider Outcomes”
Principal Investigator: Patrick Agte  Economics

“Giving Bacteria that ‘Full Feeling’ to Fight Infections”
Principal Investigator: Wen Kang Chou  Chemical and Biological Engineering

“The Creation and Evolution of Social Networks on Campus: A Case Study in How Individuals Integrate and Assimilate into Social Groups”
Principal Investigator: Olivia Chu  Quantitative and Computational Biology

“Immunogenetic and Epigenetic Underpinnings of Disease Susceptibility and Severity in Reintroduced Yellowstone Wolves” and “Applying an Integrative Molecular Approach to Wildlife Disease: Exploring Drivers of Sarcoptic Mange Severity in Yellowstone National Park Wolves”
Principal Investigator: Alexandra DeCandia  Ecology & Evolutionary Biology

“Radical Recovery: An Anthropological Analysis of Addiction Rehabilitation and Harm-Reduction in Portugal”
Principal Investigator: Nikhil Pandhi  Anthropology

“The Effects of Nematode Co-Infection on Malaria Dynamics” and “Regulatory and Killer T Cell Interactions during the Immune Response”
Principal Investigator: Edward Schrom  Ecology & Evolutionary Biology

“An Ethnographic Study of Rural Women’s Cooking Classes as a ‘Climate-Smart’ Intervention to Address Malnutrition in Mozambique” and “Chronic Futures: Metabolic Disease and Healthcare in Brazil”
Principal Investigator: Serena Stein  Anthropology

“Remaking Space and Place with Chinese Medicine: COVID-19 and Beyond”
Principal Investigator: Aaron Su  Anthropology

“Parasite Co-Infections in Raccoons (Procyon lotor)”
Principal Investigator: Liana Wait  Ecology & Evolutionary Biology

“Translational Regulation in Escherichia Coli Under NO Stress”
Principal Investigator: Mike Wan  Chemical and Biological Engineering
CHW was home to the National Institute on Aging Roybal Center, also called the Center for Translational Research on Aging, from 2004 until 2020. Its overall goal was to promote translation and integration of basic behavioral and social research findings into interventions to improve older people’s lives and institutions’ capacity to adapt to societal aging. The research was produced by CHW faculty affiliates and collaborating faculty at other universities who were awarded small pilot projects. The Roybal Center has funded 19 projects over the years, including “Age and the Correlates of Wellbeing: Moving from Correlation to Policy,” led by Angus Deaton and “Wellbeing, Self-Reported Health, and Suicide,” led by Anne Case and Angus Deaton. Together, these two projects laid the groundwork for Case and Deaton’s influential work on deaths of despair and supported the development of their concept of a “couma” for combining county data and public use microdata area (PUMA) data to analyze the effects of area-level factors on mortality.

The active projects during the final program year of 2020 were:

“Does Access to New Pharmaceuticals Improve Wellbeing Among Young Children with ADHD?”
Principal Investigators: Anna Chorniy Northwestern University, Janet Currie Princeton University and Lyudmyla Sonchak SUNY Oswego

“Small Area Variations in Mental Health Treatment: Towards New Measures of Prescribing Patterns and Patient Wellbeing”
Principal Investigators: Janet Currie Princeton University and Bentley MacLeod Columbia University

“Does Being Surveyed Affect Subsequent Reports of Subjective Wellbeing?”
Principal Investigators: Johannes Haushofer Princeton University and Jeremy Shapiro Busara Center for Behavioral Economics

“Interactions between Economic Status, Psychological Wellbeing and Age: Analysis of an Unconditional Cash Transfer Trial in Kenya”
Principal Investigators: Johannes Haushofer Princeton University and Jeremy Shapiro Busara Center for Behavioral Economics

“Mobile Phone Sensing to Predict Depression: An Analysis of Experiential Wellbeing in Kenya”
Principal Investigators: Johannes Haushofer Princeton University and Chaning Jang Busara Center for Behavioral Economics
Kenya is home to an unconditional cash transfer program, GiveDirectly, which provides universal income to citizens. This investigation aimed to link the economic impact of this program to effects on subjective and objective indicators of psychological wellbeing in the elderly, particularly widows.

Surprisingly, the investigators found very little evidence that age influenced the effects of GiveDirectly’s unconditional cash transfers. Outcomes of young recipients were very similar to those of older recipients. The finding held across all outcome dimensions such as expenditure, asset holdings, psychological wellbeing, female empowerment, food security, and educational and health outcomes. They did observe limited evidence that GiveDirectly’s payments have a small effect on revenue from non-agricultural businesses, such as kiosks and other small enterprises.

The investigators did find that, when compared to non-married recipients, married households had much larger increases in food security and psychological wellbeing when they received GiveDirectly funds. Thus, it appears that married households benefit more from transfers in terms of food security and psychological wellbeing. A possible mechanism for this result is that food security is more likely to be a binding constraint in married compared to non-married households because these households often have children to feed. Food security, in turn, is likely to be the mechanism for the heterogeneous treatment effect on psychological wellbeing: in the cross-section, we have previously found (Haushofer & Shapiro, 2016) that food security is the strongest predictor of psychological wellbeing. Thus, it is likely that cash transfers affect psychological wellbeing among married households through food security.
PROGRAM ON U.S. HEALTH POLICY

Faculty Director: Janet Currie  Henry Putnam Professor of Economics and Public Affairs

CHW’s Program on U.S. Health Policy sponsors research and activities addressing aspects of domestic health care and health policy. The program supports innovative faculty and student research, conferences, policy forums and special issues in health policy journals. Since its inception in 2011, and after receiving a generous gift from Daniel Spitzer ’79 and Eliot Spitzer ’81, the program has funded 15 faculty projects. The active projects are:

“Community-Wide Acquisition of Medical Knowledge Under Conditions of Risk and Uncertainty”
Principal Investigator: Alin Coman  Princeton University

“Epidemiology of Antibiotic Use in US Hospitals”
Principal Investigators: Simon Levin and Ramanan Laxminarayan  Princeton University

“Aging and Work: The Health Consequences”
Principal Investigators: W. Bentley MacLeod  Columbia University and Elliott Ash  ETH Zurich

2020 Program on U.S. Health Policy Project Spotlight

“Aging and Work: The Health Consequences”
Principal Investigators: W. Bentley MacLeod  Columbia University and Elliott Ash  ETH Zurich

Anecdotal evidence often points to aging as a cause for reduced work performance. This project provides empirical evidence on this issue in a context where performance is measurable and there is variation in mandatory retirement policies: U.S. state supreme courts. The study found that introducing mandatory retirement reduces working judges’ average age and improves court performance, as measured by output (number of published opinions) and legal impact (number of forward citations to those opinions). Consistent with aging effects as a contributing factor, the researchers find that older judges do about the same amount of work as younger judges, but that work is lower quality as measured by citations. However, the effect of mandatory retirement on performance is much larger than expected from the change in the age distribution, suggesting that the presence of older judges reduces the performance of younger judges.
U.S. Health Policy Graduate Research Projects Active in 2020

“Racial and Immigrant Generation Disparities in Birth Outcomes”
Principal Investigator: Theresa Andrasfay Office of Population Research

“Cross-scale Dynamics in Ecology: Acute Viral Infections as a Case Study”
Principal Investigator: Alexander Becker Ecology & Evolutionary Biology

“Examining Mental Representations of Pain Susceptibility”
Principal Investigator: Nathan Cheek Psychology

“How Does Sociality Shape Our Immune System?”
Principal Investigator: Alexander Downie Ecology & Evolutionary Biology

Principal Investigator: Hannah Korevaar Office of Population Research

“How Will Climate Change Drive Plant Pathogen Evolution?”
Principal Investigator: Ian Miller Ecology & Evolutionary Biology

“The Effect of Foster Care Maintenance Payments on Children’s Health Outcomes” and “The Billy Graham Effect? Short and Long-Term Impacts of Religious Messaging on Identity Salience and Local Outcomes”
Principal Investigator: Chris Mills Economics

“Parasite Co-Infections in Raccoons and the Impact of Concurrent Parasite Infection on Rabies Vaccination Effectiveness”
Principal Investigator: Liana Wait Ecology & Evolutionary Biology

“Vaccine-Driven Cross-Scale Dynamics of Infectious Diseases”
Principal Investigator: Luojun Yang Ecology & Evolutionary Biology

“Preference or Pitfall? How Disability Status Shapes Access to Voucher-Based Housing Assistance”
Principal Investigators: Simone Zhang Sociology and Rebecca Johnson Sociology
Graduate Research Project Spotlight

“Racial and Immigrant Generation Disparities in Birth Outcomes”
Principal Investigator: Theresa Andrasfay Office of Population Research

Racial disparities in birth outcomes are well established yet not well understood. Observable risk factors, including socioeconomic status, have been unable to completely account for these disparities. One hypothesis that has been proposed is that experience of lifetime discrimination and inequality and the resulting psychosocial stress can negatively affect the health of minority women and their children. This project aimed to test this hypothesis by comparing birth weight trajectories across generations between descendants of Black immigrant grandmothers and native-born Black grandmothers using California birth records from 1978-2015.

There have been relatively few within-family intergenerational studies of adverse birth outcomes, and health outcomes more generally because it is not possible to observe multiple family members in most sources of health data. An innovative way to overcome this constraint has been to link administrative birth records across generations within the same family. Birth records typically contain information on the birthplace of the mother, and when linked within families, they allow for determination of foreign-origin and generational status. Because administrative birth records contain the universe of births in a state, they are particularly useful for studying populations that may not be adequately sampled in traditional health surveys.

The study found that an initial foreign-born advantage in birth outcomes is present among most racial/ethnic groups, but not all. Asians, as a whole, exhibit no foreign-born advantage in low birthweight but a foreign-born disadvantage in preterm birth, and there is substantial heterogeneity within this population. The foreign-born advantage is especially apparent among births to Black women, among whom a foreign-born advantage is present for all birth outcomes. Compared to births to US-born Black women, births to foreign-born Black women have significantly higher average birth weight, lower prevalence of low birthweight, higher average gestational age and lower prevalence of preterm birth. In the subsequent generation, the foreign-origin advantage diminishes for most groups and a foreign-origin disadvantage in low birthweight emerges for descendants of Asian women, driven by descendants of Asian Indian, Cambodian and Filipino women. These findings largely persist after adjustment for sociodemographic and healthcare-related characteristics in both generations. These results underscore the importance of disaggregating race/ethnicity when possible to better understand population health disparities.

The results confirmed my hypothesis that descendants of foreign-born Black women would experience a steep health decline in the U.S., as this population experiences lower socioeconomic status and racial discrimination in the U.S. I extended this project’s scope to examine the birth outcomes separately by Asian subgroup because the broad Asian category includes several ethnicities with different socioeconomic profiles and circumstances surrounding their immigration to the U.S.

“Examining Mental Representations of Pain Susceptibility”
Principal Investigator: Nathan Cheek Psychology

This project set out to examine mental representations of people who are more or less susceptible to physical pain. Existing research suggests that biases in perceptions of pain may explain at least some treatment disparities well-documented in the literature on pain treatment. This previous research tends to only examine one social identity at a time — e.g., to only look at how a target’s gender, race, or age affects others’ perceptions of their pain susceptibility. However, it is likely that mental representations of pain susceptibility are (a) an amalgamation of many different social identities and (b) the result of relatively stable stereotypes of the kind of person who is more versus less susceptible to pain. This kind of social psychological research provides an important
contribution to understandings of pain treatment disparities but is not without limitations. The current project sought to address one such limitation. Thus, it is important to study how multiple social identities are jointly represented in people’s minds when they think about someone likely to experience more or less pain in a given situation.

The project used a data-driven computational reverse correlation approach to examine people’s mental representations of someone more (vs. less) susceptible to pain. In the first phase, participants completed hundreds of trials in which they selected which of two people (shown in photographs) was more sensitive to physical pain. First, these pairs were generated by first taking a base image (an average of many faces varying in gender and race) and superimposing a randomly generated noise pattern onto that base image. Then, an inverse noise pattern was superimposed on the base image as well, creating two images of opposite noise patterns. Participants completed hundreds of trials in this procedure, resulting in several hundred selections for each participant of the noise pattern that better captures the image of someone sensitive to pain. The norms were averaged and superimposed on a base image to create the average mental representation of someone who is more sensitive to pain (see Figure 1). I then took all of the unchosen noise patterns, averaged them together, and superimposed them on the base image to create the average mental representation of someone less sensitive to pain (see Figure 2).

In Phase 2, separate groups of participants rated these composite images on several characteristics of interest. For example, they rated how male, how female, how White, how Black, how young, how thin, how smart, and how human each image looked. This rating procedure was intended to illustrate how these images differed and specifically what social identities were reflected in each mental representation. Across multiple iterations and variations, a clear pattern emerged:

People think that someone more sensitive to physical pain is more likely to be (1) a woman, (2) feminine, (3) White, (4) thinner, (5) younger, (6) smarter, (7) nicer, (8) warmer, (9) healthier and (10) of a higher social class.

People think that someone less sensitive to pain is more likely to be (1) a man, (2) masculine, (3) Black, (4) less thin, (5) older, (6) less smart, (7) less nice, (8) less warm, (9) unhealthy and (10) of a lower social class.

These findings have important potential implications for understanding and addressing health disparities. When medical professionals encounter patients, they are not encountering them in a vacuum. Instead, they bring mental representations of the type of person who is more or less susceptible to pain. Accordingly, they are likely to underestimate the amount of pain a patient suffers if that patient is more similar to their mental representation of someone less sensitive to pain. Moreover, the more characteristics that the patient has in common with this mental representation, the more likely they will be undertreated. So, for example, a Black man who is overweight and in relatively poor health is at particular risk for having his pain underestimated and undertreated. These biased mental representations also have the potential to harm people who look like someone believed to be more sensitive to pain. For example, doctors may over-prescribe opioids and other potentially addictive or dangerous medications to those whose pain they overestimate.
STATE HEALTH & VALUE STRATEGIES PROGRAM

Program Director: Heather Howard  School of Public and International Affairs

With almost $10 million in support from the Robert Wood Johnson Foundation, the State Health and Value Strategies (SVHS) program helps states transform their health care systems to be affordable, equitable and innovative. By connecting states with experts in the field, SHVS can provide timely and meaningful technical assistance to states when they need it the most. SHVS assists states in four key domains: affordability, coverage, integration and value. The technical assistance SHVS provides to states is informed by two overarching goals: that every person should have the same opportunities to access the health care system and therefore have a fair and just opportunity to lead the healthiest lives possible; and to support the needs and goals of all patients as they interact with the health care system.

SHVS Thought Leadership on Health Care Reform

SHVS' webinars and publications related to equity actions for COVID response inspired an increase in states implementing equity task forces or workgroups and increasing technical assistance projects related to setting up the structure, composition, goals and agenda of these workgroups; review of existing state agency programs through an equity lens and recommendations for improvement; improvement of health equity data measurement and criteria for evaluating measures.

SHVS staff presented to the NAIC B Committee (Health Committee) on lessons learned from the COVID-19 pandemic as it relates to employer-sponsored insurance. The topics included a lack of effective data collection through UI agencies, opportunities to engage ERISA plans in payment reform and theories on where coverage went.

SHVS worked with the state of New Jersey to design a state health insurer assessment (HIA). On July 31, Governor Murphy signed legislation to create a 2.5 percent HIA that will support state programs aimed at improving the affordability of healthcare, including the state’s reinsurance program as well as a state-based subsidy.

SHVS enhanced its ties and collaboration with The National Association of Medicaid Directors (NAMD) during the pandemic. During one of NAMD’s regular convening of Medicaid CFOs, it profiled an SHVS-sponsored toolkit: Tracking Medicaid Enrollment Growth During COVID-19 Databook. SHVS also provided support to NAMD during its Virtual Workshop, Managed Care in Unprecedented Time.
SHVS joined a series of calls with RWJF and the Society of Actuaries, culminating in a new project RWJF is funding with the Society to develop a benchmark model for COVID-19 costs to help inform rate review in states for Plan Year 2021.

SHVS employed a SPIA MPA student intern over the summer. As part of her summer work, the intern researched and wrote about equitable recovery strategies used by states, how states are protecting migrant and seasonal farmworkers during the COVID-19 public health crisis, and state budget actions in response to COVID-19 and their impact on state health programs.

**COVID-19 Response: Highlights and Accomplishments**

When the pandemic’s effects became widespread in the United States in March 2020, the SHVS team pivoted quickly to focus its programming on state responses, offering strategies, analysis and opportunities to states at a time when resources were largely unavailable or difficult to find.

SHVS’s initial response to meet states’ information needs resulted in a policy brief, *State Medicaid and CHIP Strategies to Respond to the COVID-19 Public Health Crisis*, published on March 11. The brief was closely followed by a webinar, *Responding to COVID-19: State Strategies for Medicaid and Commercial Health Insurance Oversight*, on March 18, attended by over 500 state officials from all 50 states plus the District of Columbia.

Clearly, the need for specialized, technical assistance to states was acute. The initial programming was followed by:

- Twenty additional all-state webinars attended by hundreds of state officials on topics including legislative guidance on federal relief and stimulus packages; strategies for increasing Medicaid payments to providers; approaches for the expansion and use of telehealth; guidance and recommendations on how to operate an Open Enrollment Period in an environment of uncertainty; strategies for supporting children and youth with special health care needs during COVID-19; and ways to include equity considerations in COVID-19 response efforts, data collection and reopening and restarting plans.

- A website was designed specifically for state Medicaid programs, insurance marketplaces, insurance commissioners, governors and public health leaders: COVID-19 Resources for States. A weekly curated COVID-19 Digest supplemented the website with toolkits, templates, state examples and expert analysis. The newsletter highlighted recently published SHVS publications; new COVID-19 resources from federal government agencies or other sources; and COVID-19 updates from states.

- Thirty policy briefs related to the COVID-19 crisis provided states with timely insight and strategies to inform their response.

- Twenty other publications (extensive issue briefs, regulatory analyses, state toolkits and Q&A documents) covering topics including: analysis of federal declarations and mandates; states’ reporting of COVID-19 and health equity data; messaging and communication strategies about COVID-19, Marketplaces and OEP; strategies for maintaining Medicaid and CHIP coverage for enrollees; how states can navigate the fiscal challenges of the COVID-19 pandemic; and how to provide more equitable access to COVID-19 testing, treatment and vaccines.
Since its inception, State Health and Value Strategies has been committed to achieving health equity. COVID-19 exacerbated long-standing health inequities experienced by people of color, and the crisis, combined with a national reckoning on racial justice, propelled a nationwide focus on understanding and addressing these disparities. As a result, states have been increasingly called upon to drive change, and the SHVS program continues to expand its programming to meet this need. Their health equity work in 2020 included:

- **Maternal health**: SHVS presented a webinar and published an issue brief on Medicaid’s crucial role in combating the maternal health crisis, sharing insights and strategies raised and developed at a roundtable in 2019. In addition, SHVS continued to provide technical assistance to specific states on using waivers and other options to expand postpartum coverage.

- **Integrating equity into managed care**: SHVS helped several states incorporate a focus on health equity into their requests for proposals and model contracts to re-procure managed care.

- **Establishing or improving Health Equity Task Forces**: SHVS supported the establishment of health equity task forces in states and helped them define areas of focus and goals.

- **Health equity and commercial insurance**: SHVS started work with a state health insurance exchange to create a social justice and health equity subcommittee of their board and identify strategies to promote health equity.

- **Race and ethnicity data collection**: SHVS created a new workgroup with 10 states to discuss strategies to improve the collection of race, ethnicity, disability and language data. In addition, SHVS provided technical assistance to a state's department of health and human services to assess its capacity to address the racial/ethnic disparities in the COVID-19 pandemic and recommend improvements.

- **Health equity resource page**: SHVS launched a health equity resource page on its website so that users can easily find and access curated resources for state officials, such as toolkits, issue briefs, analyses, state examples and federal guidance on health equity.

- **Virtual Roundtable Lessons Learned and Opportunities for States to Advance Health Equity**: SHVS hosted its first health equity roundtable. Twenty-three state officials from seven states representing Medicaid agencies, minority health/equity officials and Secretaries of Health participated. Following the roundtable, SHVS published an issue brief, *State Strategies for Overcoming Barriers to Advance Health Equity*. This group is scheduled to convene on an ongoing basis in 2021.
2020 was an especially busy and prolific year for Heather Howard. In addition to leading many of the SHVS initiatives, she served, published, advocated and continued to drive forward the movement towards transforming our healthcare system.

Her activities in 2020 included:

Serving on the Healthcare Committee of the New Jersey Restart and Recovery Advisory Council; the Quality and Safety Committee of the University Hospital Newark; and the Commonwealth Fund’s new CONVINCE initiative, COVID-19 New Vaccine Information, Communication, and Engagement.

Redesigning her popular SPIA Policy Task Force: “Health Care for Vulnerable Populations in the U.S.” course to examine the intertwining dynamics of COVID-19 and systemic racism — specifically focusing on health disparities exacerbated by the pandemic. With funding from Princeton’s 250th Anniversary Fund for Innovation in Undergraduate Education, the Task Force presented its research findings and policy proposals via Zoom to more than a dozen officials at the New Jersey Department of Health.

Reflecting on the 10th anniversary of the ACA both in an opinion piece in the Star Ledger and in an interview of acclaimed New York Times investigative journalist Sarah Kliff. In an interview with NJ Spotlight news, she discussed lessons learned from the H1N1 vaccination efforts, highlighting the need for increased federal funding to help implement New Jersey’s vaccination distribution. She presented at the Annual Cancer Research Symposium at the Rutgers Cancer Institute on missed screenings during the COVID-19 pandemic. Director Howard also published “States Lead the Way in Responding to COVID-19 and Advancing Innovative Health Policy Solutions on Many Fronts” in the Health Affairs Blog.

Signing, along with other former state health officials, a letter to Congress advocating for $4.5 billion in mandatory funding for public health infrastructure to be included in emergency supplemental funding legislation. She also signed a letter supporting state health officials, ASTHO Call for Leadership and Solidarity, urging public and private leaders to speak out in support of evidence-based approaches to infectious disease control and support the work of public health professionals to control the pandemic.
CHW sponsors or co-sponsors dozens of domestic and international health events every year. These events are open to Princeton affiliates and, in many cases, the public. Despite the pandemic, CHW staff and their collaborators produced over 20 predominantly online events in 2020, preserving this valuable resource for the Princeton community and beyond.

**GHP COLLOQUIUM SERIES**

One of the most anticipated series offered at CHW is the Global Health Colloquium, where students, faculty, researchers and the general public can hear about innovative approaches to current global health issues.

- **Jeremy Greene**  William H. Welch Professor of Medicine and the History of Medicine and Director of the Institute of the History of Medicine, Johns Hopkins University
  “Domestic Laboratories for International Health: Indigenous Health and Technological Development in the American Southwest, 1965-1980”

- **Joia Stapleton Mukherjee**  Associate Professor of Global Health and Social Medicine, Harvard Medical School
  “Health and Human Rights for the 21st Century”

- **Amy Moran-Thomas**  Associate Professor of Anthropology, Massachusetts Institute of Technology
  “Repair Work: What Diabetic Limb Salvage Reveals about an Overlooked Epidemic”

- **Marissa Mika**  Formerly Head of Humanities and Social Sciences and Assistant Professor at the University of Global Health Equity in Rwanda
  “Africanizing Oncology in Uganda”
CHW/RPDS SEMINAR SERIES

CHW and the Research Program in Development Studies partner during the academic year to host engaging lectures on global health and development research topics led by researchers from Princeton and beyond.

The lecture topics from 2020 were:

Kevin Volpp  Professor of Medicine, Perelman School of Medicine and Wharton School, University of Pennsylvania
“Behavioral Economics and Health”

Rachel Glennerster  Chief Economist, UK Department for International Development
“A Signal to End Child Marriage: Theory and Experimental Evidence from Bangladesh”

Petra Persson  Assistant Professor of Economics, Stanford University
“The Roots of Health Inequality and the Value of Intra-Family Expertise”

Veronica Grembi  Visiting Fellow, Princeton University/Associate Professor of Economics, University of Milan
“The Political Economy of Road Traffic Accidents”

Jason Abaluck  Associate Professor of Economics at Yale School of Management
“Mortality Effects and Choice Across Private Health Insurance Plans”

Leila Agha  Assistant Professor of Economics at Dartmouth College
“Mastering the Art of Cookbook Medicine: Machine Learning, Randomized Trials, and Misallocation”

Marcella Alsan  Professor of Public Policy at Harvard Kennedy School
“Civil Liberties in Times of Crises”

Manasi Deshpande  Assistant Professor of Economics at the University of Chicago Kenneth C. Griffin Department of Economics
“Beyond Health: Non-Health Risk and the Value of Disability Insurance”

Zack Cooper  Assistant Professor of Economics, Yale School of Public Health
“Surprise! Out-of-Network Billing for Emergency Care in the United States”

Laura Wherry  Assistant Professor of Economics and Public Service at New York University
“Medicaid and Mortality: New Evidence from Linked Survey and Administrative Data”

David Molitor  Assistant Professor of Finance at University of Illinois Urbana-Champaign
“Nonlinear Health Effects of Air Pollution: Evidence from Wildfire Smoke”
CHW EVENT HIGHLIGHTS

“Sexual Citizens: A Landmark Study of Sex, Power and Assault on Campus”
Jennifer Hirsch ’88, Professor of Sociomedical Sciences at Columbia University’s Mailman School of Public Health and former CHW Visiting Scholar, delivered a lecture on how college campuses can become safer, how external pressures before college predispose kids to commit assault, how parents can start dialogues with children about healthy sexual behavior, and how high school sex education can make assaults less likely and sexual lives more fulfilling.

“COVID-19: Fiscal, Monetary and Health Policy Responses and Implications for the Economic Outlook”
Moderated by Senator Bill Frist, M.D., this event featured discussions by Alan Blinder on the topic of fiscal stimulus, Bill Dudley on Federal Reserve measures, and Jessica Metcalf on epidemiological models and the health policy outlook. The event was sponsored by the Center for Economic Policy Studies and co-sponsored by CHW.

“COVID-19 in Brazil Today: Reckoning with the Pandemic in the Global South”
CHW partnered with the Princeton Institute for International and Regional Studies, Program in Latin American Studies, and Instituto de Estudos para Políticas de Saúde to produce this online panel of Brazil’s leading social scientists. Moderated by João Biehl and Thomas Fujiwara, presenters Monica de Bolle, Miguel Lago, Debora Diniz and Marcelo Medeiros discussed the impact of COVID-19 in Brazil and the dramatic effect the pandemic has had on the country.

“COVID-19 and Amazonia’s Future”
This conversation with Marcia Castro, Ilona Szabó, Pedro Vasconcelos and Beto Veríssimo was sponsored by the Brazil LAB and co-sponsored by CHW, Princeton Institute for International and Regional Studies, Princeton Environmental Institute, Program in Latin American Studies and Instituto de Estudos para Políticas de Saúde. Moderated by João Biehl, this event focused on the effects of the, then surging, COVID-19 pandemic in the crucial economic and ecologic Amazonia region.

Dinner with Sarah Kliff
Prior to the onset of the pandemic, several GHP students attended a dinner with health policy journalist and investigative reporter Sarah Kliff of the New York Times. Topics included the legacy of the Affordable Care Act, COVID-19 and how the pandemic is testing the limits of the American healthcare system.

CHW co-sponsored a virtual lunch with Vivian Lee, M.D., Ph.D., M.B.A. and president of Health Platforms at Verily Life Sciences, an Alphabet company whose mission is to apply digital solutions that enable people to enjoy healthier lives. Dr. Lee discussed future applications of technology in the healthcare ecosystem, and technology as a dominant driver of health equity. She also spoke on how data informs the development of apps to enhance health outcomes at the population level and allow patients and their health care community to co-produce health.
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