

Public Health Interventions and Countermeasures for Advancing Pandemic and Seasonal Influenza Preparedness and Response

Committee

Alexander M. Capron

Chair

Alexander M. Capron, L.L.B., M.A., is a University Professor at the University of Southern California where he teaches Public Health Law and Policy, Bioethics, and Torts, and occupies the Scott H. Bice Chair in Healthcare Law, Policy and Ethics in the Gould School of Law, is Professor of Medicine and Law in the Keck School of Medicine, and is Co-Director of the Pacific Center for Health Policy and Ethics. He previously taught at Georgetown University, the University of Pennsylvania, and Yale University. His ten books and hundreds of articles cover a wide range of topics in law, medicine, ethics, and public health, such as serving as the principal rapporteur for the International Ethical Guidelines for Epidemiological Studies issued by the Council for International Organizations of Medical Sciences (Geneva: 2008). In 1966 he received a BA in Economics with High Honors from Swarthmore College and in 1969 an LLB from Yale University, where he was an officer of the Yale Law Journal. Capron was appointed by Congress as the chair of the Biomedical Ethics Advisory Committee, and by President Bill Clinton as a member of the National Bioethics Advisory Commission. From 1980 to 1983 he was the Executive Director of the President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research, which was established by Congress and appointed by Presidents Carter and Reagan. From 2002-06, he served as Director of the Department of Ethics, Trade, Human Rights and Health Law at the World Health Organization, where he co-led its global work on establishing equitable access to antiretroviral treatment for HIV and for influenza pandemics. He is an elected member of the National Academy of Medicine and the American Law Institute and an elected Fellow of the American Association for the Advancement of Science and of the Hastings Center. He has served as President of the American Society for Law, Medicine and Ethics and of the International Association of Bioethics.

Patricia J. Garcia

Vice Chair

Patty J. García, M.D., Ph.D., M.P.H., is a Professor at the School of Public Health at Cayetano Heredia University (UPCH) in Lima-Peru and member of the US National Academy of Medicine. She is the former Minister of Health of Peru, former Dean of the School of Public Health at UPCH, and former Chief of the Peruvian National Institute of Health (INS). She is recognized as a leader in global health. She is an affiliate Professor with the Department of Global Health at the University of Washington and the School of Public Health at Tulane University. She is actively involved in research and training in global health, reproductive health, STI/HIV, HPV and medical informatics as well as has expertise in public health interventions, infectious diseases, and implementation science. Dr. Garcia is a member of the advisory board of CEPI (Coalition for Epidemic Preparedness Innovations) and is a member of the International Committee, being coordinated by the National Academy of Medicine, that set the statement of task for this consensus study. During the pandemic she is leading clinical trials in Peru as SOLIDARITY, Convalescent plasma and ivermectin use, and has been chairing the advising governmental committee on innovations to fight the pandemic. She is active with the media providing public information about COVID-19 and other health information.

Lukoye Atwoli

Member

Lukoye Atwoli, MBChB, MMed Psych, Ph.D., is a Professor of Psychiatry and the Dean of the Medical College, East Africa, at the Aga Khan University. He also holds visiting and honorary appointments at the Harvard T H Chan School of Public Health and the University of Cape Town. His current research interests center on psychiatric epidemiology, and he has carried out research on trauma and posttraumatic stress disorder, youth and adolescent mental health, and substance use, among others. He has also been involved in policy development and advocacy across a wide range of mental health issues and has recently been appointed to chair the Board of the Mathari National Mental Health Teaching and Referral Hospital, the premier psychiatric facility in the region. Dr. Atwoli obtained his medical training at Moi University in 2001 and completed his residency in Psychiatry in 2006 at the University of Nairobi, both institutions in Kenya. He was awarded a Ph.D. in Psychiatry and Mental Health from the University of Cape Town in South Africa in 2015 with a thesis exploring the epidemiology of trauma and posttraumatic stress disorder in South Africa. He has participated in previous workshops organized by the National Academies, “Strengthening human resources through development of candidate core competencies for mental, neurological and substance use disorders in sub-Saharan Africa (2013)”, and “Providing sustainable mental and neurological health care in Ghana and Kenya (2016)”.

Peter Daszak

Member

Peter Daszak, Ph.D., is the President and CEO of EcoHealth Alliance. His research uses epidemiology and mathematical modeling coupled with field and laboratory analyses to understand infectious disease emergence, especially wildlife-origin viruses. He has worked more recently on SARS, Nipah and Hendra, Ebola, and avian influenza viruses, while his earlier work was on wildlife diseases, including discovery of a fungal pathogen, chytridiomycosis, causing global amphibian population declines and extinctions. His policy interests are in global health, infectious disease surveillance, emerging diseases, biodefense, public health, as well as conservation medicine, One Health, EcoHealth and Planetary Health. He has developed a keen interest in gain-of-function issues, pandemic prediction and prevention, and infectious disease threats to low- and middle-income countries.

Adolfo Garcia-Sastre

Member

Adolfo García-Sastre, Ph.D., M.P.S., is a Professor at Mount Sinai University's Icahn School of Medicine. He has a research laboratory that focuses on a wide variety of viral pathogens, as well as host-pathogen interactions, and vaccine and anti-viral drug development. A major focus of the lab is on influenza virus research. Influenza viruses are globally important human pathogens infecting up to 500 million people annually. With the emergence of highly pathogenic avian influenza strains, there is a pressing need to understand the pathogenesis of influenza A and develop better vaccines and therapies. The laboratory is using both hypothesis-driven and systems biology based approaches to understand virus pathogenesis and to develop improved antivirals and vaccines. These studies are also geared towards the identification of novel regulators of innate and adaptive immune responses leading to the development of new vaccines and therapies against infectious diseases and cancer. Specifically, they are working in understanding the factors associated with severe influenza virus infection, the development of pan-influenza virus vaccines, the discovery of novel adjuvants, and the use of engineered viruses as vaccine vectors and as anti-tumor agents.

Denise A. Gray-Felder

Member

Denise Gray-Felder, M.A., is the founding president and CEO of the Communication for Social Change Consortium, a nonprofit organization working globally to equip people in marginalized communities, using participatory methods at the grassroots level to bring about the social change they define and need. She has held progressively more responsible communication positions during her 40-plus year career including her current position since 2003, four and a half years as chief communication officer for Michigan Medicine (U-Michigan), nine years as a vice president of administration and director of communication for the Rockefeller Foundation, 16 years in progressively more responsible public relations management positions at AT&T, associate director of public relations for the United Way of Detroit, scriptwriter for Criminal Justice Institute-Detroit, promotion coordinator WKBD-TV Detroit, editor and publisher of community publications, radio and TV scriptwriter, and reporter for Lansing State Journal (daily newspaper). Her research interests include community dialogue as a change agent; participatory communication, monitoring and evaluation; storytelling to impact community values, attitudes and beliefs; vaccine hesitancy/influencing anti-vax communities; HIV-AIDS communication; community radio; communication for development; health communication; as well as communication for social and community-level change. She has also work with UNICEF in four northern Nigeria states on polio vaccination, the World Health Organization on tuberculosis, the West African Health Organization on neglected tropical diseases in the Sahel, WaterAid to address clean water communication in four West African countries, the International AIDS Vaccine Initiative to create initial communication plans for aids vaccines, as well as the GIZ on African Shared Values (with African Union), community radio, sanitation. Ms. Gray-Felder has also spent years working with Public Health Schools Without Walls, girls' education in Africa, the green revolution in Africa, as well as agricultural sciences in Africa and Asia, Green Revolution for Africa. She is a board member of the Millbank Foundation as well as a former appointee of the M.L. King Commission for State of New Jersey. Her honors include the Spirit of Detroit Award and other recognitions for community service.

Gabriel M. Leung

Member

Gabriel Leung, M.D., M.P.H., is the fortieth Dean of Medicine (2013-), inaugural Helen and Francis Zimmern Professor in Population Health and holds the Chair of Public Health Medicine at the University of Hong Kong (HKU). He was the last Head of Community Medicine (2012-3) at the University as well as Hong Kong's first Under Secretary for Food and Health (2008-11) and fifth Director of the Chief Executive's Office (2011-2) in government. Leung is one of Asia's leading epidemiologists and global health exponents. His research defined the epidemiology of three novel viral epidemics, namely SARS in 2003, influenza A(H7N9) in 2013 and most recently COVID-19. He led the Hong Kong government's efforts against pandemic A(H1N1) in 2009, and has served as advisor for both the Hong Kong and mainland Chinese governments on COVID-19. He was founding co-director of HKU's World Health Organization (WHO) Collaborating Centre for Infectious Disease Epidemiology and Control (2014-8) and currently directs the Laboratory of Data Discovery for Health at the Hong Kong Science and Technology Park (2020-). Leung regularly advises national and international agencies including the World Health Organization, World Bank, Asian Development Bank, Boao Forum for Asia, Institut Pasteur, Japan Center for International Exchange and China Centers for Disease Control and Prevention. He is an Adjunct Professor of Peking Union Medical College Hospital and Adjunct Professorial Researcher of the China National Health Development Research Center. He edited the Journal of Public Health (2007-14), was inaugural co-editor of Epidemics, associate editor of Health Policy and is founding deputy editor-in-chief of China CDC Weekly. He currently serves on the editorial boards of seven journals, including the British Medical Journal.

Chandini R. MacIntyre

Member

Chandini Raina MacIntyre, Ph.D., M.B.B.B.S. (Hons 1), M.App, is a National Health and Medical Research Council (NHMRC) Principal Research Fellow at The Kirby Institute, University of New South Wales (UNSW) Australia and adjunct Professor at Arizona State University. She is a medical epidemiologist with dual specialist medical qualifications in internal medicine and public health, as well as a masters and Ph.D. in epidemiology. She has over 400 peer reviewed publications, and her research in influenza, emerging infections, biosecurity, vaccines and face masks have directly informed national and international policy and practice. Her in-depth understanding of the science of outbreak investigation draws from field epidemiology training combined with academic training. She has led the largest body of clinical research on face masks and respirators in front line health workers internationally. Research in this area includes complex cluster randomized controlled trials (RCTs) of efficacy of different personal protective equipment (PPE) products, design of more efficient PPE, and modelling to inform policy options. Prior to 2009, there were no RCTs of any PPE published, yet PPE is among the few available interventions to protect frontline workers in an emergent epidemic or pandemic where drugs and vaccines may be unavailable or delayed in development. She set out to address this important evidence gap with this body of work, which includes five RCTs on facemasks and respirators (the largest published to date among healthcare workers) and numerous other studies, comprising the largest body of work on use of face masks internationally. Her research on masks has received international recognition and has been cited by governments in several countries in their pandemic planning. This work has been internationally prominent, particularly during the COVID-19 pandemic, as hers was the only published RCT of cloth masks. She won the Council of Academic Public Health Institutions Australia Research Prize for this work, and has twice been a finalist in the Eureka Prizes. Prof MacIntyre consulted for the advisory board on Ascend Performance Materials on face masks up until January of 2021 and currently is a pro bono consultant for ATMOS, a start-up, which has developed a UVC light sterilizer method for personal protective equipment. She does research on the transmission dynamics and prevention of infectious diseases, particularly respiratory pathogens such as influenza, tuberculosis and other vaccine-preventable infections. Her Ph.D. research on tuberculosis focused on screening, surveillance and contact tracing for disease control. She has also done research on using risk-analysis methods for analyzing emerging infectious diseases outbreaks such as Ebola, COVID-19 and MERS-CoV. She leads a NHMRC Centre for Research Excellence in Epidemic Response which is international and multi-sectoral, and addresses gaps in global systems for epidemic response. She is an expert in influenza, with >100 publications on influenza. She was invited to be on the GLaMOR-Nivel WHO group to evaluate the impact of the 2009 pandemic of influenza globally and the US CDC's Global Burden of Influenza study. She also is the first researcher to measure the effectiveness of influenza vaccination in preventing acute myocardial infarction, in a high impact publication, which has achieved widespread international attention. This work has resulted in an invited plenary at the European Scientific Influenza Working Group conference and being a Principal Investigator in the IAMI trial, currently recruiting subjects globally. She has worked in immunization for over 20 years, including 15 years at the National Centre for Immunization Research. She won the peak award for Immunization in Australia, the PHAA Immunization Achievement Award in 2014, for her research in vaccinology. She has a particular interest in vulnerable populations, including immunosuppressed, migrants and refugees, and adult vaccination with a focus on the frail elderly. Specific vaccination interests include influenza, pneumococcal disease, HPV, measles, hepatitis A, smallpox, anthrax and herpes zoster. She has also done vaccine trials in immunosuppressed populations to study the immunogenicity of vaccines against weakened immunity.

Methodologies include phase 3 clinical trials, epidemiology, mathematical modelling and translational research. She has done recent work on vaccine effectiveness of influenza vaccine against myocardial infarction. She led a NHMRC Centre for Research Excellence in immunization for high risk populations from 2011-2016. She is on the Council of 100 for the journal Vaccine, the peak journal in this field. She has been a plenary speaker on vaccination at several international conferences. She leads UNSW's Vaccine and Infection Research Lab (VIRL), a research centre in adult and high-risk vaccination. She is on editorial boards for BMJ Open, Vaccine and Epidemiology and Infection. She has been on numerous expert committees including a U.S. Institute of Medicine's Expert Panel during the 2009 pandemic, the WHO SAGE Advisory Committee on VZV and zoster, World Organization for Animal Health group on dual-use research of concern, the National Ebola Infection Control Committee and many others. She is regularly invited to give plenaries in her field internationally. Prof MacIntyre has an extensive media profile in her area of expertise and contributes to informing policy and practice through expert advisory groups nationally and internationally. She has extensive community engagement around public health and infectious diseases with community and media.

Linsey C. Marr

Member

Linsey C. Marr, Ph.D., is the Charles P. Lunsford professor of Civil and Environmental Engineering at Virginia Tech. Dr. Marr's research interests include characterizing the emissions, fate, and transport of air pollutants in order to provide the scientific basis for improving air quality and health. She also conducts research on airborne transmission of infectious diseases. Dr. Marr was affiliated with the advisory board of Phylagen up until January of 2021 and currently consults for Smiths Detection, CrossFit, Inc., and The MITRE Corporation. She is a member of the National Academies' Board on Environmental Science and Toxicology and recently served on the planning committee for Airborne Transmission of SARS-CoV-2: A Virtual Workshop from the Environmental Health Matters Initiative and on the committee on Grand Challenges in Environmental Engineering for the 21st Century. In 2013, she received a New Innovator Award from the director of the National Institutes of Health. Dr. Marr received a B.S. degree in engineering science from Harvard University and a Ph.D. degree in civil and environmental engineering from University of California, Berkeley.

Tolbert G. Nyenswah

Member

Tolbert Nyenswah, LL.B., M.P.H., is a senior research associate with the Johns Hopkins Bloomberg School of Public Health, Department of International Health. He is an internationally recognized legal scholar and a global public health expert. Prior to joining Johns Hopkins University, he was deputy minister of health of Liberia, chief executive officer (CEO) of the national public health institute, and assistant minister of health of the Republic of Liberia, during the administration of President Ellen Johnson Sirleaf, appointed by the president and confirmed by the senate three times. He specializes in high as well as low-and middle-income countries, health policies and systems and public health emergencies preparedness and response, advising on incident management system functionalities. He has been engaged with several public health emergencies, including, as incident manager of the 2014-2016 Ebola epidemic in West Africa, Lassa Fever, Zika, Meningitis and the ongoing COVID-19 pandemic response. Since COVID-19, some of his major contributions to the COVID-19 response include the development of a COVID-19 contact tracing course that has over 15 million viewers, including 1.1 million enrolled and certified. He has been interviewed by multiple African, North American, Asian, European and South American media outlets, including the Washington Post, The HILL, Business Insider, Bloomberg, USA Today, NPR Radio, BBC, Business Insider, VOA News, World Economic Forum, The Philadelphia Inquirer, VOA Africa, The New Yorker, STAT, and POLITICO. He has attended and presented as an expert panelist on a couple of National Academics of Sciences, Engineering, and Medicine seminars. He is also a member of the Global Health Index International panel of experts, which assesses the overall health security capacities of nations globally based on a multitude of health indicators. He has received numerous awards, notably the Bloomberg Hopkins Emerging Leader, Outstanding Recent Graduate from the Johns Hopkins University Alumni Association, TIME Magazine Persons of the Year for Ebola Fighters in West Africa, Medal of Excellence for Public Health Services, Medal from the Surgeon General of the United States. Highest Liberian civilian award for leading the Ebola crisis.

Rosanna W. Peeling

Member

Rosanna Peeling, Ph.D., is currently Professor/Chair of Diagnostics Research at the London School of Hygiene and Tropical Medicine and Director of the International Diagnostic Centre (IDC). Trained as a medical microbiologist, she was Research Coordinator and Head of Diagnostics Research at the UNICEF/UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases (WHO/TDR) in Geneva and Chief of the National Laboratory for Sexually Transmitted Diseases in Canada before assuming her current position. Her research focuses on defining unmet diagnostic needs and facilitating test development, evaluation and implementation in developing countries. She established the IDC to advocate the value of diagnostics, foster innovation, and accelerate access to quality-assured diagnostics to improve global health and to combat antimicrobial resistance (AMR). She is a member of the Prize Advisory Panel for the UK Longitude Prize, the European Commission Horizon 2020 AMR Prize and the Global AMR Innovation Fund. She contributed to WHO Testing Guidelines for HIV, Hepatitis, Dengue and sexually transmitted infections and served as a member of the WHO/TDR Scientific and Technical Advisory Committee and the WHO Strategic Advisory Group of Experts on In Vitro Diagnostics (SAGE IVD). She is a member of the Global Validation Advisory Committee for the Elimination of Mother to Child Transmission of HIV and Syphilis, the Social Innovation in Health Initiative and the WHO COVID-19 Advisory panel for developing Target Product Profiles for diagnostics. She is a member of the Africa CDC Laboratory Working Group for the COVID-19 Pandemic Response and has worked with the Africa CDC to set up a Biobanking Network for the evaluation of diagnostic tests for diseases of epidemic potential.

Marybeth Sexton

Member

Marybeth Sexton, M.D., MSc, graduated summa cum laude from Georgetown University with a B.S. in Biology in 2005 and summa cum laude from Emory University School of Medicine with an M.D. in 2011. She completed an internal medicine residency at New York Presbyterian-Columbia University Medical Center in 2014, and an infectious disease fellowship at Emory University in 2017 while also earning a Master of Science in Clinical Research. She is now an assistant professor of infectious diseases at Emory, a healthcare epidemiologist for the Emory Clinic, and a member of the Serious Communicable Diseases Unit team at Emory Healthcare, with responsibilities for overseeing communicable disease response and preparedness, including with respect to the COVID-19 pandemic. When the COVID-19 outbreak began last year, she was responsible for coordinating initial response efforts and developing an infrastructure that informed the creation of a healthcare incident command structure. She has subsequently led efforts around infection prevention policy development, care delivery, and implementation of programs for novel therapeutic agent use and vaccination. She has been responsible for policy development, implementation, and related patient and staff communication with respect to: PPE selection, training, disinfection, and extended use protocols; universal masking and eye protection use; patient and staff screening; patient visitation protocols; COVID and influenza testing guidelines; contact tracing; return to work guidance for employees and patients; and efforts around recovery and safe maintenance of patient services. Her research during this time has focused on the safety and efficacy of infection control interventions, including evaluating PPE during a supply crisis, and working with a multidisciplinary team to evaluate the impact of racial disparities on COVID-19 readmissions.