Committee on Data Needs to Monitor Evolution of SARS-CoV-2

Committee

Diane E. Griffin

Chair

Diane Griffin is University Distinguished Service Professor and Alfred and Jill Sommer Chair of the W. Harry Feinstone Department of Molecular Microbiology and Immunology at Johns Hopkins Bloomberg School of Public Health. Dr. Griffin is a virologist recognized for her work on the pathogenesis of viral infections. She is known particularly for her studies on measles and alphavirus encephalomyelitis that have delineated the role of the immune response in virus clearance, vaccine-induced protection from infection, tissue damage and immune suppression. Dr. Griffin was born in Iowa City, Iowa, and grew up in Oklahoma City. She graduated from Augustana College, Rock Island, Illinois with a degree in biology and from Stanford University School of Medicine in 1968 with a PhD in immunology and MD, followed by a residency in internal medicine. She was a postdoctoral fellow in virology and infectious diseases at Johns Hopkins University School of Medicine and joined the faculty in 1974. She has been president of the American Society for Virology and of the American Society for Microbiology and is a member of both the National Academy of Sciences and the National Academy of Medicine.

Ralph Baric

Member

Ralph Baric is the William R. Kenan, Jr. Distinguished Professor in the Department of Epidemiology and Professor in the Department of Microbiology and Immunology. He is a Harvey Weaver Scholar from the National Multiple Sclerosis Society and an Established Investigator Awardee from the American Heart Association. In addition, he is a World Technology Award Finalist and a fellow of the American Association for Microbiology. He has spent the past three decades as a world leader in the study of coronaviruses and is single-handedly responsible for UNC-Chapel Hill's world leadership in coronavirus research. For these past three decades, Dr. Baric has warned that the emerging coronaviruses represent a significant and ongoing global health threat, particularly because they can jump, without warning, from animals into the human population, and they tend to spread rapidly. The Baric Lab uses coronaviruses as models to study the genetics of RNA virus transcription, replication, persistence, pathogenesis, genetics and cross-species transmission. He has used alphavirus vaccine vectors to develop novel candidate vaccines. Dr. Baric has led the world in recognizing the importance of zoonotic viruses as a potentially rich source of new emerging pathogens in humans, with detailed studies of the molecular, genetic and evolutionary mechanisms that regulate the establishment and dissemination of such a virus within a newly adopted host. Specifically, he works to decipher the complex interactions between the virion and cell surface molecules that function in the entry and cross-species transmission of positive-strand RNA viruses. In 2017, 2018 and 2019, Dr. Baric was named to Clarivate Analytics' Highly Cited Researchers list, which recognizes researchers from around the world who published the most widely-cited papers in their field. Also in 2017, he was awarded a grant for more than $6 million from the National Institute of Allergy and Infectious Diseases (NIAID) to accelerate the development of a promising new drug in the fight against deadly coronaviruses, which is currently in clinical trials to reverse COVID-19 disease in humans. In this collaboration, he continued his partnership between the Gillings School and Gilead Sciences Inc. to focus on an experimental antiviral treatment that he had previously shown to prevent the development of severe acute respiratory syndrome coronavirus (SARS-CoV) in mice. The drug also was shown to inhibit MERS-CoV and multiple other coronaviruses (CoV), suggesting that it may actually inhibit all CoV. He continues to work with this drug.

Kent E. Kester

Member

Kent Kester is currently Vice President and Head, Translational Science and Biomarkers at Sanofi Pasteur. In this capacity, he leads a team of over 200 research and clinical professionals in the US and France focused on the translational development of new vaccines. During a 24-year career in the US Army, he worked extensively in clinical vaccine development and led multiple research platforms at the Walter Reed Army Institute of Research, the U.S. Department of Defense's largest and most diverse biomedical research laboratory with a major emphasis on emerging infectious diseases, an institution he later led as its Commander/Director. His final military assignment was as the Associate Dean for Clinical Research in the School of Medicine at the Uniformed Services University of the Health Sciences (USUHS). During his military service, Dr. Kester was appointed as the lead policy advisor to the US Army Surgeon General in both Infectious Diseases and in Medical Research & Development. In these capacities, he worked extensively in the interagency environment and developed a variety of Army and DoD medical policies related to infectious diseases, both clinical and research aspects. Dr. Kester holds an undergraduate degree from Bucknell University and an M.D. from Jefferson Medical College, completing his internship and residency in internal medicine at the University of Maryland and a research fellowship in infectious diseases at the Walter Reed Army Medical Center. Currently a member of the US Government Presidential Advisory Council on Combating Antibiotic-Resistant Bacteria (PACCARB) and the Department of Veterans Affairs Health Services Research & Development Service Merit Review Board, he previously chaired the Steering Committee of the NIAID/USUHS Infectious Disease Clinical Research Program, and has served as a member of the FDA Vaccines & Related Biologics Products Advisory Committee (VRBPAC), the NIAID Advisory Council, and the CDC Office of Infectious Diseases Board of Scientific Counselors. He is the Vice Chair of the National Academy of Medicine Forum on Microbial Threats. Board-certified in both internal medicine and infectious diseases, Dr. Kester holds faculty appointments at USUHS and the University of Maryland; and is a fellow of the American College of Physicians, the Royal College of Physicians of Edinburgh, the Infectious Disease Society of America, and the American Society of Tropical Medicine and Hygiene. He is a member of the clinical faculty at the University of Maryland Shock Trauma Center in Baltimore.

Deven McGraw

Member

Deven McGraw is General Counsel and Chief Regulatory Officer for Ciitizen, a consumer health technology start-up. Previously she directed U.S. health privacy and security as Deputy Director, Health Information Privacy at the HHS Office for Civil Rights and Chief Privacy Officer (Acting) of the Office of the National Coordinator for Health IT. Widely recognized for her expertise in health privacy, she directed the Health Privacy Project at the Center for Democracy & Technology for six years and led the privacy and security policy work for the HITECH Health IT Policy Committee. She also served as the Chief Operating Officer of the National Partnership for Women and Families. She advised health industry clients on HIPAA compliance and data governance while a partner at Manatt, Phelps & Phillips, LLP. Deven graduated magna cum laude from Georgetown University Law Center and has a Masters of Public Health from Johns Hopkins University.

Alexandra Phelan

Member

Alexandra Phelan is an Assistant Professor at the Center for Global Health Science and Security in the Department of Microbiology and Immunology at Georgetown University School of Medicine. Dr. Phelan also holds an appointment as Adjunct Professor of Law at Georgetown University Law Center. Dr. Phelan works on legal and policy issues related to infectious diseases, with a particular focus on emerging and reemerging infectious disease outbreaks and international law. She has worked as a consultant for the World Health Organization, the World Bank, and Gavi: the vaccine alliance, and has advised on matters including international law and pathogen sharing, human rights law and Zika, intellectual property law, and contract law. She previously worked for a number of years as a solicitor at a firm in Melbourne, Australia and was admitted to practice to the Supreme Court of Victoria and High Court of Australia in 2010. Dr. Phelan's doctorate examined how overlap between fields of international law – in particular, global health law, international human rights law, and international environmental law – can serve as the catalyst to progressively develop international law to prevent and respond to infectious diseases. She also holds a Master of Laws, specializing in international law, from the Australian National University and a Bachelor of Biomedical Science/Bachelor of Laws (Honours) double degree from Monash University. She also holds a Diploma of Languages (Mandarin Chinese). Dr. Phelan is a General Sir John Monash Scholar and was recognized as an Associate Fellow of the Royal Commonwealth Society in 2015 for her human rights advocacy during the 2013-16 Ebola outbreak.

Saskia Popescu

Member

Saskia Popescu is an infectious disease epidemiologist and a Senior Infection Preventionist. In her current role at HonorHealth, she is responsible for high-consequence disease preparedness for a five-hospital system with dozens of clinics. She performs daily surveillance, risk assessments and review of microbiology reports, investigates outbreaks and healthcare-associated infections, and guides policy to ensure safety for patients and staff during medical care. More recently, she has been spearheading COVID-19 response for the hospital system and worked on the frontlines to ensure healthcare workers have the proper training and supplies needed to safely care for infectious patients. During these efforts, she was made a 2017 fellow of the Johns Hopkins Center for Health Security Emerging Leaders in Biosecurity Initiative and has served as an external expert for the European Centre for Disease Control. More recently, Popescu also serves as an Adjunct Professor for the University of Arizona's Mel and Enid Zuckerman College of Public Health Epidemiology and Biostats program. Prior to joining HonorHealth, Popescu was an infection preventionist at Phoenix Children's Hospital, where she led their Ebola readiness and communicable disease surveillance efforts. Popescu's graduate studies began with an MPH in Epidemiology from the University of Arizona, where she was awarded the Frontier Interdisciplinary eXperience (FIX), Homeland Security Career Development Grant in Food Protection and Defense for her research and thesis on food system vulnerability to terrorism. Her research also focused on infectious disease modeling and the airborne transmission of microorganisms, like smallpox, in pressurized air cabins. Following this, she completed a MA in International Security Studies from the University of Arizona, where her research addressed the roadblocks for non-state actors to build bioweapons. This research assessed tacit knowledge and manufacturing barriers, as well as dispersal and diagnostic limitations.Following her masters, Popescu received her PhD in Biodefense from George Mason University. Her honors include receiving the Presidential Scholarship, the Outstanding Doctoral Student award, the Frances Harbour Award, and serving as a George Mason Global Health Security Ambassador for the 5th Annual Global Health Security Agenda (GHSA) Ministerial meeting in Bali, Indonesia. Popescu's research and doctoral dissertation examined the political and economic obstacles for U.S. hospitals to invest in infection prevention and control efforts and the resulting impact on national biodefense. Her analysis included case studies including outbreaks of MERS-CoV, SARS-CoV, Ebola virus disease, and healthcare-associated infections. Popescu has served as a healthcare liaison for the Arizona Department of Health Services BioSense efforts to ensure the syndromic surveillance system is effectively adapted to healthcare. She has published several peer-reviewed articles and book chapters on the importance of infection prevention and biopreparedness. She is a certified infection preventionist through the Certification Board of Infection Control and Epidemiology.

Stuart C. Ray

Member

Stuart Ray serves as Vice Chair of Medicine for Data Integrity and Analytics, Professor in the Division of Infectious Diseases within the Department of Medicine, with secondary appointments in Viral Oncology and Health Sciences Informatics, at the Johns Hopkins University School of Medicine. He directs the virology laboratory and is a clinical investigator in the Center for Viral Hepatitis Research in the Division of Infectious Diseases. He is a faculty member of the graduate Immunology program, the graduate Pharmacology program, and of the Janeway Firm of the Osler Medical Service. Dr. Ray received his M.D. from Vanderbilt University School of Medicine in 1990. After an internship and residency at Johns Hopkins Hospital, he continued there as Assistant Chief of Service in Medicine (1995-1996) and completed a fellowship in infectious diseases. In 1997, Dr. Ray joined the JHU faculty. His laboratory work has focused on viral sequence variation during acute and chronic infections, developing and applying computational and molecular biology tools to underlying mechanisms including stochastic variation, immune selection, and viral fitness. He continues to care for inpatients and outpatients with HIV, HCV, and other infectious diseases. He is an elected member of the American Society for Clinical Investigation, and a Fellow of the American College of Physicians and the Infectious Diseases Society of America. During the COVID-19 pandemic, Dr. Ray has served as attending physician on a dedicated COVID-19 ward at Johns Hopkins Hospital, and as a leader of JHU’s SARS-CoV-2 viral genomic sequencing efforts.

David A. Relman

Member

David Relman is the Thomas C. and Joan M. Merigan Professor in Medicine, and Professor of Microbiology & Immunology, and Senior Fellow at the Freeman Spogli Institute for International Studies at Stanford University. He is also Chief of Infectious Diseases at the Veterans Affairs Palo Alto Health Care System in Palo Alto, California. Relman was an early pioneer in the modern study of the human indigenous microbiota (microbiome). A landmark paper in 1999 and another in 2005 were among the first to describe the human oral and gut microbiota, respectively, with modern molecular methods. Most recently, his work has focused on human microbial community assembly, and community stability and resilience. Principles of disturbance and landscape ecology are tested in clinical studies of the human microbiome. Previous work included the development of methods for pathogen discovery, and the identification of several historically important and novel microbial disease agents. He has advised the U.S. Government on emerging infectious diseases, human-microbe interactions, and future biological threats. He is a member of the Intelligence Community Studies Board at the National Academies of Science, Engineering and Medicine, and served as Chair of the Boards of Scientific Counselors at the National Institute for Dental and Craniofacial Research, and at the National Center for Biotechnology Information, both at NIH, and as President of the Infectious Diseases Society of America (2012-2013). He is a Fellow of the American Academy of Microbiology, and a Member of the National Academy of Medicine.

Julie Segre

Member

Julie Segre received her B.A. summa cum laude in mathematics from Amherst College, where she now serves on the board of trustees. She received her Ph.D. in 1996 from the Massachusetts Institute of Technology in the laboratory of Eric Lander, Ph.D., and the newly formed genome center. Dr. Segre then performed postdoctoral training with Elaine Fuchs, Ph.D., an expert in skin biology, at the University of Chicago. Dr. Segre joined the National Human Genome Research Institute of NIH in 2000 and was promoted to a senior investigator with tenure in 2007. Dr. Segre's laboratory utilizes high-throughput sequencing and develops algorithms to study the microbial diversity of human skin in both health and disease states, with a focus on eczema and other microbial-associated infections. Dr. Segre published the first topographical maps of human skin bacterial and fungal diversity. Dr. Segre's laboratory also develops genomic tools to track hospital-acquired infections of multi-drug resistant organisms, including the NIH's recent Klebsiella pneumoniae outbreak. Dr. Segre's research is based on active collaborations with the NIH Intramural Sequencing Center and the clinical departments of Infection Control, Microbiology, and Dermatology. Dr. Segre is a leader in the NIH Roadmap Human Microbiome Project, communicating with multiple media sources to promote the concept of humans as ecological landscapes. Together with the NIH epidemiologist, Tara Palmore, M.D., Segre received the 2013 Service to America Medal, considered among the most prestigious for a federal employee, for their work to establish the clinical utility of microbial genomics.

Mark S. Smolinski

Member

Mark Smolinski currently serves as President of Ending Pandemics. Dr. Smolinksi brings 25 years of experience in applying innovative solutions to improve disease prevention, response, and control across the globe. Mark is leading a well-knit team—bringing together technologists; human, animal, and environmental health experts; and key community stakeholders to co-create tools for early detection, advanced warning, and prevention of pandemic threats. Since 2009, Mark has served as the Chief Medical Officer and Director of Global Health at the Skoll Global Threats Fund (SGTF), where he developed the Ending Pandemics in Our Lifetime Initiative in 2012. His work at SGTF created a solid foundation for the work of Ending Pandemics, which branched out as an independent entity on January 1, 2018. Prior to SGTF, Mark developed the Predict and Prevent Initiative at Google.org, as part of the starting team at Google’s philanthropic arm. Working with a team of engineers, Google Flu Trends (a project that had tremendous impact on the use of big data for disease surveillance) was created in partnership with the U.S. Centers for Disease Control. Mark has served as Vice President for Biological Programs at the Nuclear Threat Initiative, a public charity directed by CNN founder Ted Turner and former U.S. Senator Sam Nunn. Before NTI, he led an 18-member expert committee of the National Academy of Medicine on the 2003 landmark report “Microbial Threats to Health: Emergence, Detection, and Response.” Mark served as the sixth Luther Terry Fellow in Washington, D.C., in the Office of the U.S. Surgeon General and as an Epidemic Intelligence Officer with the U.S. Centers for Disease Control and Prevention. Mark received his B.S. in Biology and M.D. from the University of Michigan in Ann Arbor. He is board-certified in preventive medicine and public health and holds an M.P.H. from the University of Arizona.

Paul E. Turner

Member

Paul Turner is the Rachel Carson Professor of Ecology and Evolutionary Biology at Yale University, and faculty member in Microbiology at Yale School of Medicine. He studies the evolutionary genetics of viruses, particularly bacteriophages that specifically infect bacterial pathogens, and RNA viruses that are vector-transmitted by mosquitoes. Dr. Turner received a Biology degree (1988) from University of Rochester, and Ph.D. (1995) in Zoology from Michigan State University. He did postdoctoral training at National Institutes of Health, University of Valencia in Spain, and University of Maryland-College Park, before joining Yale's Ecology and Evolutionary Biology Department in 2001. His service to the profession includes Chair of the American Society for Microbiology (ASM) Division on Evolutionary and Genomic Microbiology, as well as membership on the National Science Foundation's Biological Sciences Advisory Committee, ASM Committee on Minority Education, and multiple National Research Council advisory committees. Dr. Turner was elected Member of the National Academy of Sciences, Fellow of the American Academy of Arts & Sciences, Fellow of the American Academy of Microbiology, Councilor of the American Genetic Association, Chair of the Gordon Research Conference on Microbial Population Biology, and Chair of the CNRS Jacques Monod Conference on Viral Emergence. He chaired the Watkins Graduate Research Fellowship award committee for ASM, and received the E.E. Just Endowed Research Fellowship and William Townsend Porter Award from Marine Biological Laboratory, and fellowships from Woodrow Wilson Foundation, NSF, NIH and HHMI. Dr. Turner has served as Director of Graduate Studies and as Chair of the Ecology and Evolutionary Biology Department at Yale, as well as Yale's Dean of Science and Chair of the Biological Sciences Advisory and Tenure Promotion Committees.

Deborah A. Zarin

Member

Deborah Zarin is Program Director, Advancing the Clinical Trials Enterprise, as part of the MRCT Center of Brigham and Women’s Hospital and Harvard. Dr. Zarin was the Director of ClinicalTrials.gov at the National Library of Medicine, NIH, between 2005 and 2018. In that capacity, she oversaw the world’s largest clinical trials registry, as well as the development and implementation of the first public database for summary clinical trial results. She played a major role in the development and implementation of key legal and policy mandates for clinical trial reporting, including regulations under FDAAA (42 CFR Part 11) and the NIH trial reporting policy. Dr Zarin’s current focus is on the quality and reporting of clinical trials, as well as related efforts to improve the functioning of the clinical research enterprise overall. Previous positions held by Dr. Zarin include the Director, Technology Assessment Program, at the Agency for Healthcare Research and Quality, and the Director of the Practice Guidelines program at the American Psychiatric Association. In these positions, Dr. Zarin conducted systematic reviews and related analyses in support of evidence based clinical and policy recommendations. Dr. Zarin graduated from Stanford University and received her doctorate in medicine from Harvard Medical School. She completed a clinical decision making fellowship and a pediatric internship, and is board certified in general psychiatry as well as in child and adolescent psychiatry.