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**Innovations for Tackling Tuberculosis in the Time of
COVID-19**

A Two-Part Virtual Workshop

WORKSHOP SPEAKER BIOGRAPHIES

Sir John Bell GBE, FRS is Regius Professor of Medicine at Oxford University. He served as President of the Academy of Medical Sciences from 2006 to 2011 and chaired the Office for the Strategic Coordination of Health Research until 2017. As a Rhodes Scholar (1975-78), Sir John undertook his medical training in the UK and then went on to Stanford University, returning to the UK in 1987. His research interests are in the area of autoimmune disease and immunology where he has contributed to the understanding of immune activation in a range of autoimmune diseases. In 1993, he founded the Wellcome Trust Centre for Human Genetics, one of the world's leading centres for complex trait common disease genetics. In 2001, he was appointed non-executive director of Roche Holding AG and in 2008 he joined the Gates Foundation Global Health Advisory Board which he has chaired since 2012. He is Chair of the Rhodes Trust. In December 2011, Sir John was appointed one of two UK Life Sciences Champions by the Prime Minister. He sits on the board of Genomics England Limited and chairs its Science Advisory Committee. He was appointed Knight Grand Cross of the Order of the British Empire (GBE) in the 2015 New Year Honours for services to medicine, medical research and the life science industry. In August 2017, the UK Life Sciences Industrial Strategy, written by Sir John, was published and he has co developed a similar follow up report in 2021 called the Life Sciences Vision. The reports, written in collaboration with industry, academia, charity, and research organisations, provides recommendations to HM Government on the long-term success of the life sciences sector. Out of these initiatives he has also taken responsibility for Our Future Health, the UK's largest cohort initiative where he chairs the Board. Sir John has held prominent roles during the Covid epidemic, enabling the development of the testing platforms for LFTs and helping to initiate the PCR program nationally as well as helping to manage the relationship with Astra Zeneca that produced the Oxford AZ vaccine.

Michael V. Callahan, M.D., DTM&H, MSPH, Dr. Michael Callahan is an attending physician at Massachusetts General Hospital (MGH) in internal medicine and infectious disease, and Director for Translation at the Vaccine & Immunotherapy Center (VIC). During 2020-21, he was special COVID Advisor to the Assistant Secretary of Public Health Preparedness (ASPR) of the Department of Health and Human Services (HHS). Dr. Callahan has conducted federal-funded basic and translational research in zoonotic and tropical infectious disease, sepsis and immune therapeutics since 1986. In 1988 he patented liposomal encapsulated amphotericin, known commercially as Ambisome (GILD). He has 1 additional therapy in market and 4 in clinic. Following fellowship he worked in Sub Saharan Africa on low resource surveillance and therapies for TB and zoonotic diseases, including Lassa, cutaneous anthrax, and filovirus. In 2001, following the American anthrax attack, he was recruited to MGH to head Biodefense. In 2002, he led a Dept of State funded Cooperative Threat Reduction program to redirect former biological weapons scientists to zoonotic vaccine R&D, with programs at VECTOR, Obolensk, Highly Pure and RITOP. His work in Central Asian avian influenza surveillance was the subject of the 2004 Discovery documentary,

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Flu Time Bomb. In 2004 he was recruited back to the U.S. by the Defense Advanced Research Projects Agency (DARPA) to run the \$260M Accelerated Manufacture of Pharmaceuticals program, to protect the Nation against natural and intentional pandemics. While at DARPA, Dr. Callahan initiated 8 programs, investing over \$600M, developing multiple FIH therapeutics, launching 11 companies from TRL 1, three of which have exceeded \$1B in revenues within 8-years. In 2012, he became President of Cell Therapies at United Therapeutics (UTHR) where he oversees clinical translation and cell therapy trials. Callahan has authored over 50 peer-reviewed papers, abstracts and National Academy/ Institute of Medicine Reports, 15 chapters in major medical textbooks, and 8 international patents. Prior to 2020, he was funded as annual visiting professor at teaching hospitals in Kaduna, Bangkok, and Nanjing.

Richard E. Chaisson, M.D., is Professor of Medicine, Epidemiology, and International Health and directs the Center for AIDS Research and the Center for Tuberculosis Research at the Johns Hopkins University School of Medicine and Bloomberg School of Public Health in Baltimore, MD, USA. He directed the Johns Hopkins AIDS Service from 1988-1998 and was Medical Director of the Baltimore City Health Department Tuberculosis Control Program from 1991-1999. His research interests focus on tuberculosis and HIV infection, including epidemiology, clinical trials, diagnostics, and population-level interventions. He founded and led the Consortium to Respond Effectively to the AIDS-TB Epidemic (CREATE), and was the inaugural chair of the TB Transformative Science Group of the AIDS Clinical Trials Group, leading the development and implementation of this NIH-funded network's TB clinical trials portfolio. He has led numerous NIH-, CDC-, and FDA- funded trials of TB and TB/HIV interventions over the past 30 years. He received his MD from UMass Medical School and trained in internal medicine, infectious diseases, and epidemiology at UCSF. He is a member of the Association of American Physicians and has received honorary awards from the American Thoracic Society, CDC, International Union Against TB and Lung Disease, and USAID.

Gavin Churchyard, M.B.B.Ch., M.MED. (Int Med), FCP (SA), FRCP (Edin), Ph.D., is a specialist physician, internationally renowned for his contributions in tuberculosis (TB) research. Prof Churchyard is the founder and Group Chief Executive Officer of the Aurum Institute, an independent, not for profit, proudly South African, public benefit organization that focuses on TB and HIV technical assistance, service delivery, and research. Prof Churchyard is an Honorary Professor at the University of Witwatersrand and University of Cape Town. Prof Churchyard and adjunct Professor at Vanderbilt University and is the Chair of the AIDS Clinical Trials Group (ACTG) Transformative Science Group for TB and the NIH/DAIDS Cross-Network TB vaccine Working Group. He has extensive clinical trials experience and has conducted numerous TB and HIV vaccine trials.

Rhea Coler, M.Sc., Ph.D., is a senior investigator at the Center for Global Infectious Disease Research, Seattle Children's. She has over 20 years of experience in studying the pathogenesis of infectious disease pathogens, biomarker discovery and vaccine development in academic, biotechnology and non-profit environments. Her expertise in infectious disease and emerging epidemics was obtained through positions held in the UK, the Caribbean, Africa, and the US. Dr. Coler serves as a scientific advisor or committee member for global health and/or pandemic, epidemic-prone infectious diseases at The World Health Organization, The Infectious Diseases Clinical Research Consortium (IDCRC) and Vaccine and Treatment Evaluation Units (VTEUs) working in tandem with the National Institute of Allergy and Infectious Diseases (NIAID), The University of Washington, and the Bill & Melinda Gates Medical Research Institute, as well

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as having a professorship in the University of Washington School of Medicine Department of Pediatrics and an affiliate professorship at the University of Washington in the Department of Global Health.

Mark Dybul, M.D., A.B., (*NAM Member*) is CEO of Enochian BioSciences; Professor of Medicine at Georgetown University; former US Global AIDS Coordinator of PEPFAR; former Executive Director of the Global Fund to Fight AIDS, TB and Malaria; and has received several honorary degrees and international awards.

Bruce Gellin M.D., M.P.H., is the Chief of Global Public Health Strategy for The Rockefeller Foundation's Pandemic Prevention Institute and lead's it Global Vaccination Initiative. In these roles, he advances the development and execution of the strategic vision for global public health with a focus on strengthening our global early warning system, to bring the COVID-19 pandemic to an end by improving equitable access to COVID-19 vaccines and strengthening the programs that turn vaccines into vaccinations.

Before joining The Rockefeller Foundation was President of Global Immunization at the Sabin Vaccine Institute following a long career in government and academia: as the US Department of Health and Human Services as Deputy Assistant Secretary for Health and Director, National Vaccine Program Office within the Office of the Assistant Secretary for Health and past positions at the National Institute of Allergy and Infectious Diseases (NIH) and the Centers for Disease Control and Prevention (CDC) and at Vanderbilt University School of Medicine, and Johns Hopkins University School of Public Health. In addition, was the founder and executive director of the National Network for Immunization Information, an organization he founded to be a resource of up-to-date, authoritative information about vaccines and immunizations. He has been a regular consultant to the World Health Organization. He currently has faculty appointments at Georgetown University School of Medicine and Vanderbilt University School of Medicine. Dr. Gellin is a graduate of the University of North Carolina (Morehead Scholar), Cornell University Medical College, and the Columbia University School of Public Health, is an infectious disease expert with training in epidemiology. He has written extensively about public health aspects of infectious diseases in medical and non-medical texts and the peer-reviewed medical literature and also served as a medical advisor to Encyclopedia Britannica.

Amanda Glassman, M.Sc., is executive vice president and senior fellow at the Center for Global Development and also serves as chief executive officer of CGD Europe. Her research focuses on priority-setting, resource allocation and value for money in global health, as well as data for development. Prior to her current position, she served as director for global health policy at the Center from 2010 to 2016, and has more than 25 years of experience working on health and social protection policy and programs in Latin America and elsewhere in the developing world. Prior to joining CGD, Glassman held positions at the Inter-American Development Bank, Brookings, and the US Agency for International Development. Glassman holds a MSc from the Harvard School of Public Health and a BA from Brown University, has published on a wide range of health and social protection finance and policy topics.

Eric Goosby, M.D., is an internationally recognized expert on infectious diseases, with a specialty in HIV/AIDS clinical care, research, and policy. During the Clinton Administration, Dr. Goosby was the founding director of the Ryan White CARE Act, the largest federally funded HIV/AIDS program in the

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U.S. He went on to become the interim director of the White House's Office of National AIDS Policy. In the Obama Administration, Dr. Goosby was appointed Ambassador-at-Large and implemented the U.S. President's Emergency Plan for AIDS Relief (PEPFAR).

He was appointed by the UN Secretary-General as the Special Envoy on Tuberculosis in 2015 where he focused on the first-ever UN High-Level Meeting on TB in 2019. Most recently, he served as a member of the Biden-Harris Transition COVID-19 Advisory Board. He is a Professor of Medicine at the UCSF School of Medicine and leading the Center for Global Health Delivery, Diplomacy and Economics, Institute for Global Health Sciences. He is a member of the Western States Scientific Safety Review Workgroup, and serves on the San Francisco Dept. of Public Health, Policy Group for the COVID-19 Response.

Margaret A. Hamburg, M.D., is an internationally recognized leader in public health and medicine, who currently serves as VP for Biological Programs and Policy at the Nuclear Threat Initiative (NTI) where she also sits a member of the NTI Board. She previously served as Foreign Secretary of the National Academy of Medicine, acting as senior advisor on international matters and liaison with other Academies of Medicine around the world. In addition, she recently completed terms as Chair/President of the American Association for the Advancement of Science (AAAS). Dr. Hamburg is a former Commissioner of the U.S. Food and Drug Administration (FDA), where she served for almost six years. Before joining FDA, Hamburg was founding vice president and senior scientist at the Nuclear Threat Initiative. Previous government positions include Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, Health Commissioner for New York City, and Assistant Director of the National Institute of Allergy and Infectious Diseases, National Institutes of Health.

Dr. Hamburg currently sits on a range of boards, including the Commonwealth Fund, the Simons Foundation, the Urban Institute, the Global Alliance for Vaccines and Immunization, The Nature Conservancy and the Lasker Foundation, the American Museum of Natural History and Alnylam Pharmaceuticals. She is chair of the Joint Coordinating Group for the Coalition for Epidemic Preparedness and Innovation, and a member of the Harvard University Global Advisory Council, the Global Health Scientific Advisory Committee for the Gates Foundation, the Harvard Medical School Board of Fellows (Chair), and the World Dementia Council. She currently co-chairs the WHO Expert Advisory Group on Human Genome Editing and Global Governance

Dr. Hamburg is an elected member of the Council on Foreign Relations, the American Academy of Arts and Sciences and the National Academy of Medicine, and recipient of multiple other honors, honorary degrees and awards. She earned her B.A. from Harvard College, her M.D. from Harvard Medical School and completed her medical residency at Weill Cornell Medical Center.

David Hermann, Pharm.D., has over 30 years of clinical drug development experience and is a long-standing champion of model-informed drug development. After receiving his Pharm.D. from the University of Illinois in 1988, Dr. Hermann completed a two-year fellowship in Clinical Research and Drug Development supported by the University of North Carolina and Glaxo. He then held various positions of increasing responsibility at Glaxo, Pharsight, and Pfizer. Responsibilities included leading early clinical development teams, crafting clinical development and dose selection strategies, and driving the application of contemporary modeling and simulation techniques into the development process. In 2005, Dr Hermann received the BIO-IT World Grand Prize award for “Best Practices in Computational Biology and

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Informatics” for modeling and simulation work he led while at Pfizer. In 2012, Dr Hermann began consulting with The Bill & Melinda Gates Foundation’s TB team and in 2017 he joined the foundation where he currently has the privilege of serving as Deputy Director in the Global Health Division overseeing the TB Drug Initiative. In this role he is responsible for guiding investment strategies to shepherd the next generation of TB drug regimens.

Daniel Kalman, Ph.D., has a B.S. in Mathematics and a Ph.D. in Neuroscience from UCLA. His postdoctoral work with J. M. Bishop at UCSF in cancer biology concerned mechanism by which pathogens use the host cytoskeleton for motility. He is now the G. Pope Huguley Professor of Pathology at Emory University in Atlanta. His research focuses on healthspan, the capacity to live better for longer, and how diseases of frailty such as tuberculosis (TB) shorten healthspan. Dr. Kalman studies how diverse pathogens, including *Mycobacterium tuberculosis* (Mtb)), use a host protein tyrosine kinase called Abl to cause disease. Abl is known for its role in cancer, where its dysregulation causes chronic myelogenous leukemia (CML). CML is treated with a specific Abl inhibitor called Gleevec. The discovery of a role for Abl in TB pathogenesis in 2002, led Dr. Kalman to propose that “host-directed therapeutics” like Gleevec might be repurposed to treat TB. Dr. Kalman and his team are currently conducting a clinical trial to test the efficacy of Gleevec against TB in humans. The general strategy of using “host-directed therapeutics” for TB may have certain advantages over conventional antibiotics; HDTs are less likely to engender resistance compared to conventional antibiotics directed at microbial targets, and HDTs are likely to have efficacy against bacterial strains that are resistant to some or all conventional antibiotics. Dr. Kalman’s work is supported by NIH.

Rebecca Katz, Ph.D., M.P.H., is a Professor and Director of the Center for Global Health Science and Security, and holds joint appointments in Georgetown University Medical Center and the School of Foreign Service. She teaches courses on global health diplomacy, global health security, and emerging infectious diseases in the Science, Technology and International Affairs, Security Studies, and Global Infectious Disease Programs. Since 2007, much of her work has been on the domestic and global implementation of the International Health Regulations as well as global governance of public health emergencies. From 2004 to 2019, Dr. Katz was a consultant to the Department of State, working on issues related to the Biological Weapons Convention, pandemic influenza and disease surveillance. She returned to the Department of State in January 2021 as a senior advisor on the global COVID-19 response and global health security.

Dr. Katz received her undergraduate degree from Swarthmore College, an M.P.H. from Yale University, and a Ph.D. from Princeton University. She is a member of the Council on Foreign Relations.

Aamir Khan, Ph.D., M.D., M.B.B.S., is a medical epidemiologist and social entrepreneur based in Singapore.

In 2004, Dr. Khan co-founded Interactive Research and Development (IRD), a Singapore-based not-for-profit committed to improving global health and development through process and technology innovations. IRD has global health delivery teams operating from offices in Dhaka, Ho Chi Minh, Jakarta, Johannesburg, Karachi, Lagos and Manila supporting programs in over 20 countries. He has led large scale service delivery grants for diagnosing, treating and preventing TB, HIV, malaria and immunizations.

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Dr. Khan trained in medicine at the Aga Khan University and has a PhD in international health from the Johns Hopkins University.

Bjørn Lomborg, Ph.D., M.A., is president of the Copenhagen Consensus Center, and visiting fellow at the Hoover Institution, Stanford University. The Copenhagen Consensus Center is a think-tank that researches the smartest ways to do good. For this work, Dr. Lomborg was named one of TIME magazine's 100 most influential people in the world. His numerous books include "False Alarm: How Climate Change Panic Costs Us Trillions, Hurts the Poor, and Fails to Fix the Planet", "The Skeptical Environmentalist", "Cool It", "How to Spend \$75 Billion to Make the World a Better Place", "The Nobel Laureates' Guide to the Smartest Targets for the World 2016-2030" and "Prioritizing Development: A Cost Benefit Analysis of the UN's SDGs".

Monique K. Mansoura, Ph.D., M.S., M.B.A., joined The MITRE Corporation as the Executive Director for Global Health Security and Biotechnology in September 2017. She brings technical, policy and business expertise from both the public and private sectors. For twenty years she has been a trailblazer on the development and sustainability of the industrial base and resilient supply chains central to the public-private partnerships that are vital to global health security, the bioeconomy and healthcare. She was a leader of the COVID-19 Healthcare Coalition, led by MITRE and the Mayo Clinic and received the MITRE President's Award in recognition of that work.

During a recent sabbatical, Dr. Mansoura explored new business models and financial vehicles for raising and deploying funds to enhance global health security as a Research Affiliate of the MIT Laboratory for Financial Engineering (LFE), led by Professor Andrew Lo.

She serves on the Board of the International Cancer Expert Corps (ICEC) and is dedicated to capacity and capability building for the provision of cancer care in low- and middle-income countries and in doing so, bridging the investment dichotomy between infectious diseases and cancer.

Dr. Mansoura earned a PhD in Bioengineering and a M.S. in Human Genetics from the University of Michigan, a B.S. in Chemical Engineering from Wayne State University, and an MBA in the Sloan Fellows Program in Innovation and Global Leadership at MIT.

Dr. Mansoura co-chaired (with Richard Hatchett) the 2015 IOM Workshop Planning Committee "Enabling Rapid Response and Sustained Capability with Medical Countermeasures to Mitigate Risk of Emerging Infectious Diseases" and served on the 2009-2010 workshop planning committee for "The Public Health Emergency Medical Countermeasures Enterprise - Innovative Strategies to Enhance Products from Discovery through Approval."

Zvi Marom, M.D., M.Sc., founded BATM in 1992. A former first lieutenant in the Israeli Navy, he graduated with excellence in Electronics from the Naval Academy and with excellence from the Advanced Naval Command Course. He has a post-graduate degree in medicine from the Sackler – Gold Schlagger School of Medicine, Israel and an MSc in Industrial Electronics. Dr. Marom is on the boards of several national and international academic committees for computing and communications, and was the Chairman of the Board of the Israeli Hi-Tech & Innovation Industries Association of the Manufacturers' Association of Israel until January 2021. He is currently a director of Shore Capital Group plc (UK).

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Matthew McMahon, Ph.D., leads the SEED Office (Small business Education and Entrepreneurial Development) in helping to transform cutting-edge technologies into products that improve health and save lives. The SEED team educates and assists NIH-funded innovators as they transition from discovery science to product development. SEED helps academic innovators validate the potential health impacts of their discoveries through a national network of proof-of-concept centers and provides a host of professional advisory services to small business innovators funded by NIH's \$1.2 billion/year SBIR and STTR programs. Dr. McMahon has a diverse background in academia, small business, congressional policy, and NIH program management. He previously served as the first director of the National Heart, Lung, and Blood Institute's Office of Translational Alliances and Coordination, and he created and led the National Eye Institute's Office of Translational Research. His previous experience also includes service as the principal scientist for the bionic eye company Second Sight Medical Products and as a staff member on both the United States Senate and House of Representatives committees responsible for science, technology, and innovation policy. Dr. McMahon holds a B.S. in Optical Engineering from the University of Rochester and a M.A and Ph.D. in Experimental Psychology from the University of California, San Diego.

Payam Nahid, M.D., M.P.H., is a pulmonologist, epidemiologist and TB clinical trialist. He is the Director of the UCSF Center for Tuberculosis and Director of Clinical Trials Operations at UCSF. As principal investigator of NIH-funded studies on diagnostics, biomarkers and novel therapeutics in TB, Dr. Nahid conducts research in partnership with the Vietnam National TB Programme as well as internationally as part of networks. He is Protocol Co-Chair of Study 31/A5349. He has led and participated in US and WHO TB practice guidelines and has served on WHO technical consultations on TB therapeutics and vaccines.

Edward Nardell, M.D., is a physician with a specialty in pulmonary medicine. His interest in TB control and airborne infection began with investigating institutional TB outbreaks in Boston when he was the TB Control Officer for the Boston and Massachusetts DPH. In consultation with Richard Riley, we re-establishment his Baltimore human-to-guinea pig TB transmission research facility in South Africa. NIOSH, BMGF, and NIH-funded studies there over 15 years led to new insights into TB pathogenesis, transmission, and transmission control, especially the role of medical facemasks and air disinfection with germicidal UV light. Dr. Nardell and colleagues also generated evidence that effective treatment rapidly stops TB transmission, including most drug resistant TB. This renewed insight led to a novel approach to administrative TB infection control called FAST: Find cases Actively, Separate temporarily, and Treat effectively. FAST has been widely deployed in high transmission settings where it has been shown to find unsuspected TB and unsuspected drug resistance and accelerate that start of treatment. In Russia, FAST reduced the generation of MDR TB by reducing the time to diagnosis and effective treatment. Most recently, Dr. Nardell and colleagues showed that the NIX regimen rapidly stops DR TB transmission whereas the addition of bedaquiline and linezolid alone did not.

Norbert Ndjeka, M.D., M.Med., is the Director, Drug-Resistant TB, TB & HIV at National Department of Health in South Africa since May 2009. He previously served as an MDR-TB Advisor under University Research Corporation and Honorary Senior Lecturer in Family Medicine at the Medical University of Southern Africa.

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He is a Specialist Family Physician with interest in TB and HIV. He was the Principal Investigator of the SA Bedaquiline Clinical Access Programme and the Delamanid Clinical Access Programme. He is the Principal Investigator of the BPaL Clinical Access Programme in South Africa.

He is currently the Chairperson of the Afro-GLC (African Green Light Committee). He recently received an Honorary Doctorate from UCT in recognition of his outstanding contribution to the fight against DR-TB locally and globally.

He obtained a degree of Master of Medicine in Family Medicine, a medical degree, a diploma in health services management and a diploma in HIV Management. His vision is to strengthen the programmatic and clinical management of Drug-Resistant TB (DR-TB). Under his leadership, there has been a decline in the number of cases of DR -TB in South Africa and a remarkable improvement in proportion of patients successfully treatment for DR- TB.

Steve Reed, Ph.D., is the co-founder, President, and CEO of HDT Bio, based in Seattle, USA. His academic appointments include Adjunct Professor of Medicine at Cornell University Medical College Research Professor of Pathobiology at the University of Washington.

Dr. Reed received a PhD in Microbiology and Immunology from the University of Montana in 1979. That year he was appointed as Scientist of the National Institute of Amazon Research in Manaus, Brazil, where he directed research on tropical diseases.

Dr. Reed joined Cornell University Medical College in 1980 as Assistant Professor of Medicine, continuing to work in Brazil as manager of the Cornell-Bahia program in International Medicine. He joined the Seattle Biomedical Research Institute in 1984 where he worked until founding the Infectious Disease Research Institute (IDRI) in 1993 when he served in various capacities until 2019. He has received over \$140 million in grants from the NIH, BARDA, DARPA, and Gates Foundation. In 1994 he co-founded Corixa Corporation (which was later sold to GlaxoSmithKline, GSK) where he served as Chief Scientific Officer until leaving in 2004. In 2008 Dr. Reed, together with Rick Klausner, David Baltimore, and Ralph Steinman founded Immune Design Corp. (IMDZ, NASDAQ), a cancer therapeutics company, where he served as CEO until 2011. In 2014 he co-founded Afrigen Biologics in Cape Town, to facilitate local manufacturing of vaccine technologies, where he served as Director until 2019.

Dr. Reed's research interests have focused on the immunology of intracellular infections, and on the development of vaccines and diagnostics for both cancer and infectious diseases. In particular, his research has focused on vaccine adjuvant development. In partnership with GSK, he led the team that developed the first defined tuberculosis vaccine, now in advanced clinical development. He also developed the first defined vaccines for leishmaniasis and leprosy, as well as the K39-based diagnostic tests currently licensed for leishmaniasis. He has more than 400 original publications, 36 book chapters and reviews, and 109 issued patents on diagnostics, vaccines, and therapeutics of adjuvants, cancer, and infectious diseases.

Mike Reid M.B.B.S., M.A., M.P.H., is an Assistant Professor of Medicine in the Department of Medicine at the University of California, San Francisco (UCSF). He currently serves as Associate Director of the Center for Global Health Diplomacy, Delivery and Economics, and since the start of the COVID-19 pandemic, as Executive Director of UCSF's Pandemic Initiative for Equity and Action.

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Dr. Reid is a board-certified infectious disease physician whose analytic work and research has focused on donor financing for tuberculosis, estimating financing needs and improving impact. Between 2017 and 2020, Dr. Reid ran the secretariat of the Lancet Commission on Tuberculosis which led to the publication of ‘Building a TB-free world’ Commission report in 2019.

Since the start of the COVID-19 pandemic, Dr. Reid’s role has expanded to support COVID-19 related policy, research and technical work, and he now oversees a large pandemic-focused public health initiative at UCSF.

He did his medical training at Cambridge University and medical residency in London, England and New York, USA. He received his MPH from UC Berkeley and did his infectious diseases fellowship at UCSF in San Francisco. Dr. Reid has published more than 80 peer-reviewed publications primarily focused on TB, HIV, donor financing and health system strengthening.

Morten Ruhwald, M.D., Ph.D., leads the TB programme at FIND in Geneva, Switzerland. Prior to joining FIND, Dr. Ruhwald was Chief Medical Officer at Statens Serum Institut in Copenhagen, Denmark where he oversaw the clinical development of TB and Chlamydia vaccines and specific skin tests for TB infection. At FIND Dr. Ruhwald oversees a large portfolio of development projects and clinical trials spanning biomarkers, immunoassay e.g. next generation LAM assays; molecular assays for TB detection and drug resistance detection; next gen. sequencing; digital diagnostics and AI based tools. A key aim of the program is to develop and trial new non-sputum based tests and sampling strategies to prepare for the post pandemic recovery of TB programs in LMICs.

Alex Schmidt, M.D., Ph.D., is the Head of Vaccine Development at the Bill & Melinda Gates Medical Research Institute. He joined Gates MRI in 2018 after 7 years with GSK Vaccines, where he led clinical vaccine development programs for dengue, RSV and influenza virus vaccines. Prior to joining industry, he spent ten years in the Laboratory of Infectious Diseases, NIAID, NIH and five years in academic medicine. Dr. Schmidt’s main interests are vaccine development and global health. He started his research career in lab-based research on host-pathogen interactions for negative strand RNA viruses, and then focused on preclinical, translational and clinical development for viral vaccines until he joined Gates MRI. At the MRI, he leads vaccine development for tuberculosis, malaria, and diarrheal diseases.

Dr. Schmidt is a member of the American Society for Microbiology, the American Society of Virology and the American Society for Tropical Medicine and Hygiene. He is a recipient of the NIH Director’s Award and several NIAID awards.

Dr. Schmidt received his M.D. from Freie Universität Berlin, trained in pediatrics at Charité and at The German Heart Center in Berlin, and held a faculty position in pediatrics at Charité.

Tharman Shanmugaratnam, M.P.A., is Senior Minister in Singapore, having served for several years as Deputy Prime Minister and Finance Minister. He is also Coordinating Minister for Social Policies, and chairs the National Jobs Council aimed at building skills and jobs in the wake of COVID-19. He is concurrently Chairman of Singapore’s central bank and financial regulator.

Tharman co-chairs the G20 High Level Independent Panel on financing the global commons for pandemic preparedness and response, which recently launched its report and recommendations. He earlier led the G20

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Eminent Persons Group on Global Financial Governance, which in 2018 proposed reforms in development finance and the international monetary system for a more cooperative international order.

Tharman chairs the Group of Thirty, an independent council of economic and financial leaders from the public and private sectors and academia. He also co-chairs the Global Education Forum, and the Advisory Board for the UN's Human Development Report. He earlier chaired the International Monetary and Financial Committee (IMFC) for four years; he was its first Asian chair.

Tharman has spent his working life in public service, in roles principally related to economic and social policies. In addition to his responsibilities in Government, he is Deputy Chairman of GIC and chairs its Investment Strategies Committee.

Kaiser Shen, M.P.H., serves as the Senior TB Diagnostic Technical Advisor in the TB Division/ Office of Infectious Diseases/Global Health Bureau at USAID. In this role, Kaiser aims to strengthen TB diagnostic capacity and increasing patient access to quality diagnostic networks globally. He also supports PEPFAR-funded USAID TB laboratory activities through monitoring and advising USAID partners on laboratory interventions. Previously, Kaiser served as a Senior Specialist for the Association of Public Health Laboratories, managing PEPFAR-related laboratory systems strengthening activities. Kaiser has worked in the academic arena with biomedical research experience in immunology, microbiology and vaccine development. Kaiser holds a Master of Public Health from John Hopkins Bloomberg School of Public Health and a Master of Science in Microbiology from the University of Michigan.

Ezra Shimeles, M.D., M.P.H., attended several international trainings on TB including implementing the end TB strategy, MDR/XDR-TB, TB/HIV management, infection control, Management development program, international training on influencing, networking and partnership, etc. With over two decades of experience working at different tiers of the health system specializing in TB and TB/HIV control program, he has extensive international experience in supporting several countries covering the different aspects of TB program including care management, prevention, TB/HIV, PMDT, infection control, Epidemiology and M&E, surveys, program management and coordination. He has worked as TB Epidemiologist at Global level supporting high burden countries in improving TB M&E system, data analysis and use for action and improvement. Before that, he has worked as Country Director for TBCARE/USAID project in Ethiopia, international TB consultant for Africa and Asia providing technical assistance and project monitoring covering twenty countries, as WHO TB advisor for TB M&E and capacity building, as TB/HIV advisor for Columbia University-International Centre for AIDS Care and treatment project.

Adrian Thomas, FRACP, M.B.B.S., serves as Vice President, Strategy & External Affairs within the Global Public Health organization at Johnson & Johnson. His team supports global strategy & external affairs efforts across the diverse public health portfolio of Johnson & Johnson including HIV, Drug-Resistant Tuberculosis, Soil-Transmitted Helminths, Mental Health, Global Surgery and Vaccines; as well as supporting the organization's early portfolio. Dr. Thomas is a physician with a special interest in the fields of public health policy, market access, medical affairs, drug safety and commercial strategy. He has held numerous public health, commercial and research roles in Johnson & Johnson including Global Head of Market Access, Medical Affairs and Business Insights for Janssen, and Global Head of Health Economics & Market Access for the Medical Device companies of Johnson & Johnson. Prior to this, he

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served in risk management and drug safety, including Global Head of Benefit Risk Management for Johnson & Johnson and Chief Safety Officer for Janssen.

Prior to joining J&J, Dr. Thomas held roles in regional medical affairs, drug development and product management for Schering-Plough and Eli Lilly. He is a clinical pharmacologist and a vascular physician with experience in clinical trials design and methodology.

Dr. Thomas is a Fellow of the Royal Australasian College of Physicians and the College of Medical Administrator's. He graduated in medicine from the University of Melbourne in Australia. He is based in New Hope, Pennsylvania.

Bruce V. Thomas, J.D., is Founder & Managing Director of The Arcady Group, LLC, a consulting company that helps purpose-driven organizations and businesses address global health issues and improve patient health outcomes by addressing key challenges relating to medication access and adherence. Bruce is both a consultant to, and grantee of, the Bill & Melinda Gates Foundation, where he leads the development and scale-up of new technologies and approaches to (i) improve medication adherence and support differentiated care for TB and HIV patients in China, India, and Sub-Saharan Africa, and (ii) to reduce the impact of dengue, Zika, and Chikungunya in a wide range of resource-limited settings. Bruce also is a Senior Adviser to the Medicines for All Institute, a Virginia-based, Bill & Melinda Gates Foundation and USAID-funded organization that uses novel chemistry approaches to dramatically reduce the cost of, and thus improve access to, a wide range of HIV, TB, NTD, and malaria medications. Finally, Bruce serves as Adherence Subject Matter Expert to Novartis Pharmaceuticals' Digital Medicines – helping bring health outcomes-enhancing digital tools to patients, doctors, and nurses around the world.

Previously, Bruce served as President of WestRock Healthcare, the global healthcare division of WestRock, a \$30B global packaging business.

Anna Vassall (TBD)

Luan Nguyen Quang Vo, M.P.H., For the past ten years Luan has been working in tuberculosis and HIV as chairman of Friends for International TB Relief in Hanoi, Vietnam as well as finance director of a Delhi-based TB NGO named Operation ASHA before that. Prior to public health, Luan worked for seven years in financial and transaction advisory at KPMG in Frankfurt, Germany, and NYC, USA, and pharmaceutical consulting at TargetRx in Philadelphia, USA.

Luan has worked closely with the Vietnam National TB Control Program, supporting the development of guidelines for LTBI management and community-based active case finding as well as the National Action Plan to End TB and the 2015-2020 End-term Program Evaluation. He is member of Vietnam's Technical Advisory Group on TB to the Global Fund CCM.

Outside of Vietnam, Luan is board member of the International Union Against TB and Lung Disease and has served as consultant to the Stop TB Partnership and UKRI Innovate UK for guideline development and proposal review.

Luan holds a master of public health from the London School of Hygiene and Tropical Medicine, and a bachelor in biomedical engineering and mathematics from the University of Pennsylvania.

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Eran Zahavy, Ph.D., has nearly 20 years of leading positions in the R&D in Chemistry, Biology, Biophysics and IVD in the government research institutes and industry. Dr. Zahavy had served as the Head of Innovation IIBR (Israel's Institution for Biological Research) for the last 5 years including during the Covid pandemic crisis. In this capacity he had led significant new collaborations, including the COVID-19 vaccine (BriLife) development and its license to NRX. Dr. Zahavy served as CTO at Israel leading clean-tech incubator "Hutchison-Kinorot" and CTO of TACount, developing rapid bacteria detection in water and clinical samples. Dr. Eran Zahavy holds a PhD in Chemistry & Biophysics from the Hebrew University and a Post Doc from the University of TX, Austin. He has worked with Adaltis part time in the last several years and will join full time in Oct. 2021.

Matteo Zignol, M.D., M.P.H., is the Unit Head of the Prevention, Diagnosis, Treatment, Care and Innovation unit at the WHO Global TB Programme in Geneva, Switzerland. The focus of his unit is to develop policy guidelines throughout the spectrum of TB prevention, screening, diagnosis, treatment and care; shape the TB research agenda; lead the development and publication of global TB research strategies and approaches; and stimulate the generation, translation and dissemination of valuable knowledge.

Dr Zignol has been working at WHO since 2003. In recent years, he led the Research for TB Elimination team and previously he coordinated the Global Project on Anti-Tuberculosis Drug Resistance Surveillance and, as part of it, managed a multi-country project on the use of genetic sequencing for surveillance of drug resistance.

Dr Zignol is an infectious disease specialist and clinical epidemiologist. He holds a MD from the University of Padua, Italy, and an MPH from Johns Hopkins University, Baltimore, US. He has contributed to several peer reviewed publications on different topics in peer review journals and has written several book chapters.