

THE influenzer INITIATIVE | SABIN VACCINE INSTITUTE

Influenza Vaccine Innovation Program Impact Report

May 31, 2024

Table of Contents

Executive Summary 3
Introduction 4
Strategic Purpose 5
Impact and Legacy 8
- Creating a Transdisciplinary Audience 8
- Building Partnerships, Extending Impact 11

Conclusion 12
Acknowledgements 12
Appendix: Expert Interviewees 13

Executive Summary

The Sabin Vaccine Institute's Influenza Vaccine Innovation (IVI) program drove impact and awareness of influenza's devastating pandemic potential and catalyzed problem-solving conversations to counteract this threat. The 1918 Influenza Pandemic claimed the lives of approximately 50 million people worldwide in less than 2 years—5 times the number of soldiers killed in all of World War I. Still today, seasonal influenza bears a heavy burden on communities across the world, with the World Health Organization estimating that approximately 1 billion people are infected and about 700,000 die each year from influenza.

Recognizing the potential power and increasing scientific feasibility of a universal influenza vaccine (UIV)—as opposed to an annual seasonal vaccine—IVI initiated collaborative engagement beyond traditional vaccinology and immunology, attracting experts from scientific disciplines to accelerate innovation in influenza vaccine research and development. Responding to the simultaneous constraint and opportunity presented by the COVID-19 crisis, IVI drew on and expanded its transdisciplinary & multi-sectoral network to create content that invited all scientists, policy makers and the science-interested public to join these critical conversations.

IVI's activities were guided by the concept of convergence: an approach to solving complex scientific and societal problems—such as those posed by influenza—by building novel, cross-disciplinary networks to spark scientific discovery and innovation. IVI was itself launched by such an effort with a landmark 2019 report on UIV development produced by the Sabin-Aspen Vaccine Policy Group featuring key recommendations to accelerate progress toward a UIV. Throughout 2019 and early 2020, IVI hosted, participated in, and planned convenings to ignite strategic conversations and build cross-sectoral collaboration to advance UIV development.



Maternal health expert Laura Riley at the inaugural Sabin-Aspen Group meeting, October 28, 2018.

When COVID-19 struck in 2020, the IVI team swiftly turned their focus to distilling, communicating, and applying lessons learned to thwart the undiminished danger of influenza. Leveraging—and quickly expanding—established partnerships and knowledge base, IVI gathered and analyzed insights as the COVID-19 response evolved. From 2020 through 2023, the team conducted more than 40 in-depth interviews with key members of these historically separate, but now interconnected communities; organized and participated in moderated discussions; presented at scientific meetings; and monitored relevant scientific and policy developments.

Products of these efforts—which include a video documentary series, a full-length film, podcasts and publications—drew and retained an audience that included scientists, funders and policymakers from more than 77 countries over the course of the program. These assets continue to inform and inspire visitors to the Sabin website and those of partner organizations such as the Center for Infectious Disease Research and Policy (CIDRAP) and The Task Force for Global Health.

Through such partnerships with key aligned organizations—which also included the Global Funders Consortium for Universal Influenza Vaccine Development and Ready2Respond—IVI produced and amplified content and conducted research, such as identifying factors underlying successful influenza vaccination programs in middle-income countries. With the program's culmination, evergreen resources developed by IVI remain accessible to its partners as they advance the quest against influenza. Thus, long after its conclusion, the IVI program will continue to demonstrate to a transdisciplinary and multi-sectoral audience the peril of influenza and the collaborative approach required to achieve the ultimate goal of a UIV.

Introduction

After launching in July 2019, the IVI program concluded in May 2024. This culminating report describes the program's impact, the initial fulfilment of its strategic purpose, and how IVI nimbly adapted its activities and projects not only to overcome constraints posed by the COVID-19 crisis, but to take advantage of the crucial opportunities it presented for informing the advancement of UIVs and the prevention of pandemic influenza. This report also defines IVI's impact on an audience that grew in terms of numbers, geography and diversity over the course of the program, and how the audience for IVI-created content can continue to expand through its presence on the Sabin website and those of its partners.

Strategic Purpose

In 2018—a century after influenza took 50 million lives in one of history's worst pandemics—the virus remained a grave pandemic threat, as well as an underappreciated cause of death and disability year after year. During an average season, influenza claims the lives of approximately 700,000 people across the globe, with the toll rising during more severe flu seasons.

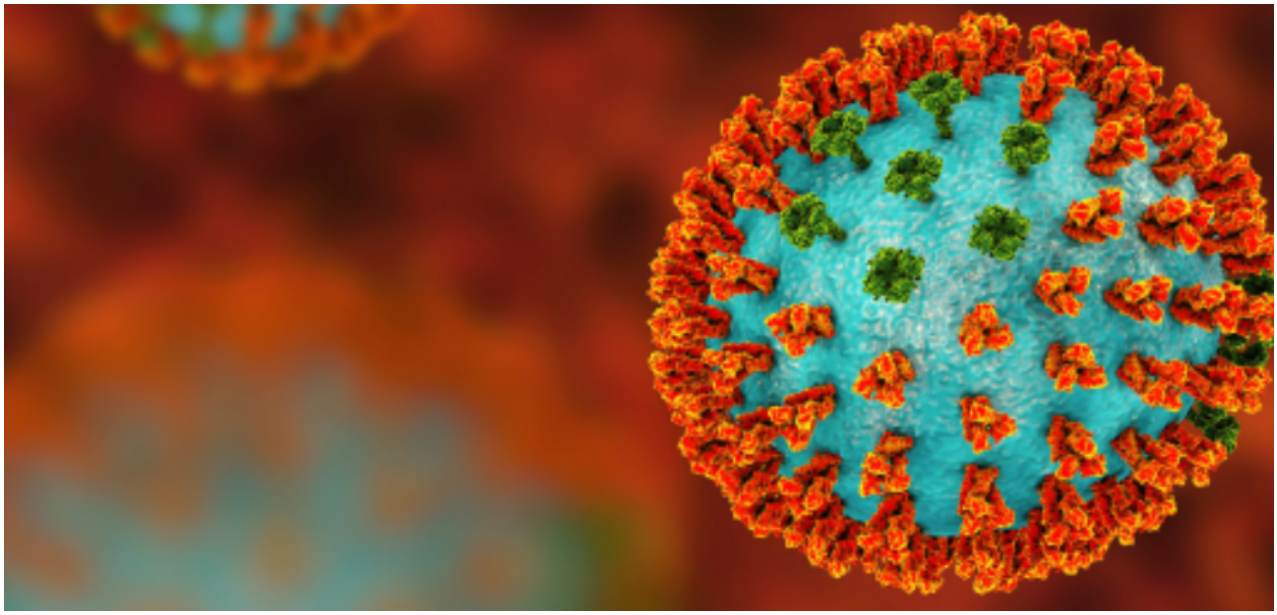
Annually scientists develop an influenza vaccine based on the specific circulating influenza strain(s), leading to annual manufacturing of that season's influenza vaccine. But with scientific and technological advances there was fresh hope for reaching the "holy grail" of vaccine/immunology science by developing a universal influenza vaccine (UIV) – a vaccine that could protect against any circulating or novel strain and confer multi-year, even lifelong, immunity.

It was at this critical time that Sabin launched its IVI program with the inaugural meeting of the Sabin-Aspen Vaccine Science and Policy Group in partnership with the Aspen Institute. The group's 24 global science and policy experts trained their distinct and deep collective knowledge of vaccine-related scientific, medical and political challenges on the longstanding challenge of developing influenza vaccines that could protect against any circulating or novel strain and confer multi-year, even lifelong, immunity. Their intense deliberations produced a report featuring the bold and actionable recommendations for accelerating UIV development that drove IVI's initial activities.



Global science and policy experts attend the inaugural Sabin-Aspen meeting.

This meeting also embodied IVI's central organizing principle: to engage innovators—including those not traditionally involved in influenza vaccine research—to bring new thinking and novel collaborations to the quest for a UIV. Throughout 2019 and early 2020, IVI's Influenzer Initiative conceived and executed multiple projects aimed at bringing new perspectives to UIV research and development by connecting scientists from vaccine-adjacent fields with vaccine-interested experts in non-traditional disciplines such as bioinformatics and machine learning, structural biology, biophysics, synthetic biology and systems biology. At a convening hosted by the Wellcome Trust in London, outstanding influenza and vaccine researchers, champions of science and technology across a range of disciplines, leaders of industry, visionary investors and thought-leaders in policy continued the brainstorming initiated by the Sabin-Aspen group.



While parts of the flu virus change rapidly, other parts are relatively stable – universal vaccines target these stable parts of the virus.

Presenting the Sabin-Aspen report in 2019 at the premier international conference on influenza (Options X for the Control of Influenza in Singapore), expanded dialogue and engagement around the report's Big Ideas. To further pursue a science agenda for UIV development –one that merged expertise from life sciences with physical, mathematical and computational sciences, and with engineering–IVI planned to convene a series of international working groups charged with forging novel pathways for UIV research. At the same time, IVI advocated for public recognition and funding of UIV development through their support of a Senate briefing by influenza vaccine experts and participation in a UIV summit hosted by the Milken Institute.

When the COVID-19 crisis ended plans for in-person meetings and consumed the attention of the experts IVI had sought to convene, the team recognized an unprecedented opportunity to derive lessons from the pandemic at hand. Leveraging—and quickly expanding—their established partnerships and knowledge base, the team gathered and analyzed insights on vaccine development, highlighting lessons learned from the evolving COVID-19 response.

Timeline of Outputs and Events Prior to COVID-19

2018

Sabin-Aspen Inaugural Meeting

1

OCTOBER 2018
Aspen, CO

The Sabin-Aspen Vaccine Science & Policy Group convenes thinkers across scientific, medical, industry & regulatory sectors.

2019

Senate briefing: Meet the Experts of Influenza Vaccine Research

2

MARCH 5, 2019
Washington, DC

Sabin supports participation of influenza vaccine research experts in a Senate briefing.

Influenzer Initiative Holds Call to Action with Vaccine Champions

3

APRIL 3-4, 2019
London, UK

The Influenzer Initiative, hosted by the Wellcome Trust, engages leaders in influenza & vaccine research, technology, industry, funding & policy to reimagine development of a UIV.

4

Influenzer Initiative Launch: Together We Can Outsmart Flu

APRIL 19, 2019
Virtual

Video launch of the Influenzer Initiative, featuring Michael Specter, Scott Hensley, Harvey V. Fineberg, Michael Osterholm, Shirley Tilghman and more.

Sabin-Aspen Vaccine Science & Policy Group Report Issued

5

JULY 2019
Virtual

Report released communicating the urgent need for a universal influenza vaccine (UIV) and putting forward bold recommendations.

Options X for the Control of Influenza

6

AUGUST 2019
Singapore

Sabin and Flu Lab host a dialogue among biotech, industry, government, universities, and philanthropy to explore how the report's "Big Ideas" could be incentivized and realized.

Milken Future of Health Summit

7

OCTOBER 2019
Washington, DC

Featured the panel discussion, "The Quest for a Universal Influenza Vaccine."

2020

COVID-19 PANDEMIC BEGINS

Impact and Legacy

Creating a Transdisciplinary Audience

Among IVI's several contributions to public health, its most outstanding was the worldwide connections forged among key representatives of the scientific and policy communities, as well as members of the public. IVI-created content and hosted events featured and attracted vaccinologists, immunologists, epidemiologists, evolutionary and systems biologists, policymakers, health policy scholars, and pharmaceutical and biotech leaders at all stages of education and career. IVI also engaged representatives of civil society and philanthropic organizations, economists, historians and journalists while informing and inspiring science-interested viewers.



Experts at the Influenzer Initiative's Options XI event.

IVI-hosted and -supported conferences and working group sessions drew scientific and technical experts across a range of disciplines. For example, an IVI-hosted and -moderated event at Options XI for the Control of Influenza in Belfast in 2022 attracted a capacity crowd of 215 participants to a conversation on the future of influenza vaccine research with Dr. Rosalind Hollingsworth (Astra Zeneca, formerly Bill and Melinda Gates Foundation), Dr. Eric Karikari-Boateng (Centre for Laboratory Services and Research, Ghana), Chris Chadwick (WHO), Dr. William Ampofo (African Vaccine Manufacturing Initiative) and Dr. Tiago Rocca (Instituto Butantan, Brazil). This recorded discussion launched IVI's "Flu Vaccine Forum" webinar and podcast series.

IVI's Influenzer Initiative website and social media also featured offerings aimed at early-career scientists, such as the VaxHunt game, an interactive educational experience designed and disseminated with input from three PhD students, each of whom received stipends for their efforts. Both VaxHunt and the Influenzer Initiative's weekly Flu News review, which included current events, recent publications, as well as funding and employment announcements, appealed to established scientists and lay viewers alike.

Many of IVI's projects drew on the perspectives of such notables as economists Dr. Andrew Lo and Dr. Mariana Mazzucato and popular authors Laura Spinney and Michelle Wucker. More than 80 such leaders participated in IVI events and/or the creation of IVI's video series and the "Flu Vaccine Forum" podcast series—among them, the 30 scientists, policymakers, authors, and economists featured in the full-length documentary, Influence of the Stars. Drawing on this breadth of expertise, IVI produced content to engage a wide and eclectic audience, meanwhile amplifying voices from across the globe.



Dr. John Nkengasong, Former Director of Africa CDC spoke about reshaping vaccine R&D in a pandemic.

In particular, IVI engaged experts from across the African continent who were central to the world's response to COVID-19 including Ampofo, Dr. Moses Alobo (Science for Africa Foundation), Dr. John Nkengasong (Africa CDC) and Patrick Tippoo (Biovac Institute, South Africa). Drawing on this breadth of expertise, IVI produced content to engage a wide and eclectic audience, meanwhile amplifying voices from across the globe.

Established before COVID-19 riveted the world's attention on vaccines, IVI's expert network and audience provided a solid anchor for its pivot from building a convergent research agenda for a UIV to learning lessons applicable to accelerating UIV development and preventing pandemic influenza. Throughout the coronavirus crisis and its aftermath, IVI not only maintained its focus on multidisciplinary conversation and collaboration, but expanded it to include the production of videos, webinars, and a feature-length film: content that consistently grew and broadened its audience over the course of the program. Between opportunities such as film outreach and high-performing campaigns like the Nature Custom Media and Guardian collaborations, Influenzer-associated content reached over 15 million viewers and readers worldwide, sparking conversations on social media and at conferences, largely aided by key partnerships.

The urgent scientific and technological response to COVID-19—marked by unprecedented collaboration across disciplines and sectors, and fueled by a vast, diverse funding network—rapidly altered the vaccine research and development ecosystem. Responding to this, IVI developed a white paper titled, "Lessons From COVID-19: Advancing Development of Universal Influenza vaccines" that examined the results of information-gathering activities aimed at harnessing COVID-era insights to inform and inspire the next-generation influenza vaccine development. To assess the changing R&D landscape, the team conducted video interviews, a broad stakeholder survey, and a scientific literature and policy review, gathering perspectives from professionals and thought-leaders in the life sciences, vaccinology, pandemic preparedness, vaccine regulation, policy and funding. Combined, they provided a timely review of this crucial period in vaccine innovation, and its implications for preventing future pandemics, and laid the groundwork for further expert collaboration and interviews in the video series, "Lessons From COVID-19".

Key Events and Outputs Post-2020

Conferences

- 8th European Scientific Working Group on Influenza (ESWI) Conference 2021 (virtual)
- World Vaccine Congress 2022 (Washington, DC)
- MediconMM 2022 (Oxford, UK)
- Options XI & "Night at the Titanic Museum" Side Event (Belfast, UK)
- World Vaccine Congress 2023 (Washington, DC)
- VARN2023 (Bangkok, Thailand)
- 9th ESWI 2023 (Valencia, Spain)

Publications

- 4-part Nature Research Article Series (2020-21)
- 4- part Scientific American Article Series (2020-21)
- "Lessons from COVID-19: Advancing Development of a UIV" White Paper (2020)
- "Ensuring vaccine self-sufficiency for every global region", The Guardian
- "Exploring Determinants of Response-Ready Influenza Vaccination Programs in MICs" Report (2023)

Videos

- "Lessons From COVID-19" 11-episode series
- "Flu Vaccine Forum" 2-part Webinar
- "Influence of the Stars: An Influenza Documentary"

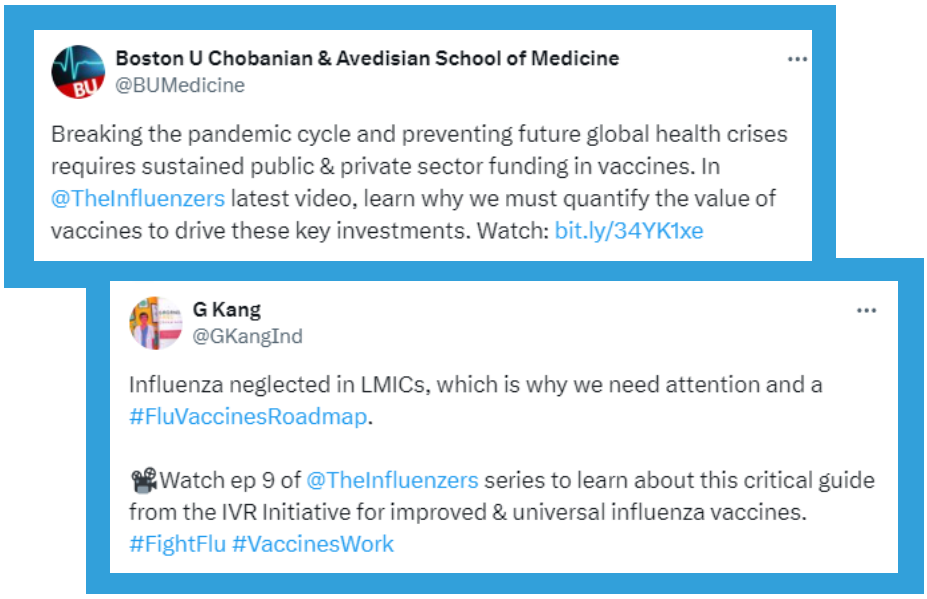
Recognizing the depth of insights shared by expert interviewees early in the development of the "Lessons from COVID" video series, IVI undertook parallel production of the full-length film, "Influence of the Stars: An Influenza Documentary." The team proceeded to acquire over 60 hours of video interview footage, which it used to expand the "Lessons" narrative to discuss the broader topic of pandemic preparedness and prevention from the standpoint of global health security. Building on recent pandemic experiences, documentary viewers learn how influenza shaped history, how it threatens our future, and how it is possible to contain or even prevent another influenza pandemic. As the film argues, vaccine alone cannot protect the world from viral threats. The COVID crisis demonstrated that we need a global "ecosystem" to design, produce and deliver a UIV when and wherever in the world it is most needed. More than 30 experts in "Influence of the Stars" describe how to make that happen, but as the film asks in its final moments, will we?

"Influence of the Stars: An Influenza Documentary" was selected by and premiered at the Maryland International Film Festival in 2024, with over 5 million impressions across social media platforms in its first month. Along with individuals previously mentioned, it features scientists including Dr. Michael Osterholm, Dr. Eric Topol and Nobel Prize nominees Dr. Maria Elena Bottazzi and Dr. Peter Hotez, and policymakers including former CDC director Dr. Julie Gerberding and former FDA commissioner Margaret Hamburg. The documentary is narrated by Chuck Nice, co-host (with Neil DeGrasse Tyson) of Star Talk Radio.

Building Partnerships, Extending Impact

Recognizing that allied organizations could both enhance and amplify IVI messaging—and vice versa—the team built strong relationships with multiple partners including CIDRAP's Influenza Vaccine Roadmap (IVR) Initiative, The Taskforce for Global Health, the Global Funders Consortium for Universal Influenza Vaccine Development (GFC) and the Pandemic Action Network. These partners proved particularly crucial during the unfolding of the COVID-19 pandemic, as together we navigated the rapidly evolving information environment and built resources on pandemic prevention.

IVI-created content resulting from partnerships includes an agenda-setting white paper, a video episode on CIDRAP's Influenza Vaccines Roadmap (IVR) Initiative, and a webinar series produced in collaboration with the IVR Initiative and the GFC. A research project conducted by IVI and supported by Ready2Respond, which identified factors underlying successful influenza vaccination programs in middle-income countries, was presented at the VARN2023 Conference and the 9th European Scientific Working Group on Influenza (ESWI) Conference.



Partners sharing posts about the Influenzer Initiative's offerings broadened audience reach.

Amplification of IVI-created content via partners' email and social media broadened and increased audience reach while exposing viewers to additional content on IVI's Influenzer Initiative website.

Much of the content created for the Influenzer Initiative remains relevant to the continuing quest for next-generation influenza vaccines and to the challenge of pandemic prevention. These evergreen resources remain accessible to IVI's partners, such as CIDRAP and The Taskforce for Global Health, as they carry forward messaging and awareness of the critical issues that inspired IVI. The film "Influence of the Stars" and episodes of the Flu Vaccine Forum and COVID-19 video and podcast series, along with blogs and paid articles, are available to partners to post in full on their websites and social media.

IVI also created an asset library comprised of graphics, animations and audio clips developed for Influenzer content. Available to partners via a shared drive, these resources can be repurposed to streamline and enhance ongoing efforts toward our common goals.

Conclusion

Throughout its six years, Sabin's IVI program engaged, informed and amplified messaging among an international network of experts and aligned organizations, producing content that drew audiences across a wide spectrum of disciplines, as well as the science-interested public. Responding to the COVID-19 crisis, IVI collaborated with its partners to distill and communicate lessons as they were learned and apply them to reduce future pandemic threats, including the recurring menace of influenza.

Attracted by creative, diverse messaging in multiple formats, IVI's audience grew as the pandemic unfolded. While IVI-created content informed and inspired those hungry to understand the rapidly changing vaccine and respiratory disease landscape, it also reached beyond these communities, bringing new minds and perspectives to the challenge of developing universal influenza vaccines.

IVI's legacy endures through its partners, such as CIDRAP and The Taskforce for Global Health, who, supported by IVI-created content, continue to engage global, transdisciplinary audiences.

Acknowledgements

IVI's work would not have been possible without the contributions of scores of individuals and institutions, beginning with our funder, Flu Lab. Several organizations significantly enriched our access to information, introduced us to experts, hosted and/or collaborated on convenings in which IVI participated and continue to promote our content to their networks.

These essential partners include CIDRAP's Influenza Vaccines Research and Development Roadmap (IVR) team, Ready2Respond and the Global Flu Funders. IVI-created content featured the expertise and insights of 40+ interviewees listed in the Appendix, each of whom graciously shared their time—often amid heroic efforts to contain COVID-19.

An array of talented individuals and firms enabled the conception, delivery and refinement of IVI's high-quality content; these included science writer Alison Mack, videographers and producers Storyteller, special effects and video editing professionals Fade-In and animator Rachelle Purych. IVI is indebted to them all, and to the many experts and collaborators too numerous to mention who enhanced the program's success and enduring impact.

Appendix: Expert Interviewees 2019-2023

(Titles and affiliations as of interview dates.)



Dr. Amesh Adalja

Senior Scholar, Center for Health Security, Johns Hopkins Bloomberg School of Public Health



Dr. Moses Alobo

Programmes Manager, Grand Challenges Africa at Science for Africa Foundation



Dr. William Ampofo

Chair, African Vaccine Manufacturing Initiative



Dr. John Barry

Author; Distinguished Scholar, Bywater Institute at Tulane University and Adjunct Professor, Tulane School of Public Health and Tropical Medicine



Dr. Norman Baylor

Trustee, Sabin Vaccine Institute and Former Director of FDA's Office of Vaccines Research and Review



Dr. Alan Bernstein

President and Chief Executive Officer, Canadian Institute for Advanced Research



Dr. Maria Elena Botazzi

Associate Dean, National School of Tropical Medicine, Baylor College of Medicine



Dr. Eric Karikari-Boateng

Director for the Centre for Laboratory Services and Research



Dr. Joseph Bresee

Director, Task Force for Global Health

(Titles and affiliations as of interview dates.)



Christopher Chadwick

Technical Officer, Influenza Preparedness and Response, WHO



Dr. Stacey Schultz-Cherry

Deputy Director, WHO Collaborating Centre for Studies on the Ecology of Influenza in Animals and Birds, St. Jude Children's Research Hospital



Dr. Kundai Chinyenze

Executive Medical Director for Clinical Development, International AIDS Vaccine Institute (IAVI), Kenya



Dr. James Crowe

Professor, Vanderbilt University Medical Center; Director, Vanderbilt Vaccine Center



Dr. Alan Donnelly

Executive Chairman of Sovereign Strategy; non-executive Director of Cosworth; and member of the Council of the University of Chicago's Harris School of Public Policy.



Dr. Matthew Downham

Director, Manufacturing & Supply Chain Networks, Coalition for Epidemic Preparedness Innovations (CEPI)



Dr. Ali Ellebedy

Associate Professor of Pathology and Immunology, Washington University School of Medicine



Dr. Harvey Fineberg

President, Gordon and Betty Moore Foundation



Dr. Martin Friede

Coordinator, World Health Organization Initiative for Vaccines Research

(Titles and affiliations as of interview dates.)



Dr. George Gao

Director-General, Chinese Center for Disease Control (China CDC)



Dr. Julie Gerberding

Chief Patient Officer and Executive Vice President, Merck & Co.



Anarudha Gupta

Deputy Chief Executive Officer of Gavi, the Vaccine Alliance (2014-2022)



Dr. Swati Gupta

Vice President and Head of Emerging Infectious Diseases and Scientific Strategy, International AIDS Vaccine Initiative (IAVI)



Dr. Margaret Hamburg

Foreign Secretary, National Academy of Medicine; and former FDA Commissioner (2009-2015)



Dr. Jonathon Heeney

Professor of Comparative Pathology and Head, Laboratory of Viral Zoonotics (LVZ), University of Cambridge; CEO, DIOSynVax



Dr. Scott Hensley

Professor of Microbiology at the University of Pennsylvania and Director of Penn-CEIRR



Dr. Matthew Hepburn

Senior Advisor, White House Office of Science and Technology Policy; Vaccine Development Lead, Operation Warp Speed (2020-2021)



Dr. Rosalind Hollingsworth

Senior Program Officer, Bill and Melinda Gates Foundation

(Titles and affiliations as of interview dates.)



Dr. Edward Holmes

Professor of Virology, University of Sydney, Australia



Dr. Peter Hotez

Dean, National School of Tropical Medicine, Baylor College of Medicine



Dr. Jeffrey Hubbell

Professor, Pritzker School of Molecular Engineering, University of Chicago



Dr. Benjamin Jones

Professor, Northwestern University; Non-resident senior fellow of the Brookings Institution



Dr. Aaron Esser-Kahn

Professor, Pritzker School of Molecular Engineering, University of Chicago



Dr. Gagandeep Kang

Professor of Microbiology, Christian Medical College, Vellore, India



Dr. Gerald Keusch

Emeritus Professor, Medicine and International Health and Associate Director, National Emerging Infectious Diseases Laboratories, Boston University



Dr. Amin Khan

Chief Science Advisor, mRNA Hub Programme, Afrigen Biologics & Vaccines



Dr. Jerome Kim

Director General, International Vaccine Institute (IVI)

(Titles and affiliations as of interview dates.)



Dr. Florian Krammer

Professor, Icahn School of Medicine at Mount Sinai



Hatice Küçük

Executive Director, The G20 Health and Development Partnership (since 2019)



Dr. Teresa Lambe

Head of Vaccine Immunology and Professor of Vaccinology & Immunology, University of Oxford, UK



Dr. Andrew Lo

Professor, MIT Sloan School of Management



Dr. Mariana Mazzucato

Professor of Economics and Founding Director, Institute for Innovation & Public Purpose, University College London



Dr. Warwick McKibbin

Vice Chancellor's Chair in Public Policy and Director, Centre for Applied Macroeconomic Analysis (CAMA), Australian National University



Dr. Martha Nelson

Senior Biologist, National Institute of Allergy and Infectious Diseases, U.S. National Institutes of Health



Dr. John Nkengasong

Director, Africa Centres for Disease Control and Prevention (Africa CDC)



Dr. Albert (Ab) Osterhaus

Professor of Wildlife Virology and Virus Discovery, University of Utrecht (Netherlands)

(Titles and affiliations as of interview dates.)



Dr. Michael Osterholm

Professor of Public Health and Director, Center for Infectious Disease Research and Policy, University of Minnesota



Dr. Daniel Perez

Chair, Poultry Medicine, University of Georgia



Dr. Diane Post

Chief, Viral Respiratory Diseases Section, National Institute of Allergy and Infectious Diseases



Dr. Tiago Rocca

Strategic Partnerships and Business Development Lead, Instituto Butantan, Brazil



Dr. Pardis Sabeti

Professor, Center for Systems Biology and Department of Organismic & Evolutionary Biology, Harvard University;



Dr. Francesco Berlanda Scorza

Director, GSK Vaccines for Global Health (GVGH)



Dr. Vivek Shinde

Vice President, Clinical Development Lead, Older Adult Influenza & RSV Vaccines, Novavax (since 2015)



Dr. Pamela Silver

Professor, Harvard Medical School; Member, Harvard Wyss Institute of Biologically Inspired Engineering



Laura Spinney

Author, *Pale Rider: The Spanish Flu of 1918 and How it Changed the World*

(Titles and affiliations as of interview dates.)



Lynda Stuart

Deputy Director of Vaccines and Human Immunobiology, Bill and Melinda Gates Foundation



Prof. Kanta Subbarao

Professor and Director, WHO Collaborating Centre for Reference and Research on Influenza, Doherty Institute, Australia



Dr. Holden Thorp

Editor-in-Chief of Science family of journals



Patrick Tippoo

Head of Science & Innovation, Biovac Institute, South Africa; Executive Director, African Vaccine Manufacturing Initiative



Dr. David Topham

Professor of Microbiology and Immunology, University of Rochester Medical Center



Dr. Eric Topol

Founder and Director, The Scripps Research Translational Institute



Dr. Rajeev Venkayya

CEO, Aerium Therapeutics; President, Global Vaccines, Takeda Pharmaceutical Company Ltd. (2014-2022)



Dr. Charlie Weller

Head of Prevention, Infectious Disease, Wellcome



Michele Wucker

Author, *The Grey Rhino*
Photo © M Shirk Photography
www.mshirkphotography.com