

Curriculum Vitae
Wilbur H. Chen, MD, MS, FACP, FIDSA
Professor of Medicine
University of Maryland School of Medicine

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Contact Information

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Education

1988-1992	B.A., Biology	Boston University
1995-1999	M.D.	Howard University College of Medicine
2004-2008	M.S., Clinical Research	University of Maryland, Baltimore

Post Graduate Education and Training

1999-2002	Internal Medicine Residency, Johns Hopkins Bayview Medical Center
2002-2004	Infectious Disease Fellowship, University of Maryland Medical Center
2004-2006	Vaccinology Fellowship, National Research Service Award, Center for Vaccine Development, Baltimore, MD

Certifications

2002	Diplomate, American Board of Internal Medicine
2011	Diplomate, American Board of Internal Medicine, Infectious Disease
2004	Emergency Preparedness and Response Training, Maryland Board of Physicians
2007	BSL-3 Training, Mid-Atlantic Center of Excellence
2019	BLS/AED Certification

Medical Licensures

2002-Present Maryland (active)

Employment History

Academic Appointments

2002-2006	Assistant Instructor in Medicine, University of Maryland School of Medicine
2006-2014	Assistant Professor of Medicine, Division of Geographic Medicine, University of Maryland School of Medicine
2014-2020	Associate Professor of Medicine, Division of Geographic Medicine, University of Maryland School of Medicine
2015-Present	Tenured, Department of Medicine, University of Maryland School of Medicine
2020-Present	Professor of Medicine, Division of Geographic Medicine, University of Maryland School of Medicine

Other Employment

- 1987, 88, 89 Neuroscience Summer Program Awardee, NINCDS, NIH, Bethesda, MD
 1991-1992 Lab Technician, Clinical Microbiology Lab, Boston University Hospital
 1993-1993 Research Technician, Septic Shock Research Program, NMRI
 1993-1995 Biologist GS-9, Office of Vaccine Research and Review, FDA
 1996 & 1997 Intramural Research Training Award Fellow, NIAID, NIH (Summer)

Professional Memberships

- 1993-1994 President and Founder, Society of Taiwanese Americans, Washington DC/Baltimore Chapter
 1995-1999 Howard University Chapter President (1996) and Member, Christian Medical and Dental Society
 1995-2002 Member, American Medical Association
 1999-2002 Member, Society of General Internal Medicine
 1999-present Member, American College of Physicians
 2002-present Member, Infectious Disease Society of America
 2003-present Member, American Society for Microbiology
 2005-2014 Member, International Endotoxin and Innate Immunity Society
 2009-2014 Member, International Society for Influenza & Other Respiratory Virus Diseases
 2012-present Member, American Society of Tropical Medicine & Hygiene

Honors and Awards

- 1988 Letter of Commendation for Neuroscience, NIH, NINCDS
 1993 Outstanding Service Award, Taiwanese Association of America.
 1994 Award for Patriotic Service, Department of Health and Human Services
 1995 Outstanding Performance Award for Fiscal Year 1995, FDA
 1996 & 1997 Intramural Research Training Award, NIH, NIAID
 1998 Bioethics Award, Howard University College of Medicine.
 2004 & 2005 NIH National Research Service Award (T32)
 2004 & 2005 ASM George McCracken Infectious Disease Fellow Travel Grant
 2008 Passano Physician Scientist Award (The Passano Foundation, Inc.)
 2010 Special Recognition Certificate for H1N1 research, NIH, NIAID, DMID
 2010 Society of Leukocyte Biology (SLB)/IEIIS 2010 Junior Faculty Travel Award
 2016 Fellow, American College of Physicians
 2017 Fellow, Infectious Disease Society of America
 2018, 12, 15-17 Teaching Commendation in Host Defences & Infectious Diseases, Parasitology, Virology Section, UMSOM
 2018 & 2012 Department of Medicine, Division of Geographic Medicine, Faculty Teacher of the Year Award
 2019 & 2016 Department of Medicine, Clinical Publication of the Year award

Clinical Activities

- 2004-present Attending & Director (since April 2012), University of Maryland, Baltimore (UMB) Travel Medicine Practice

- 2006-2010 Attending, Greenebaum Cancer Center Infectious Disease Consultation service at the University of Maryland Medical Center.
- 2011-2016 Attending, Baltimore VA Hospital Infectious Disease Consultation service.

Administrative Service

Institutional Service

- 2008-2011 Member, UMMC Antimicrobial Committee
- 2008-2012 Department of Medicine Faculty Representative, School of Medicine Council
- 2009 Member, UMSOM Pandemic Influenza Task Force
- 2010-2016 Member, DEPM Alumni Affairs Committee
- 2010 & 2012 Speaker, 2010 & 2012 Mini-Med School for Kids: The Importance of Vaccines
- 2016 Reviewer, UMSOM Passano Clinician-Investigator Career Development Award
- 2017 Speaker, Mini-Med School for Seniors: Vaccine Development
- 2018 Panelist, Inclusion Town Hall: Navigating Mentorship; UMB Student Diversity Council, November 28, 2018
- 2019 Speaker, Seniors Medical Symposium, Vaccines: Current Use and Future Challenges
- 2019 Discussion Leader, UMSOM Office of Student Research, Annual Summer Research Retreat
- 2019 Member, Department of Medicine mentoring committee for Justin Ortiz
- 2019 Expert Reviewer, Maryland Momentum Fund
- 2020 Member, COVID-19 UMB Unified Command, Emergency Management Team
- 2020 Member, COVID-19 University System of Maryland, Response Planning
- 2020 Speaker, Mini-Med School: COVID-19 Vaccine Development
- Present Member, Institutional Review Board Committee, University of Maryland, Baltimore, since 2007
- Present Member & Back-up Chair, GCRC Advisory Committee, since 2010
- Present Chief, Adult Clinical Studies Section, Center for Vaccine Development and Global Health, since 2012
- Present Co-Director, Studio program, Institute for Clinical and Translational Research (ICTR), UMB, since 2018
- Present Member, Campus Infectious Disease Management Committee, University of Maryland, College Park, since 2019

National Service

- 2006-2007 Independent Safety Monitor (ISM) and Back-up Chair of the SMC Data Review Committee. Phase 1 study of H5N1 vaccine with proprietary adjuvant (DMID 06-0052). (Sponsor: NIH)
- 2006 Participant, U.S. Department of State International Visitor Leadership Program. Responsible for briefing South Korean Government Public Health Officials on U.S. Pandemic Influenza Vaccine Development.
- 2007-2008 ISM. A Phase 1 study of Parvovirus B-19 Vaccine (DMID 05-007). (Sponsor: NIH)
- 2007-2008 ISM. Phase 1 Norwalk VLP Vaccine (LV01-101) (Sponsor: LigoCyte Pharmaceuticals, Inc.)

- 2007-2009 Chair, SMC. A Phase 1 study of Influenza A/H7N7 Vaccine. (DMID 07-0023). (Sponsor: NIH)
- 2008 Member, CDC Influenza Vaccine Effectiveness Special Emphasis Panel (ZCD1 CJM 03)
- 2008-2011 Medical Monitor, A Phase 1 Trial of irradiated *Plasmodium falciparum* sporozoite vaccine (Sponsor: PATH MVI, Navy, Sanaria, Inc.)
- 2008-2009 ISM. A phase 1 study of Alphavirus replicon vaccine expressing Influenza A/Wyoming/03/2003 HA in elderly (AVX502). (Sponsor: AlphaVax, Inc.)
- 2008 Member, NIH DMID Influenza CMI Assays Working Group
- 2008 Participant, U.S. Department of State International Visitor Leadership Program. Responsible for briefing Azerbaijan Government Public Health Officials on U.S. Avian Influenza and Pandemic Preparedness.
- 2008-2009 Chair, SMC. Phase I Norovirus VLP vaccine trial (LV01-102). (Sponsor: LigoCyte Pharmaceuticals, Inc.)
- 2009-2012 ISM. A phase 2b study of shigella/ETEC vaccine (Shigella CVD 27000). (Sponsor: PATH).
- 2009 Panel Member, GRAS Review Panel for anti-LPS *E. coli* hyperimmune colostrums (Immuron Ltd.)
- 2009 Member, CDC Special Emphasis Review Panel for Public Health Research Dissertation (R36), PAR07-231
- 2009 Ad Hoc Reviewer, NIH Vaccines against Microbial Diseases (VMD) Study Section (RC1).
- 2009-2010 Chair, SMC. Phase 2 Norovirus VLP vaccine and GI.1 challenge trial (LV01-103). (Sponsor: LigoCyte Pharmaceuticals, Inc.).
- 2009 Grant Reviewer, Maryland Industrial Partnerships (MIPS) Program
- 2009 Member, NIH DMID Maternal Immunization Focus Group for Influenza
- 2010-2013 Chair, SMC. Phase 1 Bivalent VLP Norovirus vaccine trial (LV03-104). (Sponsor: LigoCyte Pharmaceuticals, Inc.).
- 2010-2012 Member, SMC. Phase 1 oral paratyphi vaccine (Paratyphi CVD 1000, DMID 09-0020).
- 2010 Member, CDC Special Emphasis Panel for CDC Grants for Conducting Public Health Research in Kenya (UO1), RFA-GH-10-003.
- 2010-2012 Member, SMC. Attack rate of Human Volunteers to Norovirus (PI: R. Frenck, CCHMC) (DOD, USAMRMC)
- 2010-2011 Member, SMC. Phase 1 broad-spectrum anti-influenza monoclonal therapeutic. (Functional Genetics, Inc.)
- 2011-2015 Member, SMC. Phase 1 Rifabutin/Rifampin PK study. (DMID 10-0043).
- 2011 Member, NIH Special Emphasis Panel, Targeted Clinical Research to Address Select Viral Infections (BAA-NIAID-DMID-NIH-AI2010101)
- 2011 Ad hoc Member, VA Merit Review Committee for Small Clinical Trials on Influenza and Pneumococcus.
- 2011 Member, CDC Special Emphasis Panel, CDC, Public Health Research in Kenya (UO1), RFA-GH-10-003.
- 2011-2012 Member, SMC. Phase 1 SARS vaccine (DMID 09-0100). (Sponsor: NIH)
- 2011-2012 Member, SMC, Phase 1 Malaria ID cryo PfSPZ (DMID 11-0027). (Sponsor: NIH)

- 2011-2016 Member, SMC, Phase 1 nasal XF-73 SA decolonization (DMID 11-0007). (Sponsor: NIH)
- 2011-2017 Member, SMC, Phase 1 aerosolized colistimethate (DMID 10-0082). (Sponsor: NIH)
- 2012-2014 Chair, SMC. Phase 2 Bivalent VLP Norovirus vaccine and GII.4 challenge trial (LV03-105). (Sponsor: LigoCyte Pharmaceuticals, Inc.).
- 2012 Member and Back-up Chair, CDC Special Emphasis Panel for Conducting Public Health Research in South Africa by the National Health Laboratory Services (U19), RFA-GH12-004.
- 2012 Member, VA Merit Review, Subcommittee for Infectious Diseases - A panel.
- 2012-2013 Chair, SMC. Phase 1 study of tuberculosis drug PA-824 (DMID 10-0058).
- 2012-2014 Chair, SMC. Phase 1 study of tuberculosis drug SQ109 (DMID 11-0079).
- 2012 Member, VA Merit Review, Clinical Trials-A panel
- 2012 Member, VA Merit Review, Subcommittee for Infectious Diseases - A panel.
- 2013 Member, NIH Special Emphasis Panel for U.S.-China Program for Biomedical Collaborative Research (R01) (RFA-AI-12-021)
- 2013 Member, NIH Special Emphasis Panel for Omics Technologies for Predictive Modeling of Infectious Diseases (RFA-AI-12-027)
- 2013-2015 ISM. Phase 1 trial of shingles vaccine prior to renal transplant (DMID 09-0016)
- 2013-2014 Member, SMC. Phase 1 first-in-man hookworm vaccine study (Sabin Vaccine Institute)
- 2013-2015 Member, SMC. Malaria vaccine trial, Mali (NIAID-14-I-N010; Sanaria)
- 2014-2015 Chair, SMC. Malaria vaccine trial, Tubingen, Germany (TUCHMI-002; Sanaria)
- 2014 Member, SMC. Phase 1 study of clofazimine (DMID 12-0042)
- 2014-2015 Chair, SMC. Malaria study, Lambarene, Gabon (LACHMI-001; Sanaria)
- 2014-2015 Member, VA Merit Review, Clinical Trials-B panel
- 2014-2015 Member, ESMC. Phase 1 study of RSV vaccine (MedImmune)
- 2015-2016 Member, ESMC, Phase 2 study of RSV vaccine (MedImmune)
- 2015-2016 Chair, SMC, Malaria vaccine trial, NIH (LMIV CVac-PYR; Sanaria)
- 2015-2017 Member, DSMB, Malaria vaccine trial, Mali (Sanaria)
- 2015-2017 ISM, Phase 1 controlled human infection model of 7G8 and SF54 (DMID 14-0040)
- 2016-2018 Member, SMC. *Shigella sonnei* challenge model (PATH, NMRC)
- 2016 Member, CDC Special Emphasis Panel for Emerging Infections Program (CK17-1701)
- 2016 Member, NFID roundtable: Reinvigorating Flu Prevention in US Adults 65 and Older, Bethesda, MD
- 2016 Panelist, 2016 NFID Influenza/Pneumococcal News Conference, National Press Club, Washington, DC
- 2016 Inaugural Member, RSV Collaborative—a working group to identify educational, policy and research goals for RSV disease among elderly adults
- 2016 Member, Consultation on the Ethics of ZIKV (Zika Virus) Human Challenge Trials, sponsored by NIAID and WRAIR.
- 2017-2019 Chair, DSMB. Comparison of High vs. Standard Dose Flu Vaccine in Pediatric Stem Cell Transplant Recipients (DMID 16-0117)
- 2017-2019 Chair, SMC. Malaria vaccine trial (CVac2, Sanaria)

2017	Member, Steering Committee, NFID Influenza Education Program
2017	Member, NIAID Clinical Trial Implementation review panel
2018	Panelist, Alliance for Health Policy, “Healthy Aging and Immunizations”
2018-2019	Member, SMC. Hookworm vaccine trial (HV-003)
2018-2019	Chair, SRC. Universal influenza vaccine efficacy trial (FluGen)
2018-2019	Member, DSMB, influenza anti-viral (Pharmaron)
2018	Member, Adjudication Committee, Valneva ETEC challenge study VLA 1701-201
2018	Presenter & Facilitator, Smithsonian National Museum of Natural History, Outbreak: Fighting Diseases in a Changing World; Washington, DC
2019-present	Chair, SMC. Malaria vaccine trial in Mali (MLSPZ-CVac3, Sanaria)
2019-present	Member, SMC. Safety and pharmacokinetics of ceftazidime, avibactam, and aztreonam combination (DMID 17-0107)
2019	Member, Planning Committee, NFID 2019 Clinical Vaccinology Course
2019-present	Chair, SRC. Universal influenza vaccine phase 1b study (FluGen)
2020	Participant, U.S. Department of State International Visitor Leadership Program. Responsible for Government Public Health Officials of Pacific Island nations on COVID-19 Vaccine Development
2020	Member, Planning Committee, NFID 2020 Clinical Vaccinology Course
2020-present	Co-Lead, design team for the Maryland-wide Serosurveillance of COVID-19, sponsored by Maryland Department of Health
2020-present	Chair, SRC. Phase 1 COVID-19 therapeutic study (ICON)
2020	Reviewer, NIH Special Emphasis Panel, Phage Biology and Bacteriophage Therapy
2020-present	Member, Federation of American Scientists, COVID-19 Rapid Response Task Force
2020-present	Member, Governor Larry Hogan’s COVID-19 Response and Advisory Task Force, State of Maryland
Present	Core Voting Member, DSMB, Intramural NIAID, NIH, DHHS, since 2015
Present	Voting Member, CDC Advisory Committee on Immunization Practices, DHHS, since 2020

International Service

2009	Ad Hoc External Grant Reviewer, Oesterreichische NationalBank Jubiläumsfonds (Austrian Anniversary Fund for the Promotion of Scientific Research and Teaching)
2009	Grant Reviewer, Medical Research Council (UK), Infections and Immunity Board
2009	Research Grant External Reviewer, the Physicians Services Inc. Foundation (Ontario Medical Association)
2009	Expert Consultant, Toyama Chemical Co., Ltd, on the U.S. FDA IND submission of T-705 (anti-influenza therapeutic)
2010	Session Chair, 3 rd World Summit of Anti-Virals, Track: Influenza Vaccines
2012	Member, Austrian Science Fund (FWF, Hertha Firnberg-Programme, career development grant for female scientists)

- 2012 Advisory Member, Sabin Vaccine Institute, Washington, DC; Feasibility of Development of a Hookworm Vaccine Challenge model
- 2013 Grant Reviewer, Medical Research Council (UK)
- 2014 Advisory Member, PATH, Washington, DC; Enterotoxigenic *Escherichia coli* (ETEC) and Toxin Challenge meeting
- 2014 Participant, GSK Vaccines Field Advisory Board, Influenza vaccines for the elderly
- 2014 Member, Coalition for Cholera Prevention and Control, Task Force for Global Health
- 2014 Chair Scientific Session, 63rd Annual Meeting of the American Society of Tropical Medicine & Hygiene, Session 14: Bacteriology: Cholera and Cholera Vaccines
- 2015-2017 Advisory Member, PATH-EVI, Washington, DC; ST-only expressing enterotoxigenic *Escherichia coli* (ETEC)
- 2015-2016 Member, Scientific Advisory Committee, Vaccines Against *Shigella* and enterotoxigenic *Escherichia coli* (VASE); Washington, DC, June 28-30, 2016
- 2016-2018 Member, Scientific Leadership Group, BMGF-sponsored Controlled Human Infection Models (CHIM)
- 2017 Grant Reviewer, Health Research Council of New Zealand (HRC of NZ)
- 2017 Member & Presenter, WHO meeting on Immunization in the Elderly; Geneva, 22-23 March 2017
- 2017 Advisory Board Member, GSK Meningococcal Vaccine Advisory Board; Atlanta, GA, 6-7 April 2017
- 2017-2018 Organizing Committee Member, 2nd meeting of Vaccines Against *Shigella* and enterotoxigenic *Escherichia coli* (VASE); Mexico City, Mexico, June 11-14, 2018
- 2018 Advisory Board Member, Medicago Norovirus Vaccine Advisory Committee; Baltimore, MD, 24 May 2018
- 2018 Reviewer, Agence Nationale De La Recherche (French National Research Agency), CE18, Innovation biomédicale panel
- 2018 Advisory Board Member, Janssen Global Advisory Board meeting on a vaccine; Amsterdam, Netherlands, December 4-5, 2018
- 2019 Guest Editor, journal *Vaccine*, Special Supplement on Oral Cholera Vaccines
- 2019 Advisory Board Member, Seqirus Influenza Portfolio meeting; Philadelphia, PA, June 12, 2019
- 2019-present Organizing Committee Member, 3rd meeting of Vaccines Against *Shigella* and enterotoxigenic *Escherichia coli* (VASE); Washington, DC, date postponed to 24-26 August 2021

Editorial Reviews

- 2003 *Antimicrobial Agents and Chemotherapy*
- 2004 *Annals of Internal Medicine*
- 2004 *Clinical Infectious Disease*
- 2004 *Journal of Endotoxin Research*
- 2005-present *Journal of Infectious Disease* (1/year)
- 2005 *American Journal of Preventive Medicine*

2006	<i>New England Journal of Medicine</i>
2006	<i>Microbes and Infection</i>
2006	<i>Am J Trop Med & Hygiene</i>
2008	<i>FEMS Immunology & Medical Microbiology</i>
2009	<i>Bentham Science Publishers e-Book</i>
2009	<i>Trends in Immunology</i>
2009	<i>Biosecurity and Bioterrorism</i>
2010	<i>Critical Care Medicine</i>
2011-present	<i>Annals of Internal Medicine</i> (1-2/year)
2011-present	<i>Vaccine</i> (2/year)
2016& 2018	<i>The Medical Letter</i>
2018-2019	Guest Editor, <i>Vaccine</i> , Special Supplement on Cholera Vaccines

Teaching

Students

Fall 2003	Preceptor, second year medical school course Physical Diagnosis, UMSOM – 5 sessions, 3 hours each.
2003-present	Small Group Leader, second year medical school course Host Defenses and Infectious Diseases (HDID), UMSOM – 3-5 sessions/year, 1-2 hours each.
Spring 2004	Preceptor, second year medical school course Physical Diagnosis, UMSOM – 10 sessions, 3 hours each.
2007-2017	Lecture, Vaccination in the Elderly; PREV 627 Vaccinology graduate course – 1 hour, 15-20 students.
2008-present	Lectures, Respiratory Viruses and Waterborne Diseases epidemiology; PREV 649 Infectious Disease Epidemiology graduate course – 3 hours, 15-25 students.
2009	Lecture, Topic: Pandemic H1N1 and you; UMB School of Nursing, Health Promotions Course – 1 hour, 30 students.
2010-present	Lecture, HDID, Viral Respiratory Infections – 1 hour.
2011-2017	Lecture, Topic: New Influenza Vaccines; PREV 627 Vaccinology graduate course – 1 hour, 15-20 students.
2018-present	Lecture & Journal Club, Topic: Influenza & Respiratory Viruses; GPILS 704 Principles of Virology – 3 hours, 8 students.

Residents and Fellows

2006-2008	Didactic Lecture, Topic: Immunesenescence, Clinical Geriatric Fellows, UMSOM – 1 hour, 6 attendees
2006-present	Didactic Lectures, Topics: Influenza, Aging and altered immunity, Adaptive Immunity; Clinical Infectious Disease Fellows – 1 hour each
2009	Didactic Lecture, Topic: H1N1 pandemic influenza update; UMMC Department of Medicine House staff noon conference – 1 hour.
2012	Seminar, Topic: Travel Medicine, Preventive Medicine Residents – 1 hour.
2012	Seminar, Topic: Preventive Strategies against <i>Staphylococcus aureus</i> ; UMSOM CTSI – 1 hour.
2013	Didactic Lecture, Topic: Influenza; UMMC Department of Medicine House Staff morning conference – 1 hour.

Mentoring

- 2003 David Issever, undergraduate summer intern, rabbit response to J5 vaccination, 40 hours
- 2006 Zeynep Teksin, post-doctoral fellow, intranasal vaccination with ZOT peptide; current position: Associate Professor of Pharmacy, Gazi University, Ankara, Turkey, 30 hours
- 2006 Craig Gertner, undergraduate summer intern, mouse and human Dendritic Cells, 20 hours
- 2006 Keon-Hyoung Song, post-doctoral fellow, immunization with tetanus toxoid +/- AT1002; current position: patent examiner, Korean Intellectual Property Office, 20 hours
- 2007-2010 Dipti M. Mistry, medical student class 2010; current position: private practice in pediatrics, Maywood, IL, 10 hours
- 2007-2010 Angela Yin, medical student class 2010; current position: private practice in internal medicine, Newark, NJ, 5 hours
- 2007 Steven E. Bowen, Department of Microbiology & Immunology Graduate student, cell-mediated immune responses to influenza Vaccination; current position: Experimental Immunology Branch, NCI, 40 hours
- 2007 Melissa A. Hayes, Department of Microbiology & Immunology graduate student, humoral immune responses to influenza vaccination; current position: post-doctoral fellow in Andrew Pekosz lab (JHU), innate immune response to influenza, 20 hours
- 2008-2009 Angeliki Giannelou, Post-doctoral fellow, multiparameter flow cytometry of human dendritic cells; current position: Henry Metzger Scholar in Translational Research, NIAMS/NHGRI.
- 2008-2012 Adebola Ajao, Dept Epi & Preventive Medicine PhD student, anti-*Staphylococcus aureus* antibody responses in bacteremic patients, 20 hours
- 2009-2010 Joel Chua, 2nd year Clinical Infectious Disease Fellow, H1N1 influenza vaccine trials; current position: infectious disease physician, Christiana Care Health System, Dover, DE, 80 hours
- 2009-present Franklin Toapanta, Assistant Professor, influenza immunology; post-doctoral fellow and faculty mentoring committee
- 2011-2013 Mary Boyd, T32 Vaccinology Fellow, serum bactericidal assays to evaluate *Salmonella* vaccines; current position: Office of Vaccine Research and Review, FDA, 20 hours
- 2013–2014 Robert Kessler, Infectious Disease Fellow, cholera vaccine trials; current position: Assistant Professor, University of South Dakota, 20 hours
- 2013–2014 Stephen Yu, UMCP Post-Bachelor, clinical trials according to GCP, 20 hours
- 2014-2015 Kapil Saharia, Assistant Professor of Medicine, Div. Infectious Disease, 20 hours
- 2014-2015 Jennifer Husson, Visiting Instructor, Div. Infectious Disease, 10 hours
- 2014-2015 Sarah S. Jackson, PhD student in Epidemiology, research rotation supervisor, 60 hours
- 2014-2017 Thiagarajan Venkataraman, PhD thesis committee member, thesis topic: EGFR signalling influence on the evolution of lung fibrosis caused by SARS coronavirus
- 2015-2016 Kurt Hanevik, MD, PhD, post-doctoral research on engineering *Shigella* to express ETEC antigens, 10 hours

- 2017-present Justin R. Ortiz, MD, MS, FACP, FCCP, Associate Professor of Medicine, clinical studies on respiratory pathogens; member Mentoring Committee (2019-present)
- 2018 Zachary Williamson, 3rd year Preventive Medicine Resident, clinical trials according to GCP
- 2018-present Rekha Rapaka, Assistant Professor, *Salmonella* immunity; member (2019-present), T32 and K08 Advisory Committee
- 2018-2019 Raches Ella, MBBS, MS, Postdoctoral Fellow at JHUSPH, co-mentored by Mathuram Santosham, clinical study of non-typhoidal *Salmonella* vaccine
- 2019-2020 Sarah Williams, MD, Pulmonary & Critical Care Fellow, influenza challenge studies and cost-effectiveness analysis of influenza vaccination
- 2020 Thanh Pham, MPH student, COVID-19 serosurveys
- 2019-present Jessica Allen, PhD thesis committee member, thesis topic: evaluating a live attenuated *Salmonella* vaccine in aged mice
- 2019-present University of Maryland College Park Global Health Scholars internships, 2 undergraduate students every 4 months
- 2020-present Meagan Deming, MD, PhD, T32 Vaccinology Fellow, COVID-19 research.

Grant Support

ACTIVE

- 07/01/20-06/30/2022 Karen Kotloff (PI) and Wilbur Chen (Co-PI, 5%)
 CDC contract 75D30120C08405
 Applied Research to Address the COVID-19 Emerging Public Health
 Emergency
 (subcontract to Vysnova Partners, Inc.)
 \$799,502 (total)
- 07/07/20-04/30/2023 Wilbur Chen (PI, 20%)
 NIAID U01 AI43493
 Initial clinical evaluation of attenuated *Shigella flexneri* 2a live vector
 expressing enterotoxigenic *Escherichia coli* antigens, strain CVD 1208S-
 122
 \$3,636,079 (total)
- 05/05/20-04/30/2025 Alexander Sulakvelidze (PI, 10%), Wilbur Chen (Subcontract PI)
 NIAID U01 AI48054
 Bacteriophage-based approach for managing *Shigella* infections
 \$6,170,209 (total)
- 12/28/19-12/01/2022 Wilbur Chen (Co-PI, 15%)
 Bill & Melinda Gates Foundation, subcontract to Institut Pasteur
 Phase 2b efficacy trial of *Shigella* vaccine, SF2a-TT15, using a *Shigella*
 challenge model
 \$2,671,955 (total)

- 12/11/19-12/01/2026 Karen Kotloff (PI, 15%), Wilbur Chen (Co-Inv, 5%)
 NIAID 1UM1-AI148689
 Implementing Vaccine and Treatment Evaluation Unit (VTEU) Clinical Site Protocols
 \$614,576 (year 1)
- 10/22/19-10/21/2022 Wilbur Chen (PI, 10%)
 Emergent BioSolutions, Inc.
 Multi-valent *Shigella*-ETEC vaccine development program
 \$4,545,828 (total)
- 09/16/19-09/15/2026 Kathy Neuzil (PI), Wilbur Chen (Co-PI)
 HHS-NIH-NIAID-BAA2018, Contract No. 75N93019C00055
 Collaborative Influenza Vaccine Innovation Centers (CIVICs), Clinical Core. The proposed research will advance the development of novel influenza vaccines through the design, execution and conduct of phase I and II clinical trials and challenge studies in diverse populations, and the establishment of a specimen repository for human samples for current and future scientific investigations.
 Up to \$200,971,302 (including base plus all options if fully exercised)
- 08/21/19-10/31/2021 Wilbur Chen (PI, 10%)
 GSK CTA 3829-19
 Phase 1 trial of a Rabies mRNA vaccine
 \$807,268 (total)
- 07/03/19-07/02/2020 Wilbur Chen (PI, 15%)
 UK DfID, subcontract to PATH through Pharmaron
 Phase 2b efficacy trial of iOWH032, using a cholera challenge model
 \$363,333 (total)
- FE 04/10/18 Wilbur Chen (PI)
 Guardian Therapeutics
 Research Services Agreement
 To support development of a small-molecule therapeutic, using a human challenge model with cholera
Hours to be invoiced, as necessary
- 06/08/17-05/01/2021 Eileen Barry & Wilbur Chen (Co-PI, 15%)
 NIH/NIAID R01-AI32257
 Good Manufacturing Practices Master Cell and Working Cell Banks and GMP Pilot Lot of Prototype *Shigella flexneri* 2a live vector expressing enterotoxigenic *E. coli* antigens, CVD 1208S-122
 \$2,471,977 (total)
- 11/01/16-06/30/2022 Wilbur Chen (Investigator; PD: D. Milton, UMCP)

DoD/DARPA

Prometheus-Respiratory Viral DREAM Challenge

Characterization of respiratory virus community circulation and transmission in college dorms and the detection of biomarkers.

- 09/16/13-09/15/2023 Wilbur Chen (PI on subawards, 25%; PD: K Kotloff)
NIH/NIAID HHSN272201300022I
Vaccine and Treatment Evaluation Unit (VTEU)
NIAID contract is for the evaluation of control measures against diseases other than AIDS. The goal is to provide the necessary resources to conduct high-public health priority phase 1-4 clinical vaccine trials. PI of following subaward:
- Task Order 13-0034, H7N9 MF59 in elderly, \$1,099,881 total
 - Task Order 14-0031, endemic dmLT vaccine, \$3,894,415 total
 - Task Order 16-0107, influenza protein microarray, \$526,082 total
 - Task Order FY.2017.B8C12.0080, H7N9 vaccine trials, \$4,678,871 total
 - Task Order 18-0010, H1N1 challenge model, \$1,601,464 total
- 05/14/12-05/13/2021 Wilbur Chen (PI Milestone 3; Milestone 4, 2%; PD: M. M. Levine)
The Wellcome Trust- Strategic Translation Award
Bivalent *Salmonella* Typhimurium/*Salmonella* Enteritidis Non-Typhoidal Conjugate Vaccine
\$3,999,620 (total directs)

PENDING

- 07/01/21-06/30/26 Donald Milton (PI UMCP), Wilbur Chen (PI UMB)
NIAID U19
Evaluating Modes of Influenza Transmission (EMIT-2) using Innovative Technologies and Designs in Controlled Environments
\$15,366,533 total; UMB portion \$6,027,882

COMPLETED

- 07/01/03-06/30/04 Wilbur Chen (Postdoctoral Fellow; PI: A Cross)
Evaluation of anti-endotoxin vaccine for human use.
NIH/NIAID-2RO1-AI 42181-04A1
- 07/01/03-06/30/04 Wilbur Chen (Co-Invest; PI: A Cross)
“Initial Safety and Pharmacokinetics Trial of Immune Globulin *Staphylococcus aureus* Capsule Polysaccharide (Altastaph™) in Subjects with *S. aureus* Bacteremia and Persistent Fever” a multi-center phase 1/2 clinical trial
Nabi Biopharmaceuticals, Rockville, MD
- 07/01/04-06/30/06 Wilbur Chen (Fellow; PI: MM Levine)
Fellowship training program in vaccinology

T32 postdoctoral fellowship training grant
NIH-T32 AI07524

- 09/01/07-08/31/08 Wilbur Chen (PI)
Immunologic Dysfunction in Elderly Subjects Who Undergo Aerobic Exercise Rehabilitation. This pilot study proposed to examine whether aerobic exercise can significantly change dendritic cell function in elderly subjects.
UM Claude D. Pepper Older American Independence Center Pilot Studies Grant
\$20,000 (personnel, supplies, equipment; no salary support)
(funded through Pepper Center grant P30 AG028747)
- 06/01/02-12/31/08 Wilbur Chen (Co-Invest; PI: MM Levine)
Vaccine Treatment and Evaluation Unit (VTEU)
NIH/NIAID-N01-AI-25461
Evaluation of control measures against infectious diseases other than AIDS. Clinical testing of vaccines and related products in pediatric, adult, and geriatric populations.
Principal Investigator on the following completed VTEU Subawards:
DMID 04-100, High-dose Influenza Vaccine for Older Adults
DMID 05-0055, Immunologic Studies on Influenza Vaccine in Healthy Young Adults
DMID 05-0141, H5N1 Alum adjuvanted vaccine in Older Adults
- 09/30/05-07/31/10 Wilbur Chen (Clinical Research Scholar, 75%; PI: A.R.Shuldiner)
NIH-1K12 RR023250-03
\$111,960 (Direct Costs/Year)
Title: Clinical Research Career Development (RMI)
University of Maryland Multidisciplinary Research Career Development Program
The goal of this project was to develop a multidisciplinary research career development program for junior faculty at the University of Maryland.
- 09/15/08-01/15/11 Wilbur Chen (Site PI)
Therapeutic Human Hyperimmune Polyclonal Antibodies against Staphylococcal Enterotoxin B
A two-year development plan which included a phase I/II clinical trial with STEBVax, sponsored by Integrated BioTherapeutics, Inc., in healthy human volunteers to generate polyclonal hyperimmune globulin for animal efficacy testing
DOD-Army SBIR- USAMRIID W81XWH-08-C-0004
\$169,663 (+12,087)
- 4/1/04 - 9/30/12 Wilbur Chen (PI beginning 6/1/2010)

Food and Waterborne Disease Integrated Research Network Clinical
Research Unit (FWD-IRN CRU)

The Clinical Research Unit in this Network was involved with the
evaluation of vaccines and other biologics to prevent food and waterborne
disease.

NIH/NIAID-N01-AI-40014

\$6,810,200

- 05/28/12-05/27/13 Wilbur Chen (PI)
Phase 1 trial of an oral single dose cholera vaccine
PaxVax, Inc.-CTA
\$622,000
- 11/18/09-12/31/13 Wilbur Chen (Co-investigator, 4%; PD: M.M. Levine)
Influenza incidence measurement and randomized trials of the
effectiveness of inactivated influenza vaccine in preventing influenza in
pregnant women and in their infants during the first six months of life in
Bamako, Mali
Bill & Melinda Gates Foundation-OPP1002744
\$9,999,815 (total directs)
- 04/16/13-03/31/14 Wilbur Chen (PI subaward; PD: K. Wycoff)
NIH/NIAID R34 AI104506
Planning grant for a phase 1 clinical trial of an immunoadhesin antitoxin
fusion protein for anthrax
\$12,613
- 11/01/07-10/31/16 Wilbur Chen (PI on subawards; PD: K. Kotloff)
NIH/NIAID HHSN272200800001C
Vaccine and Treatment Evaluation Unit (VTEU)
NIAID contract was for the evaluation of control measures against
diseases other than AIDS. The goal is to provide the necessary resources
to conduct high-public health priority phase 1-4 clinical vaccine trials.
Principal Investigator on the following completed VTEU Subawards:
DMID 07-0022, H5N1 clade 2 booster vaccine study, \$319,267
DMID 08-0013, H5N1 MF59 adjuvanted vaccine study, \$545,873
DMID 08-0006, Tularemia vaccine study, \$473,953
DMID 09-0053, pH1N1 adult vaccine study, \$500,000
DMID 09-0058, pH1N1 ASO3 adjuvanted vaccine study, \$500,000
DMID 10-0017, H5N1 ASO3 adjuvanted vaccine study, \$661,057
DMID 12-0060, *Clostridium difficile* treatment study, \$50,000 (protocol
development only)
DMID 07-0009, Staphylococcal enterotoxin B vaccine study, \$500,000
- 06/14/13-10/31/14 Wilbur Chen (PI, 10%)
Phase 3 trial of the efficacy of a oral cholera vaccine CVD 103-HgR

PaxVax, Inc.-CTA
\$2,721,000 (total directs + 30% indirects)

07/03/14-07/01/15 Wilbur Chen (PI, 2%)
NIH/NIAID HHSN272009000011
NIAID Influenza Research Collaboration-Intramural NIAID
IRC-002, A phase 2 trial of hyper-immune plasma for the treatment of
influenza
\$76,021 total direct

08/28/13-08/27/15 Wilbur Chen (PI of Task 8, human challenge study, 5%; PD: M.
Klempner, U Mass)
DoD/DARPA W911NF-13-1-0346
ADEPT: Prophylactic Options to Environmental and Contagious Threats
(PROTECT)-DARPA
“Vectored Delivery of Oligoclonal Antibodies for Protection Against
Enterotoxin Mediated Diarrheal Diseases” seeks to develop human
antibodies which would be protective against ETEC infection.
\$1,120,451 total, as subcontract to U Mass

10/2012-09/2015 Wilbur Chen (PI Objective 1, 3%; PD: M.M. Levine)
Bill & Melinda Gates Foundation-OPP1066646A Point-of-Care Rapid
Assessment Tool to Detect Protective Levels of Vaccine-Related
Antibodies in Oral (Crevicular) Fluid of Infants, Toddlers & Older
Subjects
\$2,514,225 (total directs)

02/05/15-01/31/16 Wilbur Chen (Collaborator, 5%; PD: D. Milton)
DJF-15-1200-K-0001725
Bio-Intelligence Chips (BIC) Program
This Intelligence Advanced Research Projects Activity (IARPA-BAA-13-
04) project seeks to discover *omni-omic* biomarkers from physiological
fluids to rapidly assess an individual’s involvement in biological weapons
activities

01/12/18-05/01/18 Wilbur Chen (PI)
CCT 2978-17-CTA
Serum Institute of India Pvt Ltd.
Serum substudies on subjects immunized with conjugate vaccine against
meningococcal serogroups A, C, Y, W, and X.
\$79,552

10/18/16-10/01/18 Wilbur Chen (PI, 15%)
PATH Enteric Vaccine Initiative
Clinical Trial Agreement
Phase 2b efficacy of a killed whole-cell *Shigella* vaccine candidate

\$3,368,841 (directs & 10% indirects)

- FE 05/23/16 Wilbur Chen (PI)
American Cleaning Institute (ACI)
Research Services Agreement
To support the ACI, a non-profit trade association, in the planning of clinical studies that will provide FDA-mandated data on the efficacy of OTC topical antiseptic hand products, using the human volunteer challenge model with ETEC
- 05/16/16-2/31/18 Wilbur Chen (PI, 5%)
PATH Enteric Vaccine Initiative & BMGF
Research Collaboration Agreement
“Development of a heat-stable enterotoxin (ST)-only expressing enterotoxigenic *Escherichia coli* (ETEC) challenge model”
\$307,159 (directs & 10% indirects)
- 01/08/16-01/07/18 Wilbur Chen (PI, 15%)
Wellcome Trust & PATH Enteric Vaccine Initiative
Phase 1 evaluation of a *Shigella* DB Fusion subunit vaccine (VAC-030)
\$1,386,710 (directs & 10% indirects)
- 01/01/16-02/31/18 Wilbur Chen (PI, 15%)
Serum Institute of India, Ltd & PATH Meningococcal Vaccine Project
Phase 1 evaluation of a pentavalent meningococcal conjugate vaccine (VAC-046)
\$399,006 (directs & 10% indirects)
- 11/19/15-10/31/18 Wilbur Chen (PI, 15%)
Bill & Melinda Gates Foundation, OPP136713
Volunteer Challenge Studies of *Cryptosporidium hominis*
To develop human experimental challenge models in which adult volunteers are given the protozoan pathogen *Cryptosporidium hominis* in order to lay a rational foundation for vaccine development.
\$2,473,837 (directs & 10% indirects)
- 04/01/14-03/31/19 Wilbur Chen (Co-PI on Project 2, 5%; PD: C. Fraser)
NIH/NIAID-U19-AI110820
Genomic Center for Infectious Diseases (UMB GCID-2)
“Host, Pathogen, and the Microbiome: Determinants of Infectious Disease Outcome” applies state-of-the-art genomic technologies to study the dynamic interactions between the host, pathogenic microbes, the microbiota, and the environment. Project 2: enteric bacterial pathogens
Role: specimens and bacterial isolates from human experimental studies with cholera and ETEC pathogens
\$15.2M total

- 09/15/13-08/31/18 Wilbur Chen (Investigator, 5%; PD: A. Stinchcomb)
FDA U01 FD004955-01
Heat Effect on Generic Transdermal Drug Delivery Systems
\$499,999/year (directs & indirects)
- 09/01/13-08/31/18 Wilbur Chen (Investigator, 5%; PD: A. Stinchcomb)
FDA U01 FD004947-01
Bioequivalence of topical drug products: in vitro – in vivo correlations
\$499,998/year (directs & indirects)
- 06/01/14-05/31/19 Wilbur Chen (Co-PI Clinical Core, 10%; PD: M. Szein)
NIH/NIAID-U19-AI082655
Cooperative Center for Human Immunology (UMB CCHI-2)
"Mucosal and Systemic Immunity, Vaccines and Microbiota Interplay in Humans" will investigate the role of the homeostasis of effector and regulatory immunological mechanisms elicited systemically and in the gut mucosa, as well as the interactions with the resident gut microbiota, in protection from infection with *Salmonella typhi*, the causative agent of typhoid fever in humans.
\$13.5M total

Publications

Peer-Reviewed Journal Articles (underline indicates First, Co-Primary, or Senior Authorship)

1. Chan KJ, Robb ND, and **Chen WH**. Myelin basic protein: interaction with calmodulin and gangliosides. *J Neurosci Res* 1990; 25:535-44.
2. Chan KJ and **Chen WH**. High performance capillary electrophoresis of calmodulin. *Electrophoresis* 1990; 02:15-18.
3. **Chen WH**, Balakonis PA, and Tsai CM. Detection of lipopolysaccharides on nylon membranes. *J Endotoxin Res* 1995; 2:405-10.
4. Tsai CM, **Chen WH**, and Balakonis PA. *Neisseria meningitidis* lipooligosaccharides mimic glycolipids and glycoproteins in having NeuNAc α 2-3Gal β 1-4GlcNAc sequence. *Glycoconjugate J.* 1995; 2:562.
5. Tsai CM, **Chen WH**, and Balakonis PA. Characterization of terminal NeuNAc α 2-3Gal β 1-4GlcNAc sequence in lipooligosaccharides of *Neisseria meningitidis*. *Glycobiology* 1998; 8:359-65.
6. Opal SM, Palardy JE, **Chen WH**, Parejo NA, Bhattacharjee AK, and Cross AS. Active immunization with a detoxified endotoxin vaccine protects lethal polymicrobial sepsis: Its use with CpG adjuvant and potential mechanisms. *J Infect Dis* 2005; 192:2074.
7. Lu W, Hisatsune A, Koga T, Kato K, Kuwahara I, Lillehoj EP, **Chen WH**, Cross AS, Gendler SJ, Gewirtz AT, Kim KC. Cutting Edge: Enhanced pulmonary clearance of *Pseudomonas aeruginosa* by Muc1 knockout mice. *J. Immunology* 2006; 176:3890.
8. Joshi VD, Kalvakolanu DV, **Chen WH**, Zhang L, Kang TJ, Thomas KE, Vogel SN, and Cross AS. A role for STAT1 in the regulation of lipopolysaccharide-induced interleukin-1 β expression. *J Interferon & Cytokine Res* 2006; 26:739-747.

9. Treanor JJ, Campbell JD, Zangwill KM, Rowe T, and Wolff M. *Acknowledged sub-investigator*. Safety and immunogenicity of an inactivated subvirion Influenza A (H5N1) vaccine. *N Eng J Med* 2006; 354:1343-51
10. Basu S, Kang TJ, **Chen WH**, Fenton MJ, Baillie L, Hibbs S, Cross AS. Role of *Bacillus anthracis* spore structures in macrophage cytokine responses. *Infect Immun* 2007; 75: 2351.
11. Couch RB, Winokur P, Brady R, Belshe R, **Chen WH**, Cate TR, Sigurdardottir B, Hoepfer A, Graham I, Edelman R, Ha F, Nino D, Capellan J, Ruben F. Safety and Immunogenicity of a High Dosage Trivalent Influenza Vaccine among Elderly Subjects. *Vaccine* 2007; 25:7656-63.
12. Cross AS, **Chen WH**, and Levine MM. A case for immunization against nosocomial infections. *J Leuk Biol* 2008; 83:483-8.
13. Zangwill KM, Treanor JJ, Campbell JD, Noah DL, and Ryea J. *Acknowledged sub-investigator*. Evaluation of the Safety and Immunogenicity of a Booster (Third) Dose of Inactivated Subvirion H5N1 Influenza Vaccine in Humans. *J Infect Dis* 2008; 197:580-3
14. **Chen WH**, Kang TJ, Bhattacharjee AK, and Cross AS. Intranasal administration of a detoxified endotoxin vaccine protects mice against heterologous Gram-negative bacterial pneumonia. *Innate Immunity* 2008; 14:269-78.
15. **Chen WH**, Kozlovsky BF, Effros RB, Grubeck-Loebenstien B, Edelman R, and Sztein MB. Vaccination in the Elderly: an Immunological Perspective. *Trends in Immunology* 2009; 30: 351-359.
16. Brady RC, Treanor JJ, Atmar RL, Keitel W, Edelman R, **Chen WH**, Winokur P, Belshe R, Noah DL, He F, and Hill H. Safety and immunogenicity of an inactivated subvirion influenza AH5N1 Vaccine with and without aluminum hydroxide among healthy elderly subjects. *Vaccine* 2009; 27: 5027-5170.
17. **Chen WH**, Basu S, Bhattacharjee AK, and Cross AS. Enhanced antibody responses to a detoxified lipopolysaccharide-group B meningococcal outer membrane protein vaccine are due to synergistic engagement of TLR. *Innate Immunity* 2010; 16:322-32.
18. Cate TR, Rayford Y, Niño D, Winokur P, Brady R, Belshe R, **Chen WH**, Atmar RL, Couch RB. A High Dosage Influenza Vaccine Induced Significantly More Neuraminidase Antibody than Standard Vaccine among Elderly Subjects. *Vaccine* 2010; 28: 2076-2079.
19. Chua JV and **Chen WH**. Herpes Zoster Vaccine for the Elderly: Boosting Immunity. *Aging Health* 2010; 6: 169-176.
20. Gregory SH, **Chen WH**, Mott S, Palardy JE, Parejo NA, Heninger S, Anderson CA, Arntstein AW, Opal SM, and Cross AS. Detoxified Endotoxin Vaccine (J5dLPS/OMP) Protects Mice Against Lethal Respiratory Challenge with *Francisella tularensis* SchuS4. *Vaccine* 2010; 28: 2908-15.
21. Chua JV and **Chen WH**. Vaccine protection strategies during pandemic flu outbreaks. *Critical Care* 2010; 14:218.
22. El-Kamary SS, Pasetti MF, Mendelman PM, Frey SE, Bernstein DI, Treanor JJ, Ferreira JF, **Chen WH**, Sublett R, Richardson C, Bargatze R, Sztein MB, and Tacket CO. Adjuvanted intranasal Norwalk virus-like particle vaccine elicits antibodies and antibody-secreting cells that express homing receptors for mucosal and peripheral lymphoid tissues. *J Infect Dis* 2010; 202:1649-58.
23. **Chen WH**, Cross AS, Edelman R, Sztein MB, and Pasetti MF. Antibodies and Th1-type cell-mediated immunity in elderly and young adults immunized with the standard or a

- high-dose influenza vaccine. *Vaccine* 2011; 29:2865-73.
24. Atmar RL, Bernstein DI, Harro CD, Al-Ibrahim MS, **Chen WH**, Ferreira J, Estes MK, Graham DY, Opekun AR, Richardson C, and Mendelman PM. Norovirus Vaccine against Experimental Human Norwalk Virus Illness. *N Eng J Med* 2011; 365:2178-87.
 25. **Chen WH** and El-Kamary SS. Vaccines for Enteric Infections. *Curr Op Gastro* 2012; 28:18-23.
 26. **Chen WH**, Toapanta F, Shirey KA, Zhang L, Giannelou A, Page C, Frieman M, Vogel S, and Cross AS. Potential Role for Alternatively Activated Macrophages in the Secondary Bacterial infection During Recovery from Influenza. *Immunology Letters* 2012; 141:227-34.
 27. Jackson LA, **Chen WH**, Stapleton JT, Dekker CL, Wald A, Brady RC, Edupuganti S, Winokur P, Mulligan MJ, Keyserling HL, Kotloff K, Roupael N, Noah DL, Hill H, and Wolff M. Immunogenicity and Safety of Varying Dosages of a Monovalent 2009 H1N1 Influenza Vaccine Given with and without AS03 Adjuvant in Healthy Adults and Senior. *J Infect Dis* 2012; 206:811-20.
 28. **Chen WH**. Turning Down the Heat: The Potential Role of RIP140 in Inflammation. *Cellular & Molecular Immunology* 2012; 9:195-6.
 29. Adhikari RP, Ajao AO, Aman MJ, Karauzum H, Sarwar J, Lydecker AD, Johnson JK, Nguyen C, **Chen WH**, Roghmann M-C. Lower Antibody Levels to Staphylococcus aureus Exotoxins are associated with Sepsis in Hospitalized Adults with Invasive Staphylococcus aureus Infections. *JID* 2012; 206:915-23.
 30. **Chen WH**, Winokur P, Edwards KM, Jackson JA, Wald A, Walter EB, Noah DL, Wolff M, and Kotloff KL. Phase 2 Assessment of the Safety and Immunogenicity of Two Inactivated Pandemic Monovalent H1N1 Vaccines in Adults as a Component of the U.S. Pandemic Preparedness Plan in 2009. *Vaccine* 2012; 30:4240-8.
 31. Ajao AO, Harris AD, Johnson JK, Roghmann M, Perencevich EN, Schweizer ML, Zhan M, **Chen WH**, Furuno JP. Association between Methicillin-resistant *Staphylococcus aureus* Colonization and Infection May not Differ by Age Group. *Infect Control Hosp Epidemiol* 2013; 34:93-5.
 32. Shirey KA, Lai W, Scott A, Lipsky M, Mistry P, Pletneva LM, Karp CL, McAlees J, Gioannini JL, Weiss J, **Chen WH**, Ernst R, Rossignol DP, Gusovsky F, Blanco JC, Vogel SN. The TLR4 Antagonist, Eritoran, Protects Mice from Lethal Influenza Infection. *Nature* 2013; 497:498-502.
 33. El-Kamary SS, Cohen MB, Bourgeois AL, Van De Verg L, Bauers N, Reymann M, Pasetti MF, and **Chen WH**. Safety and Immunogenicity of a Single Oral Dose of Recombinant Double-Mutant Heat-Labile Toxin (dmLT) Derived from Enterotoxigenic *Escherichia coli* (ETEC). *Clin Vac Immunol* 2013; 20:1764-70.
 34. **Chen WH**, Greenberg RN, Pasetti MF, Livio S, Lock M, Gurwith M, and Levine MM. Safety and immunogenicity of single-dose live oral cholera vaccine strain CVD 103-HgR prepared from new master and working cell banks. *Clin Vac Immunol* 2014; 21:66-73.
 35. **Chen WH**, Jackson LA, Edwards KM, Keitel WA, Hill H, Noah DL, Creech CB, Patel SM, Mangal B, Kotloff KL. Safety, Reactogenicity, and Immunogenicity of Inactivated Monovalent Influenza A/H5N1 Virus Vaccine Administered With or Without AS03 Adjuvant. *Open Forum Infect Dis* 2014; 1(3):ofu091.
 36. Stamatou NM, Zhang L, Jokilampi A, Finne J, **Chen WH**, El-Maarouf A, Cross A, and Hankey KG. Changes in Polysialic Acid Expression on Myeloid Cells during

- Differentiation and Recruitment to Sites of Inflammation: Role in Phagocytosis. *Glycobiology* 2014; 24:864-79.
37. Bernstein DI, Atmar RL, Lyon GM, Treanor JJ, Jiang X, Vinje J, Gregoricus N, **Chen WH**, Frenc RW, Moe C, Al-Ibrahim MS, Barrett J, Ferreira J, Estes MK, Graham DY, Goodwin R, Borkowski A, Clemens R, Mendelman PM. Norovirus vaccine against experimental human GII.4 virus illness: a challenge study in healthy adults. *J Infect Dis* 2015; 211:870-8.
 38. Callahan ST, Wolff M, Hill HR, and Edwards KM. *Acknowledged as member of NIAID Vaccine and Treatment Evaluation Unit (VTEU) Pandemic H1N1 Vaccine Study Group*. Impact of Body Mass Index on Immunogenicity of Pandemic H1N1 Vaccine in Children and Adults. *J Infect Dis* 2014; 210: 1270-74.
 39. Belshe RB, Frey SE, Graham IL, Anderson EL, Jackson LA, Spearman P, Edupuganti S, Mulligan MJ, Roupheal N, Winokur P, Dolor RJ, Woods CW, Walter EB, **Chen WH**, Turley C, Edwards KM, Creech CB, Hill H, Bellamy AR. Immunogenicity of avian influenza A/Anhui/01/2005 (H5N1) vaccine with MF59 adjuvant: a randomized clinical trial. *JAMA* 2014; 312:1420-28.
 40. Treanor JJ, Atmar RL, Frey SE, Gormley R, **Chen WH**, Ferreira J, Goodwin R, Borkowski A, Clemens R, Mendelman PM. A Novel Intramuscular Bivalent Norovirus VLP Vaccine Candidate – Reactogenicity, Safety and Immunogenicity in a phase I trial in healthy adults. *J Infect Dis* 2014; 210:1763-71.
 41. **Chen WH**, Garza J, Choquette M, Hawkins J, Hoepfer A, Bernstein DA, Hall R, Cohen MB. The safety and immunogenicity of escalating dosages of a single oral administration of Peru-15 pCTB, a candidate live, attenuated vaccine against enterotoxigenic *Escherichia coli* (ETEC) and *Vibrio cholerae*. *Clin Vac Immunol* 2015; 22: 129-35.
 42. Sundararajan A, Sangster MY, Frey S, Atmar R, **Chen WH**, Ferreira J, Bargatze R, Mendelman PM, Treanor JJ, Topham DJ. Robust Mucosal-homing Antibody-secreting B cell Responses Induced by Intramuscular Administration of Adjuvanted Bivalent Human Norovirus-like Particle Vaccine. *Vaccine* 2015; 33:568-76.
 43. Nita-Lazar M, Banerjee A, Feng C, Amin MN, Frieman MB, **Chen WH**, Cross AS, Wang L-X, Vasta GR. Desialylation of airway epithelial cells during influenza virus infection enhances pneumococcal adhesion via galectin binding. *Molec Immunol* 2015; 65:1-16.
 44. Winokur P, Patel S, Brady R, **Chen WH**, Edwards K, Creech CB, Frey S, Belshe R, Walter E, Bellamy A, Hill H. Safety and Immunogenicity of a Single Low or High Dose of Clade 2 H5N1 Inactivated Influenza Vaccine in Adults Previously Primed with Clade 1 H5N1 Vaccine. *J Infect Dis* 2015; 212: 525-30.
 45. Atmar RL, Bernstein DI, Lyon GM, Treanor JJ, Al-Ibrahim MS, Graham DY, Vinje J, Jiang X, Gregoricus N, Frenc RW, Moe CL, **Chen WH**, Ferreira J, Barrett J, Opekun AR, Estes MK, Borkowshi A, Baehner F, Goodwin R, Edmonds A, Mendelman PM. Serological Correlates of Protection against a GII.4 Norovirus. *Clin Vacc Immunol* 2015; 22: 923-9.
 46. Frey SE, Wald A, Edupuganti S, Jackson LA, Stapleton J, El Sahly H, El-Kamary SS, Edwards K, Keyserling H, Winokur P, Keitel W, Hill H, Goll JB, Chaplin P, Belshe RB, the DMID 09-0002 MVA Study Group, Anderson EL, Graham IL, Johnston C, Mulligan M, Roupheal N, Atmar R, Patel S, **Chen W**, Kotloff K, Creech CB. Comparison of lyophilized versus liquid modified vaccinia Ankara (MVA) formulations and

- subcutaneous versus intradermal routes of administration in healthy vaccinia-naïve subjects. *Vaccine* 2015; 33: 5225-34.
47. Jackson SS and **Chen WH**. The evidence for CVD 103-HgR as an effective single dose oral cholera vaccine. *Future Microbiology* 2015; 10: 1271-81.
 48. Omer SB, Richards JL, Madhi SA, Tapia MD, Steinhoff MC, Aqil AR, Wairagkar N; *acknowledged as member of the BMGF Supported Maternal Influenza Immunization Trials Investigators Group*. Three randomized trials of maternal influenza immunization in Mali, Nepal, and South Africa: Methods and expectations. *Vaccine* 2015; 33:3801-12.
 49. **Chen WH**, Jackson LA, Edwards KM, Keitel WA, Hill H, Noah DL, Creech CB, Patel SM, Mangal B, Kotloff KL. Persistence of Antibody to Influenza A/H5N1 Vaccine Virus: Impact of AS03 Adjuvant. *Clin Vacc Immunol* 2015; 23:73-77.
 50. Mbawuike I, Atmar RL, Patel SM, Corry D, Winokur PL, Brady RC, **Chen WH**, Edwards KM, Creech CB, Walter EB, Frey SE, Belshe RB, Goll JB, Hill H, Keitel WA. Cell Mediated Immune Responses Following Revaccination with an Influenza A/H5N1 Vaccine. *Vaccine* 2016; 34:547-554.
 51. **Chen WH**, Cohen MB, Kirkpatrick, BD, Brady RC, Galloway D, Gurwith M, Hall RH, Kessler RA, Lock M, Haney D, Lyon CE, Simon JK, Szabo F, Levine MM. Single-Dose Live Oral Cholera Vaccine CVD 103-HgR Protects Against Human Experimental Infection with *Vibrio cholerae* O1 El Tor. *Clin Infect Dis* 2016; 62: 1329-35.
 52. Tapia MD, Sow SO, Tamoura B, Teguate I, Pasetti MF, Kodio M, Onwuchekwa U, Tennant SM, Blackwelder WC, Coulibaly F, Traore A, Keita AM, Haidara FC, Diallo F, Doumbia M, Sanogo D, EdMatt E, Schluterman NH, Buchwalkd A, Kotloff KL, **Chen WH**, Orenstein EW, Orenstein LAV, Villanueva J, Bresee J, Treanor J, Levine MM. Maternal immunisation with trivalent inactivated influenza vaccine for prevention of influenza in infants in Mali: a prospective, active-controlled, observer-blind, randomised phase 4 trial. *Lancet ID* 2016; 16: 1026-35.
 53. Feldstein LR, Matrajt L, Halloran ME, Keitel WA, Longini IM. *Acknowledged as member of H5N1 Vaccine Working Group*. Extrapolating theoretical efficacy of inactivated influenza A/H5N1 virus vaccine from human immunogenicity studies. *Vaccine* 2016; 34: 3796-802.
 54. Hoft DF, Lottenbach K, Goll JB, Hill H, Winokur PL, Patel SM, Brady RC, **Chen WH**, Edwards K, Creech CB, Frey SE, Blevins TP, Salomon R, Belshe RB. Priming Vaccination with H5 Hemagglutinin Antigen Significantly Increases T cell Responses Induced by a Heterologous H5 Booster Vaccination. *J Infect Dis* 2016; 214: 1020-9.
 55. **Chen WH**, Pasetti MF, Adhikari RP, Baughman H, Douglas R, El-Khorazaty J, Greenberg N, Holtsberg FW, Liao GC, Reymann MK, Wang X, Warfield KL, Aman MJ. The safety and immunogenicity of a parenterally administered structure-based rationally modified recombinant Staphylococcal enterotoxin B protein vaccine, STEBVax. *Clin Vacc Immunol* 2016; 23: 918-25.
 56. **Chen WH** and Kotloff KL. Invited Commentary: *Shigella* Vaccine Development: Finding the Path of Least Resistance. *Clin Vacc Immunol* 2016; 23: 904-7.
 57. Mayo-Smith L, Simon J, **Chen WH**, Haney D, Lock M, Lyon C, Calderwood SB, Kirkpatrick B, Cohen, M, Levine M, Gurwith M, and Harris JB. The live attenuated cholera vaccine, CVD 103-HgR, primes responses to the toxin-coregulated pilus antigen TcpA in subjects challenged with wild type *Vibrio cholerae*. *Clin Vacc Immunol* 2017; 24: 1-10.

58. McArthur MA, **Chen WH**, Magder L, Levine MM, Sztein MB. Impact of CD4+ T Cell Responses on Clinical Outcome following Oral Administration of Wild-type Enterotoxigenic *Escherichia coli* in Humans. *PLoS Negl Trop Dis* 2017; 11:e0005291.
59. Levine MM, **Chen WH**, Kaper JB, Danzig L, and Gurwith M. PaxVax CVD 103-HgR single-dose live oral cholera vaccine. *Expert Review of Vaccines* 2017; 16: 197-213.
60. Jackson LA, Frey SE, El-Sahly HM, Mulligan MJ, Winokur PL, Kotloff KL, Campbell JD, Atmar RL, Graham I, Anderson EJ, Anderson EL, Patel SM, Fields C, Keitel W, Roupael N, Hill H, and Goll JB. *Acknowledged sub-investigator*. Safety and immunogenicity of a modified vaccinia Ankara vaccine using three immunization schedules and two modes of delivery: A randomized clinical non-inferiority trial. *Vaccine* 2017; 35: 1675-82.
61. Beigel JH, Tebas P, Elie-Turenne M, Bajwa E, Bell TE, Cairns CB, Shoham S, Deville JG, Feucht E, Feinberg J, Luke T, Raviprakash K, Danko J, O'Neil D, Metcalf JA, King K, Burgess TH, Aga E, Lane HC, Hughes MD, Davey RT. *Acknowledged as member of IRC002 Study Team*. Immune plasma for the treatment of severe influenza: an open-label, multicentre, phase 2 randomised study. *Lancet Respiratory Medicine* 2017; 5: 500-511.
62. Feng C, Li J, Snyder G, Huang W, Goldblum SE, **Chen WH**, Wang L-X, McClane BA, Cross AS. Antibody Against Microbial Neuraminidase Recognize Human Sialidase 3 (*neu3*): The Neuraminidase/Sialidase Superfamily Revisited. *mBio* 2017; 8:e00078-17.
63. Neuzil KM and **Chen WH**. Influenza Vaccines for Older Persons: Progress and Pitfalls. *J Infect Dis* 2017; 216: 397-8.
64. Mulligan M, Stapleton JT, Keitel WA, Frey SE, **Chen WH**, Roupael N, Edupuganti S, Beck A, Winokur PL, El-Sahly, HM. Tularemia Vaccine: Safety, Reactogenicity, "Take" Skin Reactions, and Antibody Responses following Vaccination with a New Lot of the *Francisella tularensis* Live Vaccine Strain - A Phase 2 Randomized Clinical Trial. *Vaccine* 2017; 35: 4730-7.
65. Sow SO, Tapia MD, **Chen WH**, Haidara FC, Kotloff KL, Pasetti MF, Blackwelder WC, Raore A, Tamboura B, Doumbia M, Diallo F, Coulibaly F, Onwuchekwa U, Kodio M, Tennant SM, Reymann M, Gurwith M, Lock M, Yonker T, Smith J, Simon JK, Levine MM. A randomized, placebo-controlled, double-blind Phase 2 trial comparing the reactogenicity and immunogenicity of a single $>2 \times 10^8$ colony forming units [cfu] standard-dose versus a $>2 \times 10^9$ cfu high-dose of CVD 103-HgR live attenuated oral cholera vaccine, with Shanchol inactivated oral vaccine as an open label immunologic comparator. *Clin Vacc Immunol* 2017 (Epub 11Oct2017).
66. Gaudlinski MR, Houser KV, Morabito KM, Hu Z, Yamshechikov G, Rothwell RS, Berkowitz N, Mendoza F, Saunders JG, Novik L, Hendel CS, Holman LA, Gordon IJ, Cox JH, Edupuganti S, McArthur MA, Roupael NG, Luke KE, Cummings GE, Sitar S, Bailer RT, Foreman BM, Burgomaster K, Pelc RS, Gordon DN, DeMaso CR, Dowd KA, Laurencot C, Schwartz RM, Mascola JR, Graham BS, Pierson TC, Ledgerwood JE, Chen GL, and the VRC319 and VRC320 study teams. *Acknowledged as sub-investigator*. Safety, tolerability, and immunogenicity of two Zika virus DNA vaccine candidates in healthy adults: randomised, open-label, phase 1 clinical trials. *Lancet* 2018; 391: 552-62.
67. Shin S, Thomas S, Raney S, Ghosh P, Hammell D, El-Kamary S, **Chen WH**, Billington MM, Hassan H, Stinchcomb A. In vitro-in vivo correlations for nicotine transdermal delivery systems evaluated by both in vitro skin permeation (IVPT) and in vivo serum

- pharmacokinetics under the influence of transient heat application. *J Control Release* 2018; 270; 76-88.
68. Aguado MT, Barratt J, Beard JR, Blomberg BB, **Chen WH**, Hickling J, Hyde TB, Jit M, Jones R, Poland GA, Friede M, Ortiz JR. Report on WHO meeting on immunization in older adults: Geneva, Switzerland, 22–23 March 2017. *Vaccine* 2018; 36: 921-31
 69. Rudolph ME, McArthur MA, Magder L, **Chen WH**, Barnes RS, Sztein MB. Differences Between Pediatric and Adult T Cell Responses to *in vitro* Staphylococcal Enterotoxin B Stimulation. *Front Immunol* 2018; 9: 498.
 70. Schaffner W, **Chen WH**, Hopkins RH, Neuzil K. Effective Immunization of Older Adults Against Seasonal Influenza. *Am J Medicine* 2018; 131: 865-73
 71. Islam K, Hossain M, Kelly M, Smith LM, Charles RC, Bhuiyan TR, Kovac P, Xu P, LaRocque RC, Calderwood SB, Simon JK, **Chen WH**, Haney D, Lock M, Lyon CE, Kirkpatrick BD, Cohen M, Levine MM, Gurwith M, Harris JB, Qadri F, Ryan ET. Anti-O-specific polysaccharide (OSP) immune responses following vaccination with oral cholera vaccine CVD 103-HgR correlate with protection against cholera after infection with wild-type *Vibrio cholerae* O1 El Tor Inaba in North American volunteers. *PLoS-NTD* 2018; 12(4):e0006376.
 72. Haney DJ, Lock MD, Gurwith M, Simon JK, Ishioka G, Cohen MB, Kirkpatrick BD, Lyon CE, **Chen WH**, Levine MM, Sztein MB, Harris JB. Lipopolysaccharide-specific Memory B Cell Responses to an Attenuated Live Cholera Vaccine are Associated with Protection Against *Vibrio cholerae* Infection. *Vaccine* 2018; 36: 2768-73.
 73. Riddle M, **Chen WH**, Kirkwood C, and MacLennan C. Update on vaccines for enteric pathogens. *Clin Microbiol Infect* 2018; 24: 1039-1045.
 74. **Chen WH**, Neuzil KM, Boyce CR, Pasetti MF, Reymann MK, Martellet L, Hosken N, LaForce FM, Dhare RM, Pisal SS, Chaudhari A, Kulkarni PS, Borrow R, Findlow H, Brown V, McDonough ML, Dally L, and Alderson MR. A double-blinded randomized study of the safety and immunogenicity of a pentavalent meningococcal conjugate vaccine, containing serogroups A, C, Y, W, and X, in healthy adults. *Lancet Infectious Diseases* 2018; 18: 1088-96.
 75. Richter TKs, Michalski JM, Zanetti L, Tennant SM, **Chen WH**, and Rasko DA. Responses of the human gut *Escherichia coli* population to pathogen and antibiotic disturbances. *mSystems* 2018; 3:e00047-18.
 76. Nakajima R, Supnet M, Jasinskas A, Jain A, Taghavian O, Obiero J, Milton DK, **Chen WH**, Grantham M, Webby R, Krammer F, Carter D, Felgner PL, Davies DH. Protein Microarray Analysis of the Specificity and Cross-Reactivity of Influenza Virus Hemagglutinin-Specific Antibodies. *mSphere* 2018; 3:e00592-18.
 77. Hazen TH, Nagaraj S, Sen S, Permal-Booth J, Barry EM, Bitoun J, **Chen WH**, Tennant SM, Rasko DA. Genome and functional characterization of CFA/I and CS6-encoding ST-only enterotoxigenic *Escherichia coli* reveals lineage and geographic isolate variation. *mSystems* 2019; 4:e00329-18.
 78. Hanevik K, **Chen WH**, Talaat KR, Porter C, Bourgeois AL. The way forward for ETEC controlled human infection models (CHIMs). *Vaccine* 2019; pii: S0264-410X(19)30030.
 79. Rudolph ME, McArthur MA, Magder L, Barnes RS, **Chen WH**, Sztein MB. Diversity of *Salmonella* Typhi-responsive CD4 and CD8 T cells before and after Ty21a typhoid vaccination in children and adults. *Int Immunol* 2019 Apr 5. pii: dxz011. doi: 10.1093/intimm/dxz011.

80. Rudolph ME, McArthur MA, Magder L, Barnes RS, **Chen WH**, Sztein MB. Age-Associated Heterogeneity of Ty21a-Induced T Cell Responses to HLA-E Restricted *Salmonella* Typhi Antigen Presentation. *Fron Immunol* 2019 Mar 4;10:257. doi: 10.3389/fimmu.2019.00257.
81. Levine MM, Barry EM, **Chen WH**. A Roadmap for Enterotoxigenic *Escherichia coli* vaccine development based on volunteer challenge studies. *Hum Vaccin Immunother* 2019; 15: 1357-78.
82. Rudolph ME, McArthur MA, Magder L, Barnes RS, **Chen WH**, Sztein MB. Characteristics of regulatory T-cell populations before and after Ty21a typhoid vaccination in children and adults. *Clin Immunology* 2019; 203: 14-22.
83. **Chen WH** and Azman AS. Mitigating Cholera in the Aftermath of Cyclone Idai. *AJTMH* 2019; 101:960-2.
84. Santaus TM, Li S, Saha L, **Chen WH**, Bhagat S., Stine OC, Geddes CD. A Comparison of Lyse-It[®] to Other Cellular Sample Preparation, Bacterial Lysing, and DNA Fragmentation Technologies. *PLoS-ONE* 2019;14(7):e0220102.
85. Talaat KR, Bourgeois AL, Frenck RW, **Chen WH**, MacLennan CA, Riddle MS, Suvarnapunya A, Brubaker JL, Kotloff KL, Porter CK. Consensus Report on *Shigella* Controlled Human Infection Model: Conduct of Studies. *Clin Infect Dis* 2019; 69: S580-90.
86. MacLennan CA, Riddle MS, **Chen WH**, Talaat KR, Jain V, Bourgeois AL, Frenck R, Kotloff K, Porter C. Consensus Report on *Shigella* Controlled Human Infection Model: Clinical Endpoints. *Clin Infect Dis* 2019; 69: S591-5.
87. Hossain M, Islam K, Kelly M, Mayo-Smith LM, Charles RC, Weil AA, Bhuiyan TR, Kovac P, Xu P, Calderwood SB, Simon JK, **Chen WH**, Lock M, Lyon CE, Kirkpatrick BD, Cohen M, Levine MM, Gurwith M, Leung DT, Azman A, Harris JB, Qadri F, Ryan ET. Immune responses to O-specific polysaccharide (OSP) in North American adults infected with *Vibrio cholerae* O1 Inaba. *PLoS-NTD* 2019; 13(11); e0007874.
88. Deming M and **Chen WH**. COVID-19 and lessons to be learned from prior Coronavirus outbreaks. *Ann Am Thorac Soc* 2020; 17: 790-4.
89. Omer SB, Clark DR, Madhi SA, Tapia MD, Nunes MC, Cutland CL, Simoes EAF, Aqil AR, Katz J, Tielsch JM, Steinhoff MC, Wairagkar N. *acknowledged as member of the BMGF Supported Maternal Influenza Immunization Trials Investigators Group*. Efficacy, duration of protection, birth outcomes, and infant growth associated with influenza vaccination in pregnancy: a pooled analysis of three randomised controlled trials. *Lancet Respir Med* 2020; 8: 597-608.
90. Muhsen K, Sow SO, Tapia MD, Haidara FC, Reymann M, Asato V, **Chen WH**, Pasetti MF, and Levine MM. Pre-existing *Helicobacter pylori* serum IgG enhances the vibriocidal antibody response to CVD 103-HgR live oral cholera vaccine in Malian adults. *Sci Rep* 2020; 10: 16871.
91. Kahn JP, Henry LM, Mastroianni AC, **Chen WH**, and Macklin R. For now, it's unethical to use human challenge studies for SARS-CoV-2 vaccine development. *Proc Natl Acad Sci U S A* 2020 Nov 17;117(46):28538-28542.
92. Allen J, Toapanta F, **Chen WH**, Tennant SM. Understanding immunosenescence and its impact on vaccination of older adults. *Vaccine* 2020 De 14;38(52):8264-8272.
93. Clark DR, Omer SB, Tapia MD, Nunes MC, Cutland CL, Tielsch JM, Wairagkar N, Madhi SA. *Acknowledged as member of the BMGF Supported Maternal Influenza*

- Immunization Trials Investigators Group*. Influenza or Meningococcal Immunization During Pregnancy and Mortality in Women and Infants. *Pediatr Infect Dis J* 2020; 39: 641-644.
94. Winokur PL, El Sahly HM, Mulligan MJ, Frey SE, Anderson EJ, Edwards KM, Bernstein DI, Schmader KE, Jackson LA, **Chen WH**, Hill H, Bellamy A. Immunogenicity and safety of different dose schedules and antigen doses of an MF59-adjuvanted H7N9 vaccine in healthy adults aged 65 years and older. *Vaccine* 2021 Feb 22;39(8):1339-1348.
 95. Salerno-Goncalves R, **Chen WH**, Mulligan M, Sharon F, Stapleton J, Keitel W, Bailey J, Sendra E, Hill H, Johnson R, Sztejn M. Vaccine-related major cutaneous reaction – Take-size correlates with cellular-mediated immune responses after tularemia immunization. *Clin Trans Immunol* 2021 Jan 19;10(1):e1239.
 96. Williams SR, Driscoll AJ, LeBuhn HM, **Chen WH**, Neuzil KM, Ortiz JR. National Routine Adult Immunization Programs among World Health Organization Member States: An Assessment of Health Systems to Deploy Future SARS-CoV-2 Vaccines. *Eurosurveillance* 2021 (in press).
 97. Ortiz JR, Robertson J, Hsu J-S, Yu SL, Driscoll AJ, Williams SR, **Chen WH**, Fitzpatrick MC, Sow SO, Biellik RJ, Okwo-Bele J-M, Neuzil KM. The potential effects of deploying SARS-Cov-2 vaccines on cold storage capacity and immunization workload in countries of the WHO African Region. *Vaccine* 2021 (in press).
 98. Oliver SE, Gargano JW, Scobie H, et al. *acknowledged as member of ACIP*. The Advisory Committee on Immunization Practices' Interim Recommendation for Use of Janssen COVID-19 Vaccine – United States, February 2021. *MMWR* March 2, 2021; 70.
 99. Frey SE, Stapleton JT, Ballas ZK, Rasmussen WL, Kaufman TM, Blevins T, Jensen TL, Davies DH, Tary-Lehman M, Chaplin P, Hill H, Goll JB. *Acknowledged as member of the DMID-09-0002 MVA Vaccine Study Group*. Human antibody responses following vaccinia immunization using protein microarrays and correlation with cell-mediated and antibody dependent cellular cytotoxicity responses. *J Infect Dis* 2021 (in press).

Submitted or In-Revision Peer-reviewed Journal Articles

100. Rudolph ME, McArthur MA, Magder L, Barnes RS, **Chen WH**, Sztejn MB. Heterogeneity in Circulating T Follicular Helper Cells in Children and Adults. Submitted to *J Leuk Biol*.
101. Herrington DM and COVID-19 Community Research Partnership Study Group. Duration of SARS-CoV-2 Sero-Positivity in a Large Longitudinal Sero-Surveillance Cohort: The COVID-19 Community Research Partnership. Submitted to *MedRxiv*.
102. Ortiz JR, Yu SL, Driscoll AJ, Williams SR, Robertson J, Hsu J-S, **Chen WH**, Biellik RJ, Sow SO, Kuchhar S, Neuzil KM. The operational feasibility of vaccination programs targeting influenza risk groups in the WHO African and South-East Asian Regions. Submitted to *Clin Infect Dis*.
103. Porter C, Detizio K, Maier N, Testa K, Talaat K, **Chen WH**, Lyon C, Gutierrez R, Frenck R, Isidean S, Kaminski R, Alcalá A, Hanevik K, Sawe F, Kirkpatrick B, Bourgeois L. A site assessment tool for inpatient controlled human infection models for enteric disease pathogens. Submitted to *Clinical Trials*.
104. Jumani R, Blais J, Tillmann H-C, Segal F, Wetty D, Ostermeier C, Number N, Lakshman J, Aziz N, Chandra R, **Chen WH**, Chappell C, Diagnana T, Manjunatha U. Opportunities

and challenges in developing a *Cryptosporidium* controlled human infection model for testing anti-parasitic agents. Submitted to *ACS Infectious Diseases*.

Miscellaneous Publications

1. Thomas Masterson, Steve Weinroth, and **Wilbur Chen**. 2003 HIV Weekly Calendar, ISBN:1588082113, International Medical Publishing, Inc., McLean, VA, USA, 2003.
2. Thomas Masterson, Steve Weinroth, and **Wilbur Chen**. 2004 HIV Weekly Calendar, ISBN: 1588084663, International Medical Publishing, Inc., McLean, VA, USA, 2004.
3. **Wilbur Chen**. Contributing author to Infectious Diseases Images website on a case of *Scedosporium apiospermum* arthritis. 2003. <http://www.idimages.org/main.asp>
4. Acknowledged medical monitor in article. Pasetti MF, Resendiz-Albor A, Ramirez K, Stout R, Papania M, Adams RJ, Polack FP, Ward BJ, Burt D, Chabot S, Ulmer J, Barry EM, and Levine MM. Heterologous Prime-Boost Strategy to Immunize Very Young Infants against Measles: Pre-clinical Studies in Rhesus Macaques. *Clin Pharmacol Ther* 2007; 82:672-85.
5. Acknowledged as member of safety monitoring committee in article. Keitel WA, Dekker CL, Mink C, Campbell JD, Edwards KM, Patel SM, Ho DY, Talbot HK, Guo K, Noah DL, and Hill H. Safety and Immunogenicity of inactivated, Vero cell culture-derived whole virus influenza A/H5N1 vaccine given alone or with aluminum hydroxide adjuvant in healthy adults. *Vaccine* 2009; 27:6642-6648.
6. Contributor to *BMJ Best Practice*, Monograph Topic: Tularemia. August 2016.
7. Module 1 (Introduction) and Module 4 (Conclusion), CITI Program with AAMC; videotaping of training modules on re-opening research on campus with respect to safe practices about COVID-19; May 2020.

Abstracts

1. **Chen WH** and Rastegar DA. Utility of HIV-1 RNA Testing of Hospitalized Patients. Poster presentation at Maryland Associates ACP meeting on May 23, 2002.
2. **Chen WH**, Erlich RB, and Ziegelstein RC. A Jaundiced View of Thrombocytopenia. Poster presentation at Maryland Associates ACP meeting on May 23, 2002.
3. **Chen WH**, Cross AS, Opal SM, Warren S, Palardy JE, and Bhattacharjee AK. CpG Oligonucleotide enhances the serum antibody response and protective efficacy of a vaccine for sepsis. Oral presentation S-2 at the 7th Annual Conference on Vaccine Research on May 25, 2004, Arlington, VA.
4. **Chen WH**, Cross AS, and Bhattacharjee AK. Intranasal Administration of a Detoxified Lipopolysaccharide (dLPS) Vaccine with CpG Elicits Systemic IgG and Local IgA. Poster presentation G-541 at the 44th Interscience Conference on Antimicrobial Agents and Chemotherapy on October 30, 2004, Washington, DC.
5. Cross A, Opal S, Palardy J, **Chen WH**, and Bhattacharjee AK. The serum antibody response and protective efficacy of a detoxified *Escherichia coli* (J5 mutant) lipopolysaccharide/group B meningococcal outer membrane protein (J5dLPS/OMP) vaccine for sepsis is enhanced by CpG oligonucleotide adjuvant (CpG). Poster presentation #179 at the 8th International Endotoxin Society Conference on November 18, 2004, Kyoto, Japan.

6. **Chen WH.** Detoxified endotoxin vaccine for nosocomial pneumonia. Oral session at the Inaugural Conference of the Mucosal Biology Research Center, University of Maryland, Baltimore on June 21, 2005
7. **Chen WH,** Bhattacharjee AK, Cross AS. Intranasal administration of a detoxified lipopolysaccharide vaccine protects against Gram negative bacterial pneumonia. Poster G-916 at the 45th ICAAC, Washington, DC on December 17, 2005.
8. Joshi VD, Kalvakolanu DV, **Chen WH,** Basu S, Zhang L, Vogel S, Cross AS. Role of STAT1 in the regulation of lipopolysaccharide-induced interleukin-1 β expression. Keystone Conference on Innate Immunity, Banff, Canada, February, 2006.
9. Basu S, **Chen WH,** Fenton MJ, Baillie L, Hibbs S, Kang TJ, Cross AS. Role of *Bacillus anthracis* spore structures in TLR-mediated cytokine responses. ASM Conference on Biodefense on February 16, 2006, Washington, DC.
10. **Chen WH,** Basu S, Bhattacharjee AK, Cross AS. Synergistic Toll-Like Receptor (TLR) Signaling is Required for Optimal Antibody Responses to an Endotoxin-Based Sepsis Vaccine. Poster #P4 at the NFID 9th Annual Conference on Vaccine Research, Baltimore, Maryland on May 8, 2006.
11. Kang TJ, **Chen WH,** Basu S, Fenton MJ, Weiner MA, Hibbs S, Baillie L, Cross AS. Critical Role for Caspase-1 in the Innate Immune Response to *Bacillus anthracis*. AAI/Immunology Annual Meeting, Boston, MA on May 13, 2006.
12. Couch RB, Winokur P, Brady R, Belshe R, Edelman R, Cate TR, Sigurdardottir B, Hoepfer A, Graham I, **Chen WH,** Ha F, Nino D, Capellan J, Ruben F. Reactogenicity and Immunogenicity of a High Dosage Trivalent Influenza Vaccine among Elderly Subjects. NFID 10th Annual Conference on Vaccine Research, Baltimore, MD on April 30, 2007.
13. Brady R, Treanor J, Atmar RL, Edelman R, **Chen WH,** Winokur P, Belshe R. A Phase I-II, Randomized, Controlled, Dose-Ranging Study of the Safety, Reactogenicity, and Immunogenicity of Intramuscular Inactivated Influenza A/H5N1 Vaccine Given Alone or with Aluminum Hydroxide to Healthy Elderly Adults. Options for the Control of Influenza VI, Toronto, Canada in June 2007.
14. **Chen WH,** Gregory SH, Opal S, and Cross AS. Detoxified J5 lipopolysaccharide (LPS) core glycolipid/group B meningococcal outer membrane protein (J5dLPS/OMP) complex vaccine with CpG adjuvant protects mice against lethal pulmonary infection with *F. tularensis*. Poster #69 at 2008 Tularemia Workshop, Sagamore Resort and Conference Center, Bolton Landing, NY on March 31, 2008.
15. **Chen WH,** Bowen S, Cross AS, Edelman R, Hayes M, Lim Y, Reymann M, Ruslanova I, Wu S, Szein MB, Pasetti MF. Cellular and Humoral Immune Responses of Elderly Adults Who Received a High-dose or Standard-dose Influenza Vaccine. NFID 11th Annual Conference on Vaccine Research, Baltimore, MD on May 6, 2008.
16. Szein M, Heuser M, **Chen W,** Pasetti M, Cross A, and Edelman R. Immunosenescence in Healthy Elderly Adults Immunized with Hepatitis B and Influenza Vaccines. U.S.-Japan Cooperative Medical Sciences Program: Immunosenescence Workshop, San Francisco, CA on June 21, 2008.
17. **Chen WH** and Cross AS. LPS Primes the Immune System to Protect Against Lethal Sepsis. 10th Biennial International Endotoxin and Innate Immunity Society, Edinburgh, UK on July 31, 2008.

18. **Chen WH**, Gregory S, Opal S, Bhattacharjee AK, and Cross AS. A Detoxified Lipopolysaccharide (LPS) Vaccine with CpG Adjuvant Protects Mice Against Lethal Pulmonary Infection with *F. tularensis*. 48th ICAAC/46th IDSA, Washington, DC on October 26, 2008.
19. Shoaibi A, **Chen WH**, and Braver E. Association between Heavy Alcohol Consumption and Hepatitis in Vietnam Veterans. 42nd Society for Epidemiologic Research, Anaheim, CA on June 24, 2009.
20. Ajao AO, Harris AD, Roghmann M, Perencevich EN, Schweizer ML, **Chen WH**, Furuno JP. Age as a Non-linear Predictor in the Progression from Methicillin-resistant Staphylococcus aureus (MRSA) Colonization to Infection. 49th ICAAC, San Francisco, CA, September 2009.
21. **Chen WH** and Giannelou A. Hypersusceptibility to lethal bacterial pneumonia post-influenza recovery. XII International Symposium on Respiratory Virus Infections, Taipei, Taiwan. March 11, 2010.
22. Tacket CO, Frey S, Bernstein DI, Treanor JJ, El-Kamary S, Pasetti MF, Sztein MB, **Chen WH**, Ferreira J, and Richardson C. Intranasal Vaccination Elicits Serum Antibodies and Antibody Secreting Cells Expressing Mucosal Homing Receptors in a Phase I Safety and Immunogenicity Study of a Novel Norovirus VLP Vaccine. 13th Annual Conference on Vaccine Research, Bethesda, MD, April 2010.
23. Swamy G et al. Safety and Immunogenicity of an Inactivated Monovalent 2009 Influenza A (H1N1) Vaccine in Pregnant Women. Annual Infectious Diseases Society for Obstetrics and Gynecology, Santa Fe, NM, August 5, 2010.
24. Patel S et al. A Randomized, Double-Blind Trial of the Safety and Immunogenicity of 2008-2009 Seasonal Inactivated Trivalent Influenza Vaccine (TIV) in Pregnant Women, Annual Infectious Diseases Society for Obstetrics and Gynecology, Santa Fe, NM, August 7, 2010.
25. Roghmann M, Ajao A, Adhikari RP, Karauezuem H, **Chen WH**, Johnson JK, and Aman MJ. Lower Antibody Levels to S. aureus Exotoxins associated with Sepsis in Hospitalized Patients with Invasive S. aureus Infections. Oral abstract at 50th ICAAC, Boston, MA, September 15, 2010.
26. **Chen WH**, Shirey KA, Vogel SN, Frieman, and Cross AS. The contribution of alternatively activated macrophages in eliciting the hypersusceptibility to post-influenza bacterial pneumonia. 2010 Joint Society of Leukocyte Biology and the International Endotoxin and Innate Immunity Society, Vancouver, British Columbia, October 8, 2010.
27. Jackson LA, **Chen WH**, Winokur P, Dekker CL, Wald A, Brady R, Mulligan MJ, Keyserling HL, Noah DL, Hill H, and Wolff M. Immunogenicity of a 2009 H1N1 Influenza Vaccine Administered at Different Dose Levels Given With and Without ASO3 Adjuvant. Poster presentation at 48th IDSA, Vancouver, October 23, 2010.
28. Atmar RL, Bernstein DI, Harro CD, Al-Ibrahim MS, **Chen WH**, Ferreira J, Estes MK, Graham DY, Richardson C, and Mendelman PM. Efficacy of An Intranasal (IN) Norovirus (NoV) Vaccine to Prevent Acute Gastroenteritis (AGE) Following Experimental Live GI.1 Nov Challenge. Late breaker Oral Abstract at 48th IDSA, Vancouver, October 23, 2010.
29. Atmar RL, Bernstein DI, Harro CD, Al-Ibrahim MS, **Chen WH**, Ferreira J, Estes MK, Graham DY, Richardson C, Bargatze RF, and Mendelman PM. An Intranasal (IN) Norovirus (NoV) Vaccine Shows Efficacy in Preventing Acute Gastroenteritis (AGE)

- Following a Live GI.1 NoV Challenge. Abstract at Keystone Meeting: Immunological Mechanisms of Vaccination, Seattle, October 27-November 1, 2010.
30. Toapanta FR, Giannelou A, Frieman M, Shirey KA, Vogel S, Zhang L, Cross AS, and **Chen WH**. Alternatively Activated Macrophages and Susceptibility to Secondary Bacterial Infection in Influenza Infected Mice. Abstract #240 at Keystone Meeting: Pathogenesis of Influenza: Virus-Host Interactions, Hong Kong, May 26, 2011.
 31. Richardson C, Frey SE, Treanor JJ, Atmar RL, Topham D, **Chen WH**, Ferreira J, Bargatze R, and Mendelman PM. Phase 1 dose escalation, safety and immunogenicity of a human calcivirus (Norovirus) bivalent VLP vaccine by the intramuscular route. Oral at Vaccines for Enteric Disease, Cannes, France, September 15, 2011.
 32. Frey SE, Treanor JJ, Atmar RL, Topham D, **Chen WH**, Ferreira J, Bargatze RF, Mendelman PM, and Richardson C. Phase 1 dose escalation, safety and immunogenicity study of a bivalent Norovirus VLP vaccine by the intramuscular route. Poster #717 at 49th IDSA, Boston, MA, October 21, 2011.
 33. Treanor JJ, Frey SE, Gormley R, Atmar R, Topham D, **Chen W**, Ferreira J, Bargatze R, Richardson C, and Mendelman P. Safety and Immunogenicity of an Intramuscular Bivalent Norovirus VLP Vaccine. Oral presentation #2420 at ICAAC 2012, San Francisco, CA, September 10, 2012
 34. **Chen WH**, Greenberg RN, Pasetti MF, Livio S, Lock M, Levine MM, Gurwith M. Safety and immunogenicity of a single-dose live oral cholera vaccine strain CVD 103-HgR prepared from new master and working cell banks. Late-breaker abstract at ASTMH 2012, Atlanta, GA. November 11, 2012
 35. **Chen WH**, Greenberg RN, Pasetti MF, Livio S, Lock M, Levine MM, Gurwith M. Prelude to a phase II cholera challenge study: Safety and immunogenicity of a single-dose live oral cholera vaccine strain CVD 103-HgR prepared from new master and working cell banks. Poster at Wellcome Trust: Human Challenges meeting, Cambridge, UK, January 9, 2013.
 36. Levine MM, **Chen W**, Tacket CO, Kotloff KL. Historical and contemporary perspectives on human microbial challenge models. Oral Session at Wellcome Trust: Human Challenges meeting, Cambridge, UK, January 9, 2013.
 37. Treanor J, Frey S, Gormley R, Atmar R, Topham D, **Chen WH**, Ferreira J, Bargatze R, Richardson C, Mendelman P. The First Norovirus Bivalent VLP Vaccine Study in Man. Poster P-141 at 13th Conference of the International Society of Travel Medicine 2013 (CISTM 2013) in Maastricht, Netherlands, May 19-23, 2013.
 38. Treanor J, Frey S, Gormley R, Atmar R, Topham D, **Chen WH**, Ferreira J, Bargatze R, Richardson C, Mendelman P. The first norovirus bivalent GI.1/GII.4 virus-like particle (VLP) vaccine in man. Abstract A-534-0042-00195 at 31st Annual Meeting of the European Society for Paediatric Infectious Diseases in Milan, Italy, May 28 - June 1, 2013.
 39. Bernstein DI, Atmar RL, Lyon GM, Treanor JJ, **Chen WH**, Frenck RW, Jiang X, Vinje J, Al-Ibrahim MS, Barrett J, Graham DY, Richardson C, Goodwin R, Borkowski A, Clemens R, Mendelman PM. An Intramuscular (IM) Bivalent Norovirus GI.1/GII.4 Virus Like Particle (VLP) Vaccine Protects Against Vomiting and Diarrhea in an Experimental Human GII.4 Oral Challenge Study. Late Breaker Oral Abstract 169b at IDWeek 2013, San Francisco, CA, October 2-6, 2013.

40. Levine MM, **Chen WH**, Kirkpatrick BD, Brady R, Galloway D, Kessler RA, Lock M, Lyon CE, Hall RH, Szabo F, Simon JK, Gurwith M, and Cohen The role of human challenge studies in the development of cholera vaccines. Abstract at the International Alliance for Biological Standardization (IABS), New Technologies, New Vaccines VIII 2014 meeting, Wilmington, DE; March 23-26, 2014.
41. Goodwin R Bernstein DI, Atmar RL, Lyon GM, Treanor JJ, **Chen WH**, Frenck RW, Jiang X, Vinjé J, Al-Ibrahim MS, Barrett J, Graham DY, , Borkowski A, Clemens R, and Mendelman PM. Reduction in Vomiting Associated with Norovirus Vaccination in a Live Norovirus Human Challenge Study. Abstract at 16th International Congress on Infectious Disease, Cape Town, South Africa, April 2-5, 2014.
42. Atmar RL, Bernstein DI, Lyon GM, Treanor JJ, **Chen WH**, Frenck RW, Jiang X, Vinje J, Al-Ibrahim MS, Moe C, Barrett J, Ferreira J, Estes MK, Graham DY, Goodwin R, Borkowski A, Clemens R, Mendelman PM. Serological Correlates of Protection Against A GII.4 Norovirus. Abstract at 32nd Annual Meeting of European Society for Paediatric Infectious Diseases (ESPID 2014), Dublin, Ireland, May 6-10, 2014.
43. **Chen WH**, Cohen MB, Kirkpatrick BD, Brady R, Galloway D, Gurwith M, Hall RH, Kessler RA, Lock M, Lyon CE, Simon JK, Szabo F, Levine MM. Single-Dose Live Attenuated Oral Cholera Vaccine (CVD 103-HgR) Protects against Cholera at 10 Days following Vaccination: Results of a *Vibrio cholerae* O1 El Tor Inaba Challenge Study. Oral abstract at 63rd Annual Meeting of the American Society for Tropical Medicine & Hygiene (ASTMH 2014), New Orleans, LA, November 2-5, 2014.
44. **Chen WH**, Cohen MB, Kirkpatrick BD, Brady R, Galloway D, Gurwith M, Hall RH, Kessler RA, Lock M, Lyon CE, Simon JK, Szabo F, Levine MM Single-Dose Live Attenuated Oral Cholera Vaccine (CVD 103-HgR) Protects Against Heterologous Challenge With Wild-type *Vibrio cholerae* O1 El Tor Inaba at 10 Days and 3 Months After Vaccination. Oral Abstract at 49th U.S.-Japan Conference on Cholera and Other Enteric Bacterial Infections, Gainesville, FL, January 14, 2015.
45. **Chen WH**, McArthur MA, Rasko DA, Broering T, Szein MB, Molrine D, Thomas W, Vigneault F, Klempner M, Levine MM. Establishment of a human experimental challenge with enterotoxigenic *Escherichia coli* (ETEC) strain H10407 and preliminary results of intestinal microbiome and immune response measurements. Poster at 49th U.S.-Japan Conference on Cholera and Other Enteric Bacterial Infections, Gainesville, FL, January 15, 2015
46. Simon JK, **Chen WH**, Cohen MB, Kirkpatrick B, Gurwith M, Hall R, Lock M, Haney D, Lyon CE, and Levine MM. Immune Correlates of Protection in Cholera: Analysis of Data from a Human Challenge Model. Oral Abstract at 2015 Annual Conference of Vaccine Research, Bethesda, MD, April 13, 2015.
47. Simon JK, **Chen WH**, Cohen MB, Kirkpatrick BD, Lyon CE, Hall RH, Lock M, Levine MM, Gurwith M. Redevelopment of a single-dose live-attenuated oral cholera vaccine CVD 103-HgR. Oral Abstract at 2015 Vaccines for Enteric Diseases Conference, Edinburgh, UK, July 9, 2015.
48. Gurwith M, Simon JK, **Chen WH**, Cohen MB, Kirkpatrick BD, Lyon CE, Hall RH, Lock M, Levine MM. Development of a '2nd generation' vaccine for epidemic response and endemic country use. Oral Abstract at 2015 Vaccines for Enteric Diseases Conference, Edinburgh, UK, July 9, 2015.

49. Thomas S, Shin SH, Abdallah I, Ghosh P, Newman B, Raney S, Hammell D, El-Kamary S, **Chen W**, Hassan HE, Stinchcomb AL. A Pharmacokinetic Study of the Effect of a Standardized Exposure to Heat on Nicotine Transdermal Delivery in Adult Smokers. Abstract to 2015 American Association of Pharmaceutical Scientists Annual Meeting, Oct 25-29, 2015; Orange County Convention Center, Orlando, FL.
50. Mayo-Smith L, Simon J, **Chen WH**, Lyon C, Kirkpatrick B, Cohen M, Gurwith M, Harris JB. Immune Response to *V. cholerae* Toxin-Coregulated Pilus A induced by Single-Dose, Live Oral Cholera Vaccine, strain CVD 103-HgR. 50th U.S.-Japan Conference on Cholera and Other Enteric Bacterial Infections, North Bethesda, MD, January 11-15, 2016
51. Richter T, Michalski J, **Chen WH**, Rasko DA. Diversity, dynamics and diarrhea: how ETEC infection impacts resident *E. coli*. 50th U.S.-Japan Conference on Cholera and Other Enteric Bacterial Infections, North Bethesda, MD, January 11-15, 2016
52. **Chen WH**, Pasetti MF, Douglas R, Reymann M, Wang X, Greenberg N, Liao G, Warfield K, Holtsberg F, Aman J. The safety and immunogenicity of a parenterally administered modified recombinant Staphylococcal enterotoxin B protein vaccine. 19th Annual Conference on Vaccine Research, Baltimore, MD, April 18, 2016.
53. Levine MM and **Chen WH**. CVD 103-HgR, a single-dose live oral cholera vaccine for travelers and for reactive immunization to control "virgin soil" epidemics in immunologically-naïve populations. 2016 Hwasun International Vaccine Forum, Hwasun, Korea, June 10-11, 2016.
54. Richter T, Song Y, Michalski J, Mahurkar A, White OR, Kaper JB, **Chen WH**, and Rasko DA. 'Omics approaches to the study of ETEC H10407 challenge. 1st Vaccines Against Shigella and ETEC conference, Washington, DC, June 28-30, 2016.
55. McArthur MA, **Chen WH**, Levine MM, and Sztein MB. Modulation of antibody responses against enterotoxigenic *Escherichia coli* (ETEC) by T cells in humans. 1st Vaccines Against Shigella and ETEC conference, Washington, DC, June 28-30, 2016.
56. Aman MJ, Fasetti MF, Douglas R, Reymann M, Wang X, Greenberg N, Liao G, Warfield KL, Holtsberg FW, and **Chen WH**. First-in-man clinical trial of a superantigen toxoid: safety and immunogenicity of rationally designed recombinant Staphylococcal enterotoxin B vaccine (STEBVax). International Symposium on Staphylococci and Staphylococcal Infections 2016, Seoul, Korea, August 30-September 2, 2016.
57. Richter TK, Song Y, Michalski J, Mahurkar A, White OR, Kaper JB, **Chen WH**, and Rasko DA. 'Omics Approach to Enterotoxigenic *Escherichia coli* and Human Gut Microbiome During Infection. ASM Microbe 2017, New Orleans, June 1-5, 2017.
58. Richter TK, Michalski J, Mahurkar A, Zanetti L, Tennant S, Livio S, **Chen WH**, and Rasko DA. Responses of human gut *E. coli* population to pathogen and antibiotic disturbances. ASM Microbe 2017, New Orleans, June 1-5, 2017.
59. **Chen WH**, Pasetti MF, Findlow H, Dally L, Chaudhari A, Kulkarni P, LaForce FM, Alderson M, Martellet L, Neuzil K. Phase 1 Study of a Pentavalent Meningococcal Conjugate Vaccine (ACYWX). Annual Conference on Vaccine Research, Bethesda, April 23, 2018.
60. Hazan TH, Nagaraj S, Barry EM, Bitoun J, **Chen WH**, Tennant SM, and Rasko DA. Comparative genomics of CFA/I and CS6-producing ST-only enterotoxigenic *Escherichia coli* associated with human diarrhea. Vaccines Against *Shigella* and ETEC conference, Mexico City, Mexico, June 12, 2018.

61. McArthur MA, Rudolph ME, **Chen WH**, Sztein MB. Impact of CD4 T cell responses on clinical outcome in a human challenge model of *Vibrio cholerae*. 2018 ASTMH meeting, New Orleans, LA, October 29, 2018.
62. McArthur MA, Rudolph ME, **Chen WH**, Sztein MB. Impact of CD4 T cell responses on clinical outcome in a human challenge model of *Vibrio cholerae*. 2018 Sao Paulo Vaccinology Course, November, 2018

Book Chapters

1. **Chen WH**. Adverse Effects: Reporting and Causality. Essentials in Vaccinology, Global Health Press Pte Ltd. 2010.
2. Levine MM and **Chen WH**. How are Vaccines Assessed in Clinical Trials? The Vaccine Book, by Bloom and Lambert, Elsevier. 2016.
3. Levine MM and **Chen WH**. Vaccines to Prevent Cholera. Sabin Book. 2016.

Published Multimedia

1. Quoted and pictured in article for Baltimore Sun, June 3, 2003. Title: Vaccine Research gains new respect.
2. Interviewed on Channel 2 (Baltimore ABC affiliate) news, February 15, 2005, for comments on Arch Int Med article on lack of support for prevention of mortality in elderly influenza vaccines.
3. Quoted in article for The (Baltimore) Daily Record, April 11, 2005. Title: U of MD flu test may aid elderly.
4. Interviewed on Medstar Television, April 17, 2005. News on NIH's effort to test a high-dose influenza vaccine in the elderly.
5. Quoted in article for Washington Post, December 5, 2005. Topic: Avian Flu Vaccine.
6. Quoted in article for The Daily Record, April 11, 2006. Topic: Influenza Vaccine for Elderly.
7. Quoted in Associated Press article (Randy Schmid), July 31, 2006. Topic: PNAS article on reassortment Avian Influenza virus in ferrets.
8. Quoted in article for Catonsville Times, September 8, 2006. Topic: Update on Avian Flu Vaccine trial in the elderly.
9. Quoted for article in Arbutus Times, September 13, 2006. Title: Seniors give boost to flu vaccine test.
10. Quoted in Associated Press article, September 10, 2006. Topic: Nature Medicine article on Avian influenza diagnosis.
11. Guest Studio Interview on Healthline-Travel Show (30 minute program on Retirement Living Network), October 9, 2006. Topic: travel tips for the elderly.
12. Guest Studio Interview on Healthline-Travel Show (30 minute program on Retirement Living Network), November 2, 2006. Topic: Influenza in the elderly.
13. Podcast Interview on UMMC, November 2, 2007. Topic: Flu Prevention.
14. Slate magazine interview, February 22, 2008. Topic: Flu vaccine.
15. Interviewed and pictured in article for Baltimore Sun. May 26, 2008. Topic: Flu shots leave an age gap.
16. Interviewed by Associated Press, Linda Johnson, June 10, 2008. Topic: NEJM article on Baxter whole virus H5N1 vero cell vaccine.

17. Interviewed by Baltimore Sun, Johnathan Bor, June 10, 2008. Topic: NEJM article on Baxter whole virus H5N1 vero cell vaccine.
18. Interviewed by CNN Radio, Matt Cherry, June 11, 2008. Topic: NEJM article on Baxter whole virus H5N1 vero cell vaccine.
19. Story in Immunology in the News (Dana Press), July 2008. Topic: Flu Shots Leave an Age Gap (reprint from Baltimore Sun article).
20. Interviewed by Brenda Goodman (Senior Medical Editor, Arthritis Today), August 11, 2008. Topic: Influenza vaccines and the elderly.
21. Story in New York Times (by Brenda Goodman), September 2, 2008. Title: Doubts grow over flu vaccine in elderly.
22. Interviewed and videotaped for Voice of America, April 28, 2009. Topic: Swine flu vaccine.
23. Interviewed and videotaped for Globo International (Brazilian TV network), April 30, 2009. Topic: Swine flu vaccine.
24. Interview by Baltimore Sun, April 30, 2009. Topic: Swine flu.
25. Videotaped webcast for UMMC, April 30, 2009. Topic: Swine flu.
26. Audio taped interview with WTOP, Evan Haning, June 10, 2009. Topic: Pandemic influenza preparedness.
27. Interviewed by Stephanie Desmon of Baltimore Sun, July 14, 2009. Topic: Universal Flu Vaccine.
28. Video Interviewed by WJZ channel 13, Kellye Lynn, July 28, 2009. Topic: H1N1 vaccination of pregnant women.
29. Interviewed by The Diamondback, Anna Isaacs, July 28, 2009. Topic: upcoming H1N1 vaccine trials.
30. Interview by CNN Audio, Richard Uliano, August 3, 2009. Topic: H1N1 vaccine studies.
31. Multiple interviews by CNN, ABC, NBC, NPR, VOA, more, August 10&11, 2009. Topic: Initiation of Adult H1N1 vaccine trial.
32. Interviewed by Baltimore Sun (Stephanie Desmon, office 410-468-2628) and WJZ channel 13 (Alex), August 19, 2009. Topic: Initiation of Pediatric H1N1 vaccine trial.
33. Videotaped by Al Jazeera, Sept 3, 2009. Topic: H1N1 vaccine trials.
34. Videotaped by National Geographic, Sept 4, 2009. Topic: H1N1 vaccine trials.
35. Interviewed by Baltimore Sun (on H1N1 Adjuvanted trials), WJZ 13 (comments on H1N1 in College Park), Capital News Wire (H1N1 vaccine trials), Sept 8, 2009.
36. Videotaped by National Geographic on Sept 9, 2009 for footage on pediatric H1N1 vaccine trial (Frederick Pediatric site).
37. Interviewed by Baltimore Sun and WGAL (Susan Shapiro, Lancaster, PA), Sept 11, 2009. Topic: comments on NIAID press conference on early results of adult H1N1 vaccine trials.
38. Videotaped by WJZ 13, Sept 14, 2009. topic: H1N1 adjuvanted trials.
39. Interviewed by Greek press and Baltimore Sun (Kelly Brewington), videotaped by Fox 45 and ABC 2 (Kelly Swoope) on Sept 15, 2009. Topic: comments on FDA approval of H1N1 vaccines (by 4 manufacturers).
40. Interviewed by Spanish-language newspaper El Mundo (Richard Gonzalez) on Sept 17, 2009. Topic: H1N1 pandemic flu vaccine trials.

41. Interviewed by WYPR Sheila Kast (Maryland in the Morning), Sept 18, 2009. Topic: comments on H1N1 influenza and trials to mitigate against infection. Videotaped by WJZ 13 on Sept 18, 2009 for comments on early release of MedImmune's H1N1 LAIV.
42. Interviewed by Baltimore Sun (Kelly Brewington), Sept 21, 2009. Topic: comments on early results of pediatric H1N1 influenza vaccine data.
43. Interviewed by NYU biomedical journalism student, Maryam Mikaniki, on Sept 24, 2009. Topic: H1N1 vaccines.
44. Videotaped by Fox 45 on Oct 5, 2009. Topic: H1N1 vaccine and known side effects.
45. Videotaped by WJZ 13 (Kellye Lynn) on Oct 6, 2009. Topic: update on H1N1 vaccine.
46. Videotaped by Fox 45 on Oct 20, 2009. Topic: response to Eurosurv article on modeling H1N1 pandemic and vaccine effectiveness. Live interviews with WYPR Mid-Day with Dan Rodricks on Oct 20, 2009 for live call-in responses regarding questions on H1N1 flu and vaccines.
47. Interviewed by Baltimore Sun (Joe Burriss), Oct 28, 2009. Topic: H1N1 and Halloween.
48. Interviewed by WTOP (Evan Haning), Nov 2, 2009. Topic: H1N1.
49. Interviewed by Herald-Times (Bridget, Haggerstown). Nov 4, 2009. Topic: H1N1 and workplace.
50. Interviewed by Al Hurra TV (subsidiary of Voice Of America), Nov 13, 2009. Topic: Anti-virals for H1N1. Interviewed by AP Radio (Mike Hempen), Nov 13, 2009. Topic: Rockwood School District Missouri storage of H1N1 vaccine. Interviewed by Katherine Gorman (Producer of Maryland Morning with Sheilah Kast on WYPR), Topic: why H1N1 vaccine production delayed.
51. Interviewed by Capital News Service, Dec 2, 2009. Topic: 2 cases of oseltamivir-resistant H1N1 in Maryland.
52. Videotaped by Fox 45 (Melinda Roeder) on Dec 23, 2009. Topic: FluMist vaccine recalled because of loss in potency.
53. Interviewed by WJZ 13 (Jessica Kartalija, pronounced car-talia) on April 2, 2010. Topic: Expiring H1N1 vaccine.
54. Interviewed by Science News (Laura Sanders) on July 15, 2010 for comments on Nature Medicine publication, Sullivan SP et al. "Dissolving polymer microneedle patches for influenza vaccination".
55. Interviewed by Baltimore Business Journal (Emily Mullin) on Aug 24, 2010. Topic: HHS Secretary press release on recommendations driven by pandemic flu experience.
56. Interviewed by Redbook magazine (Mariel Goodson; 914-582-8723, 646-726-4810) on May 12, 2011. Topic: Influenza vaccination.
57. Interviewed by Men's Health magazine (Cindy Kuzma), Aug 1, 2011. Topic: Influenza vaccination rates in U.S.
58. Interviewed by New York Times Magazine (Wil S. Hylton), Sep 12, 2011. Topic: Tularemia vaccines and post-911 biodefense vaccine development.
59. Interviewed by Men's Health magazine (Cindy Kuzma), Oct 20, 2011. Topic: Common myths about influenza vaccination.

60. Interviewed by Pittsburgh Tribune/Review (Adam Wagner), July 19, 2012. Topic: (Ted Ross) U Pitt partnership with Sanofi Pasteur on universal flu vaccine.
61. Interviewed by The News Journal (Wilmington, DE; Kelly Bothum), Sep 19, 2012. Topic: Weekly Health Section on Influenza.
62. Interviewed by Inside Science News Service (Joel N. Shurkin), Feb 01, 2013. Topic: comments on PLOS-One article on warm winters followed by more severe influenza seasons.
63. Interviewed by Family Circle magazine (Jeannette Moninger), May 07, 2013. Topic: shingles vaccine for women 50 and younger.
64. Interviewed by WebMD (Brenda Goodman), Sept 06, 2013. Topic: high-dose influenza vaccines and other new influenza vaccines.
65. Interviewed by Redbook magazine for November 2013 issue, (Lisa Mulcahy), Sep 12, 2013. Topic: What Flu Doctors Tell Their Friends.
66. Interviewed for 237 Health Secrets from Top Docs (Hearst Books, 2014), December 6, 2013, by Sari Harrar. Topic: Tip: quarantine a sick family member.
67. Interviewed by The Baltimore Sun (Meredith Cohn), December 8, 2014. Topic: Influenza vaccine and explanation for mismatch.
68. Interviewed by Infectious Disease News (John Schoen), on April 18, 2016. Topic: ACVR presentation on STEBVax trial.
69. Interviewed by Baltimore Sun (Meredith Cohn), June 29, 2016. Topic: Cholera vaccine licensure.
70. Interviewed by Infectious Disease Special Edition (David Wild), July 19, 2016. Topic: Vaxchora approval.
71. Interviewed by UM Alumni Magazine (Henry Mortimer), August 1, 2016. Topic: The Passano Family Foundation's Passano Physician Scientist Award.
72. Interviewed by Medium (Markham Heid), June 13, 2018. Topic: Why is Everyone Getting Shingles?
73. Interviewed by Sheila Kast on WYPR public radio, September 11, 2018. Topic: Spanish Influenza.
74. Interviewed by Huffington Post (Beth Krietsch), October 5, 2018. Topic: Influenza vaccination.
75. Interviewed by WMAR-TV2, October 10, 2018. Topic: Costs of Influenza
76. Interviewed by WedMD (Stephanie Watson), October 28, 2019. Topic: Shingrix vaccine: safety, effectiveness, and usage.
77. Interviewed by STAT Plus (Elizabeth Cooney), December 17, 2019 Comment on *Science Translational Medicine* publication "Biocompatible near-infrared quantum dots delivered to the skin by microneedle patches record vaccination."
78. Live interview by eFM 101.3 MHz, Seoul, S. Korea, "This Morning" English radio, Feb 01, 2020. Topic: 2019-nCoV.
79. Interviewed by Baltimore Sun (Meredith Cohn), 26Feb2020. Topic: COVID-19 and preparedness.
80. Interviewed by Wall Street Journal (Sumathi Reddy), 02Mar2020. Topic: COVID-19 in children.
81. Interviewed by Washington Post (Joel Achenback), 03Mar2020. Topic: COVID-19 cellular immunity.
82. Interview by Bloomberg, Michelle Cortez, 05Mar2020, on COVID-19.

83. Interview by Voice of America, Ira Mellman, 05Mar2020, on COVID-19.
84. Interview by 60 minutes, Ali Rawaf, 06Mar2020, on COVID-19
85. Interview by Midday with Tom Hall, WYPR, 09Mar2020, on COVID-19
86. Interview by Washington Post (William Wan), 09Mar2020, on COVID-19
87. Interview by Ioannis Papadopoulos, Greek newspaper Kathimerini, 18Mar2020, on COVID-19
88. Present to NAFSA's Board of Director's Executive Session; 19Mar2020, on COVID-19
89. Present to LEAD1 w/Tom McMillen "What Every AD Should Know About Medical Management of their Department, on COVID-19", webinar w/Kathy Neuzil, 26Mar2020
90. Present at Virtual Townhall w/Congressman Ruppertsberger; 31Mar2020, on COVID-19
91. Interview by CNN w/ Brooke Baldwin; 02Apr2020, on COVID-19
92. Present to National Press Foundation, webinar Q&A on COVID-19, 03Apr2020
93. Interview by WJZ13, for PPE donation from CASH (Chinese-Americans support hospitals); 08Apr2020
94. Present to C-SPAN town hall Q&A on COVID-19, 08Apr2020
95. Interview by The Sinclair Broadcast Group, 10Apr2020, on COVID-19.
96. Interview by Washington Post (Carolyn Johnson), 20Apr2020, on COVID-19
97. Interview by Washington Post (Katie Shaver), 22Apr2020, on COVID-19
98. Interview by MSNBC, Chuck Todd, 28Apr2020; Oxford vaccine (ChAdOx1 nCoV-19)
99. Interview and Q&A by Fox45/Sinclair Broadcast Group; 01May2020, on COVID-19.
100. Interview by Sky News, UK, Adam Boulton; 07May2020; COVID-19 vaccines
101. Interview by Rolling Stone, Elizabeth Yuko; 13May2020; on COVID-19
102. Interview by Baltimore Sun, Colin Campbell; 14May2020; Q&A on re-opening state
103. Interview by Fox5DC; 18May2020; comments on Moderna COVID-19 vaccine
104. Interview by WNYC The Takeaway, 26May2020; opening beaches for the summer
105. Interview by Bloomberg News w/David Westin, 26May2020; vaccine development
106. Interview by Veja (Brazilian news magazine), 29May2020; vaccine development
107. Interview by WYPR Midday w/Tom Hall, 01Jun2020; Maryland phase 1 re-opening
108. Interview by Baltimore Sun, Sameer Rao, 02Jun2020; Beach Guide
109. Interviewed by Baltimore Sun, 08Jun2020; Ocean City re-opening
110. Interview by MPT Direct Connection show, 08Jun2020, COVID-19
111. Interview by MPT, 25Jun2020; dangers of pandemic fatigue
112. Interview with Don Markus, 25Jun2020; Maryland athletics in time of COVID-19
113. Interview with In Depth, KNX Los Angeles radio flagship news program, 26Jun2020; discuss growing number of cases
114. Interview with Fox45, 26Jun2020; COVID-19 Q&A
115. Interview with National Geographic, 07Jul2020; COVID-19
116. Interview with Yahoo, 14Jul2020; summer children's camps and COVID outbreaks
117. Interview with Bloomberg TV, 22Jul2020; COVID-19 vaccine development
118. Interview with Baltimore Sun, 29Jul2020; college students returning to campus
119. Interview with Fox45, 31Jul2020; importance masking & Gov. executive orders

120. Interview with NBC Universal, 03Aug2020; ethics of human challenge trials for COVID
121. Interview with Fortune, 06Aug2020; summer and vacation with COVID
122. Interview with Baltimore Sun, 07Aug2020; COVID antibodies and masking
123. Interview with USA Today, 11Aug2020; covid vaccines, efficacy and population uptake
124. Interview with South China Morning Post, Beijing Bureau, 14Aug2020; questions on covid vaccines
125. Interview by Capital Gazette, 14Aug2020; covid vaccines
126. Interview by National Geographic, 13Sep2020; human challenge studies
127. Facebook Live with Dr. Stephen Thomas, 28Aug2020, Colors COVID-19 Vaccine Town Hall Panelist
128. Interview by CBS Interactive, 09Sep2020; COVID vaccines, AZ halt
129. Interview by WYPR, On the Record with Sheila Kast, 15Sep2020, outreach to communities of color for vaccine trials.
130. Interview by AARP, 18Sept2020; older adults and Covid vaccines
131. Interview by WJZ, 05Oct2020; Covid update
132. Interview by Bloomberg, 08Oct2020; Covid update
133. Interview by AP, 16Oct2020; Covid vaccines landscape
134. Interview by Stateline/Pew Charitable Trusts, 29Oct2020; policy on Covid vaccines
135. Interview by Rolling Stone; Pfizer Covid vaccine efficacy; 10Nov2020
136. Interview by Sports Illustrated; Covid vaccination of athletes; 11Nov2020
137. Interview by Toronto Star; Covid vaccines in older adults; 12Nov2020
138. Interview by Science magazine, Covid challenge studies; 16Nov2020
139. Interview by Capital News Service; covid contact tracing; 19Nov2020
140. Interview by CBSN; Covid vaccines; 25Nov2020
141. Interview by MPT; covid vaccine race to licensure; 25Nov2020.
142. Interview by Rolling Stone; Covid vaccine FAQs; 01Dec2020
143. Interview by AARP; older adults and Covid vaccines; 01Dec2020
144. Interview by Fox 5 DC; covid vaccines questions; 10Dec2020
145. Interview by WJZ-TV; vaccine distribution and post-EUA approval; 10Dec2020
146. Interview by Al Jazeera English; covid vaccine; 14Dec2020
147. Interview by Fox 5 DC; covid vaccine; 14 Dec2020
148. Interview by WTOP; covid vaccines; 15Dec2020
149. Interview by WBAL 11; covid vaccines; 21Dec2020
150. Interview by Fox 5 DC; delayed covid vaccine second dose; 05Jan2021
151. Interview by AP; vaccine hesitancy; 06Jan2021
152. Interview by Fox 5 DC; UK variant virus and protection between doses; 13Jan2021
153. Interview by Fox 5 DC; covid vaccine questions; 04Feb2021
154. Interview by CNN, Brianna Keilar; dropping cases, variants, vaccines; 15Feb2021
155. Interview with AARP; covid; 16Feb2021
156. Interview by CBC The Current; covid human challenge trials; 18Feb2021
157. Interview by WTOP; vaccine side effects; 18Feb2021
158. Interview by Fox 5 DC; covid vaccines for children; 19Feb2021
159. Interview by ABC 7 Good Morning Washington, live 1-hr covid Q&A; 24Feb2021
160. Interview by ABC 7, covid testing decline; 01Mar2021

161. Interview by WMAR, J&J vaccine; 03Mar2021
162. Interview by AAMC, Covid vaccines; 18Mar2021
163. Interview by Fox 5 DC; Novavax, AZ, Moderna, children; 19Mar2021
164. Interview by U.S. News & World Report; Covid travel guidelines; 22Mar2021

Major Invited Speeches

1. “The Clinical Consequences of Immunosenescence,” NIA Symposium on Mechanisms of Human Immunosenescence. January 26, 2006 Harbor Hospital, Baltimore, MD.
2. “Immune responses of the elderly to influenza vaccination,” Gerontology Research Conference, Baltimore VAHCS, May 24, 2007.
3. “The Status of Seasonal and Pandemic Influenza Vaccines in the US,” Invited Lecture at National Taiwan University, Taipei, Taiwan. December 18, 2007.
4. “Vaccines-The old and the new,” Faculty Lecture at the 2007 Maryland Chapter Scientific Meeting of the American College of Physicians, Turf Valley, Maryland. February 8, 2008.
5. “U.S. Pandemic Influenza Vaccine Development,” invited seminar at the Center for Biosecurity at University of Pittsburgh Medical Center. March 23, 2009.
6. “Immunosenescence: Older, Wiser, and Difficult to Vaccinate,” Department of Medicine Grand Rounds, University of Maryland School of Medicine. April 1, 2009.
7. “Humoral and Cellular Immune Responses of Elderly Adults to High-Dose Influenza Vaccine,” invited talk at the NIH/DMID Cellular Immune Responses in H5N1 Vaccinated Adults, NIH, Bethesda, MD. June 17, 2009
8. “H1N1 Pandemic Influenza and Vaccine Development,” Grand Rounds, Mercy Medical Center, Baltimore, MD. September 16, 2009.
9. “Adapting to New Threats: H1N1 Flu and You,” invited panel member for 9th Annual 9/11 Commemoration Event, UM School of Law and Center for Health and Homeland Security. September 16, 2009.
10. “The Swine Flu Pandemic: Public Health Policy and Maryland’s Role in Vaccine Development,” invited panel member of BioBreakfast program sponsored by the MdBio Division of the Tech Council of Maryland. Baltimore, MD. October 15, 2009.
11. “Update on U.S. Pandemic H1N1 Influenza Vaccine Development,” invited seminar at the Center for Biosecurity at University of Pittsburgh Medical Center. November 3, 2009.
12. “The current status of Pandemic H1N1 vaccines,” invited CME lecture at the University of Maryland, University Health Center. College Park, MD. November 17, 2009.
13. “The H1N1 influenza pandemic and available treatment options,” invited Keynote speaker for Influenza Pandemic Training for Pharmacists Continuing Pharmacy Education program, sponsored by UM School of Pharmacy. Baltimore, MD. December 12, 2009.
14. “Overview of U.S. Pandemic H1N1 Vaccine Development,” invited lecture at Taiwan CDC, Taipei, Taiwan. March 8, 2010.
15. “Overview of U.S. Pandemic H1N1 Vaccine Development” and “Effect of Immunosenescence on Influenza Vaccine Response,” invited lectures at National Taiwan University College of Medicine and Graduate Institute of Immunology; Taipei, Taiwan. March 9, 2010.

16. “Overview of U.S. Pandemic H1N1 Vaccine Development,” invited lecture at Development Center for Biotechnology, Taipei, Taiwan. March 10, 2010.
17. “Clinical Research Unit Activities at the University of Maryland,” invited lecture at the 2010 Food and Waterborne Disease Integrated Research Network Annual Meeting, Cambridge, MD. June 3, 2010
18. “Strategies for overcoming immunosenescence with next-generation influenza vaccines,” Session Chair and presentation for Track 2-1: Influenza Vaccines at 3rd Annual World Summit of Anti-Virals; Busan, Korea. July 31-Aug 3, 2010.
19. “Immunosenescence: Older, Wiser, and Difficult to Vaccinate,” Grand Rounds, Mercy Medical Center, Baltimore, MD, September 7, 2011.
20. “Secondary Bacterial Infections Subsequent to Influenza,” Department of Medicine Grand Rounds, University of Maryland School of Medicine. June 13, 2012.
21. “Vaccines for the Elderly Population,” Taiwanese American Senior Society, Taipei Economic and Cultural Representative Office. November 17, 2012.
22. “Safety and immunogenicity of a single, oral dose of recombinant double-mutant heat-labile toxin (dmLT) derived from enterotoxigenic *Escherchia coli* (ETEC),” Vaccine for Enteric Diseases 2013 Conference, Bangkok, Thailand, November 6-8, 2013
23. “CVD 103-HgR, The development of a single-dose live oral cholera vaccine,” solicited dinner talk, Vaccine Development Dinner Program, sponsored by SNBL, Bethesda, MD, March 6, 2014.
24. “CVD 103-HgR, The development of a single-dose live oral cholera vaccine,” invited “Leaders in Innovation” Seminar Series, MassBiologics, University of Massachusetts Medical School, Boston, MA, April 4, 2014
25. “Shingles and Shingles Vaccine,” Mercy Medical Center Grand Rounds, Baltimore, MD, September 3, 2014.
26. “Safety and immunogenicity of a single, oral dose of recombinant double-mutant heat-labile toxin (dmLT) derived from enterotoxigenic *Escherchia coli* (ETEC),” invited seminar at Naval Medical Research Center (NMRC), Silver Spring, MD, September 9, 2014.
27. “Travel Vaccines: Don’t Leave Home without Them”, faculty speaker at National Foundation for Infectious Diseases Fall 2015 Clinical Vaccinology Course, Bethesda, MD, November 14, 2015.
28. “Travel Vaccines: Don’t Leave Home without Them”, faculty speaker at National Foundation for Infectious Diseases Spring 2016 Clinical Vaccinology Course, Phoenix, AZ, March 20, 2016.
29. “Travel Vaccines: Don’t Leave Home without Them”, faculty speaker for National Foundation for Infectious Diseases Adult Immunization Awareness Webinar series, June 1, 2016; 1.0 AMA PRA Category 1 Credit.
30. “Human Experimental Challenges with Cholera”, invited speaker at NIAID Annual Vaccine and Treatment Evaluation Unit (VTEU) meeting, Rockville, MD, June 16, 2016.
31. “The development of the *Cryptosporidium hominis* challenge model”, invited speaker at Grand Challenges 2016 pre-meeting workshop on Controlled Human Infection Models, London, UK, October 24, 2016.
32. “Travel Vaccines: Don’t Leave Home without Them”, faculty speaker at National Foundation for Infectious Diseases Fall 2016 Clinical Vaccinology Course, Philadelphia, PA, November 6, 2016.

33. “Vaccines to Mitigate Risk During Travel”, speaker for National Foundation for Infectious Diseases Adult Immunization Awareness Webinar series, December 7, 2016; 1.0 AMA PRA Category 1 Credit
34. “Cholera & the development of a vaccine against cholera”, University of Maryland Medical Center, Grand Rounds, Baltimore, MD, February 8, 2017.
35. “Travel Vaccines: Don’t Leave Home without Them”, faculty speaker at National Foundation for Infectious Diseases Spring 2017 Clinical Vaccinology Course, Chicago, IL, March 12, 2017.
36. “Vaccination as a potential strategy to combat Antimicrobial Resistance in the elderly”, WHO meeting on Immunization of the Elderly, Geneva, Switzerland, March 23, 2017.
37. “FDA Licensure of a Cholera Vaccine as a Result of Pivotal Efficacy Derived from Human Challenges”, NFID’s 20th Annual Conference on Vaccine Research, North Bethesda, MD, April 24, 2017
38. “Cholera & the development of a vaccine against cholera”, Mercy Medical Center, Grand Rounds, Baltimore, MD, May 10, 2017.
39. “Travel Vaccines”, webinar for the Missouri Department of Health and Senior Services’ Bureau of Immunizations, May 18, 2017.
40. “How vaccines are developed and evaluated,” Mini-Med School for Seniors, Owings Mills, MD, May 23, 2017.
41. “An Overview of Volunteer Challenge Studies for Enteric Bacterial Pathogens,” Synthetic Colostrum Program Group Meeting, Bill & Melinda Gates Foundation, Boston, MA, October 5-6, 2017.
42. “An Ounce of Prevention: Guarding Against Infection in the Home, Workplace, Hospital and Abroad, “Health Matters: A Health Education and Resource Fair, Beth Israel Congregation, Owings, Mills, MD, October 29, 2017.
43. “Travel Vaccines: Don’t Leave Home without Them”, faculty speaker at National Foundation for Infectious Diseases Fall 2017 Clinical Vaccinology Course, Bethesda, MD, November 4, 2017.
44. Symposium Organizer & Speaker, “Accelerating Research Toward the Control of Cryptosporidium”, 66th Annual Meeting of the American Society of Tropical Medicine & Hygiene, Baltimore, MD, November 7, 2017.
45. Panelist, Healthy Aging and Immunizations, Alliance for Health Policy and the Adult Vaccine Access Coalition. Capitol Hill briefing (Russell Senate Building), February 23, 2018.
46. “The application of protein microarrays for the analysis of antibodies elicited by influenza vaccines,” Annual VTEU meeting, Bethesda, MD, April 27, 2018.
47. “Travel Vaccines: Don’t Leave Home without Them”, faculty speaker at National Foundation for Infectious Diseases Fall 2018 Clinical Vaccinology Course, Bethesda, MD, November 10, 2018.
48. “Vaccines for the Elderly: Current Use and Future Challenges,” UMSoM Medical Symposium: Innovation & Discovery, Community College of Baltimore County, April 23, 2019.
49. “Vaccine to Mitigate Risk During Travel,” Nevada Immunization Learning Exchange, webinar, May 30, 2019.

50. “Travel Vaccines: Don’t Leave Home without Them”, faculty speaker at National Foundation for Infectious Diseases Fall 2019 Clinical Vaccinology Course, Bethesda, MD, November 16, 2019.
51. Invited speaker for 2019 World Conference on Access to Medical Products—Achieving the SDGs 2030, Sponsored by WHO-India and the Ministry of Health & Family Welfare, New Delhi, India, November 19-21, 2019:
 - a. Speaker in the Parallel Session 4: Controlled Human Infection Model (CHIM) Studies-Regulatory and Ethical Considerations;
 - b. Speaker in the Parallel Session 9: Regulatory Approaches for Approval of Pharma & Biosimilar Drugs, and Gene and Cell Therapies - USFDA, EMA Models;
 - c. Speaker during the side meeting on ‘Current Global Regulatory and Ethical Landscape for Controlled Human Infection Model (CHIM) Studies including Regional/Global Collaborative Guidance’.
52. “The Vaccine Development Paradigm for Emerging Pathogens: how this can inform our response to COVID-19,” webinar for Sino-American Pharmaceutical Professionals Association, February 13, 2020.
53. “The World of Coronaviruses: SARS, MERS, and COVID-19,” University Maryland Medical Center, Grand Rounds, Baltimore, MD, March 18, 2020.
54. “The World of Coronaviruses: SARS, MERS, and COVID-19,” Mercy Medical Center, Grand Rounds, Baltimore, MD, April 01, 2020.
55. “COVID-19: What You Need to Know,” MMDA (The Mid-Atlantic Society for Post-Acute and Long-Term Care Medicine, Inc.), Teleconference, May 7, 2020
56. “COVID-19 Therapeutics, Vaccines, and Testing,” COVID-19 webinar for Department of Family and Community Medicine, UMSOM, May 20, 2020
57. “COVID-19 Challenges in Re-opening the State of Maryland,” webinar for University of Maryland Medical Systems providers, May 21, 2020
58. “COVID-19 Vaccine Development,” webinar for Greater Washington Association of Physicians from India, May 30, 2020
59. “COVID-19 Update: Transmission, Therapies, and Vaccine,” keynote address for the Annual State of Aging Conference, sponsored by the Central Maryland-Area Health Education Center, September 29, 2020
60. “State of the COVID-19 Pandemic,” Virtual Face-to-Face with Dr. Bruce Jarrell, October 8, 2020
61. “COVID-19 Status Update,” Gamma Boule of Sigma Pi Phi, monthly meeting, October 16, 2020
62. “COVID-19 Vaccine Development,” Arthritis Foundation webinar, October 21, 2020
63. “COVID-19 Vaccine Development,” Maryland General Assembly Joint COVID-19 Response Legislative Workgroup, October 28, 2020
64. “Travel Vaccines: Don’t Leave Home without Them”, faculty speaker at National Foundation for Infectious Diseases 2020 Clinical Vaccinology Course, virtual meeting, November 15-17, 2020
65. “COVID-19 Vaccine Development,” Maryland Health Care Commission, November 17, 2020
66. “Global Health, Vaccines, and the Geopolitics of COVID-19,” UMB Global Health seminar, November 18, 2020

67. "COVID-19 Vaccine and Economic Impact in 2021," Fortunato and Friends webinar (Ed Fortunato, chief economist for Constellation Energy), December 1, 2020
68. "COVID-19 Vaccine Development," Baltimore Co. Health Dept, December 10, 2020
69. "COVID-19 Vaccine Development," Am Assoc Physicians Indian, December 16, 2020
70. "President's Q&A on COVID-19," Virtual Face-to-Face with President Bruce Jarrell, December 17, 2020
71. "COVID-19 Vaccine Development," Medical Directors of Seventh Day Adventist Church, December 17, 2020
72. Q&A with the Prince George's Country Firefighters and Paramedics, January 6, 2021
73. Townhall with Maryland State Delegate Brian Crosby, January 7, 2021
74. "COVID-19 Update on Transmission and Vaccine Development," Maryland Area Health Education Center West Webinar, 3 CEUs, January 8, 2021
75. "Vaccine platforms for rapid product development," UCSF-Stanford Centers of Excellence for Regulatory Science and Innovation, 2021 Innovations in Regulatory Science Summit, January 10, 2021
76. The Upside weekly webcast (sponsored by the Associated Federation of Baltimore), with Scott Rifkin, January 12, 2021
77. "Working Toward Eradication of Invasive Meningococcal Disease in Sub-Saharan Africa," University of Virginia Infectious Diseases and Global Biothreats Seminar Series, January 12, 2021
78. "The potential use of human challenge models for accelerating the development of therapeutics for *Cryptosporidium*," Third Symposium on Innovative Therapies for *Cryptosporidium*, sponsored by PATH, January 13, 2021
79. Q&A with UMB President Jarrell, January 14, 2021
80. "COVID-19 Updates and Vaccine Development," Maryland State Dental Association webinar, 2 CEUs, January 15, 2021
81. "COVID-19 Update on Transmission and Vaccine Development," University of Maryland School of Dentistry, Annual Retreat, January 22, 2021
82. Community Conversations: COVID-19, Health, and Vaccines, webinar sponsored by Baltimore Magazine, January 26, 2021
83. Maryland District 11 Virtual Townhall with Senator Shelly Hettleman and Delegates Dana Stein, Jon Cardin, and Lisa Belcastro, January 28, 2021
84. UMMS Webinar, January 29, 2021
85. Tri-Caucus COVID-19 Vaccine Town Hall with Maryland General Assembly Latino, Black, and Asian/Pacific Islander Caucuses, February 1, 2021
86. Fortunato and Friends webinar, with Ed Fortunato, chief economist for Constellation Energy, February 2, 2021
87. Updates on COVID-19 webinar, Association of Indian Physicians of Northern Ohio, February 5, 2021
88. National Recreation and Park Association, COVID-19 Equity webinar, February 16, 2021
89. UMSOM Department of Family and Community Medicine, COVID-19 vaccines and variants, February 19, 2021
90. Biomedical Research Alliance of New York LLC (BRANY) on behalf of Collaborative Institutional Training Initiative (CITI) webinar, What you need to know about COVID-19 vaccines, February 23, 2021

91. Howard County & Ellicott City Adventist Church webinar, COVID-19 vaccines, March 02, 2021
92. Exelon Corp., Corporate Operations All-Hands meeting, COVID-19 situational update and vaccines, March 04
93. University of Maryland College Park, Global Public Health Scholars panel discussion on COVID-19, March 05, 2021
94. Seabrook Adventist Church webinar, COVID-19 vaccines, March 06, 2021
95. 61st Annual Meeting of the Japanese Respiratory Society, with the American Thoracic Society, SARS-CoV-2 Vaccine Symposium, March 8, 2021