



## CURRICULUM VITAE

**KAREN L. KOTLOFF, M.D.**  
Professor of Pediatrics and Medicine  
University of Maryland School of Medicine

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### CONTACT INFORMATION

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### EDUCATION

1979 M.D. Temple University School of Medicine  
1975 B.A. Washington University, Psychology major

### POST-GRADUATE TRAINING

1983-86 Fellowship in Infectious Disease, University of Maryland School of Medicine  
1980-83 Internship and Residency in Pediatrics, Children's Hospital of Pittsburgh

### PROFESSIONAL BOARDS AND CERTIFICATIONS

2013 Recertification in Basic Life Support  
2008 Recertification in Pediatric Infectious Diseases of the American Board of Pediatrics (Subspecialty Examination)  
1994 Diplomate in Pediatric Infectious Diseases of the American Board of Pediatrics (Subspecialty Examination)  
1985 Diplomate of the American Board of Pediatrics

### LICENSURE

1983 Maryland (Active)  
1979 Pennsylvania (Inactive)

### MAJOR RESEARCH INTERESTS

Clinical vaccine trials (with special interest in *Shigella* and group A Streptococcus), epidemiology of infections in children from developing countries, including diarrheal disease, pneumonia, group A streptococcus, and invasive bacterial infections

## EMPLOYMENT HISTORY

### Primary Faculty Appointments:

University of Maryland School of Medicine  
Department of Pediatrics  
Division of Infectious Disease and Tropical Pediatrics

1999 - Present      Professor, with tenure  
1992 - 1999        Associate Professor, with tenure  
1987 - 1992        Assistant Professor  
1986 - 1987        Clinical Associate

### Secondary Faculty Appointments:

University of Maryland School of Medicine  
Department of Medicine  
Division of Geographic Medicine

1999 - Present      Professor, with tenure  
1992 - 1999        Associate Professor, with tenure  
1987 - 1992        Assistant Professor  
1986 - 1987        Clinical Associate

### Administrative Positions: University of Maryland School of Medicine

2012 - Present      Head, Division of Infectious Disease and Tropical Pediatrics  
2010 - 2012        Interim Head, Division of Infectious Disease and Tropical Pediatrics  
2011 - Present      Associate Director for Clinical Research  
Center for Vaccine Development  
2006 - 2009        Clinical Director, Infectious Disease and Tropical Pediatrics  
2003 - 2009        Director, Clinical Core  
Mid-Atlantic Regional Center of Excellence for the Defense against  
Biowarfare and Emerging Infection Agents  
2000 - Present      Chief, Community Studies Section  
Center for Vaccine Development  
1992 - 2000        Chief, Domestic Epidemiologic Studies Section  
Center for Vaccine Development

## PROFESSIONAL MEMBERSHIPS/FELLOWSHIPS

American Academy of Pediatrics  
Infectious Disease Society of America  
Pediatric Infectious Disease Society  
Society for Pediatric Research  
American Society for Tropical Medicine and Hygiene (Elected Fellow, 2013)

American Society of Epidemiology (Elected Fellow, 2013)

## **HONORS, AWARDS**

2013, 2014 Baltimore Magazine's Best Doctors: Pediatric Infectious Disease  
2005 Chevalier de l'Ordre National du Mali (Knight of the National Order of Mali)  
1987-88 Alexander I. Shaeffer Teaching Award for Outstanding Contributions to Housestaff Education  
1978 Sandoz Award in Psychiatry  
1975 Magna Cum Laude

## **CLINICAL ACTIVITIES AT UMMC**

1989 - 1996 Pediatric Immunology Service (1-2 months/year)  
1987- 2001 University Hospital Pediatric Ward (1-4 months/year)  
1987 - 1989 General Pediatric Clinic (2 ½ days/week)  
1986 - Present Pediatric Infectious Disease Consultation Service (2-4 months/year)

## **ADMINISTRATIVE SERVICE**

### **Institutional Service**

#### **Department of Pediatrics**

2012 - Present Interviewer, intern applicants  
2003- Present Member, Promotions and Tenure Committee  
2001 - 2004 New Faculty Mentor, James Campbell  
2001 Member, Department of Pediatrics, Education Committee, Strategic Planning Initiative  
1995 - 2001 Resident Advisor (1 resident/year)  
1990 - 93 Pediatric Housestaff Curriculum Committee  
1987 - 89 Pediatric Housestaff Selection Committee

#### **School of Medicine**

2011- Present Interviewer, Admissions Committee  
2002- 2005 Member, Appointment, Promotion, and Tenure Review Committee  
2001 - 2002 Member, Institutional Review Board  
2001 - 2003 Member, School of Medicine Research Affairs Advisory Committee  
1999 - 2001 Member, School of Medicine Research Advisory Committee

## University of Maryland Medical System

- 1996- 2006      Member, Pharmacy and Therapeutics Antibiotic Subcommittee  
1990- 2005      Member, Pharmacy and Therapeutics Committee

### Local Service

- 1992-93          Institutional Review Board, Survey Research Associates, Baltimore, MD  
1990-91          Chairman, Subcommittee on Day Care, Maryland Chapter of the American Academy of Pediatrics

### National/International Service

#### Consultantships

- 2016 – Present    Member, *Cryptosporidium Therapeutics Program Advisory Group*. Bill & Melinda Gates Foundation.
- 2015                NIH/DMID Pneumonia Consultation on pathogen diagnostics for pediatric pneumonia in low-income global communities
- 2015 – Present    Chair, DSMB, (NIDDK)-funded U01 entitled *Probiotics to Reduce Impact of Diarrhea and Enteropathy in Children-Peru* (PRIDEC-Peru)
- 2015 – Present    Member, DSMB, Azithromycin to prevent post-discharge morbidity and mortality in Kenyan children
- 2014 - Present    Member, Vaccines and Related Biological Products Advisory Committee of the Food and Drug Administration
- 2014 – 2015      Member, Scientific Advisory Group for *Cryptosporidium* Strategy (SAG4CS). Bill & Melinda Gates Foundation.
- 2014 – 2015      Consultant on Development of a Target Product Profile for Anti-Cryptosporidial Therapy. Bill & Melinda Gates Foundation.
- 2013                An expert convening to define the need and gold standard for *Cryptosporidium* diagnostics. Bill & Melinda Gates Foundation.
- 2012                Consultation on vaccines for enteric and diarrheal diseases: An update on latest advancements and a potential WHO research agenda. World Health Organization.
- 2012 – Present    Member, Management of infectious diarrhea guideline panel. Infectious Disease Society of America
- 2012                Child Health and Nutrition Research Initiative (CHNRI). Consultation on identifying and prioritizing research gaps for the program entitled, *Vaccines for Diarrhea Prevention*.
- 2010                Consultation for nontypable *Haemophilus influenzae* challenge model. Respiratory Diseases Branch, Division of Microbiology and Infectious Diseases, NIH.
- 2009 - Present    Member, Scientific Advisory Group, PATH Disposable-Syringe Injector Project.
- 2009                Adviser, Optimer Pharmaceuticals, Inc. Pediatric *Clostridium difficile* infection.

- 2008 - 2013 Member, World Health Organization Scientific Advisory Committee for the Zanzibar Cholera Trial.
- 2007 - Present RV3 Rotavirus Vaccine Advisory Group. Murdoch Children's Research Institute, Melbourne, Australia.
- 2007 - 2013 Chair, RV3 Rotavirus Vaccine Safety Monitoring Committee. Murdoch Children's Research Institute, Melbourne, Australia.
- 2007 Consultant, Rotavirus Advisory Board. GalaxoSmithKline.
- 2005 - 2007 Chair, Safety Monitoring Committee for NIH-sponsored Sanofi Pasteur Inactivated Influenza A/H5N1 Vaccine Trial #05-0015
- 2005 - 2007 Member, Data Safety Monitoring Board for NIH-sponsored Sanofi Pasteur Inactivated Influenza A/H5N1 Vaccine Trials
- 2008 Member, Steering Committee on Diarrhoeal Disease Vaccines, World Health Organization
- 2005 Consultant, World Health Organization, Global Task Force on Cholera Control. Oral Cholera Vaccine Use in Complex Emergencies: What Next?
- 2004 Consultant, Group A Streptococcus Needs Assessment, Wyeth, Baltimore, MD
- 2002 - 2011 Member, Steering Committee on New Vaccine Delivery Systems, World Health Organization
- 2002 - 2008 Chair, Data Safety Monitoring Board for International Trials to Test GSK's Human Rotavirus Vaccine
- 2001 Intranasal Administration of Toxin Adjuvants. National Institutes of Allergy and Infectious Diseases. Presented "R<sub>192G</sub> Orally in *Helicobacter* Vaccine". Bethesda, Maryland
- 2001 Global Vaccine Research Forum, World Health Organization and Global Alliance for Vaccines and Immunization; Presented "New Developments in *Shigella* Vaccine Development"; Montreaux, Switzerland
- 2001 Chair, Data Safety Monitoring Board: "StreptAvax™ Group A Streptococcal Vaccine: Safety and immunogenicity in healthy adult volunteers" (IDBiomedical, Inc.)
- 1998 World Health Organization Global Program for Vaccines and Immunization; Development of a generic protocol to measure *Shigella* disease burden
- 1997 Consultant on influenza vaccines -for McNeil Consumer Products, Philadelphia, PA
- 1993 Medical consultant in Hoddur Somalia for St. Luke's Medical Center, Milwaukee, WI
- 1993 Scientific Advisory Board, NIH-DC Initiative to Reduce Infant Mortality

### Review Panels

- 2015 GAVI's Vaccine Investment Strategy (VIS) learning agenda for oral cholera and rabies vaccines (VISLACRV19122014) RFP Review Panel.

2015	University of Gothenburg Centres for Global Societal Challenges, UGOT Challenges
2012	NIH Director's New Innovator Award Program. NIH
2006	Special Emphasis Panel: NIAID Centers of Excellence for Influenza Research and Surveillance
2004	Small Grants Program Technical Expert Review, PneumoADIP, Global Alliance for Vaccines Initiative
2000 - 2003	Diseases of the Most Impoverished Program (DOMI), International Vaccine Institute
2000	National Institutes of Health. Research Centers in Minority Institutions Clinical Research Infrastructure Initiative (P20) Special Emphasis Panel (SEP)
1997	National Institutes of Health. SFP-NO1-AI-35176-JMEISTER1: HIV Vaccine Preparedness Studies and Phase III Efficacy Trial Sites.
1994	National Institutes of Health. SFP-NO1-AI-35176-JMEISTER1: HIV Vaccine Preparedness Studies and Phase III Efficacy Trial Sites.
1992	United States-Israel Binational Science Foundation
1989-92	National Institutes of Health. AIDS and Related Research Review Group [AHR-V4]
1988-89	Agency for International Development. PSTC/CDR Review Panel for Bacterial and Viral Disease Grant Proposals

#### **Editorial Tasks (*Ad Hoc* Reviewer)**

*American Journal of Epidemiology*  
*American Journal of Tropical Medicine and Hygiene*  
*Clinical Infectious Diseases*  
*Journal of Pediatrics*  
*Journal of American Medical Association*  
*Journal of Infectious Diseases*  
*Vaccine*  
*Journal of Pediatric Gastroenterology and Nutrition*  
*Epidemiologic Reviews*  
*Pediatric Infectious Diseases Journal*  
*Infection and Immunity*  
*Emerging Infectious Diseases*  
*Expert Reviews in Vaccines*  
*PlosONE*  
*Journal of the Pediatric Infectious Disease Society*  
*Plos Neglected Tropical Diseases*  
*Vaccine*

## TEACHING/ATTENDING ACTIVITIES

### Undergraduate Teaching

#### Sophomore Medical Students

- 1997 - 2012 Microbiology and Immunology Course (1-2 sessions/year)
- 1996 - 2011 Medical Microbiology Course (2 sessions/year)
- 1980 - 1989 Pediatric Physical Diagnosis

#### Junior Medical Students

- 1996 - 2001 Tutor in Pediatrics (6 sessions/year)
- 1990 - 2001 Oral Examiner in Pediatrics (6 students/year)

#### Senior Medical Students

- 1986 - Present Preceptor, Elective in Pediatric Infectious Disease (3 students/year)

### Graduate and Post-graduate Teaching

#### Department of Epidemiology and Preventive Medicine, School of Medicine

- 2007 - 2009 Introduction to Clinical Research Course (Prev 616), UMSOM, 2009.
- 2002 - 2005 Clinical Trials and Experimental Epidemiology Course (1 seminar/year)
- 1998 - Present Vaccinology Course (1-3 lectures/every other year)
- 1991 - 1992 Infectious Disease Epidemiology (2 sessions/year)
- 1988 - 1989 Preventive Medicine in Clinical Practice (1 session/year)

#### Department of Pediatrics, School of Medicine

- 1988 - 1993 Pediatric Board Review Sessions (2 sessions/year)
- 1987 - Present Core Lecture Series for residents (3 sessions/year)
- 1987 - 1994 Discharge Conference (2-5 sessions/year)
- 1987 - Present Infectious Disease Elective Preceptor (2-5 residents/year)

#### Department of Internal Medicine, School of Medicine

- 1987 - 1995 Pediatric Infectious Disease Elective Preceptor for Internal Medicine Infectious Disease Fellows (1-2/year)
- 1987- Present Lectures in Pediatric Infectious Disease for Fellows (1-2/year)

#### School of Nursing, Graduate Program

- 1992 Advanced Nursing of the High Risk Infant I [NURS640] Course (1 lecture/year)

#### School of Medicine, Dean's Office

- 2001 - 2002 Lecture Series for New Faculty. Clinical Research Skills: An Introduction.

## Mentoring

### Graduate students PhD Thesis Committee

- 2011 Krishnan Kolappaswamy, Dept of Epidemiology and Public Health, UMB, "Molecular Epidemiology of *Shigella spp.* In children less than five years of age in Mirzapur, Bangladesh
- 2015 – Present Avital Shimanovich, Dept of Microbiology, UMSOM, "Defining serological correlates of protection against shigellosis
- 2015 – Present Lauren Schwartz, Dept of Epidemiology, University of Washington, "Effectiveness of rotavirus vaccine in low-income settings

### Residents and Fellows

- 2000-1 James Campbell, MD (see references 50 and 56)
- 2012-13 Debbie Shirley, UMSOM, Phase 1 trial of live attenuated *Shigella* vaccine, Phase 1 trial of live attenuated paratyphi vaccine, Prevention of colonization with *Staphylococcus aureus* in critically ill neonates. (see ref. 94)
- 2013-2014 Jaya Goswami, MD (Goswami J and Kotloff K. *Gastrointestinal Infections in Comprehensive Pediatric Hospital Medicine*, in press.)
- 2013 – Present Breanna Barger Kamate (project on pertussis as a cause of severe and very severe pneumonia in developing countries; abstract presented at the *Pediatric Academic Society* meeting in 2015; manuscript in preparation.)

### New Faculty

- James Campbell, MD (see references 59 and 70)
- Jakub Simon, MD (see references 71 and 81)
- Milagritos Tapia, MD (see reference 129)

### Other Faculty

- As PI of the NIAID-funded Vaccine Treatment and Evaluation Unit, I have mentored numerous UMB faculty in the Departments of Pediatrics and Medicine the design and conduct of clinical vaccine trials, including the following:
- Wilbur Chen, MD (see references 90 and 132)
- Ina Stephens, MD (see reference 127)
- Andrea Berry, MD (see reference 140)

## GRANT SUPPORT

### PRINCIPAL INVESTIGATOR

- 2014-17 Rotavirus Impact Studies in Africa  
Role: Principal Investigator  
Bill & Melinda Gates Foundation
- 2014-19 Surveillance Study to Monitor Effectiveness and Safety of Vaccine Vial Monitor Compatible Formulation of RotaTeq in Routine Use in a Developing World Setting  
Role: Principal Investigator  
Merck Corp



- 2013-23 Vaccine and Treatment Evaluation Units (VTEU) (HHSN27220130002210)  
NIH-AI-2012144  
K. Kotloff, Principal Investigator  
National Institute of Allergy and Infectious Diseases
- 2010-16 Pneumonia Etiology and Research for Child Health (PERCH)  
Subcontract to Bloomberg School of Public Health  
Kate O'Brien Principal Investigator  
K. Kotloff, Mali site Principal Investigator  
Bill & Melinda Gates Foundation
- 2007-16 Vaccine and Treatment Evaluation Units (VTEUs): Evaluation of Control Measures  
against Diseases other than AIDS (contract no. HHSN272200800057C)  
N01-AI-80001  
K. Kotloff, Principal Investigator  
National Institute of Allergy and Infectious Diseases
- 2003 - 10 Mali immunization training initiative: Development of a sustainable immunization  
infrastructure in Mali, West Africa  
K. Kotloff, Principal Investigator  
Merck Company Foundation
- 2004 - 09 Vaccine for prevention of rheumatic fever  
U01 AI-03-028  
J. Dale, Principal Investigator; K. Kotloff, Site PI  
National Institute of Allergy and Infectious Diseases
- 2003-06 Clinical testing of a candidate herpes vaccine in college-aged students  
N01 AI45250 (subcontract)  
R. Belshe, Principal Investigator; K. Kotloff, Site PI  
St. Louis University (from NIH)
- 2004-05 Surveillance for Invasive Pneumococcus Disease in Mali  
ID Biomedical
- 1995-00 Early Events in Clinical Human Papillomavirus Infection ((1 U19 AI38533-01, Proj. 3)  
Keerti Shah, Program Director  
K. Kotloff, Project 3 Principal Investigator  
National Institute of Allergy and Infectious Diseases
- 1996-98 Phase I Trial of *Helicobacter* Vaccine  
MicroCarb, Inc.
- 1995-97 A Randomized, Double-Blind Placebo-Controlled, Multicenter Safety and  
Immunogenicity Study of an Oral Vaccine (ORV105) against *Helicobacter pylori*,  
Administered with Adjuvant, in Healthy Adult Volunteers Infected with *H. pylori*  
(Protocol H-020-015)  
OraVax, Inc.
- 1994-96 Combination Vaccine Trial, Baltimore and Santiago.  
Pasteur Mérieux Sérums & Vaccins
- 1989-94 Gastrointestinal Dysfunction in Children Born to HIV Infected Women (1R01 HD  
26691-01)

- National Institute of Child Health and Human Development
- 1989-93 Seroprevalence of HIV-1 Among College Students (1RO1 AI/HD 28711-01 ARR2)  
National Institute of Allergy and Infectious Diseases
- 1991-92 Safety and Immunogenicity of a Group B Streptococcus Vaccine  
Univax Biologics, Inc.
- 1990-91 Safety and Immunogenicity of a Group B Streptococcus Vaccine  
Maryland Industrial Partnerships
- 1988-89 The Seroprevalence of HIV Infection in Sexually Active College Students  
National Institute of Allergy and Infectious Disease
- 1987-88 The Incidence and Etiology of Diarrhea in Children with Perinatal Human  
Immunodeficiency Virus Infection  
University of Maryland *Designated* Research Initiative Funds
- 1986-87 Infant Nosocomial Rotavirus Prevention Study  
Ross Laboratories

#### CO-INVESTIGATOR

- 2009- 14 Defense against biowarfare and emerging infection agents: Development and testing of  
vaccines, diagnostics, and therapeutics against agents of biowarfare U54AI057168-06  
Principal Investigator: M. Levine  
National Institute of Allergy and Infectious Diseases
- 2008- 10 Safety, immunogenicity, and efficacy following experimental challenge of CVD 1208S, a  
 $\Delta$ guaBA,  $\Delta$ sen, $\Delta$ set Shigella flexneri 2a live oral vaccine  
Principal Investigator: M. Levine  
PATH Vaccine Solutions
- 2009- 13 Influenza incidence measurement and randomized trials of the effectiveness of  
inactivated influenza vaccine in preventing influenza in pregnant (3rd trimester) women  
and in their infants during the first six months of life in Bamako, Mali  
Principal Investigator: M. Levine  
Bill and Melinda Gates Foundation
- 2006 – 14 Diarrheal Disease in Infants and Young Children in Developing Countries  
Principal Investigator: M. Levine  
Bill and Melinda Gates Foundation
- 2004 – 09 *Haemophilus influenzae* type b (Hib) conjugate vaccine in infants in Mali, West Africa  
Principal Investigator: M. Levine  
Bill and Melinda Gates Foundation
- 2003 - 08 Defense against biowarfare and emerging infection agents (U54 AI057168)  
Principal Investigator: M. Levine  
Director of Clinical Core: K. Kotloff  
National Institute of Allergy and Infectious Diseases
- 2003 – 08 Food and Waterborne Disease Integrated Research Network Clinical Research Unit  
N01 AI40014  
Principal Investigator: C. Tacket  
National Institute of Allergy and Infectious Diseases

- 2000-05 Mucosal Measles Vaccine for Immunizing Young Infants  
Principal Investigator: M. Levine  
Bill and Melinda Gates Foundation
- 2002-07 Evaluation of control measures against infectious diseases other than AIDS  
Clinical testing of vaccines and related products in healthy human subjects  
N01 AI25461  
Principal Investigator: M. Levine  
National Institutes of Health
- 2002-07 Fellowship Training Program in Vaccinology  
Training program for clinical- and laboratory-track fellows in vaccinology T32-AI-07524  
Principal Investigator: M. Levine  
National Institutes of Health
- 1996-03 Enteric Diseases Mucosal Pathogens Research Unit  
Principal Investigator: C. Tacket  
National Institute of Allergy and Infectious Diseases
- 1994-02 Evaluation of Control Measures Against Infectious Diseases Other Than AIDS  
NO1-AI-45251  
Principal Investigator: M. Levine  
National Institutes of Health
- 1992-97 Vaccine Testing Facility (DAMD 17-92-C-2058)  
Principal Investigator: M. Levine  
U.S. Army
- 1998-02 Evaluation of Vaccines and Therapeutics against Infectious Diseases Other Than AIDS in  
the Elderly and Adults (NO1 AI 85342)  
Principal Investigator: R. Edelman  
National Institutes of Health

## PULICATIONS

### JOURNAL ARTICLES REFEREED

1. **Kotloff K.L.** and Wald E.R. Uvulitis in children. *Pediatr Infect Dis* 1983;2:392-393.
2. **Kotloff K.L.**, Vial P.A., Young J.W.R., Smith A.G. *Histoplasma duboisii* infection in a Liberian girl. *Pediatr Infect Dis J* 1987;6:202-205.2.
3. Losonsky G.A., Ferreccio C., **Kotloff K.L.**, Kaintuck S., Robbins J.B., Levine M.M. Development and evaluation of an enzyme-linked immunosorbent assay for Vi antibodies in the detection of chronic *Salmonella typhi* carriers. *J Clin Micro* 1987;25:2266-2269.
4. Morris J.G., Jr., Tall B.D., **Kotloff K.L.**, Sechter I. Carriage of *Citrobacter diversus* among young children in Baltimore. *Pediatr Infect Dis J* 1988;7:294-296.
5. **Kotloff K.L.**, Wade J.C., Morris J.G., Jr. Lack of association between *Clostridium difficile* toxin and diarrhea in infants. *Pediatr Infect Dis J* 1988;7:662-663.
6. Vial P.A., **Kotloff K.L.**, Losonsky G.A. Molecular epidemiology of rotavirus infection in a room for convalescing newborns. *J Infect Dis* 1988;157:668-673.

7. **Kotloff K.L.**, Wasserman S.S., Steciak J.Y., Tall B.D., Losonsky G.A., Nair P., Morris J.G., Jr., Levine M.M. Acute diarrhea in Baltimore children attending an outpatient clinic. *Pediatr Infect Dis J* 1988;7:753-759.
8. **Kotloff K.L.**, Blackmon L.R., Tenney J.H., Rennels M.B., Morris J.G., Jr. Nosocomial sepsis in the neonatal intensive care unit. *South Med J* 1989;82:699-704.
9. **Kotloff K.L.**, Losonsky G.A., Morris J.G., Jr., Wasserman S.S., Singh-Naz N., Levine M.M. Enteric adenovirus infection and childhood diarrhea: An epidemiologic study in three clinical settings. *Pediatrics* 1989;84:219-225.
10. Vial P.A., **Kotloff K.L.**, Tall B.D., Morris J.G., Jr., Levine M.M. Detection by immune electron microscopy of 27-nm viral particles associated with community-acquired diarrhea in children. *J Infect Dis* 1990;161:571-3.
11. Noriega F.R., **Kotloff K.L.**, Martin M.A., Schwalbe R.S. Nosocomial bacteremia caused by *Enterobacter sakazakii* and *Leuconostoc mesenteroides* resulting from extrinsic contamination of infant formula. *Pediatr Infect Dis J* 1990;9:447-9.
12. \***Kotloff K.L.**, Tacket C.O., Clemens J.D., Wasserman S.S., Cowan J.E., Bridwell M.W., Quinn T.C. Assessment of the prevalence and risk factors for HIV-1 infection among college students using three survey methods. *Am J Epidemiol* 1991;133:2-8.
13. **Kotloff K.L.**, Tacket C.O., Wasserman S.S., Bridwell M.W., Cowan J.E., Clemens J.D., Brothers T.A., O'Donnell S.A., Quinn T.C. A voluntary serosurvey and behavioral risk assessment for human immunodeficiency virus infection among college students. *Sex Trans Dis* 1991;18:223-227.
14. Saltzberg D.M., **Kotloff K.L.**, Newman J.L., Fastigi R. Cryptosporidium infection in acquired immunodeficiency syndrome: not always a poor prognosis. *J Clin Gastroent* 1991;13:94-7.
15. Guerrant R.L., Araujo V., Soares E., **Kotloff K.**, Lima A.A.M., Cooper W.H., Lee A.G. Measurement of fecal lactoferrin as a marker of fecal leukocytes and inflammatory enteritis. *J Clin Micro* 1992;30:1238-1242.
16. **Kotloff K.L.**, Herrington D.A., Hale T.L., Newland J.W., Van De Verg L., Cogan J.P., Snoy P.J., Sadoff J.C., Formal S.B., Levine M.M. Safety, immunogenicity, and efficacy in monkeys and humans of invasive *Escherichia coli* K-12 hybrid vaccine candidates expressing *Shigella flexneri* 2a somatic antigen. *Infect Immun* 1992;60:2218-2224.
17. **Kotloff K.L.**, Herrmann J.E., Blacklow N.R., Hudson R.W., Morris J.G., Jr., Levine M.M. The frequency of astrovirus as a cause of endemic diarrhea in Baltimore children. *Pediatr Infect Dis J* 1992;11:587-589.
18. **Kotloff K.L.**, Wasserman S.S., O'Donnell S., Losonsky G.A., Cryz S.J., Levine M.M. Safety and immunogenicity in North Americans of a single dose of live oral cholera vaccine CVD 103-HgR: Results of a randomized, placebo-controlled, double-blind cross-over trial. *Infect Immun* 1992;60:4430-4432.
19. Wasserman S.S., **Kotloff K.L.**, Losonsky G.A., Levine M.M. Immunologic response to oral cholera vaccination in a crossover study: A novel placebo effect. *Am J Epidemiol* 1993;138:988-93.
20. **Kotloff K.L.**, Johnson J.P., Nair P., Hickman D., Lippincott P., Wilson D., Clemens J.D. Diarrheal morbidity during the first two years of life among HIV-infected infants. *JAMA* 1994;271:448-452.
21. Miller J.R., Barrett L.J., **Kotloff K.**, Guerrant R.L. A rapid test for infectious and inflammatory enteritis. *Arch Int Med* 1994;154:2660-2664.

22. **Kotloff K.L.**, Losonsky G.A., Nataro J.P., Wasserman S.S., Hale T.L., Taylor D.N., Newland J.W., Sadoff J.C., Formal S.B., Levine M.M. Evaluation of the safety, immunogenicity, and efficacy in adults of four doses of live oral hybrid *Escherichia coli-Shigella flexneri* 2a vaccine strain EcSf2a-2. *Vaccine* 1995;13:495-502.
23. **Kotloff K.L.**, Nataro J.P., Losonsky G.A., Wasserman S.S., Hale T.L., Taylor D.N., Sadoff J.C., Levine M.M. A modified *Shigella* volunteer challenge model in which the inoculum is administered with bicarbonate buffer: Clinical experience and implications for *Shigella* infectivity. *Vaccine* 1995;13:1488-1494.
24. **Kotloff K.L.**, Fattom A., Basham L., Hawwari A., Harkonen S., Edelman R. Safety and immunogenicity of a tetravalent group B streptococcal polysaccharide vaccine in healthy adults. *Vaccine* 1996;14:439-445.
25. Basham L., Pavliak V., Li X., Hawwari A., **Kotloff K.L.**, Edelman R., Fattom A. A simple, quantitative, reproducible avidin-biotin ELISA for the evaluation of group B *Streptococcus* type specific antibodies in humans. *Vaccine* 1996;14:446-450.
26. **Kotloff K.L.** *Helicobacter pylori* and gastroduodenal disorders: New approaches for prevention, diagnosis and treatment (24-25 April, 1995, Philadelphia Marriott, Philadelphia, PA, USA). *Vaccine* 1996;14:1174-1175.
27. **Kotloff K.L.**, Noriega F., Losonsky G.A., Wasserman S.S., Nataro J.P., Levine M.M. Safety, immunogenicity, and transmissibility in humans of CVD 1203, a live oral *Shigella flexneri* 2a vaccine candidate attenuated by deletions in *aroA* and *virG*. *Infect Immun* 1996; 64:4542-4548.
28. Iyengar S., Shah K., **Kotloff K.L.**, Viscidi R. Self-assembly of in vitro HPV-16 protein into virus like particles and reactivity of the protein with sera from virologically characterized college women. *Clin Diag Lab Immunol* 1996;3:733-739.
29. Van de Verg L.L., Bendiuk N.O., **Kotloff K.**, March M.M., Ruckert J.L., Puryear J.L., Taylor D.N., Hartman A.B. Cross-reactivity of *Shigella flexneri* serotype 2a O antigen antibodies following immunization or infection. *Vaccine* 1996;14:1062-1068.
30. Viscidi R.P., **Kotloff K.L.**, Daniel R., Clayman B., Russ K., Shapiro S., Shah K.V. Prevalence of antibodies to HPV type 16 virus-like particles in relation to cervical HPV infection among college women, *Clin Diag Lab Immunol* 1997;4:122-126.
31. Levine M.M., Galen J., Barry E., Noriega F., Tacket C., Szein M., Chatfield S., Dougan G., Losonsky G., **Kotloff K.** Attenuated *Salmonella typhi* and *Shigella* as live oral vaccines and as live vectors. *Behring Instit Mitt* 1997;98:120-123.
32. Tacket C.O., **Kotloff K.L.**, Losonsky G., Nataro J.P., Michalski J., Kaper J.B., Edelman R., Levine M.M. Volunteer studies investigating the safety and efficacy of live oral El Tor *Vibrio cholerae* O1 vaccine strain CVD 111. *Am J Trop Med Hyg* 1997;56:533-537.
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## INVITED SPEECHES

"Nosocomial Rotavirus Transmission." Grand Rounds, Mercy Hospital, Baltimore, Maryland. February 1987.

"The Role of Parvovirus in Human Disease." Annual Fall Meeting, Maryland Chapter of the American



Academy of Pediatrics, Annapolis, Maryland. November 1987.

"Diarrhea Update." University of Maryland Dean's Conference on Recent Developments in Recognized Childhood Problems. Baltimore, Maryland. March 1988.

"The Role of Parvovirus in Human Disease." Sinai Hospital Grand Rounds, Baltimore, Maryland. June 1988.

"The Role of Parvovirus in Human Disease." University of Maryland Department of Pediatrics, Grand Rounds, Baltimore, Maryland. October 1988.

"AIDS and the College Student." AIDS Awareness Panel. Sponsored by the Pre-Medical Society of the University of Maryland, College Park, Maryland. October, 1988.

"Assessment of Risk for Transmission of AIDS Infection Among College Students." AIDS Symposium, Department of Mathematics. University of Maryland, College Park, Maryland. April, 1989.

"HIV Serosurvey at the University of Maryland." Governor's Interdepartmental AIDS Workgroup, Baltimore, Maryland. April 1989.

"Epidemiology of HIV and Transmission among College Students." Continuing Education Course. University Health Center, College Park, Maryland. April 1989.

"Infections in Day Care: Guidelines for the Pediatrician." Workshop at the Ambulatory Pediatric Association. Washington, D.C. May 1989.

"Considerations in Counseling Seropositive Patients Regarding Their Reproductive Options." Clinical Conference and Exhibition of the National Perinatal Association. Washington, D.C. November 1989.

"Diarrhea." Third Annual Infectious Diseases in Children Symposium. Washington, D.C. September 1990.

"The Role of Parvovirus in Human Disease." University of Maryland Dean's Conference on Pediatric Infectious Disease. Baltimore, Maryland. January 1991.

"Infectious Complications of Pediatric HIV Infection." Third Annual Maryland AIDS Conference. Baltimore Convention Center, Baltimore, Maryland. November 1991.

"Opportunistic Infection Prophylaxis in Children." Fifth Annual Maryland AIDS Conference. Baltimore Convention Center, Baltimore, Maryland. November 1993.

"Clinical Evaluation of *Shigella* Vaccines." Naval Medical Research Institute, Rockville, Maryland. May 1995.

"Epidemiology of Diarrhea in Childhood." Sinai Hospital Pediatric Grand Rounds. Baltimore, Maryland. January 1996.

"Evaluation of Candidate *Shigella* Vaccines." Symposium entitled, "The Vaccine Development Paradigm: Illustrative Examples in the Development of Vaccines Against Tropical Diseases." American Society of Tropical Medicine and Hygiene. 45th Annual Meeting. Baltimore, Maryland. December 1996.

"Early Events in Cervical HPV Infection". Infectious Disease Research Seminar. Johns Hopkins University School of Medicine. Baltimore, Maryland. April 1997.

"Issues Related to Human Subjects, Informed Consent, and Regulatory Affairs in

Conducting Clinical Trials." Clinical Trials Workshop for Latin America: Evaluation of Drugs and Vaccines for Tropical Diseases. Sponsored by Centro Internacional de Entrenamiento e Investigaciones Médicas and the World Health Organization. Cali, Colombia. August 1998.

"New Challenges in Treating and Preventing Shigella Infection". VI Nacional Congreso de Salud Pública. San Jose, Costa Rica. September 1998.

"Group A Streptococcal Vaccine Clinical Trials" and "Safety Issues in Designing Group A Streptococcal Vaccine Clinical Trials". Group A Streptococcal Consultation to the National Institutes of Allergy and Infectious Diseases. Bethesda, MD. December 1998.

"Pediatric Viral Diarrheal Illnesses." Virology Update CME Course, Washington County Hospital, Hagerstown, MD. October 1999.

"Volunteer Challenge Trials" NIAID Conference: Development of a standardized human challenge model for *Helicobacter pylori*. Rockville, MD. November 30, 1999.

"An Adolescent Girl with a Neck Mass." Senior Clinician Rounds. University of Maryland Department of Pediatrics. Baltimore, MD. December 1999.

"Update on Group A Streptococcus." Grand Rounds, Mercy Hospital, Baltimore, MD. December 1999.

"Update on Group A Streptococcus." Grand Rounds, Sinai Hospital, Baltimore, MD. January, 2000.

"Global Perspective on Prevention Strategies for Shigellosis." International Society for Infectious Diseases. Buenos Aires, Argentina. April 13, 2000.

"Phase 1 Trials (Example: Group A Streptococcus)". Advanced Vaccinology Course (organized by the Mérieux Foundation). Annecy, France. May 22 - June 3, 2000.

"Challenge Studies." Advanced Vaccinology Course (organized by the Mérieux Foundation). Annecy, France. May 22 - June 3, 2000.

"Ethical Issues, Developed Countries." Advanced Vaccinology Course (organized by the Mérieux Foundation). Annecy, France. May 22 - June 3, 2000.

"Clinical Trial Work Plan for Bacterial Live Vector Measles Vaccines". Consultation on New Measles Vaccine Candidates: Preclinical vaccination testing designed to safely immunize infants in developing countries prior to six months of age. Johns Hopkins School of Public Health. March 22, 2001. Baltimore, Maryland.

"New Developments in *Shigella* Vaccine Development". Global Vaccine Research Forum, World Health Organization and Global Alliance for Vaccines and Immunization. June 12, 2001. Montreaux, Switzerland.

"R<sub>192G</sub> Orally in *Helicobacter* Vaccine." Intranasal Administration of Toxin Adjuvants. National Institutes of Allergy and Infectious Diseases. July 9, 2001. Bethesda, Maryland.

"Phase 1 Evaluation of virG Deleted *Shigella sonnei* Live, Attenuated, Oral Vaccine (Strain WRSS1) in Healthy Adult Volunteers. Vaccines for Enteric Diseases 2001 Conference. September 12, 2001. Tampere, Finland.

"Processing Existing Data to Measure the Disease Burden of Shigellosis." Workshop on Existing Data Collection in Diseases of the Most Impoverished (DOMI) Countries. International Vaccine Institute. November 26, 2001. Seoul, Korea.

"Challenge Studies with Infectious Agents". American Federation for Medical Research. Clinical

Research 2002. April 13, 2002. Baltimore, MD.

"Vaccine Studies". Symposium: Research with Children: The New Legal and Policy Landscape. May 3, 2002. Baltimore, MD.

"Update on Pediatric Diarrhea". Mercy Hospital Pediatric Grand Rounds. May 17, 2002. Baltimore, MD.

"Progress in Group A Streptococcus Vaccine Development." University of Maryland Pediatric Grand Rounds. September 12, 2002. Baltimore, MD.

"*Shigella* Vaccines: The Future." Conference on Vaccines, Prevention, and Public Health: A Vision for the Future. A Centennial Celebration of the Pan American Health Organization. November 25-27, 2002. Washington, D.C.

"Mucosal Immunization: An Overview of Clinical Aspects." Steering Committee on New Vaccine Delivery Systems, World Health Organization, 10-11 December 2002, Geneva, Switzerland.

"Immunization against Bacterial Enteropathogens: The Example of *Shigella*". The 3<sup>rd</sup> Elzenveld Workshop on Infectious Diseases, 12-14 December 2002, Antwerp, Belgium.

"Treatment and Prevention of Diarrhea". Grand Rounds, Sinai Hospital, January 14, 2003, Baltimore, MD.

"*Clostridium difficile* vaccines". Sixth Annual Conference on Vaccine Research. National Foundation of Infectious Disease. May 1, 2003, Washington, D.C.

"Vaccine Clinical Trial Design". Prevention of group A streptococcal diseases and their sequelae with a focus on vaccine related issues. National Institutes of Health. March 29, 2004, Washington, D.C.

"Update on Needle-free Vaccine Technologies in Development". National Immunization Conference. May 13, 2004, Nashville, TN.

"Transcutaneous Immunization". Seventh Annual Conference on Vaccine Research. National Foundation of Infectious Disease. May 25, 2004, Arlington, VA.

"Global burden of *Shigella* Infections: Implications for vaccine development and implementation of control strategies." Future Needs and Directions for *Shigella* Vaccine Research. World Health Organization Initiative for Vaccine Research. September 13-15, 2004 Geneva, Switzerland.

"Update on *Shigella* vaccines developed at the Center for Vaccine Development". Future Needs and Directions for *Shigella* Vaccine Research. World Health Organization Initiative for Vaccine Research. September 13-15, 2004, Geneva, Switzerland.

"Transcutaneous Immunization". Fourth World Congress on Vaccines and Immunization. September 30, 2004. Tsukuba, Japan.

"*Shigella* global disease burden, diagnostics and strain diversity-Summary of conclusions from WHO meeting". Evaluating the DOMI model and defining a global research agenda for accelerated development and introduction of vaccines against cholera, typhoid fever and shigellosis. January 13, 2005, Hanoi, Vietnam.

"Epidemiology of diarrheal disease". Enteric Vaccines Consultation. Bill and Melinda Gates Foundation. March 9-10, 2005, Seattle, WA.

"Immunology and potential vaccine prevention of *C. difficile* colitis". Eighth Annual Conference on Vaccine Research, National Foundation of Infectious Disease. May 9-11, 2005, Baltimore, MD.

"Global burden of disease due to *Shigella* infections". World Health Organization Initiative for Vaccine

Research (IVR) Global Vaccine Research Forum. June 12-15, 2005. Salvador da Bahia, Brazil.

“Challenges of Live Oral Enteric Vaccines. Rotavirus Vaccine Development Upstream Candidates and the Role of Emerging Vaccine producers. World Health Organization. March 28-30, 2006. Geneva, Switzerland.

“The Challenges in Estimating Disease Burden for Understanding the Potential Impact of Vaccines against Enteric Diseases”. Special Session: Health Economics and their Impact on Enteric Vaccines. Vaccines for Enteric Diseases. April 25-27, 2007, Lisbon, Portugal.

“Vaccines against Diarrheal and Foodborne Diseases – An Overview. Symposium on Vaccination Strategies to Control Foodborne Pathogens from Farm-to-Table. International Association for Food Protection 94<sup>th</sup> Annual Meeting. July 8-11, 2007, Lake Buena Vista, Florida.

“Vaccine trial endpoints and laboratory considerations”. Workshop on group A streptococcal laboratory methods with a focus on vaccine related issues. August 23-24, 2007. NIAID, Bethesda, MD.

“Diarrhea and Dehydration”. Global Child Health Elective. Children’s National Medical Center, September 26, 2007. Washington, D.C.

“Diarrhea Update”. Mercy Hospital Grand Rounds. November 16, 2007. Baltimore, MD.

“The Global Enterics Multicenter Study”. International Center for Diarrhoeal Disease Research, Bangladesh, January 17, 2008, Dhaka, Bangladesh.

“Update on vaccines to prevent *Shigella* and ETEC infection”. Aga Khan University, March 20, 2008, Karachi, Pakistan.

“Protozoal Diarrhea”. WHO Diarrhoeal Disease and Enteric Vaccine Advisory Committee. October 7-9, 2008, Geneva, Switzerland.

“Nontyphoidal Salmonellosis”. WHO Diarrhoeal Disease and Enteric Vaccine Advisory Committee. October 7-9, 2008, Geneva, Switzerland.

“Conducting Diarrhea Vaccine Trials in Developing Countries”. Course on Vaccinology in Developing Countries. Aga Khan University, November 9, 2008, Karachi, Pakistan.

“Burden and Etiology of diarrheal diseases in children – the Global Enteric Multicenter Study”. Royal Society of Tropical Medicine and Hygiene Conference. Aga Khan University, November 10, 2008, Karachi, Pakistan.

“*Shigella* and ETEC vaccines”. Royal Society of Tropical Medicine and Hygiene Conference. Aga Khan University, November 11, 2008, Karachi, Pakistan.

Overview: “Global Enterics Multi-Center Study (GEMS)” Symposium. American Society for Tropical Medicine and Hygiene. 57<sup>th</sup> Annual Meeting. December 10, 2008, New Orleans, LA.

“Global Enterics Multi-Center Study (GEMS)”: Diarrheal Disease in Children from Developing Countries. Pediatric Grand Rounds, Mercy Hospital, January 9, 2009. Baltimore, MD.

The Burden of Group A Streptococcal Infection in Bamako Schoolchildren”. Pediatric Grand Rounds, Johns Hopkins University School of Medicine, January 21, 2009, Baltimore, MD.

Pediatric Vaccines. 26<sup>th</sup> 3-P Conference, Harbor Hospital. May 20, 2009, Baltimore, MD.

“Global Enterics Multi-Center Study (GEMS)”: Diarrheal Disease in Children from Developing Countries. Visiting Professor, Royal Children’s Hospital Grand Rounds, July 1, 2009. Melbourne, Australia.

“Global Enterics Multi-Center Study (GEMS): Diarrheal Disease in Children from Developing Countries.” Vaccines for Enteric Diseases, September 9-11, 2009, Malaga, Spain.

Phase 1 Trial of Two Candidate Live Oral *Salmonella enterica* Serovar Paratyphi A Vaccines Harboring Mutations in *guaBA* and Either *clpX* or *clpP*. MARCE-2 Kick-off Meeting, Ellicott City, Maryland. 2009.

“Etiology and Burden of Moderate and Severe Pediatric Diarrheal Disease in Africa and Asia”. Symposium entitled, *Surprising Insights on Diarrheal Disease, One of the Top Two Causes of Young Child Mortality in Developing Countries*. Presented at the 58<sup>th</sup> Annual Meeting of the American Society of Tropical Medicine and Hygiene, Washington, D.C. 2009.

“H1N1 Swine-Origin Influenza: The Anatomy of a Pandemic.” Pediatric Grand Rounds, Mercy Hospital. October 16, 2009, Baltimore, MD.

“H1N1 Swine-Origin Influenza: The Anatomy of a Pandemic.” Pediatric Grand Rounds, Sinai Hospital. October 6, 2009, Baltimore, MD.

“H1N1 Swine-Origin Influenza: The Anatomy of a Pandemic.” Pediatric Grand Rounds, UMB.

“Is a Group A Streptococcal Vaccine Desirable and Feasible?” Wellcome Trust-MSD Hilleman Laboratories Frontiers in Vaccinology, March 1-3, 2010, New Dehli, India.

“Group A Streptococcal Vaccine Clinical Trials: Progress, Prospects, and Potential Pitfalls”. University of Bergen, March 24, 2010. Bergen, Norway,

“Bacterial Enteric Vaccines.” Vaccines and Immune Therapeutics: Immuno6/CAMB09. University of Pennsylvania, Department of Pathology and Laboratory Medicine, Gene Therapy and Vaccine Program. October 7, 2010, Philadelphia, PA.

New Vaccine Development Symposium. “Group A Streptococcus”. Infectious Disease Society of America 48<sup>th</sup> Annual Meeting. October 23, 2010. Vancouver, Canada.

“Global Enterics Multi-Center Study (GEMS): Diarrheal Diseases in Children from Developing Countries.” Global Health Seminar Series. Merck and Co, Inc., October 28, 2010, West Point, Pennsylvania.

“Burden and etiology of severe pediatric diarrheal disease from the Global Multi-Center Study (GEMS): contrasting Africa and Asia.” 58<sup>th</sup> Annual Meeting of the American Society of Tropical Medicine and Hygiene. November 6, 2010, Atlanta, GA.

“Microbiology of Growth Failure in the Developing World.” Expert Convening on Gut Integrity in the Developing World. Bill and Melinda Gates Foundation. 15 December, 2010. Seattle, WA.

“Global Enterics Multi-Center Study (GEMS): Diarrheal Diseases in Children from Developing Countries.” Global Diarrhea Action Plan. First Strategic Advisory Group Meeting. Department of International Health, Bloomberg School of Health, Johns Hopkins University, August 1, 2011, Baltimore, MD.

“Global Enterics Multi-Center Study (GEMS): Diarrheal Diseases in Children from Developing Countries.” Workshop of Indian Technical Experts to develop an in-country course: Addressing the role of vaccines in a comprehensive childhood pneumonia and diarrheal disease prevention and control strategy in India. Sponsored by the International Vaccine Access Center, Bloomberg School of Health, Johns Hopkins University. Mount Washington Conference Center, October 4, 2011, Baltimore, MD.

“*Cryptosporidium* as an important cause of childhood diarrhea: the GEMS experience”. Workshop on *Cryptosporidium*: Global burden, novel diagnostics and therapeutics, and preventive strategies. Foundation for the NIH, Fogarty International Center, NIAID, and the Bill & Melinda Gates Foundation. 2-3 December, 2011. Philadelphia, PA.

“From Epidemiology to Prevention: the Path for Enteric Vaccines. Department of Epidemiology and Molecular Microbial Pathogenesis. Institut Pasteur. March 19, 2012, Paris, France.

“Epidemiology of Diarrheal Diseases: An Update”. Institut Pasteur Vaccinology Course. March 20, 2012, Paris, France.

“GEMS Study and Global Etiology”. Consultation on vaccines for enteric and diarrheal diseases: An update on latest advancements and a potential WHO research agenda. World Health Organization. May 24, 2012, Geneva, Switzerland.

“Clinical Vaccine Trials”. Colloquium of Science. Office of Student Research Summer Research Training Program. University of Maryland, Baltimore. June 21, 2012.

“Group A Streptococcal Vaccines.” 6<sup>th</sup> Vaccine and ISV Annual Global Congress. 14-16 October 2012. Shanghai, China.

“*Shigella* Volunteer Challenge Model.” Controlled Human Infections Studies in the Development of Vaccines and Therapeutics. Jesus College, Cambridge University, 9-11 January 2013, Cambridge, UK.

“*New and candidate vaccines for gastrointestinal infections*”. European Society of Clinical Microbiology and Infectious diseases (ESCMID). 22-24 March 2013. Prague, Czech Republic.

“Strategies for Success in Academic Medicine from a Personal Perspective.” Workshop on Getting Promoted in an Academic Medical Institution. 18 May 2013. University of Maryland, Baltimore.

“The Global Enteric Multicenter Study (GEMS): Deciphering why children in developing countries are dying from diarrheal diseases.” 03 October 2013. Pediatric Grand Rounds, University of Maryland, Baltimore.

“Importance of GEMS data and implications for *Cryptosporidium* diagnostics. The Global Enteric Multicenter Study (GEMS): Etiology and Burden of Moderate-to-Severe Diarrheal Disease (MSD) in Developing Countries.” 2013 *Cryptosporidium* Diagnostics: Tools and Stools. An expert convening to define the need and gold standard for *Cryptosporidium* diagnostics. Bill & Melinda Gates Foundation. 21-22 November 2013. Seattle, WA.

“The Global Enteric Multicenter Study (GEMS) of Diarrheal Disease in Infants and Young children in Developing Countries.” Symposium on Childhood Diarrhea – a Global Problem. 5<sup>th</sup> International Giardia and Cryptosporidium Conference. 27-30 May 2014. Uppsala, Sweden.

“Challenge Studies with Enteric Bacteria.” The Alliance for Biological Standardization (IABS) International Workshop on Human Challenge Trials in Vaccine Development: Scientific and Regulatory Issues. 19 September – 1 October, 2014. Strasbourg, France.

“Overcoming Obstacles in the Development of Group A Streptococcal Vaccines.” 18<sup>th</sup> Annual Conference on Vaccine Research. 13 – 15 April, 2015. Bethesda, Maryland.

“Burden of *Cryptosporidium* in Developing Countries: The Global Enterics Multicenter Study (GEMS). 64<sup>th</sup> Annual Meeting of the American Society of Tropical Medicine & Hygiene. 26 October 2015. Philadelphia, Pennsylvania.

“Bacterial Gastrointestinal Infections I and II”. PREP ID Course/American Academy of Pediatrics. 20 August 2015, Chicago, Illinois.

“The Global Enterics Multicenter Study (GEMS)”. Conference on Correlates of Enteric Vaccine-Induced Protection Fondation Mérieux. 21-23 March 2016, Annecy, France.