



Parasitology Pre-meeting Course:

The Science and Business of Vaccines Against Tropical Parasitic Diseases in the COVID19 Era

Friday, November 13, 2020; 7:45 a.m. – 4:30 p.m. EST.

Virtual

(all times are in Eastern Standard Time)

There is no vaccine for a human parasitic infection that has marketing authorization (licensure) anywhere in the world. However, we are on the verge of licensed vaccines for malaria, and are making enormous progress for diseases caused by other protozoans like leishmaniasis and helminths like hookworm. A distinguished international faculty from the biotechnology industry, the government, and academia will communicate their experience and insights regarding how to approach successful development of vaccines against parasites, including identification of the immunological mechanisms of protection and the antigenic targets of protective humoral and cellular immune responses, the construction of vaccine delivery systems (recombinant proteins, recombinant viruses, nucleotide (eg. mRNA), and whole wild type and genetically altered parasites) and achieving regulatory approval for conducting phase 1-3 clinical trials and translating from the laboratory to the clinic to assess safety and vaccine efficacy in the era of COVID-19.

Course Organizers:

John Adams, PhD, FASTMH, Distinguished University Professor, University of South Florida College of Public Health, Tampa, Florida, United States

Stephen L. Hoffman, MD, DTMH, FASTMH, Chief Executive and Scientific Officer, Sanaria, Inc., Rockville, Maryland, United States

AGENDA

- 7:45 a.m. **Why We Need Vaccines and Why There Aren't Any Licensed Vaccines Against Parasites**
Stephen L. Hoffman, MD, DTMH, FASTMH, Chief Executive and Scientific Officer, Sanaria, Inc., Rockville, Maryland, United States
- 8:15 a.m. **The European Union Malaria Fund: A New Paradigm for Funding Private Sector Malaria Vaccine R&D**
Holm Keller, Executive Chairman, Director, kENUP Foundation and EU Malaria Fund, Republic of Malta

8:45 a.m. **Determining the Mechanisms of Protective Immunity and Establishing they are Induced by Vaccines**

Humoral Immunity (Antibodies): Systems immunology tools to determine the role of humoral immunity in protection against malaria, COVID-19 and other infectious diseases and to monitor vaccine response

Galit Alter, PhD, Professor of Medicine, Harvard Medical School and Group Leader, Ragon Institute of MGH, MIT and Harvard, Cambridge, Massachusetts, United States

Cellular Immunity (T cells): Cellular immunology tools to determine the role of protective immunity in protection against malaria, COVID-19, and other infectious diseases and to monitor vaccine response.

Robert Seder, MD, Chief, Cellular Immunology Section, Vaccine Research Center, National Institutes of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland, United States

9:45 a.m. **Determining the Targets of Protective Immunity**

Targets of Antibodies I: Structural vaccinology: defining B cell epitope targets of protective immunity to malaria

Niraj Tolia, PhD, Senior Investigator, Laboratory of Malaria Immunology and Vaccinology, National Institutes of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland, United States

Targets of Antibodies II: Determining targets of naturally acquired protective immunity using protein microarrays and functional assays

Faith H.A. Osier, PhD, Professor of Malaria Immunology, Nuffield Department of Medicine, Centre for Tropical Medicine and Global Health, Kilifi, Kenya

Targets of Cellular Immune Responses: Determining the targets of cellular immune responses after natural infection with and immunization against parasites and SARS-CoV-2

Alessandro Sette, Dr. Biol.Sci, Professor and Member, Infectious Disease and Vaccine Center, La Jolla Institute, La Jolla, California, United States

11 a.m. **Questions and Answers**

11:15 a.m. Break

11:30 a.m. **Producing/Manufacturing Immunogens to Induce the Required Immune Responses Against the Identified Targets and the Manufacturing and Regulatory Challenges of Transitioning from Phase 1-3, and Scaling Up to Meet Commercial Demand**

Recombinant Protein Vaccines (VLPs) and Adjuvants

Simon Draper, PhD, Professor of Vaccinology and Translational Medicine, Jenner Institute, University of Oxford, Oxford, United Kingdom

A Next-Generation Anti-Sporozoite Subunit Vaccine

Adrian Hill, FMedSci, FRCP, Director, Jenner Institute, University of Oxford, Oxford, United Kingdom

Nucleotide Vaccines (DNA/mRNA)

TBD

Wild Type and Genetically Altered Whole Parasite and Attenuated Bacteria Vaccines

B. Kim Lee Sim, PhD, FASTMH, Executive Vice President Process Development and Manufacturing, Sanaria Inc. and President and Chief Scientific Officer, Protein Potential LLC, Rockville, Maryland, United States

1:30 p.m. **Questions and Answers**

1:45 p.m. **Lunch**

2:15 p.m. **Evaluating Safety and Protective Efficacy of Vaccines in the Era of COVID-19**

Controlled Human Infections to Assess Malaria, Schistosomiasis and Hookworm Vaccines

Meta Roestenberg, MD, PhD, Physician-Scientist, Department of Parasitology, Leiden University Medical Center, Leiden, Netherlands

Field and CHMI Trials of Malaria Vaccines in Africa:

Said Jongo, MD, Principal Investigator, Ifakara Health Institute and Bioko Island Malaria Elimination Program, Dar es Salaam, Tanzania

Translating Parasitic Disease and COVID-19 Vaccines from Discovery to the Clinic

Peter Hotez, MD, PhD, FASTMH, Dean of National School of Tropical Medicine, Baylor College of Medicine, and Director of the Texas Children's Center for Vaccine Development, Houston, Texas, United States

Conducting Trials of COVID-19 Therapeutics, COVID-19 Vaccines, and Malaria Vaccines at the Same Time

Peter Kremsner, MD, PhD, Distinguished International FASTMH, Director, Institute of Tropical Medicine, University of Tübingen, Tübingen, Germany and President, Centre de Recherches Médicales de Lambaréné (CERMEL), Lambaréné, Gabon

4:15 p.m. **Question and Answers**

4:30 p.m. **Course Adjourns**