Speakers' Biographies

4th Annual Short Course in Medical Virology of the GVN

Clement A. Adebamowo, BM, ChB, ScD, FWACS, FACS. As a member of the Population Sciences Program of the Cancer Center and a cancer epidemiologist, I conduct research on the epidemiology of cancer. At this time, I am the PI of the NIH funded African Collaborative Center for Microbiome and Genomics Research (ACCME) which is one of the NIH/Wellcome Trust funded Human Heredity and Health in Africa (H3Africa) initiative on genomics research and education in Africa. ACCME's current project is enrolling 10,000 women in Nigeria and Zambia and following them up every 6 months for research focused on integrative epidemiology of persistent high risk HPV infection, host germline and somatic genomics and epigenomics, and vaginal microenvironment (cytokines and microbiome) and risk of cervical cancer. As part of this project, I established a comprehensive genomics laboratory in Nigeria including facilities for epigenetics and next generation sequencing using Illumina NextSeq500. The genomics lab is linked to an NIH funded biorepository at IHVN. I also direct the Fogarty funded West African Bioethics Training program which has provided medium term training leading to Certificates in Research Ethics for 842 biomedical researchers, Masters' degree in Bioethics to 34 individuals and Online WAB-CITI Training program to 6115 participants in West Africa. In Baltimore, I am working with colleagues at the University of Maryland Greenebaum Cancer Center and University of Maryland College Park to develop a research program on cancer disparities among Africans in Africa, recent African immigrants to the United States and African Americans in order to better understand the role of genetics, environment cultural and socio-economic factors in cancer prevention, treatment seeking behavior and outcomes.

Dr. Man Charurat is a Professor of Medicine and Director of the Division of Epidemiology and Prevention at the Institute of Human Virology. He is an international leader in the field of epidemiological studies of populations at high risk of HIV and AIDS. Dr. Charurat received his Masters of Health Science in Infectious Disease Epidemiology and PhD in International Health from the Johns Hopkins Bloomberg School of Public Health. In 1998, he joined the Institute of Human Virology (IHV), University of Maryland School of Medicine.

Dr. Konstantin Chumakov is an Associate Director for Research at the Office of Vaccines Research and Review at the US Food and Drugs Administration, and an Adjunct Professor at George Washington University and the University of Maryland. He holds a PhD (1979) in molecular biology and Doctor of Sciences degree (1987) from Moscow State University. In 1973-1987 he was a Research Scientist at the Laboratory of Molecular Biology and Bioorganic Chemistry of Moscow State University. From 1987 to 1989, he headed the Laboratory of Bacterial Genetics at the Institute of Microbiology of the Soviet Academy of Sciences in Moscow. In 1989 he moved to the FDA Center for Biologics Evaluation and Research (CBER) in Bethesda, Maryland, and since 1997 leads a research laboratory in the Division of Viral Products. His scientific interests are in creation of molecular methods for evaluation and quality control of vaccines and other biological products. The primary focus of his studies is related to poliovirus and polio vaccines.

Dr. Niel Constantine, a professor in the University of Maryland School of Medicine, possesses 40 years of experience in the diagnostic arena, has frequently acted as an international consultant for laboratory strengthening activities in many countries, and has a productive track record with extramural funding and publications. During 1993, Dr. Constantine was recruited to Geneva to work with the Global AIDS Programme in the Diagnostics Unit of the World Health Organization for establishing research protocols in a number of countries, and addressing issues in global diagnostics for HIV. In 1998, Dr. Constantine became part of the Institute of Human Virology (IHV, Dr. Robert Gallo, Director) where he established the Laboratory of Viral Diagnostics. This laboratory provides serologic and molecular testing capabilities, performs research activities for the development of new test technologies, provides training for international students, and supports a variety of ancillary activities including sample archiving, quality assurance support, and FDA clinical trials. Efforts are directed toward the development of a variety of novel technologies aimed at increasing sensitivity, simplifying procedures, and developing test technologies for resource-limited facilities in developing countries. Major activities are supported by FHI360, PSCM, and PFSCM (USAID) to evaluate rapid test kits for HIV, hepatitis, malaria, TB, pregnancy, and others from international locations; other support is from NIH for HIV research.

Matthew B. Frieman, Ph.D. is an Associate Professor in The Department of Microbiology and Immunology at The University of Maryland School of Medicine. The focus of his research is on emerging respiratory viruses with a focus on Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV), Middle East Respiratory Syndrome Coronavirus (MERS-CoV) and Influenza virus. He is the principal investigator on an NIAID funded RO1 on the host response to SARS-CoV infection as well as being supported by several contracts for anti-viral testing of compounds against SARS-CoV, MERS-CoV and Influenza virus. His laboratory works on viral proteins and how they engage and alter the host response to infection as well as pathogenesis of the viruses in animal models to identify host pathways that inhibit viral infection and disease.

Prof. Robert Gallo is Founder and Director of the Institute of Human Virology (IHV) at the University of Maryland. Prior to this role, he spent 30 years at the National Institutes of Health's National Cancer Institute, where he was head of its Laboratory of Tumor Cell Biology. Dr. Gallo is renowned for his research on HIV, most notably his co-discovery in 1984 that HIV is the cause of AIDS. His research has been instrumental to the development of HIV blood tests and HIV therapies. In 1996, his discovery that a natural compound known as chemokines can block HIV and halt the progression of AIDS was hailed by Science magazine as one of that year's most important scientific breakthroughs. Dr. Gallo's current work at the IHV combines the disciplines of research, patient care, and prevention programs in a concerted effort to speed the pace of medical breakthroughs. Dr. Gallo has authored more than 1,200 scientific publications, as well as the book "Virus Hunting: AIDS, Cancer & the Human Retrovirus: A Story of Scientific Discovery." Dr. Gallo has been awarded 31 honorary doctorates and was twice a recipient of the Albert Lasker Clinical Medical Research Award (1982 and 1986). He is a member of the National Academy of Sciences and the Institute of Medicine.

Dr. Gavegnano earned her PhD from Emory University in Pharmacology in 2012, and a MS degree in Clinical and Translational Medicine. She also holds a MS degree in Immunology from the University of Florida. Dr. Gavegnano is an Assistant Professor at Emory University, Department of Pediatrics, Laboratory of Biochemical Pharmacology. Dr. Gavegnano's work focuses on the area of HIV-1 persistence in vivo reservoirs, and design of cellular factor and immunomodulatory agents to disrupt these key events. Dr. Gavegnano's work in collaboration with Dr. Raymond F. Schinazi has led to discovery of the use of Jak inhibitors to treat HIV infection, which is currently a multi-site phase 2a ACTG-funded study in HIV-infected individuals.

Diane E. Griffin MD, PhD is University Distinguished Service Professor of Molecular Microbiology and Immunology at Johns Hopkins Bloomberg School of Public Health and Vice President of the US National Academy of Sciences. She earned her MD and PhD from Stanford University School of Medicine. Her research interests are in the area of pathogenesis of viral diseases with a focus on measles and alphavirus encephalitis. These studies address issues related to virulence and the role of immune responses in protection from infection and in clearance of infection and has included evaluation of licensed and experimental vaccines for measles. She is past president of the American Society for Virology and the American Society for Microbiology. Currently, she is US Chair of the US-Japan Cooperative Medical Sciences Program and Director of the Johns Hopkins GVN Center of Excellence.

Andrew Haddow, PhD is currently a Research Entomologist based at the United States Army Medical Research Institute of Infectious Diseases. He earned an MSc in Environmental Sciences from Johns Hopkins University and completed postgraduate training at the London School of Hygiene & Tropical Medicine and the Natural History Museum in Vector Biology and Identification. Dr. Haddow then earned a PhD in Medical Entomology from The University of Tennessee for his dissertation research on the epidemiology of La Crosse virus in the Eastern United States. After completing his PhD, Dr. Haddow accepted a Postdoctoral Fellowship to study emerging and re-remerging arboviruses with Professor Scott Weaver at the University of Texas Medical Branch. During his fellowship, he studied the vector pathogenesis and the molecular epidemiology of several alphaviruses and flaviviruses, including Zika virus. While in Texas, Dr. Haddow was awarded the Robert E. Shope International Fellowship in Infectious Diseases from the American Society of Tropical Medicine & Hygiene. This fellowship provided him the opportunity to conduct field work on emerging infectious diseases in Senegal, Thailand, and Uganda. In 2013, Dr. Haddow accepted a contract position as a Research Entomologist at the United States Army Medical Research Institute of Infectious Diseases (USAMRIID). His research program is focused on the characterization of emerging/re-emerging arboviruses and studying vector pathogenesis, including arthropod studies carried out at Biosafety Level-4. In addition, he is a lead investigator of several international field studies examining the ecology and epidemiology of vector-borne pathogens.

CAPT Peter H. Kilmarx, MD, an expert in infectious disease research and HIV/AIDS prevention, is the Deputy Director of the John E. Fogarty International Center of the National Institutes of Health, a preeminent center for global health research and capacity building. Dr. Kilmarx previously served as the Center for Disease Control and Prevention's Country Director in Zimbabwe, providing oversight for 30 CDC staff who managed implementation of the U.S. efforts to reduce HIV/AIDS, TB and malaria. A captain in the U.S. Public Health Service, Dr. Kilmarx served as the CDC Ebola response team leader in Sierra Leone in September-October 2014, and as principal deputy team leader in Guinea in January-February 2015. Previously, he initiated the CDC response to the Ebola outbreak in Kasai Occidental, Democratic Republic of Congo (DRC), in 2007, and led household surveillance in the Ebola outbreak in Kikwit, DRC, in 1995. Dr. Kilmarx has held a variety of leadership positions at the CDC since 1996, including senior advisor to the Director for Health Reform and chief of the Epidemiology Branch — both in the Division of HIV/AIDS Prevention. He also served as director of the CDC partnership with Botswana to combat HIV/AIDS, TB and related conditions, as well as the chief of the CDC's Sexual Transmission Research Section in Thailand. Previously, he completed assignments in Pakistan and the DRC. An experienced clinical trials manager, he has served as principal investigator on microbicide trials in Thailand, and as senior investigator in TB and HIV trials in Botswana. Until recently, he was principal investigator on HIV studies he initiated at public health facilities in Zimbabwe. After earning his M.D. from Dartmouth-Brown's Combined Program in Medicine, Dr. Kilmarx completed both his internal medicine residency and infectious disease clinical fellowship at Johns Hopkins Hospital, Baltimore. He remains board-certified in both specialties and is a fellow of the Infectious Diseases Society of America and of the American College of Physicians. He has published more than 120 peer-reviewed journal articles and book chapters, and serves on the editorial board of Sexually Transmitted Diseases. He began his international career as a Peace Corps volunteer in the DRC (then Zaire), where he helped develop fisheries that are still productive today.

Marion Koopmans (DVM, PhD) is Head of the department of Viroscience at Erasmus MC Rotterdam, The Netherlands. She is also Professor of virology at the Laboratory for Infectious Diseases of the National Institute of Public health. Her responsibilities include reference diagnostics, syndrome surveillance and emergency preparedness for viral diseases, including research aimed at improving the response capacity of a public health lab. Her research interests focus enteric viruses, food-borne infections, emerging disease preparedness, and infections at the human-animal interface, with a particular focus on unravelling mechanisms underlying possible emergence of new health threats and optimizing the early detection and response. She is initiator and coordinator of a network of laboratories with responsibility for norovirus surveillance that agreed to share data and sequences internationally. She has authored over 300 papers in peer reviewed journals.

Dr. Shyam Kottilil is the Professor of Medicine and Associate Chief of Clinical Care and Research at the Institute of Human Virology (University of Maryland). He trained at Brown University and at the National Institutes of Health prior to his appointment at University of Maryland. He is a national leader in the management of hepatitis C infection and has conducted several clinical studies in the inner city community clinics in District of Columbia and Baltimore. He has published over 150 peer reviewed publications and serves as a member of the National HCV Treatment Guidelines Committee member.

Dr. Florian Krammer received his degree in biotechnology from the University of Natural Resources and Life Sciences, Vienna, Austria where he worked on insect cell derived influenza virus-like particle vaccines in the laboratory of Dr. Reingard Grabherr. For his postdoctoral work he joined Dr. Peter Palese's group at the Icahn School of Medicine at Mount Sinai, New York. His postdoctoral work focused on the development of a universal influenza virus vaccine. Dr. Krammer is now an Associate Professor at Mount Sinai. The Krammer laboratory studies cross-reactive antibody responses against the surface glycoproteins of RNA viruses including influenza, hanta and filoviruses.

Dr. Mary Marovich joined the Division of AIDS as the new director of the Vaccine Research Program in December 2012, where she leads the development and coordination of clinical and preclinical research on HIV vaccines. She comes to NIH from the U.S. Military HIV Research Program (MHRP), where she served as chief of vaccine research and development since 2005. Additionally, Mary worked as the clinic director for MHRP's Rockville Vaccine Assessment Center, where she led multiple early-stage HIV and non-HIV vaccine clinical trials. She earned bachelor's degrees in biochemistry and chemistry at Illinois State University and a medical degree at Loyola University of Chicago-Maywood. In 1993, she completed a residency in internal medicine and clinical infectious diseases training at the University of Colorado and earned a diploma in tropical

medicine and hygiene from the Royal College of Physicians and Surgeons, London School of Tropical Medicine and Hygiene. Mary was in the NIAID intramural research program studying immunology for her fellowship training from 1995-1999. She then went to the MHRP to launch a translational program in HIV vaccine development form 1999-2012. An adjunct professor of medicine with the Uniformed Services University's department of medicine, Dr. Marovich has won several honors for academic and teaching excellence.

Erica Ollmann Saphire, Ph.D. is a Professor of Immunology and Microbial Science at The Scripps Research Institute. Her research uses structural biology to understand and defeat viral pathogens. Her team has explained how filoviruses drive themselves into cells, how they suppress immune function, where antibodies can defeat them, as well as the structure of the entire human antibody itself. A recent discovery expanded the central dogma of molecular biology by proving that certain viral proteins actually rearrange into different structures at different times for different functions. Her work has been recognized with a PECASE, by the Burroughs Wellcome Fund, by young investigator awards from ASBMB and ASM, the Lilly–Elanco Research Award which is the oldest and most prestigious award of the ASM, and by the Surhain Sidhu award for the most outstanding contribution to the field of diffraction by a person within five years of the Ph.D. She is a Fellow of AAM and AAAS, serves on the Scientific Leadership Board of the Global Virus Network and is the director of the Viral Hemorrhagic Fever Immunotherapeutic Consortium. This organization, the VIC, united the field into a single force to understand and provide antibody therapeutics against Ebola, Marburg, Lassa and other viruses.

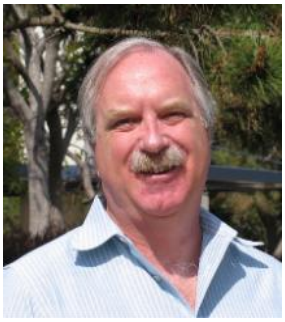
Dr. Olson is a professor of Virology in the Department of Microbiology, Immunology and Pathology at Colorado State University (Fort Collins, CO USA). He is past director (2004-2014) of the Arthropod-borne and Infectious Diseases Laboratory (AIDL) research and training unit at CSU. His research interests include arbovirology and arthropod vector biology. His group has been at the forefront in developing *Alphavirus* based gene expression systems and genetically modified mosquitoes for examining arbovirus-vector interactions. He has extensively studied the vector's antiviral RNAi pathway responses after infection with dengue viruses. His lab routinely works with *Aedes* and *Culex* species of mosquitoes infected with various arboviruses in BSL3 containment environments with the goal of identifying critical virus-vector interactions that could be exploited to control arbovirus transmission.

Professor Osterhaus (DVM PhD) has been Head of the Department of Viroscience at Erasmus MC Rotterdam until July 1st 2014, is currently Professor of Wildlife Virology and Virus Discovery at Utrecht University, and Director of the Center of Infection Medicine and Zoonosis Research and Guest-Professor at the University of Veterinary Medicine Hannover. He has a long track record as a scientific researcher and Principal Investigator of numerous major scientific projects. At Erasmus MC, Professor Osterhaus has run a diagnostic virology lab with more than 40 staff and a research Virology lab with over 150 personnel. His research programme follows a novel integrated "viroscience" concept, bringing together

world-leading scientists in molecular virology, immunology, epidemiology, pathogenesis, and intervention studies on human and animal virus infections. Among the major accomplishments are the discovery of more than 50 viruses of humans and animals (e.g. in humans: influenza A H5N1 virus, human metapneumovirus, human coronaviruses, influenza viruses), elucidation of the pathogenesis of major human and animal virus infections, and development of novel intervention strategies. This has enabled health authorities like the WHO to effectively combat disease outbreaks like SARS and avian influenza. The spin-off, Viroclinics Biosciences BV, is another societally relevant success, allowing effective testing and refining of diagnostic tools and other intervention strategies. The international recognition of Professor Osterhaus is further highlighted by his chairmanships of many international organizations, awards, prizes, guest lecture invitations, (co-)organiserships of international meetings and editorships of scientific journals. Professor Osterhaus has acted as PhD mentor for more than 75 students and holds several key patents. He is also the author of more than 1100 papers in peer-reviewed journals, together cited more than 50,000 times, and his H index is 97. Most of all, Professor Osterhaus firmly believes that scientists have a role to play in translating their knowledge for the benefit and protection of society.

Dr. Reitz obtained his PhD in 1970 from the Department of Biochemistry at Purdue University. His graduate work in the field of enzymology was supervised by Professor Victor Rodwell, a recognized scholar in studies of enzymes of amino acid catabolism. Dr Reitz trained as a postdoctoral fellow at the Boston Biomedical Research Institute in the laboratory of Dr Rao Sanadi in the field of tRNA and tRNA aminoacyl synthetases. He was recruited as a staff scientist to Bionetics Research Laboratory in 1971 as part of the laboratory group of Dr Robert Gallo and Joined him at NIH in 1976. He received tenure in 1984, became Head of the Molecular Biology of Hematopoietic Cells Section in 1992 and Acting Chief of the Laboratory of Tumor Cell Biology in 1995. When Dr. Gallo left to find the IHV, Dr. Reitz was recruited to the IHV as a tenure track Associate Professor and Associate Director of the Basic Science Division in February 1996 and became Professor with full tenure in 1998. His expertise is in the fields of molecular biology and virology especially retroviruses and herpesviruses. He is focused on host cellvirus interactions and their effects on immunopathology and carcinogenesis at the level of regulation of signaling and gene expression. Research interests: Molecular biology and virology, especially retroviruses and herpesviruses. Host cell-virus interactions and their effects on immunopathology and carcinogenesis at the level of regulation of signaling and gene expression.

Dr. Ryscavage serves as the Associate Medical Director of the Center for Infectious Diseases and the Medical Director of the Jacques Initiative HIV Program at the Institute of Human Virology, University of Maryland School of Medicine. He also serves on the Baltimore City HIV Planning Group and Commission. His clinical and research interests include strategies to improve linkage to- and retention in care, HIV prevention, and the care of HIV-infected adolescents and young adults.



Richard H. Scheuermann, Ph.D., is the Director of Informatics at the J. Craig Venter Institute (JCVI) and a Professor of Pathology at U.C. San Diego. He received a B.S. in Life Sciences from the Massachusetts Institute of Technology, and a Ph.D. in Molecular Biology from the University of California, Berkeley. After completing his doctoral research, he accepted an independent research position at the Basel Institute for Immunology in Switzerland. In 1992 he joined the faculty in the Department of Pathology at the University of Texas Southwestern Medical Center in Dallas where he rose to the rank of Professor with tenure. In 2001 he made a career shift into the discipline of bioinformatics, initiated with a sabbatical year at the San Diego Supercomputer Center. In 2012 Dr. Scheuermann moved to San Diego to become the Director of Informatics at JCVI. Dr. Scheuermann has applied his deep knowledge in molecular immunology and infectious disease toward the development of novel computational data mining methods and knowledge representation approaches, including the development of biomedical ontologies and their use in data mining, novel methods for the analysis of gene expression, protein network and flow cytometry data, and novel comparative genomics methods. These computational methods have been made available through several public database and analysis resources, including the Influenza Research Database (IRD; www.fludb.org), the Virus Pathogen Resource (ViPR; www.viprbrc.org) and the Immunology Database and Analysis Portal (ImmPort; https://immport.niaid.nih.gov/) through support from the U.S. National Institutes of Health.

Dr. Tagaya is Head, T-cell Biology Lab, Division of Basic Sciences and Vaccine Research, Institute of Human Virology, at the University of Maryland School Of Medicine. Dr. Tagaya received his M.D. and Ph.D. degrees from Kyoto University Medical School, and completed postdoctoral studies at the National Cancer Institute. While at the NCI, Dr. Tagaya made seminal discoveries in the field of cytokine biology. He has been recognized as one of the international leaders in this field. He has discovered a unique way IL-15 functions in vivo (trans-presentation paradigm) and generated animal models to study the biology of cytokines and, through his work, has demonstrated a direct correlation between cytokines and some illnesses such as leukemia and autoimmune diseases. Currently Dr. Tagaya's group at the IHV studies the molecular mechanism of CD8 T cell differentiation in special connection to a transcription factor IRF-8. Dr. Tagaya's group is also developing novel anti-cytokine drugs that may be used to treat autoimmune and inflammatory diseases using the animal models his group has generated in the past. His group also studies the leukemic mechanism associated with HTLV-1. His bibliography contains more than 60 publications in reputed journals in the field of cytokine biology, molecular and cellular immunology.

Dr. Joel Vega-Rodriguez is a Research Associate at the Johns Hopkins Malaria Research Institute, Bloomberg School of Public Health. He earned his Ph.D. at the Medical Sciences Campus of the University of Puerto Rico where he studied the redox metabolism and drug resistance of malaria parasites. Dr. Vega-Rodriguez completed his Postdoctoral training in the laboratory of Dr. Marcelo Jacobs-Lorena at the Johns Hopkins Malaria Research Institute where his research focused on the identification of mosquito-parasite interactions required for the malaria parasite to invade the mosquito midgut epithelium. His current research focuses on characterizing host-parasite interactions during transmission of the malaria parasite from the mosquito vector to the human host. Dr. Vega-Rodriguez is studying the interaction of the malaria sporozoite with the human fibrinolytic system and the role of these interaction during parasite infection. His research has uncovered a new mechanism for parasite migration through extracellular matrix barriers that has promising potential as target for new malaria transmission-blocking interventions.