



# WE WERE THERE



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## Honoring Sherif Zaki

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the Science and the Man

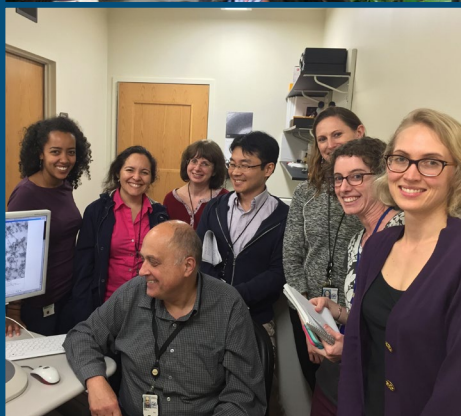
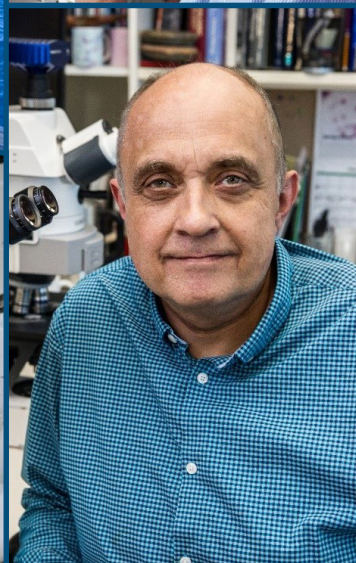
Tuesday, April 26, 2022

1:30 p.m. to 3:00 p.m. ET

Tribute video immediately following session

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Roybal Campus | Global Communications Center | Alexander D. Langmuir Auditorium



# We Were There—“Honoring Sherif Zaki—the Science and the Man”

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Welcome to We Were There, a series featuring personal perspectives from CDC researchers on past and present historically important, CDC-led epidemiologic and laboratory investigations. This special presentation will honor Dr. Zaki as a beloved colleague, friend, and scientist.

## **Rima Khabbaz, MD, Host**

Former Director, National Center for Emerging and Zoonotic Infectious Diseases, CDC

## **Welcome**

### **Rochelle P. Walensky, MD, MPH**

Director, CDC, and Administrator, ATSDR

### **James Hughes, MD, FIDSA**

Professor Emeritus of Medicine at Emory

Director of National Center for Infectious Diseases, CDC, from 1992–2005

*“Critical Role of Pathologists in Epidemic Detection and Response”*

### **Jeff Koplan, MD**

Senior Strategic Advisor—Emory Global Health Institute (EGHI); Child Health and Mortality Prevention Surveillance (CHAMP) and International Association of National Public Health Institutes (IANPHI)

CDC Director, 1998–2002

*“Sherif Zaki: A Superstar in the CDC Galaxy”*

### **Inger Damon, MD, PhD, FIDSA, Host**

Director, Division of High Consequence Pathogens & Pathology, CDC

### **Thomas Ksiazek, DVM, PhD**

Professor, University of Texas Medical Branch, Galveston

*“Historical Glimpse of History Being Made: Sherif Zaki and the Special Pathogens Branch”*

### **Ruth Lynfield, MD**

State Epidemiologist and Medical Director, Minnesota Department of Health

*“Promoting Partnerships to Explain the Unexplained”*

### **David Walker, MD**

Professor, Department of Pathology, and Director, Center for Biodefense and Emerging Infectious Diseases  
University of Texas Medical Branch, Galveston

*“Crossroads in Our Lives”*

### **Chris Paddock, MD, MPHTM, Host**

Microbiology Team Lead, Rickettsial Zoonoses Branch, CDC

### **John Crump, MB ChB, MD, DTM&H**

Professor of Medicine, Pathology, and Global Health

Co-Director, Otago Global Health Institute, University of Otago, New Zealand

*“Unassuming, Generous Virtuoso Who Improved Our World”*

### **Wun-Ju Shieh, MD, MPH, PhD, DrPH**

Visiting Professor, Department of Microbiology and Immunology, School of Medicine, College of Medicine,  
Taipei Medical University

*“Captain Zaki and the Final Frontier of Pathogens”*

### **Closing Remarks—Chris Paddock, MD, MPHTM, Host**

## Hosts

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### **Rima Khabbaz, MD**

#### **Former Director, National Center for Emerging and Zoonotic Infectious Diseases, CDC**

Rima Khabbaz, MD, retired from the federal government on March 31, 2022, after 38 years of service with CDC. She held several senior leadership positions with CDC, most recently serving as Director of the National Center for Emerging and Zoonotic Infectious Diseases (NCEZID) and, before that, as CDC's Deputy Director for Infectious Diseases and Director of the Office of Infectious Diseases. She has been instrumental in launching cross-cutting CDC programs in advanced molecular detection and antibiotic resistance. She has held leadership roles in many CDC emergency responses to infectious disease outbreaks, including hantavirus pulmonary syndrome, West Nile virus disease, SARS, monkeypox, Ebola, Zika, and COVID-19. Dr. Khabbaz is a fellow of the Infectious Diseases Society of America, a member of the American Epidemiological Society, the American Society for Microbiology, and the American Society for Tropical Medicine and Hygiene. She earned her undergraduate and medical degrees from the American University of Beirut in Lebanon. She also is a graduate of the Public Health Leadership Institute at the University of North Carolina and the National Preparedness Leadership Initiative at Harvard University.



### **Inger Damon, MD, PhD, FIDSA**

#### **Director, Division of High Consequence Pathogens & Pathology, CDC**

Inger K. Damon, MD, PhD, FIDSA directs the Division of High-Consequence Pathogens and Pathology in CDC's National Center for Emerging and Zoonotic Infectious Diseases.

Dr. Damon is one of the world's experts on orthopoxviruses including smallpox, an infectious disease that killed millions before it was declared eradicated in 1980 by global surveillance and vaccination campaigns. CDC is one of only two locations in the world where live smallpox is still kept and studied.

Since 2014, Dr. Damon has served as the director for the Division of High Consequence Pathogens and Pathology, overseeing the agency's expertise on deadly pathogens such as Ebola, other viral hemorrhagic fever viruses, smallpox, rabies, and anthrax. The Division has responsibility for a broad range of bacterial and viral pathogens, as well as prion diseases and cross-cutting pathology roles. Division staff lead studies of CFS/ME and human papilloma virus infections—inclusive of laboratory studies to evaluate vaccine efficacy. During 2014–2015, she served as the Incident Manager for CDC's response to the Ebola epidemic in West Africa. As part of that response, Dr. Damon helped direct the agency's national and global fight against Ebola.



### **Christopher Paddock, MD, MPHTM**

#### **Microbiology Team Lead, Rickettsial Zoonoses Branch, CDC**

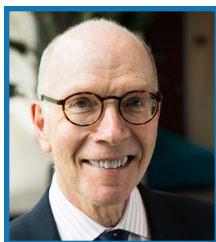
Christopher Paddock is a rickettsiologist and pathologist at the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia. Dr. Paddock received his B.S. and M.S. degrees in Entomology at the University of California, Davis, in 1981 and 1986, respectively, and his M.D. and M.P.H.T.M. degrees at Tulane University in New Orleans, Louisiana, in 1990. He completed his residency in Anatomic Pathology and Laboratory Medicine at the University of California, San Francisco in 1995. His employment with CDC began in 1996, as medical officer in the Viral and Rickettsial Zoonoses Branch, where he worked until taking a position as staff pathologist with the Infectious Disease Pathology Branch from 2003–2014. He now serves as research medical officer and Microbiology Team Lead in the Rickettsial Zoonoses Branch at CDC.

## Speakers



### **Jim Hughes, MD, FIDSA**

Dr. Hughes served as Director of CDC's National Center for Infectious Diseases from 1992–2005. Following retirement from CDC, he moved to Emory University serving as Professor of Medicine in the Division of Infectious Diseases and Professor of Public Health in the Hubert Department of Global Health until 2018. He is currently Professor Emeritus of Medicine at Emory. His interests include emerging infectious diseases, antimicrobial resistance, epidemic preparedness and response, and One Health.



### **Jeff Koplan, MD**

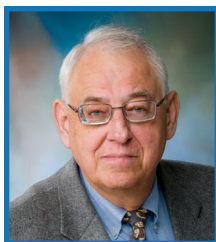
Jeffrey Koplan, Senior Strategic Advisor—Emory Global Health Institute (EGHI); Child Health and Mortality Prevention Surveillance (CHAMP) and International Association of National Public Health Institutes (IANPHI)

Dr. Jeffrey P. Koplan is an internationally renowned leader in the fields of public health and global health. In 2006, he founded the Emory Global Health Institute (EGHI) and served as its Director until 2013, and as Emory's Vice President for Global Health until 2021. As Senior Strategic Advisor, he continues to be actively involved in EGHI programs, which provide multidisciplinary global health research, training, and partnership opportunities to Emory faculty and students.

A former Director (1998–2002) and 26-year veteran of the U.S. Centers for Disease Control and Prevention (CDC), Dr. Koplan began his public health career in the early 1970s as a member of the CDC's Epidemic Intelligence Service. Throughout his career, he has worked on many major public health issues in the U.S. and abroad including infectious diseases such as smallpox, SARS, pandemic influenza, and HIV/AIDS.

Dr. Koplan has also worked on chronic diseases resulting from tobacco use and obesity and environmental health issues such as the Bhopal chemical disaster.

Dr. Koplan is a graduate of Yale College, the Mt. Sinai School of Medicine, and the Harvard School of Public Health. He is a Master of the American College of Physicians and was elected to the National Academy of Medicine. He has written more than 240 scientific papers on numerous public health issues and has co-authored two books on childhood obesity. He has served on numerous advisory groups and consultancies in the U.S. and overseas. He is a trustee of the China Medical Board and the CDC Foundation Board. He is a former trustee of Yale University. Dr. Koplan has received numerous awards throughout his career including the China Friendship Award, the highest honor that the Chinese government bestows on foreign nationals.



### **Thomas G. Ksiazek, D.V.M., Ph.D.**

Professor, Departments of Pathology and Microbiology and Immunology; Senior Staff Scientist and Director, High Containment Operations Core, Galveston National Laboratory; Member Center for Tropical Disease, UTMB; Member Center for Biodefense and Emerging Infectious Diseases, UTMB; Member Sealy Center for Vaccine Development, UTMB. Scientific interests include epidemiology/ecology and laboratory diagnosis of hemorrhagic fevers and arthropod-borne viral diseases. Consultant on operational biosafety and facility design to USDA, UTMB, DOD, DHHS, DHS, professional assignments in England, Taiwan, Indonesia and Egypt as well as extensive outbreak experience in Asia, Africa and South America. Author/co-author of more than 379 research papers.



### **Ruth Lynfield, MD**

Ruth Lynfield, M.D. attended in pediatric infectious diseases at Massachusetts General Hospital and worked at the Massachusetts State Laboratory prior to joining the Minnesota Department of Health as a medical epidemiologist in 1997. She was appointed State Epidemiologist in 2007 and Medical Director of the Department in 2010. Ruth is the co-principal investigator of the Minnesota Emerging Infections Program. She has conducted infectious disease investigations and responses to outbreaks; she has developed surveillance systems, and worked on public health research, evaluation, planning, and policy. Her research interests include emerging infections, antimicrobial resistance, and the prevention of infectious diseases.



### **Dave Walker, MD**

David H Walker received his premedical and liberal arts education at Davidson College, graduated from the School of Medicine, Vanderbilt University, and trained in Anatomic and Clinical Pathology at the Peter Bent Brigham Hospital in Boston. During residency in pathology, he investigated Chagas disease and tropical diseases and pathology at the Gorgas Memorial Institute in Panama, where he deepened his commitment to tropical infectious diseases. Following residency, he was an officer in the US Public Health Service at the Centers for Disease Control and Prevention in Atlanta where he was mentored into a scientific career by Fred Murphy, DVM, PhD in the Virology Division. He also began his career-long focus on investigations of immunity to Rickettsia while a research officer at the CDC. His recruitment as an assistant professor in the Department of Pathology at the University of North Carolina provided a laboratory where BSL-3 research was performed safely for 12 years, and he had access to abundant clinical and pathologic material from current and past cases of Rocky Mountain spotted fever. He served as Chairman of the Department of Pathology, University of Texas Medical Branch for 27 years. During that time he played a major role in the development of the programs in vectorborne and zoonotic diseases and the construction of BSL3 and BSL4 biocontainment laboratories, including the Robert Shope Infectious Disease Pavilion and the Galveston National Laboratory. He was founding director of the WHO Collaborating Center for Tropical Diseases and of the Center for Biodefense and Emerging Infectious Diseases at UTMB. He has served as a member of the Scientific Advisory Board for the Armed Forces Institute of Pathology, the Armed Forces Epidemiological Board, the Defense Health Board, the External Advisory Committee of the National Research Council Standing Committee on Biodefense for the US Department of Defense, the Viral and Rickettsial Diseases Panel of the Military Infectious Diseases Research Program, the Vector Biology Study Section of the National Institutes of Health, President of the American Society of Tropical Medicine and Hygiene, Chair of the Programmatic Panel of the Congressionally Mandated Department of Defense Managed Tick Borne Diseases Research Program, and Cochair of the Congressionally Mandated Tick Borne Diseases Working Group. He received the Distinguished Medical Alumnus Award from Vanderbilt Medical School in 2012. He is a fellow of the Infectious Diseases Society of America, the American Society of Tropical Medicine and Hygiene, and the American Academy of Microbiology.



### **John A. Crump, MB ChB, MD, DTM&H**

John Crump is Professor of Medicine, Pathology, and Global Health, and Co-Director, Otago Global Health Institute, University of Otago, and Adjunct Professor of Medicine, Pathology, and Global Health at Duke University. He graduated from the University of Otago Medical School in 1993 and trained as both an internist in infectious diseases and as a pathologist in medical microbiology, training at Christchurch Hospital, New Zealand; the Royal Free Hospital, London; the Canberra Hospital, Australia; Duke University Medical Center; and with the US Centers for Disease Control and Prevention. He is a Fellow of the Royal Australasian College of Physicians, a Fellow of the Royal College of Pathologists of Australasia, a Fellow of the Royal College of Physicians of the United Kingdom, and a diplomate of the London School of Hygiene and Tropical Medicine. His main interests are in the prevention, diagnosis, and treatment of infectious diseases in low-resource settings, with particular focus on febrile illness; invasive bacterial diseases especially the salmonellosis; bacterial zoonoses; and enteric infections.



### **Wun-Ju Shieh, MD, MPH, PhD, DrPH**

Previously working at the Infectious Disease Pathology Branch, US CDC as Deputy Branch Chief and Senior Pathology & Science Advisor; retired in July 2020. Academic interests include 1) pathology, clinical microbiology, epidemiology, and pathogenesis of infectious diseases; 2) genetic variation and molecular biology of viruses; 3) global public health and geographic medicine; and 4) science education, digital imaging, and medical information management.

## **Tribute Video Contributors**

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Ermias Belay  
Marty Cetron  
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Cynthia Goldsmith  
Heather Huntley  
Tara Jones  
Rima Khabbaz  
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Alex Mremi

Donovan Newton  
Angela Oliver  
Chris Paddock  
Lyle Petersen  
Bobbi Pritt  
Jana Ritter  
Larry Schonberger  
Glenn Shipman  
Tom Skinner  
Felicia Stamey  
Sarah Reagan-Steiner

## Obituary



Raymond McKee Jones/Reuters/Getty

### Sherif Ramzy Zaki

Leading US infectious disease pathologist. He was born in Alexandria, Egypt, on Nov 24, 1955 and died after a fall in Atlanta, GA, USA, on Nov 21, 2021 aged 65 years.

As the founding Director of the Infectious Diseases Pathology Branch of the US Centers for Disease Control and Prevention (CDC) in Atlanta, GA, Sherif Zaki brought a new dimension to the work of the organisation. And in the face of lingering doubts that a pathology branch was really needed, he repeatedly demonstrated its indispensability. Through his efforts it became the CDC's primary department for laboratory studies of infectious diseases of unknown cause or origin and for identifying new or emerging pathogens. Zaki's investigations ranged over most of the headline-making infections of the past three decades, including West Nile virus, the Ebola and Zika viruses, SARS, and SARS-CoV-2. Chris Paddock, Chief of Reference Diagnostics and Microbiology Activity in the Rickettsial Zoonoses Branch at the CDC, worked closely with Zaki for many years, and describes him as "a visionary for infectious disease pathology and for laboratory science in the Agency...He transformed pathology at CDC and made it a front-line endeavour".

Born to a father who worked for the International Labour Organization, Zaki had an itinerant childhood that took him to Europe, the Middle East, and the Caribbean. But it was to Egypt that he returned to study medicine, graduating from the Alexandria University School of Medicine in 1978. He stayed on to do a master's in pathology, but his urge to investigate the human body was partly constrained by Egypt's then religious prohibition on autopsies. As a

consequence he travelled to Atlanta's Emory University, where he completed a PhD in experimental pathology. In 1988, Zaki moved to the nearby CDC: an institution that could more than satisfy his insatiable love of solving disease puzzles.

One of Zaki's early successes, at the beginning of the 1990s, was an investigation of unexplained deaths among people of the Navajo nation living in the US southwest. He and his team discovered that the deaths were due to what became known as hantaviruses. Sebastian Lucas, Emeritus Professor of Pathology at Guy's and St Thomas' NHS Foundation Trust in London, UK, first met Zaki a few years after he joined the CDC. Lucas recalls him describing what Zaki himself regarded as the two developments that made his career. "One was in 1995 when there was an epidemic of haemorrhagic fever in Nicaragua", says Lucas. "He solved it. It wasn't hantavirus or Ebola or anything like that. It was actually leptospirosis." Zaki correctly identified the cause in his CDC laboratory using a specific antibody and, as Lucas comments, "he got a lot of credit for rapidly sorting out what appeared on the ground to be a terrifying and lethal epidemic". The second development was a bioterrorism incident in 2001 when several people died after handling letters containing a mysterious white powder. Zaki was able to show that the deaths were due to anthrax following infection by inhalation or via the skin. "Like all good pathologists he had a phenomenal memory", says Lucas. "If he'd seen it once he'd never forget it. He also had dogged persistence, and he was a workaholic."

"Sharif was very good at harnessing and adapting new and powerful techniques such as in-situ hybridisation and immunohistochemistry", says Paddock. But, like electron microscopy, these were additions to established methods, not replacements. Zaki, he adds, "had a deep appreciation for traditional techniques of pathology which are actually quite old...for stains like haematoxylin and eosin, used since the 19th century. His guidance always incorporated that conventional start...he had a foothold in the past as well as a foot in the future". As Lucas recalls "He became the person to call if you wanted someone to give an encyclopaedic lecture on infections and infectious pathology. His lectures were a joy, beautifully put together and all based on vast amounts of case work."

John Crump, McKinlay Professor of Global Health at the University of Otago's Global Health Institute in Dunedin, New Zealand, knew Zaki for 20 years and describes him as someone who aroused affection and respect. "He was softly spoken, very gentle, very humble and kind...Everyone hoped he'd be around for many years to come. He was like a library of infectious disease pathology. It's a huge loss." As Lucas points out, "specimens [sent to CDC] would come from everywhere...in that way Sherif served the whole world". Zaki leaves a wife, Nadia, a daughter, Yasmin, and a son, Samy.

Geoff Watts



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## Acknowledgements

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## Hosts

National Center for Emerging  
and Zoonotic Infectious Disease  
&  
Office of Science

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