

# Discovery

#### Laboratory • Clinic • Community • World • Spring/Summer 2023



Two-Time Lasker Awardee and Internationally Acclaimed Virologist, Robert C. Gallo, MD, Steps Down as Director of UM School of Medicine's Institute of Human Virology

**Robert C. Gallo, MD**, one of the world's leading virologists and cancer researchers, announced he has stepped down from his position as Director of the Institute of Human Virology (IHV) at the University of Maryland School of Medicine (UMSOM), effective March 24.

Dr. Gallo was Founding Director of the Institute when he and his colleagues established it in 1996 and he holds the Homer & Martha Gudelsky Distinguished Professorship in Medicine, and is a Professor of Microbiology and



Robert C. Gallo, MD

Immunology. He now takes on the role as Director Emeritus of IHV and Special Advisor to the Dean at UMSOM before retiring next spring.

**Shyam Kottilil, MBBS, PhD**, Director of the Division of Clinical Care and Research at IHV, Professor of Medicine, and Chief of the Division of Infectious Diseases at UMSOM, will assume the role as Interim IHV Director.

Dr. Gallo is internationally renowned as a co-discoverer of HIV, the cause of AIDS, and as a two-time recipient of the prestigious Albert Lasker Award—a program established in 1945 to honor individuals who have made major contributions to medical science or who have performed public service on behalf of medicine. He received the first Lasker Award for Basic Science in 1982 for his discovery of the first human RNA tumor virus (the old name for retroviruses) and its association with certain leukemias and lymphomas. In 1986, he received the Lasker-DeBakey Clinical Medical Research Award for his co-discovery of the retrovirus, now known as HIV-1, as the cause of AIDS.

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## Interim Director's Message:

By Dr. Shyam Kottilil As you know, Dr. Robert Gallo announced in March that he is stepping down as



Shyam Kottilil, MBBS, PhD

Director to become the first Emeritus Director of the Institute of Human Virology (IHV). As Interim Director, along with my colleagues, I have been working hard to make this transition as smooth and efficient as possible. Our Institution has a decades-long history of being one of the world's most elite virology institutes. This feat is largely due to Dr. Gallo's leadership and the hard work and accomplishments of our faculty and staff. We shall honor these accomplishments through our continued dedication to transform global healthcare of human viral diseases through discovery, education, and translation and implementation of therapeutics.

This fiscal year, IHV's five Divisions and one Center, including Virology, Pathogenesis, and Cancer; Immunotherapy; Vaccine Research; Clinical Care and Research; Epidemiology and Prevention; and the Center for International Health, Education, and Biosecurity (Ciheb), performed significant basic research, clinical care, clinical research, and

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UNIVERSITY of MARYLAND School of Medicine



Bruce E. Jarrell, MD, FACS

ensured IHV's continued success and position as a global leader in the research of HIV/AIDS and other chronic viral diseases and cancer," said University of Maryland, Baltimore President Bruce E. Jarrell, MD, FACS.

"The foundation

laid by Dr.

Gallo and his

co-founders,

three decades

of progressive

achievement

since, have

and nearly

scientific

Dr. Gallo established IHV, the first-of-itskind virology center that combines the disciplines of research, patient care, and prevention in a combined effort to speed the pace of medical breakthroughs and deliver care. Since its inception, the Institute has treated more than 2 million patients worldwide and approximately 5,000 patients each year in the greater Baltimore/Washington D.C. area for a variety of chronic and deadly viruses and immune disorders, most notably HIV. Prior to founding the Institute, Dr. Gallo spent 30 years at the National Institutes of Health's National Cancer Institute, where he was head of its Laboratory of Tumor Cell Biology.

"Robert Gallo is a world-renowned scientist whose breakthrough discoveries and scholarly contributions have made major contributions to foundational science for more than four decades," said Mark T. Gladwin, MD, the John Z. and Akiko K. Bowers Distinguished Professor and Dean at the University of Maryland School of Medicine and Vice President, Medical Affairs at University of Maryland, Baltimore. **"He** is a visionary investigator who has unlocked many important mysteries of human viruses and diseases. Few living scientists have contributed so much to fundamental science, from the discovery of transfer RNAs, DNA

polymerase, the first human retroviruses, the inflammatory cytokine Interleukin-2, and the molecular basis for viral induced oncogenesis.



Mark T. Gladwin, MD

He has been one of our most distinguished members of the University of Maryland School of Medicine faculty for many years and holds the unique distinction of twice winning America's most prestigious scientific award—the Albert Lasker Award in Medicine."

#### Molecular Biology and Basic Immunology

Dr. Gallo's legendary scientific career spans six decades. His major impact on scientific discovery began in the 1970s when he characterized all 61 types of the transfer RNAs in animal cells, which are used as essential adaptors when genetic messages are converted into proteins. Then, with a coworker, he described in human cells the enzyme that makes copies of DNA, known as DNA polymerase. In 1976, he identified the first cytokine, which is a chemical messenger that activates the immune system. This cytokine, Interleukin-2, first allowed researchers to grow T-cells in the laboratory and later was used to develop cancer immunotherapy.

"Bob Gallo has had an unparalleled impact on our understanding of the inner workings of infectious agents that afflict humans. The breadth and importance of his discoveries are astounding. There have been tremendous advances in the war on HIV/AIDS and without Bob's contributions, we would not be where we are today," said Mario Stevenson, PhD, Professor of Medicine, Chief of the Division of Infectious Diseases. Director of the Institute of AIDS at the University of Miami Miller School of Medicine, and Chair of IHV's Scientific Advisory Board. "His vast impact on our scientific understanding cannot be understated."



Robert Gallo, MD, and Mario Stevenson, PhD

#### Virology

In 1980, Dr. Gallo and colleagues discovered the first retrovirus, Human T-Cell Leukemia Virus-1 (HTLV-1), also the first virus shown to directly cause cancer on its own without any other contributing factors. Two years later, he identified a second retrovirus, HTLV-2. These initial retroviral discoveries paved

# Interim Director's Message (continued)

epidemiology programs. However, in the international arena, the trend towards awarding grants to indigenous organizations continued, which was reflected in IHV's funding decline. This outcome was inevitable as the goal of these federal grants included U.S. institutions partnering with developing nations and providing mentorship, training, and infrastructure so that those nations may learn to effectively treat and manage their own growing epidemics. The decline in the grant funding is a tribute to the success of the U.S. programs.

My goal is to ensure that IHV continues to flourish during this period of transition and through the eventual international search and recruitment of a new Director. Last year,

Dr. Gallo asked me to lead the development of a five-year strategic plan for IHV. The strategic plan is a tactical organizational blueprint that quides us in accordance with the Institute's desire to maintain its eminence as one of the leading virology institutes in the world and forge ahead to newer heights in global virology research. The Institute will continue to utilize a multidisciplinary approach, partnering with colleagues



on campus when appropriate and as promoted by Dean Mark Gladwin at the University of Maryland School of Medicine, to continue to successfully cultivate an environment of Discovery (inventions advancing science); Translation (clinical transformation of discoveries); and Implementation (expansion of evidence-based medicine).

Through the strategic planning process, including discussions with IHV's community, we identified an overwhelming consensus to IHV's mission and outcomes under the auspices of the University of Maryland, Baltimore's (UMB) 2022–2026 Strategic Plan.

IHV's core values have guided the Institute and will continue as we grow. The IHV has put forward several task forces for emergency pandemic preparedness and contributed several key scientific advances for SARS-CoV-2. We will continue to accelerate our leadership role for COVID-19 and future pandemic preparedness, pioneer novel discovery paths, and execute care models to alleviate the viral disease burden. We will seek public-private partnerships toward commercialization and philanthropic support for public recognition of high-impact outcome-driven goals. The IHV also commits to continuing our scientific growth while exemplifying diversity and inclusion at every level as we move forward. We will accomplish our goals through dedicated recruitment, augmented fundraising strategies, and fostered internal and external collaborations to pioneer our discoverybased research on existing and emerging viral pathogens. In fact, many of IHV's friends and colleagues will come together this fall to discuss these types of scientific endeavors.

We hope you will join us at IHV's 25th Anniversary and Dr. Robert Gallo Scientific Legacy Symposium & Gala on Thursday, September 28 – Friday, September 29, 2023, at the Four Seasons Hotel in Baltimore, MD. The Gala, on Thursday, September 28, will begin with a reception at 6 pm and dinner at 6:45 pm. IHV2023's theme includes "Viruses of Yesterday, Today, and Tomorrow" with a special focus on Dr. Gallo's career. UMB faculty and staff can register for the meeting for free. This year's IHV 25th Anniversary Lifetime Achievement Award for Scientific Contributions and Drug Development will be presented to William Haseltine, PhD. During the Gala, we also will recognize Dr. Gallo for his lasting scientific contributions to mankind. We hope to see many of vou in Baltimore this September as we continue our annual tradition (which was postponed these past few years due to the pandemic) of excellent science and provocative discussion during our 25th anniversary celebration. More information, including registration, sponsorship, and purchasing a tribute ad for the gala program can be found at https://www.ihv.org/ ihvmeeting/.





Dr. Gallo discovered the two viruses, HTLV-1 and HIV

the way for identifying HIV. In 1986, he discovered the first new human herpes virus in more than 25 years, HHV-6, which causes roseola infantum, a fever and rash in infants, and is possibly involved in some types of dementia.

In 1985, Dr. Gallo and his team developed the first HIV blood test, which has been updated by him and others over the years, allowing patient diagnoses and screening of blood used for transfusions. Dr. Gallo and his colleagues were important participants in an NCI-led project with the Burroughs Wellcome Fund developing the antiretroviral drug AZT as the first AIDS therapy.

"Dr. Gallo's career has been unique and awe-inspiring. He discovered II-2, a cytokine, which made it possible to grow T-cells. This led to the discovery of the first human RNA virus, HTLV-1, and allowed Dr. Gallo and his colleagues to determine that another retrovirus is the cause of acquired immunodeficiency syndrome (AIDS). Twenty-seven years ago, he founded the Institute of Human Virology in Baltimore. Dr. Gallo's vision, creativity, and boundless energy made the IHV a world-renowned institution," said Peter Palese, PhD, Horace W. Goldsmith Professor at the Icahn School of Medicine at Mount Sinai, Center of Excellence Director at the Global Virus Network (GVN), and member of the U.S. National Academy of Sciences. Dr. Palese is also a member of IHV's Scientific Advisory Board and Board of Advisors. He is a recipient of the 2017 IHV Lifetime Achievement Award for Scientific Contributions.



Robert Gallo, MD, and Peter Palese, PhD

#### **Global Public Health**

In the early 2000s, Dr. Gallo and his colleagues at IHV developed an HIV vaccine candidate that has now progressed to a phase Ib clinical trial in Thailand, a true example of IHV's bench-to-bedside mission.

#### "Bob's brilliant scientific breakthroughs saved millions of lives. But he was not satisfied. He



Robert Gallo, MD, and The Honorable Kathleen Kennedy Townsend, JD

created a team of extraordinary scientists, epidemiologists, and doctors to make sure that science would be used in the most efficient and effective way. That team, centered in Baltimore, spread its passion and knowledge worldwide to cities, to small towns, and rural communities. Filled with unmatched energy and daring, Bob is one of history's great explorers, attracting friends and admirers wherever he goes," said The Honorable Kathleen Kennedy Townsend, JD, former Chair of the Board of Advisors of the IHV. former Chair of the Board of Directors of the GVN, recipient of the 2019 IHV Lifetime Achievement Award for Public Service and Secretary Representative for Pensions and Retirement, U.S. Department of Labor. In her previous role as Lt. Governor of Maryland, Kennedy Townsend recruited Gallo and his team to establish the Institute in the State of Maryland in 1996.

"Bob Gallo, through his founding

and leadership of the Institute of Human Virology in Baltimore has been a godsend in many ways," said Terry Lierman, Co-Chair of the IHV Board of Advisors. "He and his colleagues are responsible for the development of more than 500 jobs, and in bringing nearly \$2 billion in research revenue to the city and state. Most importantly, literally thousands of lives in Baltimore, the state, and the nation have been saved by the Institute's research, treatment, and prevention programs. Dr. Gallo's energy, tenacity, and vision are an inspiration to anyone who works with him, not to mention the untold benefactors of his deeds. Wow-what a legacy!"

Most recently with the onset of the



Terry Lierman and Robert Gallo, MD

COVID-19 pandemic, Dr. Gallo along with colleagues, including Dr. Kottilil authored two studies that suggested that the oral polio vaccine made from a live, weakened virus may protect people from SARS-CoV-2. These findings suggest that these types of vaccines could be used in a pinch to protect from future pandemics by amping up the body's first-response innate immune system.

Dr. Gallo received his BA Degree in Biology from Providence College and his MD Degree from Jefferson Medical College. After conducting his Clinical Clerkship at Yale University School of Medicine, he completed his residency at the University of Chicago.

"Bob Gallo's impact on the scientific world cannot be overstated. He has made so many scientific discoveries including among others, showing HIV as the cause of AIDS. His discoveries have created therapies and therapeutics that have impacted millions of people worldwide. His legacy of curiosity, vision, insight, leadership, tenacity, empathy, and humanity serve as a beacon for this and generations to follow," said John



John Evans and Robert Gallo, MD

**Evans**, Co-Chairman of the IHV Board of Advisors and Co-Founder of C-SPAN. He is a recipient of the 2008 IHV Lifetime Achievement Award for Public Service.

#### Accolades

Through his research legacy, Dr. Gallo has published more than 1,300 scientific papers and a book "Virus

Hunting–AIDS, Cancer & the Human Retrovirus: A Story of Scientific Discovery," which has been published in 12 languages. Dr. Gallo was the most cited scientist in the



world from 1980–1990 and was ranked third in the world for scientific impact during 1983–2002.

In 1996, Science magazine named his team's work Breakthrough of the Year for demonstrating that certain cvtokines could inactivate the HIV virus. He holds 35 honorary doctorate degrees. A sampling of his most prestigious international awards includes Canada's Gairdner Foundation International Award; The Japan Prize of Science and Technology; Germany's Paul Ehrlich and Ludwig Darmstaedter Prize; India's Birla Prize; France's Griffuel Prize; Spain's Prince Asturias Award; Israel's Dan David Award, the first Otto Herz Cancer Prize, and the Rabbi Shacknai Immunology Prize;



L to R: IHV's co-founders Robert Redfield, MD, William Blattner, MD, and Robert Gallo, MD

Italy's Premio International Award, International Science Prize, the Magna Graecia International Prize, and Tevere Roma International Award; China's highest award, the VCANBIO Award for International Cooperation Life Sciences and Medicine; and the World Health Award from former Soviet Union President Gorbachev.

Dr. Gallo said, "I have for some time been discussing with IHV leadership and campus leadership my transition from Directorship of the Institute to Emeritus Director and Special Advisor to the Dean. In conjunction with Dean Gladwin and President Jarrell, we have initiated a significant and thoughtful recruitment process that will occur over the next year or so. Personally, I could not be prouder of all that this Institute has accomplished since Bill Blattner, Bob Redfield, and I co-founded IHV with the help of our numerous supporters—too many to mention here. I look forward to commemorating the Institute's

achievements during the IHV 25th anniversary meeting September 28-29 at the Four Seasons Hotel in Baltimore, though it has been 27 years since we officially opened our doors, we had to postpone our plans due to the pandemic. It is a time in my career that I am more than happy to turn over administrative reigns, and hone my attention on science, in particular, on concepts related to origins of some human cancers and on a fuller understanding of how HIV causes disease or pathogenesis, focusing on an attempt to reach a functional cure where patients no longer need therapy. I look forward to continuing my work with the IHV, which will always have a special place in my heart and expanding my work with the Global Virus Network. I appreciate our faculty and staff's superb commitment to our mission and look forward to working with my colleagues in my new Emeritus and Special Advisor positions. I will forever be grateful to former Governor Parris Glendening and former Lt. Governor Kathleen Kennedy Townsend, the Maryland legislature, and City of Baltimore for recruiting us to the State. I especially look forward to this next chapter in my career when I can focus my time more selectively!"

Dr. Gallo's legacy will be celebrated at the 25th IHV Anniversary and Dr. Robert Gallo Scientific Legacy Symposium & Gala on September 28–29, 2023, at the Four Seasons Hotel in Baltimore, MD. For more information, visit <u>ihv.org/ihvmeeting/</u>.

I appreciate our faculty and staff's superb commitment to our mission and look forward to working with my colleagues in my new Emeritus and Special Advisor positions.

Robert Gallo, MD



www.IHV.org for more information on the program, registration, and abstract submission





Christain Bréchot, MD, PhD

This editorial was originally published on Jan. 31, 2023 in <u>STAT as a First Opinion</u>. It was authored by Steven Phillips, a medical epidemiologist and Board Member of the <u>Global Virus Network (GVN)</u>; **Robert Gallo, MD,** The Homer & Martha Gudelsky Distinguished Professor in Medicine, Co-Founder and Emeritus Director of IHV, and Special Advisor to the Dean at the University of Maryland School of Medicine, and Co-Founder and Chair of the Scientific Leadership Board of GVN; and **Christian Bréchot, MD, PhD**, Professor of Medicine at the University of South Florida, President of GVN, and Board of Advisors Member. <u>Read the full story</u>





The Institute of Human Virology (IHV) at the University of Maryland School of Medicine (UMSOM) is hosting IHV's 25th Anniversary and Dr. Robert Gallo Scientific Legacy Symposium on September 28-29, 2023, with a Gala on Thursday, September 28 at the Four Seasons Hotel in Baltimore, MD. We hope you will attend!

Delayed by COVID-19, this year's event celebrates the 25th anniversary of IHV's founding and recognizes Dr. Robert Gallo for his pioneering scientific contributions in advancing the human condition. In honor of this momentous occasion, we are raising funds to support the values and attributes that embody IHV's work and Dr. Gallo's unmatched contributions to mankind. We hope you will consider honoring Dr. Gallo with your gift to propel the work of IHV into its next quarter-century.



Recently, Dr. Gallo announced his resignation as Director of IHV to become Director Emeritus and Special Advisor to the Dean at UMSOM. Internationally renowned as a co-discoverer of HIV, the cause of AIDS, among many other prestigious international awards, he is a two-time recipient of the prestigious Albert Lasker Award—a program established in 1945 to honor individuals who have made major contributions to medical science or who have performed public service on behalf of medicine.

In 1996, Dr. Gallo and his colleagues, Dr. William Blattner and Dr. Robert Redfield, co-founded IHV, the first-of its-kind virology center that combines the disciplines of research, patient care, and prevention to speed the pace of medical breakthroughs and deliver care. The Institute has since treated more than two million patients worldwide and approximately 5,000 patients in the Baltimore/Washington D.C. region each year.

Dr. Gallo's legendary scientific career spans six decades. Included here are a sampling of his highlights:

- In the 1970s, he characterized all 61 types of transfer RNAs in animal cells.
- In 1976, he identified the first cytokine, Interleukin-2, which first allowed researchers to grow T-cells in the laboratory and later was used to develop cancer immunotherapy.
- In 1980, Dr. Gallo and colleagues discovered the first retrovirus, Human T-Cell Leukemia Virus-1 (HTLV-1).
- In 1984, Dr. Gallo and colleagues co-discovered HIV as the cause of AIDS and developed the first HIV blood test, which allows patient diagnoses and screening of blood used for transfusions.
- In the early 2000s, Dr. Gallo and his colleagues developed an HIV vaccine candidate that has now progressed to a phase Ib clinical trial in Thailand, a true example of IHV's bench-to-bedside mission.
- In 2011, he co-founded the Global Virus Network (GVN), a coalition of eminent virologists from 71 Centers of Excellence and nine affiliates in 40 countries.
- With the onset of the COVID-19 pandemic, Dr. Gallo along with colleagues, including Dr. Kottilil, authored two studies that suggested that the oral polio vaccine made from a live, weakened virus may protect people from SARS-COV-2.

Dr. Gallo truly appreciates the importance of unexpected discoveries and curiosity in scientific research. Your support of IHV's 25th Anniversary and Dr. Gallo's Scientific Legacy and Gala, enables IHV to further its mission in leading cutting-edge science to advance the human condition.

For more information about Dr. Gallo's announcement, please visit <u>here</u>. Please consider purchasing a tribute ad in support of our celebration at <u>ihv.org/IHV25th</u>. You may add a tribute message for the Gala dinner program directly on the webpage or, if you are using a logo or design, please contact **Debbie Mullins** at <u>demullins@ihv.umaryland.edu</u>. Ms. Mullins will also be pleased to share sponsorship opportunities with you as well.

#### Warm regards, Peter Palese, PhD, Mark H. Kaplan, MD, and Shyam Kottilil, MBBS, PhD

P.S. If you prefer to mail in your gift, please make your check out to UMBF, Inc./IHV25th, and send it to: University of Maryland School of Medicine, Office of Development, 31 S. Greene Street, Third Floor, Baltimore, MD 21201

ATTN: Traci Morgan

Thank you!



## University of Maryland, Baltimore Leadership Helps IHV-Nigeria Launch State-of-the-Art Campus in Public Healthcare, Treatment Training, and Research in Nigeria

Institute of Human Virology-Nigeria (IHV-Nigeria) was established in 2004 as an affiliate of the Institute of Human Virology, University of Maryland School of Medicine, Baltimore, USA

The Institute of Human Virology-Nigeria (IHV-Nigeria), an affiliate of the University of Maryland School of Medicine's (UMSOM) Institute of Human Virology (IHV), recently announced the launch of its state-of-the-art multi-campus of excellence in public healthcare, treatment training, and research to bring quality health services within the reach of millions of Nigerians.

The IHV-Nigeria Campus, located on Plot 62, Emeritus Umaru Shehu Avenue, Cadastral Zone, COO, Abuja, is a combination of leasable office buildings, clinical laboratories for diagnosis, research, and training; functional clinic spaces for patient care and clinical trials; repositories for storing and managing bio-specimens; and multi-media lecture auditoriums, meeting rooms, and offices.



IHV-Nigeria's new building

IHV-Nigeria's new building ribbon cutting ceremony

www.ihv.org



IHV members at the Gala

Participants from the University of Maryland, Baltimore (UMB) included via video Bruce E. Jarrell, MD, FACS, President of UMB; UMSOM Dean Mark T. Gladwin, MD, Vice President for Medical Affairs at University of Maryland, Baltimore, and the John Z. and Akiko K. Bowers Distinguished Professor; and Robert C. Gallo, MD, Co-Founder and Emeritus Director of the IHV, The Homer & Martha Gudelsky Distinguished Professor in Medicine and Special Advisor to the Dean at UMSOM, and Co-Founder and Chair of the Scientific Leadership Board of the Global Virus Network. Attending in person was Man Charurat, PhD, MHS, Professor of Medicine, Director of the Center for International Health, Education, and Biosecurity (Ciheb), Director of the Division of Epidemiology and Prevention in IHV at UMSOM; Alash'le Abimiku, PhD, Professor of Medicine, Division of Epidemiology and Prevention, at the IHV and Director of the International Research Center of Excellence IHV-Nigeria; Patrick Dakum, MBBS, MPH, Associate Professor of Epidemiology and Public Health, Division of Epidemiology and Prevention, at IHV and CEO of IHV-Nigeria; Kristen Stafford, PhD, MPH, Associate Professor of Epidemiology and Prevention, Division of Epidemiology and Public Health,



IHV Co-Founder Dr. William Blattner cuts the IHV-Nigeria building cake

and Deputy Director of Ciheb at UMSOM's IHV, and **William Blattner, MD,** retired Co-Founder of IHV, and current member of IHV's Board of Advisors.



Dr. William Blattner reads the IHV-Nigeria building story

As an internationally recognized local and nonprofit organization, IHV-Nigeria is structured to develop and maintain links with other local and international organizations in collaborative ways that support the Government of Nigeria's health sector strategic plans. IHV-Nigeria focuses on preventing, treating, and managing diseases such as HIV/ AIDS, tuberculosis (TB), malaria, COVID-19, cancer, and other infectious and non-infectious diseases.

"This new campus is a testament to the incredible work of local researchers in Nigeria. IHV-Nigeria plays a critical role in advancing scientific knowledge, developing innovative treatments, and improving healthcare outcomes for communities," said President Jarrell. "The work being done at IHV-Nigeria reflects the spirit of innovation and collaboration that defines the University of Maryland, Baltimore."

"IHV-Nigeria's modern campus will further advance the SOM and IHV-Nigeria research partnership of already \$30 million in NIH-funded studies in the area of HIV, HPV, emerging infectious diseases, non-communicable diseases, and cancers," said Dean Gladwin. "Furthermore, IHV-Nigeria will continue to be Nigeria's resource in conducting quality clinical trials, training the next generation of health care providers and researchers, and providing technical assistance in implementing quality management systems to more than 100 laboratories and health facilities that they already support." Dr. Dakum, said, "The commissioning of the IHV-Nigeria Campus demonstrates the Institute's commitment as a leader in providing health service implementation, capacity building, research, and ensuring equitable access to quality healthcare services through innovative and evidence-based strategies."

Dr. Dakum also says that with its two centers now on campus: the Program Implementation Center (PIC) and the International Research Center of Excellence, the Institute will continue to develop training and expertise for sustaining HIV/ AIDS, TB, malaria, and cancer programs.

The commissioning of the IHV-Nigeria Campus is expected to revolutionize the fight against emerging infectious and noninfectious diseases in Nigeria and the African Continent.

"A silver lining of the AIDS pandemic was that it allowed us to have better relations with Africa," said Dr. Gallo. "In the 1980s, when we signed the American-French agreement, we agreed that proceeds from the HIV blood test would go to training health care providers in Africa. We owe a thanks to the originators of the U.S. President's Emergency Plan For AIDS Relief (PEPFAR) program and to our own Prof. Alash'le Abimiku. Through much of the help of PEPFAR



Dr. Stafford, Segun Akanmu of IHV-Nigeria, and Dr. Charurat

and funds for training from the U.S., Nigeria has become our independent collaborator, who I hope will continue to work with us well into the future. I want to extend a hearty congratulations to IHV-Nigeria on the new development. Congratulations on your work, and thank you personally, for carrying the Institute of Human Virology name."

Dr. Dakum speaks at the commissioning ceremony

www.ihv.org



How HIV Damages the Liver Even When the Virus is Suppressed by Antiretroviral Therapy

More than 30 million people live with HIV infection with some 73% on antiretroviral therapy (ART), which has allowed people to live longer. Although the person's virus levels are suppressed, current therapies do not fully restore a person's health and chronic inflammation persists.

"People living with controlled HIV infection remain at increased risk for developing numerous morbidities, with liver fibrosis [scarring] or hepatocellular carcinoma



[liver cancer] as leading—often fatal—complications," said Lishan Su, PhD, the Charles Gordon Smith Professor for HIV Research, Professor of Pharmacology, Director of the Division of Virology, Pathogenesis, and Cancer, and Interim Director of the Division of Immunotherapy at the University of Maryland School of Medicine's (UMSOM) Institute of Human Virology (IHV). "New

Lishan Su, PhD

targets and strategies are urgently needed to combat such complications."

Until recently researchers did not understand how exactly the virus still wreaks havoc in the body, even when it is at virtually undetectable levels. **James Ahodantin, PhD**, Research Associate of Pharmacology in the Division of Virology, Pathogenesis, and Cancer at the IHV in Dr. Su's laboratory, decided to dig deeper into the cell and molecular mechanism behind HIV-induced liver disease.

His research led to identifying two different factors involved in liver damage that the researchers hope will direct targets towards treatment and prevention. The findings were published last year in <u>JCI Insight</u>.

He started his investigation using "humanized" mice—mice with their immune systems swapped out for human ones. These mice were infected with HIV and treated 4-6 weeks



James Ahodantin, PhD

later with a similar combination of antiretroviral therapy taken by patients with HIV. After about three or four months, Dr. Ahodantin checked the mouse's livers and blood, which already had inflammation (i.e. hepatitis) and markers for liver tissue injury.

"As for identifying the mechanism, we knew that HIV infection, even with effective antiretroviral therapy, still leads to persistent type I interferon (IFN-I) production. That made us wonder why it was still there months, even years later in patients and what its impact was," said Dr. Ahodantin. "Interferons are released by cells when they detect a virus to amp up the body's antiviral defenses. If the interferon amount isn't regulated correctly or is produced chronically, interferon itself can become pathogenic."

They found notably higher levels of interferons in the livers from their humanized mice with treated HIV infections. Next, they treated liver stellate cells—which are a type of liver cell that play a vital role in liver function and scar tissue formation —from healthy donors with interferons, which turned on damage markers that lead to liver scarring, confirming their suspicions that interferons played a role.



#### How HIV Damages the Liver Even When the Virus is Suppressed by Antiretroviral Therapy (continued)

The researchers also observed that immune cells infiltrated into the liver in the humanized mice treated for HIV. When they analyzed what kind they were, Dr. Ahodantin found they were primarily macrophages with M2 characteristics. What characterizes M2 macrophages are high levels of production of a cytokine, an immune system regulator, called Transforming Growth Factor- $\beta$  (TGF- $\beta$ ), which has been reported to be the "master of liver disease." When the researchers added both interferons and TGF-β to liver stellate cells, the damage markers for liver scarring were much more pronounced than with interferons or TGF-β alone.

Even though interferons and TGF- $\beta$ seemed to be both implicated in HIVinduced liver disease, when the team used an antibody to block a receptor for interferons, the humanized mice with HIV on antiretroviral therapy no longer had scarring in their livers. The TGF- $\beta$  producing M2-like macrophages also disappeared. Working with IHV's Division of Clinical Care and Research, the team confirmed these results in blood samples and liver biopsies from patients.

"Currently there are no effective drugs for treating people living with HIV-associated liver diseases, although several drugs targeting type 1 interferons or TGF-β/M2



Dr. Ahodantin analyzes cells under a microscope

macrophages are being developed to treat other diseases," said Dr. Su.

"This finding has opened a possibility that we may be able to prevent or treat liver damage by finding another therapy that targets M2 macrophages or blocks interferons to treat liver disease in people living with HIV," added Dr. Ahodantin.

Dr. Ahodantin has several projects in the works determining how viruses affect the liver. In a related project, he showed that HIV and hepatitis B viruses induce the conversion of proinflammatory M1 macrophages to

M2 macrophages, which instead are immunosuppressive. He speculates that this metabolic switch allows viruses to escape the immune response.

# KAHLERT INSTITUTE for Addiction Medicine

# from Discovery to Recovery

University of Maryland School of Medicine Receives One of the Largest Gifts in its History to Establish Kahlert Institute for Addiction Medicine

#### Institute of Human Virology's Dr. Sarah Kattakuzhy Named Kahlert Institute's Associate Director

With a commitment of \$30 million in funding, the new Kahlert Institute will bring together leading addiction experts in a shared research space to collaborate and create the synergy necessary for systemic change. University Maryland School of Medicine (UMSOM) faculty, as well as members of the Institute of Human Virology (IHV), will serve as an integral part of this Institute. They will include neuroscientists, studying the brain mechanisms underlying substance use and its lifelong consequences, and clinical researchers investigating potential interventions in patient trials. Kahlert Institute members also will include substance use disorder specialists who understand the daily realities of caring for patients with complex disorders often involving psychiatric illness, trauma, and socioeconomic stressors.

#### **Aiming for Radical Innovation**

"We need revolutionary progress in the area of addiction treatment and recovery. The Kahlert Foundation recognizes that to achieve radical innovation, you need to bring together the leading experts across multiple disciplines," said Greg Kahlert, President of the Kahlert Foundation. "Millions



of people are affected by addiction in this country, including the child of one of our team members at the Kahlert Foundation. We are hopeful that the Kahlert Institute for

# Addiction Medicine will discover new treatments that will save countless lives in the future."

Maryland alone has experienced a more than doubling in its rate of drug overdose deaths from 2015 to 2020—from 21 deaths to 44 deaths per 100,000 people. This increase is one of the highest in the nation with an overdose death rate that is 50% higher than the national average. In Baltimore City, 964 deaths were attributed to opioid overdose in 2020, nearly triple the number of deaths from homicide.

"There is not a person that I know who hasn't been impacted by this opioid epidemic. It's clear we need to do more," said Kahlert Institute Associate Director Eric Weintraub, MD, Professor of Psychiatry and Director of the Division of Addiction Research and Treatment at UMSOM. "One critical goal is to establish a collaboration between basic scientists in the field of addiction and clinicians who are treating patients. We need to work closely, put our heads together, and develop strategies for research and treatment that will be effective in the long term." Dr. Weintraub also collaborates with IHV members at the Health and **Recovery Practice (HARP).** 

Education will serve as a foundational pillar of the Kahlert Institute with interprofessional training on addiction treatment provided within the University system, as well as to the greater Maryland community. Trainees will include community members and peer counselors as well as health professionals and University of Maryland, Baltimore (UMB) graduate students entering the medical field. The aim is to educate and



Dr. Sarah Kattakuzhy at the press conference announcing the opening of the Kahlert Institute.

increase the next generation of addiction counselors and health providers and to create a model that will serve as a national blueprint for community-academic partnerships.

"The University of Maryland, Baltimore is a research powerhouse dedicated to finding solutions to the most pressing problems of today, including addiction. **Opioid use disorder and addiction** have created a public health crisis in Baltimore, in Maryland, and across the country," said Bruce Jarrell, MD, President of UMB. "UMB's mission—to improve the human condition and serve the public good—means that we have a responsibility to do what we can to address this crisis, and I expect the research we will conduct at the Kahlert Institute will make a powerful difference."

#### Hub for Multi-Disciplinary Research Collaboration

The Kahlert Institute will create a central hub allowing multidisciplinary investigators to bring together their knowledge and accelerate innovation by sharing the same physical space. It will be located on a currently shelled floor of the new Health Sciences Research Facility III on the UMSOM campus with state-ofthe-art labs to accelerate fundamental and translational science, alongside a fully integrated space for clinical care, clinical research, and education.

Greg W. Kahlert



President Jarrell speaks at the press conference announcing the Kahlert Institute.

"Last year, 20 million Americans were diagnosed with substance use disorder, and only 10% received treatment. Overall, more than 100,000 people nationally died from a drug overdose," said UMSOM Dean Mark T. Gladwin, MD, who is also Vice President for Medical Affairs, University of Maryland, Baltimore, and the John Z. and Akiko K. Bowers Distinguished Professor. "The Kahlert Institute seeks to build a bridge from the lab bench, where rapid advances in fundamental neuroscience will spur innovative therapies, to the clinic where life saving medications like buprenorphine and methadone require an optimized system to ensure access to any patient in need."

Fundamental research will focus on developing and testing novel interventions, including behavioral therapies, drugs, and innovative technologies to reduce cravings, drug use, and the many complications of addiction. Faculty members also will conduct accelerated preclinical research to identify why certain individuals are more susceptible to addiction. Others will explore the cause of the high comorbidity between substance abuse disorders and neuropsychiatric diseases, such as depression and schizophrenia. Fetal programming studies investigating how genes are expressed will aim to measure the impact of prenatal exposure to drugs and ways to reduce the long-term consequences.

"Our research techniques include behavioral, neurophysiological, genetic, molecular, and computational approaches. We investigate drugs as diverse as opioids, cocaine, amphetamines, cannabis, nicotine, and alcohol," said Asaf Keller, PhD, the Donald E. Wilson, MD, MACP Distinguished Professor and Chair of Neurobiology, and Associate Director of the Kahlert Institute at UMSOM. "This collaboration will help us expand our basic and translational research opportunities by more fully understanding the challenges in the field of addiction medicine to develop new strategies and research approaches."

#### **Supportive Therapies to Prevent Relapse**

Clinical studies will include analyzing innovative treatment strategies to determine, for example, how supportive therapies delivered by peer counselors can prevent relapse. A foundational activity of the Kahlert Institute will be to establish a Community Advisory Board, which will include individuals with substance use disorder, community members affected by addiction, and harm reductionists.

"In order for the Kahlert Institute's scientific, clinical, and educational work to have relevance and impact, it must be grounded in and shaped by the lived experience of individuals with addiction," said Kahlert Institute Associate Director Sarah Kattakuzhy, MD, MPH, Associate Professor of Medicine in the Division of Clinical Care and Research in UMSOM's IHV. "We want to reduce death and long-term complications of addiction especially in disproportionately affected communities. Black patients, for example, are far less likely to receive certain medications to treat opioid use disorder than white patients, and we need to find ways to eliminate this disparity." Dr. Kattakuzhy is also Co-Director of IHV's Research Initiative on Infectious Disease and Substance Use Disorder (RIIS).

#### **Continuum of Care for Patients**

Another major goal of the Kahlert Institute focuses on improving the continuum of care for individuals with addiction. Patients with addictions often face additional challenges in accessing traditional health care settings. Experts will focus on creating a more effective care model to address these patients' primary health care needs and ensure they have continued access to medication like suboxone or methadone as well as psychiatric services for mental health issues.

The Kahlert Institute also will closely collaborate with the Maryland Addiction Consultation Service (MACS), a UMSOMrun, state-sponsored program to expand treatment of opioid use disorder. Research programs with an established portfolio in addiction also will be part of the collaboration, including the new University of Maryland Institute for Health Computing; the IHV's RIIS; UMSOM's Institute for Substance Use in Pregnancy; and The Center for Addiction Medicine (CAM) at the University of Maryland Medical Center Midtown Campus—a comprehensive clinical program offering medication-assisted treatment and

outpatient counseling. The newly established University of Maryland-Medicine Institute for Neuroscience Discovery (UM-MIND) will have a strong connection to the Kahlert Institute, with the two Institutes working together to further the science of addiction. UM-MIND Director Margaret McCarthy, MD, the James and Carolyn Frenkil Dean's Professor and Chair of the Department of Pharmacology, will serve on the **Executive Committee of Kahlert** L to R Dr. Assaf Keller and Dr. Margaret Institute.



McCarthy



The University of Maryland School of Medicine (UMSOM) Institute of Human Virology's (IHV) <u>Research Initiative on</u> <u>Infectious Disease and Substance Use</u> (<u>RIIS</u>) engages marginalized populations in Baltimore and Washington, D.C., bringing together endemic infections and substance abuse treatment in a community-based setting with the goal of establishing research programs.

In Baltimore, the RIIS team connects with community members at the <u>Health</u> and <u>Recovery Practice (HARP)</u> space, a clinic that treats addiction as well as offers primary care and mental health services. However, the team knew of other populations in the city they had not yet reached, specifically sexual and gender minorities.

"There are challenges to getting treatment to people who use drugs, as you only see patients who made it into the clinic," said David Sternberg, MHA, Manager of Health Programs at



RIIS, Division of Clinical Care and Research at UMSOM's IHV. "We wanted to better reach people in our community who were not

#### David Sternberg, MHA

# RIIS Partners with Baltimore Safe Haven

# already connected to care, so we had to figure out how to find them."

Sexual and gender minorities, and especially people who are transgender, tend to be more likely to use substances and are at greater risk for sexually transmitted infections—much of this as a direct byproduct of the stigma and discrimination they face on a day-to-day basis. According to the U.S. Health and Human Services, an estimated 20-30% of gay and transgender people abuse substances compared to less than 10% of the general population. Approximately 14% of transgender women have HIV, but the rates are much higher for Black and Hispanic individuals, according to the U.S. Centers for Disease Control and Prevention



In order to reach this population, the RIIS team approached <u>Baltimore</u> <u>Safe Haven</u> last summer to establish a potential partnership opportunity. Baltimore Safe Haven is a grassroots, non-profit organization led by transgender women of color that provides safe housing and supportive services for transgender individuals. The group also advocates for LGBTQ+ supportive legislation in Annapolis. Specifically, Baltimore Safe Haven has a drop-in center near Penn Station that offers services, clothes, meals, and a trusted environment.

The RIIS team worked directly with Baltimore Safe Haven's Founder and Executive Director, Iya Dammons, to



establish what the group's unmet medical needs were and how they could assist. Starting in January, the Baltimore RIIS team began

Omar Harfouch, MD, MPH

seeing members of the community at Baltimore Safe Haven's drop-in location one day a week. The team provides gender-affirming care, prescribes HIV prevention medication (PrEP), and performs testing and care for sexually transmitted infections.

"Baltimore Safe Haven allows us to meet the community where they are. These patients are not going to be seen in a traditional health care setting," said Omar Harfouch, MD, MPH, Assistant Professor of Medicine, Division of Clinical Care and Research, at UMSOM's IHV. "Many of these people are scared of going to a clinical setting, as they have faced much discrimination already, and they may not want to encounter people who aren't transgender."

Further, in a traditional clinic setting there may be long wait times,

## **RIIS Partners with Baltimore Safe Haven** (continued)

restrictions on acceptable insurance, and other barriers to access. Some people even choose to get unregulated hormones on the street, according to Dr. Harfouch.

"You see people who really need these medications and you see that you are making a difference in their lives, and they are so grateful for all the care they get," said Dr. Harfouch.

Dr. Harfouch sees patients while Mr. Sternberg is responsible for continually managing the relationship of RIIS' partnerships like the one with Baltimore Safe Haven. His many roles include navigating cultural competencies, making sure spaces have what people need, ensuring people are using the correct names/pronouns, identifying what services are needed and which of those the team can address, and lifting barriers to care and communication.



The team also has a Research Assistant Meghan Derenoncourt, a Clinical Research Specialist, Onyinyechi Ogbumbadiugha, MPH, and a Nurse Coordinator, Walker Weinstein, RN. Sarah Kattakuzhy, MD, MPH, Associate Professor of Medicine,

Baltimore RIIS Director, Associate

Director of the Kahlert Institute for

Sarah Kattakuzhy, MD, MPH

Addiction Medicine, Division of Clinical Care and Research, at UMSOM's IHV manages the program.

"This is truly a team effort, and we are grateful to lya and her group for opening their space to us as guests," said Dr. Kattakuzhy. "Community research collaborations require the right ingredients for success. The most vital elements are to have an amazing team that you can trust, a strong

community partner, and a unified commitment to improving health through the power of research."

"IHV's mission is to improve the lives of people afflicted with or predisposed to chronic viral infections, such as HIV, particularly to the most marginalized groups," said



Shyam Kottilil, MBBS, PhD



Baltimore Safe Haven, 2117 N Charles St, Baltimore, MD 21218

Shyam Kottilil, MBBS, PhD, Professor of Medicine, Interim IHV Director, Director of the Division of Clinical Care and Research at UMSOM's IHV. "Our team at Baltimore Safe Haven is an example of IHV's dedication, commitment, and outreach to the most marginalized trans population. I applaud them and their community partners at Safe Haven in their efforts."

Eventually RIIS hopes to recruit for research studies. Some of the projects they hope to move forward include understanding how many people use drugs and what are risk factors for use or investigate whether long-acting HIV PrEP injectables work better than daily pills for adherence to treatment.

"Before we even approach the idea of research, we need to build and earn trust and better understand their needs, so we can make a positive impact in the Baltimore trans community," said Mr. Sternberg.

# Safe Antibiotic Prescribing

Antibiotics like penicillin, which became widely used in the 1940s during World War II, have increased life expectancy by an estimated 20 years through their ability to quash deadly bacterial infections. However, antibiotic overprescribing for unaffected viral infections and massive overuse of antibiotics for promoting growth in farm animals have led to an increase in bacteria resistant to many of the antibiotics available.

In the U.S. alone, more than 2.8 million antimicrobial-resistant infections occur each year, with more than 35,000 people dying as a result, according to the U.S. Centers for Disease Control and Prevention (CDC).

So-called superbugs, such as MRSA (methicillin-resistant *Staphylococcus aureus*), are now commonly found almost everywhere. These bugs pick up resistance either by sharing bacteria resistance genes with one another or by evolving in real-time to escape death from antibiotics.

To ensure responsible prescribing and reduce any potential patient care harms at University of Maryland Medical Center and the School of Medicine (UMSOM), the Institute of Human Virology's (IHV) Division of Clinical Care and Research operates the <u>Antimicrobial Stewardship Program</u>.

"It is inevitable that bacteria will become resistant to antibiotics, but it is our job to mitigate the process so that we can extend the likelihood that these drugs will continue to work for as long as possible by ensuring we are adhering

to best practices," said Jacqueline Bork, MD, MS, Assistant Professor of Medicine, Division of Clinical Care and Research, and Medical Director of the Antimicrobial Stewardship Program at UMSOM's IHV. "Our program's primary goal is to get the right antibiotic at the right dose to the right patient at the right time and for the right duration."



Jacqueline Bork, MD, MS

The Antimicrobial Stewardship to improve Clinical Outcomes Team (ASCOT) consists of pharmacists, nurse coordinators, and infectious disease physicians that audit antibiotic prescribing in both the inpatient and outpatient settings to ensure that a patient is on the correct antibiotic, dose, and duration prescribed (or if the patient needs the antibiotic at all). The Antimicrobial Stewardship team works closely with the microbiology laboratory following culture results and ensuring the antibiotic prescribed covers the identified organism.

"Antimicrobial therapy is like a double-edged sword. If used inappropriately, it results in increased antibiotic resistance and morbidity and mortality among patients," said Shyam Kottilil, MBBS, PhD, Professor of Medicine, Interim IHV Director, Director of the Division of Clinical Care and Research at UMSOM's IHV. **"The CDC estimates that antimicrobial resistance adds a \$20 billion excess in healthcare costs in the United States. The IHV team headed by Dr. Bork plays a remarkable role in optimizing antimicrobial therapy for our patients to mitigate the burden of antimicrobial resistance."** 

A vulnerable part of patient care is the transition from inpatient to outpatient when cultures may go unnoticed, or antibiotics may be prescribed incorrectly. The team monitors many antibiotics at the point a patient is discharged, as well as bacteria cultures that may grow after a patient is discharged.

Separately, the Antimicrobial Stewardship team oversees prescribing restricted antibiotics and requires that the Infectious Diseases consultation team evaluate the patient. Restricted antibiotics may be newer and have less known about them, may be ones of last resort due to their potential toxicity and harmful side effects, or ones that are potent, broad covering antibiotics that can treat a wide spectrum of bacteria. The tighter control of certain antibiotics prevents overprescribing, reduces any potential harms to patients, and preserves the antibiotic for future use.

Discovery A Newsletter of the Institute of Human Virology



Antimicrobial Stewardship Clinical Outcomes Team

"We also make sure physicians and health care providers are not using jackhammers when a perfectly ordinary hammer will do," said Dr. Bork. She referred to the process of narrowing an antibiotic down to one that only covers the organisms identified or implicated in the infection. When broad-spectrum antibiotics are used, especially when they are not needed, the risk of antimicrobial resistance and *C. difficile* infection (which causes diarrhea) can also result in severe lifethreatening complications.

Another focus of the antimicrobial stewardship team is the misconception of penicillin allergies in many patients, which can also lead to overly broad or less optimal infection treatment.

"Many people think for some reason or another that they have an allergy or even their medical record says they have an allergy, but the patient states they can take amoxicillin, which is a clue that they don't have a true penicillin allergic reaction," said Dr. Bork. The team works with frontline health care providers to debunk falsely reported penicillin allergies. In addition, the Infectious Disease trainees engage in this work by learning to perform penicillin skin testing when appropriate.

Along with her pharmacy counterparts, Dr. Bork oversees updating of institutional guidelines for antibiotic prescribing

of certain kinds of infections, such as urinary tract infections and pneumonia. The guidelines incorporate evidence-based medicine and local bacterial resistance rates. This year, they will begin reporting to the CDC on antibiotic use and resistance for benchmarking purposes.

Quality improvement projects make up another piece of the group's function. The Antimicrobial Stewardship team collects data on infections or antibiotics of interest, usually guided by antibiotic use data that is tracked over time or by anecdotal experiences of frontline providers. These projects may inform practice and bring awareness to areas that need improvement. This may lead the team to carry out an intervention project, such as an education campaign, in order to improve antibiotic practices.

Many of these projects and the daily antibiotic audits require tight collaboration with members of the patient care team.

"Our team needs to develop good relationships with frontline providers and staff, so they have trust in our recommendations particularly if our recommendations require them to make changes to their practice to deliver care in a safer, more effective way," said Dr. Bork.



In Sub-Saharan Africa, HIV infection disproportionately affects people detained within the criminal justice system. These vulnerable populations may not access regular medical care before and during incarceration.

University of Maryland School of Medicine's (UMSOM) Institute of Human Virology (IHV) researchers conducted a study in Zambia that demonstrated high uptake of HIV preventative medicine, known as pre-exposure prophylaxis (PrEP), is possible in prison populations with adequate resources and support from the criminal justice health system.

Published earlier this year in <u>The</u> <u>Lancet HIV</u>, the research team provided evidence of a model of HIV prevention with at-risk populations that could possibly be extended to other criminal justice facilities, as many of the issues faced by Zambian prisoners are universal to prisoners worldwide.

"Our results show it is feasible to deliver PrEP in diverse criminal justice settings where other HIV prevention commodities, such as

condoms and lubricants, are prohibited," said epidemiologist Brianna R. Lindsay, PhD, MPH, Director of



Health Programs Brianna Lindsay, PhD, MPH at the Center for International Health, Education, and Biosecurity (Ciheb) at UMSOM's IHV. **"The approach was** well received by justice-involved



Prisoners in the program

individuals, demonstrating high uptake among those eligible. To our knowledge, this is the first description of PrEP service delivery for people who are incarcerated in criminal justice settings in Sub-Saharan Africa."

In the study, the largest proportion of incarcerated people reached with HIV prevention services and initiated on PrEP were men between the ages of 25 and 29 years, consistent with the known demographics of the incarcerated population in Zambia. Prior to HIV testing, individuals were screened using a high-risk screening form. People who are incarcerated may be exposed to risks such as consensual and coerced sex, sexual violence, injection drug use, and tattooing. Highrisk activity paired with other barriers to HIV prevention in prisons, including high inmate turnover, lack of health education, and the absence of HIV prevention tools, contributes to at least a 14% higher rate of infection than seen in the adult general population.

Funded by the U.S. President's Emergency Plan for AIDS Relief

(PEPFAR) through the U.S. Centers for Disease Control and Prevention (CDC), the study implemented PrEP through existing and previous projects that support HIV testing. It also links participants, including people who are incarcerated, to treatment and services, such as the University of Maryland Baltimore-supported Community Impact to Reach Key and Underserved Individuals for Treatment and Support (CIRKUITS) and Zambia Community HIV Epidemic Control for Key Populations (Z-CHECK) programs. With an all-hands-on-deck approach, there was support for the study from all stakeholders—from the Correctional Service and Zambian Ministry of Health to the prison health committee and peer-led adherence support groups to provide PrEP services.

To ensure a stable and continuous supply of PrEP medication, trained personnel worked with Zambia Ministry of Health supply chain teams to assess stock levels and support the distribution of HIV prevention supplies.

# "We are honored to work with the Zambia Correctional Services

continued on page 21 www.ihv.org

#### HIV Treatment and Prevention in Zambian Prisons May be Model for Prisons Worldwide (continued)

and Ministry of Health to accomplish this initial implementation of PrEP at these facilities," said Principal Investigator for this study Cassidy Claassen, MD, MPH, Associate Professor of Medicine, Technical Director for the



Zambia County Office, and Ciheb Global Health Fellowship Director at UMSOM's IHV. "This represents one of the first such implementations anywhere in the world and marks an important step forward in demonstrating successful HIV prevention protocols for people who are incarcerated."

Cassidy Claassen, MD, MPH

Data was collected between October 1, 2020 to March 31, 2021 from 16 Zambian criminal justice facilities, involving a total of 12,367 people (of all sexes) in the study. Of all those who tested HIV negative and were screened for PrEP, 67% considered high risk were eligible to initiate. All PrEP participants participated voluntarily, and care was taken to avoid undue coercion or incentives. PrEP participation exceeded 90% among those eligible.

"Due to Ciheb's collaborative efforts with our partners to control HIV infection in Zambia, we have been able to help bring the <u>HIV prevention</u> and treatment rates to 98% across the country, and now we are focusing on targeting this previously and traditionally ignored population of people in prisons," said Man Charurat,



Man Charurat, PhD, MHS

**PhD, MHS**, Professor of Medicine, Director of Ciheb, and Director of the Division of Epidemiology and Prevention at UMSOM's IHV. **"In many developing countries, it is much harder to institute plans for HIV interventions in prisons.** However, we believe that our model can be successfully adapted to help control the spread and improve the health and well-being of inmates across the globe."

For future studies, the researchers plan to evaluate PrEP persistence and adherence, as well as the perceptions of people who are incarcerated regarding their HIV risk and preferences for combined HIV prevention services. They

will also aim to assess and support PrEP adherence and persistence after these people are released from prison.



Robert Gallo, MD

"In many developing countries, both HIV and homosexuality are highly stigmatized, making HIV interventions in prisons that much harder to enact," said Robert Gallo, MD, The Homer & Martha Gudelsky Distinguished Professor in Medicine, Co-Founder and Emeritus Director of UMSOM's IHV. Special Advisor to the

Dean, and Co-Founder of the Global Virus Network (GVN) and Chair of the GVN's Scientific Leadership Board. **"True to Ciheb's mission and history, whose foundation dates back nearly two decades in our Institute, this team continues to promote health equity in resource-limited settings."** 

"There is an urgent need for health equity for all members of society. With almost 400,000 people globally incarcerated who are living with HIV, including 18,000 in the United States alone, controlling the spread of HIV in the prison system translates to healthier communities," said UMSOM's Dean, Mark Gladwin, MD, who is also



Mark T. Gladwin, MD

Vice President for Medical Affairs, University of Maryland, Baltimore, and the John Z. and Akiko K. Bowers Distinguished Professor. **"What the team has accomplished in this study will hopefully accelerate further changes to the prison healthcare systems in Zambia and around the globe."** 



IHV staff at the correctional facility

#### **Spotlight on a Rising Clinician** Dr. Natalie Spicyn Named Medical Director of HIV Community Health Programs



**Natalie Spicyn, MD, MHS,** joined University of Maryland School of Medicine's Institute of Human Virology's Division of Clinical Care and Research as Assistant Professor of Medicine in September 2022 and was recently named the Medical Director of HIV Community Health Programs. She attended undergraduate and medical school at Yale, where she also obtained an MHS, completing an MD thesis focused on healthcare workforce diversity. Dr. Spicyn was in the second class of the Johns Hopkins Internal Medicine & Pediatrics Urban Health Residency Program, and since graduating in 2015, has practiced full spectrum primary care in federally qualified community health centers in Baltimore City. Most recently, Dr. Spicyn was Chief of Internal Medicine at Park West Health System in Park Heights located in Northwest Baltimore, where she developed the agency's hepatitis C virus treatment program, oversaw the medical portion of the Ryan White program and Ending the HIV Epidemic (EHE) grant activities, and provided leadership to

behavioral health integration efforts. She is board certified in Internal Medicine, Pediatrics, and Addiction Medicine. She is passionate about harm reduction, gender affirming care, anti-racism, and patient advocacy.

# Q: What will you do in your new role as Medical Director of HIV Community Health Programs?

Dr. Spicyn: My focus thus far as Medical Director of HIV Community Health Programs has been supporting and expanding the work of the JACQUES Initiative's community engagement team as we chart a new path in a world changed by the COVID pandemic. Currently, we are partnering with colleagues in the Emergency Department to expand HIV testing, including re-examining processes for both blood and point-of-care testing ("rapid" testing patients on-site). We're also actively hiring new staff to rebuild and expand our hospital-based program that links people living with HIV to medical care and includes enhanced capabilities for street and community outreach. As a primary care doctor, I'm especially passionate about expanding the statusneutral components of the JACQUES Initiative's work, which means providing whole person care regardless of an individual's HIV status. This means our team will continue supporting people living with HIV, while also exploring innovative, non-traditional care delivery models to creatively engage folks from disproportionately impacted communities in HIV prevention efforts.

#### Q: What are your three top priorities in your new role?

**Dr. Spicyn:** The JACQUES Initiative team does incredible work in community engagement, but we don't have great mechanisms for regularly gathering and incorporating community input to help inform how we do the work. I'd like to host community listening sessions and perhaps develop a community advisory board to help guide our work, especially in the prevention realm.

Related to that, a second priority for me is bolstering our data systems to enable us to utilize the tools of implementation science as we work on programmatic expansion. Alongside Dr. Pat Ryscavage, who has been laying the foundations of this work before my arrival, I am coleading efforts to improve how our hospital-based linkage program captures both process and outcome data. Our goal is to be able to tell the story of the work we are doing. Moving beyond traditional outcomes, such as patients attending their scheduled appointments and lowering their blood HIV virus levels, to co-developing patientcentered outcomes would be an exciting next phase.

A third priority is to turn our attention inward and bring a health equity lens to matters of staff wellness and promotion. We often think of health equity as pertinent to patient outcomes, but institutions such as ours can do a lot to advance health equity by providing more and varied opportunities for employees to advance their careers. A program that has historically pioneered a peer navigation model (connecting patients with a person who has learned to live well with HIV) is a great place to explore such pathways!

#### Q: What are the challenges you will face?

**Dr. Spicyn:** Transitioning from a smaller community health center setting to a large academic medical center, firstly, I am navigating learning the ins-and-outs of the institution and its various processes. While FQHCs (Federally Qualified Health Centers) may be nimbler in some respects, the trade-off is that they are also more under-resourced. On the topic of resources, the shifting public health funding landscape is definitely a concern as the JACQUES Initiative looks to expand its community engagement work. Diversifying our funding sources in order to bolster and expand our work will be a major focus for me. On that topic, if anyone reading this is connected to a foundation or philanthropy interested in health equity, anti-racism in medicine, LGBTQIA health, or innovative, community-based service delivery models, please feel free to make the introduction!

#### Q: Can you tell us a bit more about yourself?

**Dr. Spicyn:** I'm originally from Brooklyn, NY and if you're wondering why you haven't noticed a Brooklyn accent, it's because I'm a first-generation American—I grew up in a multilingual household where "Brooklynese" was not a native dialect. When my family didn't want the kids to understand what they were saying it, rather than spell it out, they would say it in Yiddish! My family's immigration experience strongly informs my worldview and commitment to justice.



Dr. Natalie Spicyn meets with Kenyan physicians





UNIVERSITY of MARYLAND SCHOOL OF MEDICINE

# CELEBRATE PRIDE WITH THRIVE

janssen 丁

# MIDTOWN BLOCK PARTY

June 23rd, 2023, 10-3 Street, Tower Lower Level Midtown Campus

ICE CREAM PRIDE ART 12:15 - 1:00

#### HEALTH SCREENINGS

- 10-3: HIV
- 10-12: blood pressure, cholesterol, pregnancy, hepatitis C, diabetes

#### EDUCATION

MUSIC

- 10:00-10:30: Queer Allyship, RN Walker Weinstein
- 10:45-11:15: LGBTQ Sexual Health, Dr. Omar Harfouch
- 11:30-12:00: Healthy Sexual, Trina Scott

**TABLES:** THRIVE, JACQUES Initiative, UM Pediatrics at MTC, Center for Diabetes & Endocrinology, The Wound Healing Center, Community Health Improvement, Free State Justice, Gilead, Janssen, & Viiv



PRIDE PARADE June 24, 1pm start N. Charles & 33rd March with us!



# PRIDE IN THE PARK

June 25, 12-6 Druid Hill Park Visit our table!

# **Faculty News**

# **Grants**-



John Baddley, MD, MSPH, Professor of Medicine, Division of Clinical Care and Research, was awarded \$201,659.64 for a one-year clinical study agreement with SCYNEXIS, Inc. to use ibrexafungerp for treating patients with Candida yeast infections.



Man Charurat, PhD, MHS, Professor of Medicine, Director of the Division of Epidemiology and Prevention, Director of the Center of International Health, Education, and Biosecurity (Ciheb), was awarded a five-year grant of \$1,228,571 in partnership with the Institute of Human Virology-Nigeria (IHV-Nigeria) and the

Centers for Disease Control and Prevention (CDC) for "Action to Sustain Precision and Integrated HIV-Response towards Epidemic Control (**ASPIRE**)," which will provide technical assistance in implementing and assessing a cost effectiveness analysis and medical decision-making strategies for IHV-Nigeria's U.S. President's Emergency Plan for AIDS Relief (PEPFAR) HIV program.



**Cassidy Claassen, MD, MPH**, Associate Professor of Medicine, Ciheb Global Health Fellowship Director, Division of Clinical Care and Research, was awarded \$353,323 from the National Institutes of Health (NIH) for the two-year R21 grant "Prison PrEP Values Adherence and Implementation in Lusaka (**PrEVAIL**)," which will assess patterns of HIV

pre-exposure prophylaxis (PrEP) uptake and persistence, HIV incidence, and HIV risk perception among incarcerated people in Zambia, and conduct qualitative assessments of facilitators and barriers to effective PrEP use in this population both during and after incarceration.

Dr. Claassen was also awarded a five-year NIH D43 training grant of \$1,480,857 with Lloyd Mulenga, PhD, MMed, MBChB, MSc, of Vanderbilt University for "Zambia Education Network for Implementation Science Training in Health (**ZENITH**)." The grant funds will be used to train implementation scientists through a partnership between Zambia's University Teaching Hospital (UTH) and the University of Maryland, Baltimore (UMB) that focuses on building implementation science capacity at UTH.



#### Chozha Rathinam, Dr. rer. nat.,

Associate Professor of Medicine, Division of Virology, Pathogenesis, and Cancer, was awarded \$424,875 from NIH for the two-year R21 grant "Decoding HIV-1 mediated Hematopathology," which explores how HIV-1 infections cause

severe hematopathology (blood cell diseases) including anemia (low iron), neutropenia (too few white blood cells), thrombocytopenia (too few platelets), leukemia, lymphoma, inflammatory disorders, and bone marrow failure. Knowing this, a deeper understanding of the cellular and molecular mechanisms that regulate hematopoietic stem cells (blood stem cells) in the bone marrow of patients with HIV-1 infection would be valuable in designing novel therapies for HIVassociated hematological (blood) diseases.



Krishanu Ray, PhD, Associate Professor of Biochemistry and Molecular Biology, Division of Vaccine Research, was awarded a four-year NIH R56 grant of \$1,319,688 for "Broadly neutralizing antibody combinations with single virions in HIV+ plasma," which will establish how combinations of broadly HIV-neutralizing

antibodies (antibodies that can kill HIV) with different epitope specificities (sites that these antibodies bind on HIV) can most effectively cover the different HIV variants in order to develop approaches to prevent or treat HIV infection.

Dr. Ray was also awarded a five-year NIH R61 grant of \$1,569,864 with **Anthony Devico**, **PhD**, Professor of Medicine, Division of Vaccine Research, for "Detection Assays for Virion Susceptibility to HIV Broadly Neutralizing Antibodies in Plasma and Culture Fluids," which proposes an innovative approach toward rapid and easy next generation tests that will detect and quantify antibodies that neutralize HIV in people living with HIV.

# Faculty News (continued)

## **Keynotes**

#### Rebecca Nowak, PhD, MPH,

Assistant Professor of Epidemiology and Public Health, Division of Epidemiology and Prevention, will present at the 12th IAS (International AIDS Society) Conference, titled "Putting people first in the prevention, treatment, and care of HPV-related cancers among people living with HIV," to be held on July 22, 2023 in Brisbane, Australia.





#### Dr. Poonam Mathur Named 2022 Member of GVN Rising Star Mentorship Program



**Poonam Mathur, DO, MPH,** Assistant Professor of Medicine in IHV's Division of Clinical Care and Research, was named one of eleven

members from around the world to participate in the Global Virus Network (GVN) Rising Star Mentorship Program. The initiative, launched last year, identifies, prepares, and supports promising, early-career investigators in becoming leaders in the field of infectious diseases. The program also offers mentees the opportunity to develop innovative diagnostic and interventional

approaches to fight human pathogens. As the only coalition of its kind, the GVN Rising Star Mentorship Program offers a rare opportunity for future virology leaders to collaborate with key researchers, medical practitioners, and decision-makers driving scientific, evidence-based solutions for some of today's largest challenges in public health.

Dr. Mathur began her career at IHV in 2015 as a Fellow under the mentorship of **Shyam Kottilil, MBBS, PhD**, Interim IHV Director and Director of IHV's Division of Clinical Care and Research. During her fellowship, Dr. Mathur's clinical research focused on addressing the challenges in implementing hepatitis C treatment internationally. After completing her fellowship, Dr. Mathur joined the faculty at UMB and became an attending physician in the inpatient Greenebaum Comprehensive Cancer Infectious Diseases Service. She also continued her research with a focus on addressing co-occurring health conditions associated with HIV and the underlying cellular mechanisms that accelerate aging in people with HIV. She was a K12 NIH National Heart, Lung, and Blood Institute grant awardee in June 2019 for a program at the University of Pittsburgh, entitled "Pittsburgh HIV Mentored Training for Investigation of Comorbidities and Cure (**HIV MeTriCC**) (5K12HL143886-02)" and is a recipient of the 2022 University of Maryland Institute for Clinical and Translational Research (ICTR) Accelerated Translator Incubator Pilot grant to elucidate the immunological effects of plasmacytoid dendritic cells and interferon production on cellular aging in people with HIV.

Dr. Mathur was matched with GVN Center Director, **Diane E. Griffin, MD, PhD**, a Johns Hopkins University Distinguished Service Professor, Vice President of the U.S. National Academy of Sciences (NAS), and former Chair of the W. Harry Feinstone Department of Molecular Microbiology and Immunology at the Johns Hopkins Bloomberg School of Public Health. Dr. Griffin is also a member of IHV's Scientific Advisory Board.

# Faculty News (continued)



\$3.8 Million NIH Grant Funds Expansion of an Opioid Use Recovery Approach to Rural Maryland

Clinician researchers from the University of Maryland School of Medicine's (UMSOM) Institute of Human Virology (IHV) and the University of Maryland, College Park (UMCP) received a \$3.8 million grant from the National Institutes of Health's (NIH) National Institute of Drug Abuse (NIDA) Help to End Addiction Long-term (HEAL) Initiative to bring peer-based services of opioid use treatment to rural Maryland's Eastern Shore.

This new grant is based off of NIH-funded research led by Co-Principal Investigator Jessica Magidson, PhD, Associate Professor of Psychology at UMCP, which evaluated peer-based strategies to improve retention in methadone treatment in Baltimore City. Dr. Magidson's research found that individuals with opioid use disorder are nearly 30% more likely to stick to their treatment plan when they are paired with a peer living successfully in recovery.

The five-year new grant brings this research method to the rural population with opioid use disorder in the Eastern Shore region of Maryland, and partners with Co-Principal Investigator **Sarah Kattakuzhy, MD, MPH**, Associate Professor of Medicine, Division of Clinical Care and Research, Co-Director of the Research Initiative on Infectious Disease and Substance



Use Disorder at IHV, quadrupling the original sample size of patients, and doubling the time they follow each participant. Dr. Kattakuzhy is also Deputy Director of the newly announced Kahlert Center for Addiction Medicine at UMSOM.

The grant uses the clinical innovation of the Eastern Shore Mobile Care Collaborative, established by Eric Weintraub, MD, Professor of Psychiatry, and the Caroline County Department of Health in 2019. This program operates a mobile treatment van to travel to different parts of the Eastern Shore to deliver opioid use disorder care. Through the van, patients can connect with a physician via telemedicine to receive a prescription for buprenorphine, a medication used to treat opioid use disorder. The new grant will study the effect of peer-based support on treatment retention on the mobile treatment van, extending the findings to four wheels rather than within four walls.

"If this peer model continues to be effective and feasible, it could offer a more structured, evidence-based training for peers throughout the country, especially in rural areas," said Dr. Magidson. "Starting in early 2023 in Maryland, peer recovery specialists will be able to start billing for some services, which is a real opportunity to sustain these services. After understanding how peers can deliver evidence-based interventions, like the behavioral activation that we're rolling out, I think there will be even more momentum around this approach."

The study will also examine the rising challenge of stimulant use, such as cocaine and methamphetamine, in rural areas as well.

"Since we do not have medications to treat stimulant dependance like we do for opioid dependance, we must focus on providing crucial behavioral interventions and harm reduction. Peer support may be the ideal way to provide these services," said Dr. Kattakuzhy. "By providing support for recovery across multiple substances, we hope to keep more of our patients engaged in life-saving treatment.

# **Publications**

Abdolrahim Abbasi, PhD, Research Associate in Medicine, Division of Clinical Care and Research, was a co-author on "Targeting Caspase-3 Gene in rCHO Cell Line by CRISPR/Cas9 Editing Tool and Its Effect on Protein Production in Manipulated Cell Line," which was published in *Iran Journal of Pharmaceutical Research* in Jan 2023. DOI: <u>10.5812/ijpr-130236</u>

Abdolrahim Abbasi, PhD, Research Associate in Medicine, Mohammad Sajadi, MD, Professor of Medicine, Zahra Tehrani, PhD, Research Associate of Medicine, Alonso Heredia, PhD, Associate Professor Medicine, all of the Division of Clinical Care and Research, Anthony DeVico, PhD, Professor of Medicine, Division of Vaccine Research, and George Lewis, PhD, The Robert C. Gallo, MD Endowed Professorship in Translational Medicine, Professor of Microbiology and Immunology, IHV Deputy Director, Director of the Division of Vaccine Research, were among the co-authors of "Replacement of ART with HIV Broadly Neutralizing Antibodies to Maximize the Effectiveness of Chemotherapy in HIV Patients with Lung Cancer," which was published in *AIDS Research and Human Retroviruses* in Apr 2023. DOI: 10.1089/AID.2022.0181

Alash'le Abimiku, MON, PhD, Professor of Medicine, Division of Epidemiology and Prevention, Center for International Health, Education, and Biosecurity (Ciheb), Executive Director of International Research Center of Excellence at the Institute of Human Virology-Nigeria, was a co-author on "Implementation of data triangulation and dashboard development for COVID-19 vaccine adverse event following immunisation (AEFI) data in Nigeria," which was published in *BMJ Global Health* in Jan 2023. DOI: <u>10.1136/bmjgh-2022-011006</u>

Alash'le Abimiku, MON, PhD, Professor of Medicine, Division of Epidemiology and Prevention, Center for International Health, Education, and Biosecurity (Ciheb), David Riedel, MD, MPH, Associate Professor of Medicine, Ciheb Medical Director, Director of the Infectious Disease Fellowship Program, Division of Clinical Care and Research, Man Charurat, PhD, MHS, Professor of Medicine, Director of the Division of Epidemiology and Prevention, Director of Ciheb, and Kristen Stafford, PhD, MPH Associate Professor of Epidemiology and Public Health, Technical Deputy Director for Ciheb, Division of Epidemiology and Prevention, were among co-authors of "Prevalence of HIV drug resistance in Nigeria: results from a cross-sectional, population-based survey of Nigerian adults with unsuppressed viral load," which was published in *AIDS* in Feb 2023. DOI: <u>10.1097/QAD.000000000003413</u>

Alash'le Abimiku, MON, PhD, Professor of Medicine, Division of Epidemiology and Prevention, Center for International Health, Education, and Biosecurity (Ciheb), Man Charurat, PhD, MHS, Professor of Medicine, Director of the Division of Epidemiology and Prevention, Director of Ciheb, and Kristen Stafford, PhD, MPH, Associate Professor of Epidemiology and Public Health, Technical Deputy Director for Ciheb, Division of Epidemiology and Prevention, were among co-authors of "Factors associated with viral suppression among adults living with HIV on antiretroviral therapy in Nigeria: Analysis of a population-based survey, 2018," which was published in *HIV Medicine* in Mar 2023. DOI: 10.1111/hiv.13485

Alash'le Abimiku, MON, PhD, Professor of Medicine, Division of Epidemiology and Prevention, Center for International Health, Education, and Biosecurity (Ciheb), Executive Director of International Research Center of Excellence at the Institute of Human Virology-Nigeria, **Robert Gallo, MD**, The Homer & Martha Gudelsky Distinguished Professor in Medicine, Co-Founder and Emeritus Director of IHV, Special Advisor to the Dean, Co-Founder and Chair of the Scientific Leadership Board of the Global Virus Network, **José Esparza, MD, PhD,** Adjunct Professor of Medicine, Division of Vaccine Research, were among co-authors of "Monkeypox (Mpox) requires continued surveillance, vaccines, therapeutics and mitigating strategies," which was published in *Vaccine* in Apr 2023. DOI: <u>10.1016/j.</u> <u>vaccine.2023.04.010</u>

Alash'le Abimiku, MON, PhD, Professor of Medicine, Division of Epidemiology and Prevention, Center for International Health, Education, and Biosecurity (Ciheb), Executive Director of International Research Center of Excellence at the Institute of Human Virology-Nigeria, was a co-author on "Back-to-Africa introductions of *Mycobacterium tuberculosis* as the main cause of tuberculosis in Dar es Salaam, Tanzania," which was published in *PLoS Pathogens* in Apr 2023. DOI: <u>10.1371/journal.</u> ppat.1010893

Anthony Amoroso, MD, Professor of Medicine, Director of the Clinical Innovations Program, Shivakumar Narayanan, MBBS, MD, Assistant Professor of Medicine, Director of Hepatitis Research, Edward Traver, MD, Assistant Professor of Medicine, all of the Division of Clinical Care and Research, and Shyam Kottilil, MBBS, PhD, Professor of Medicine, Interim IHV Director, Director of Division of Clinical Care and Research, were among co-authors of "Predictors of Nonadherence Among Patients With Infectious Complications of Substance Use Who Are Discharged on Parenteral Antimicrobial Therapy," which was published in *Open Forum of Infectious Diseases* in Dec 2022. DOI: 10.1093/ofid/ofac633

John Baddley, MD, MSPH, Professor of Medicine, Division of Clinical Care and Research, as part of the International Collaboration for Endocarditis (ICE) Investigators, was published in "Epidemiological Changes and Improvement in Outcomes of Infective Endocarditis in Europe in the Twenty-First Century: An International Collaboration on Endocarditis (ICE) Prospective Cohort Study (2000-2012)" in *Infectious Diseases and Therapy* in Apr 2023. DOI: <u>10.1007/s40121-023-</u> <u>00763-8</u>

Jacqueline Bork, MD, MS, Assistant Professor of Medicine, Medical Director of the Antimicrobial Stewardship Program, Division of Clinical Care and Research, was a co-author on "Evaluating the Follow-up of Post-discharge Positive Sterile Site Cultures and the Impact on Infection-Related Complications," which was published in *Infectious Diseases and Therapy* in Mar 2023. DOI: <u>10.1007/s40121-023-00786-1</u>

Man Charurat, PhD, MHS, Professor of Medicine, Director of the Division of Epidemiology and Prevention, Director of Center for International Health, Education, and Biosecurity (Ciheb), and Rebecca Nowak, PhD, Assistant Professor of Epidemiology and Public Health, Division of Epidemiology and Prevention, were among the co-authors of "The quality of life among men who have sex with men (MSM) living with and those not living with HIV in Abuja Nigeria," which was published in *AIDS Care* in Jan 2023. DOI: <u>10.1080/09540121.2022.2160863</u>

Man Charurat, PhD, MHS, Professor of Medicine, Director of the Division of Epidemiology and Prevention, Director of Center for International Health, Education, and Biosecurity (Ciheb), Rebecca Nowak, PhD, Assistant Professor of Epidemiology and Public Health, Division of Epidemiology and Prevention, and Shenghan Lai, MD, MPH, Professor of Epidemiology and Public Health, Division of Epidemiology and Prevention, were among the co-authors of "Depression and Sexual Stigma Are Associated With Cardiometabolic Risk Among Sexual and Gender Minorities Living With HIV in Nigeria," which was published in the *Journal of Acquired Immune Deficiency Syndromes* in Jan 2023. DOI: 10.1097/QAI.00000000003096

# Publications (continued) -

Man Charurat, PhD, MHS, Professor of Medicine, Director of the Division of Epidemiology and Prevention, Director of Center for International Health, Education, and Biosecurity (Ciheb), and Rebecca Nowak, PhD, Assistant Professor of Epidemiology and Public Health, Division of Epidemiology and Prevention, were among the co-authors of "Food and water insecurity in sexual and gender minority groups living with HIV in Lagos, Nigeria," which was published in *Journal of Acquired Immune Deficiency Syndromes* in Mar 2023. DOI: <u>10.1097/QAI.00000000003183</u>

Man Charurat, PhD, MHS, Professor of Medicine, Director of the Division of Epidemiology and Prevention, Director of Center for International Health, Education, and Biosecurity (Ciheb), Rebecca Nowak, PhD, Assistant Professor of Epidemiology and Public Health, Division of Epidemiology and Prevention, and Nadia Sam-Agudu, MD, Senior Technical Advisor of Pediatric HIV, Associate Professor of Pediatrics, Division of Epidemiology and Prevention, were among co-authors of "Correlates of self-reported and biomarker based adherence to daily oral HIV pre-exposure prophylaxis among a cohort of predominantly men who have sex with men in Nigeria," which was published in *PLoS One* in Mar 2023. DOI: <u>10.1371/journal.pone.0282999</u>

Man Charurat, PhD, MHS, Professor of Medicine, Director of the Division of Epidemiology and Prevention, Director of Center for International Health, Education, and Biosecurity (Ciheb), and Nadia Sam-Agudu, MD, Senior Technical Advisor of Pediatric HIV, Associate Professor of Pediatrics, Division of Epidemiology and Prevention, were among co-authors of "Adult HIV-1 incidence across 15 high-burden countries in Sub-Saharan Africa from 2015 to 2019: a pooled analysis of nationally representative data," which was published in *Lancet HIV* in Mar 2023. DOI: <u>10.1016/S2352-3018(22)00328-9</u>

Man Charurat, PhD, MHS, Professor of Medicine, Director of the Division of Epidemiology and Prevention, Director of Center for International Health, Education, and Biosecurity (Ciheb), as part of the TRUST/RV368 Study Group, and Rebecca Nowak, PhD, Assistant Professor of Epidemiology and Public Health, Division of Epidemiology and Prevention, were among co-authors on "Herpes Simplex Virus Type 2 Prevalence and Association with Inflammatory Cytokines Among Sexual and Gender Minorities Living With and Without HIV-1 from Lagos, Nigeria," which was published in *AIDS Research and Human Retroviruses* in Mar 2023. DOI: 10.1089/AID.2022.0070

Man Charurat, PhD, MHS, Professor of Medicine, Director of the Division of Epidemiology and Prevention, Director of Center for International Health, Education, and Biosecurity (Ciheb), and Rebecca Nowak, PhD, Assistant Professor of Epidemiology and Public Health, Division of Epidemiology and Prevention, were among the co-authors of "Prevalence and Predictors of Concern about Anal Cancer among Sexual and Gender Minorites Living with HIV in Abuja, Nigeria," which was published in the *Journal of Acquired Immunodeficiency Syndromes* in Apr 2023. DOI: <u>10.1097/QAI.00000000003206</u>

Man Charurat, PhD, MHS, Professor of Medicine, Director of the Division of Epidemiology and Prevention, Director of Center for International Health, Education, and Biosecurity (Ciheb), Hong Lai, PhD, MPH, Associate Professor of Epidemiology and Public, Division of Epidemiology and Prevention, and Shenghan Lai, MD, MPH, Professor of Epidemiology and Prevention, were among co-authors of "Cocaine Use May Moderate the Associations of HIV and Female Sex with Neurocognitive Impairment in a Predominantly African American Population Disproportionately Impacted by HIV and Substance Use," which was published in *AIDS Patient Care and STDs* in May 2023. DOI: <u>10.1089/apc.2023.0006</u>

Joel Chua, MD, Associate Professor of Medicine, Chief of the Surgical Infectious Diseases Service, Alip Ghosh, PhD, MSc, Research Associate in Medicine, and Angie Price, DNP, Director of the Clinical Research Unit, all of the Division of Clinical Care and Research, and Shyam Kottilil, MBBS, PhD, Professor of Medicine, Interim IHV Director, Director of Division of Clinical Care and Research, were among co-authors on "A Phase 2 open label study of ledipasvir/sofosbuvir for 12 weeks in subjects with hepatitis B virus infection," which was published in *Journal of Medical Virology* in Jan 2023. DOI: <u>10.1002/jmv.28105</u>

Joel Chua, MD, Associate Professor of Medicine, Chief of the Surgical Infectious Diseases Service, and Shivakumar Narayanan, MBBS, MD, Assistant Professor of Medicine, Director of Hepatitis Research, both of Division of Clinical Care and Research, were among co-authors on "COVID-19 Vaccines-All You Want to Know," which was published in *Seminars in Respiratory and Critical Care Medicine* in Feb 2023. DOI: <u>10.1055/s-0042-1759779</u>

Joel Chua, MD, Associate Professor of Medicine, Chief of the Surgical Infectious Diseases Service, Arshi Khanam, PhD, Research Associate of Medicine, Alip Ghosh, PhD, MSc, Research Associate in Medicine, all of the Division of Clinical Care and Research, and Shyam Kottilil, MBBS, PhD, Professor of Medicine, Interim IHV Director, Director of Division of Clinical Care and Research, were co-authors of "Blockade of CCR4 breaks immune tolerance in chronic hepatitis B patients by modulating regulatory pathways," which was published in *Journal of Translational Medicine* in Apr 2023. DOI: <u>10.1186/s12967-023-04104-8</u>

**Cassidy Claassen, MD, MPH**, Associate Professor of Medicine, Center for International Health, Education, and Biosecurity Global Health Fellowship Director, Division of Clinical Care and Research, was a co-author on "Initial implementation of HIV pre-exposure prophylaxis for people who are incarcerated in Zambia: a cross-sectional observational study," which was published in *Lancet HIV* in Jan 2023. DOI: <u>10.1016/S2352-3018(22)00220-X</u>

**Cassidy Claassen, MD, MPH,** Associate Professor of Medicine, Center for International Health, Education, and Biosecurity Global Health Fellowship Director, Division of Clinical Care and Research, was a co-author on "Impact of the COVID-19 Pandemic on Tuberculosis Testing and Treatment at a Tertiary Hospital in Zambia," which was published in the *American Journal of Tropical Medicine and Hygiene* in Mar 2023. DOI: <u>10.4269/ajtmh.22-0689</u>

Cassidy Claassen, MD, MPH, Associate Professor of Medicine, Center for International Health, Education, and Biosecurity Global Health (Ciheb) Fellowship Director, Division of Clinical Care and Research, Marie-Claude Lavoie, PhD, MSc, Assistant Professor of Epidemiology and Public Health, Ciheb Director of Strategic Information and Evaluation, and Lottie Hachaambwa, MB, ChB, Assistant Professor of Medicine, Division of Clinical Care and Research, Ciheb, were among coauthors of "Addressing the Need for a Preexposure Prophylaxis Monitoring and Evaluation Implementation Guide: Experience From Zambia," which was published in *Global Health, Science, and Practice* in Apr 2023. DOI: <u>10.9745/GHSP-D-22-00396</u>

Patrick Dakum, MBBS, MPH, Associate Professor of Epidemiology and Public Health, Chief Executive Officer, Institute of Human Virology-Nigeria, Division of Epidemiology and Prevention, as part of the Nigeria Low-Level Viremia Investigation Group, and Kristen Stafford, PhD, MPH, Associate Professor of Epidemiology and Public Health, Technical Deputy Director for Center for International Health, Education, and Biosecurity (Ciheb), Division of Epidemiology and Prevention, were among co-authors of "Low-level viraemia among people living with HIV in Nigeria: a retrospective longitudinal cohort study," which was published in *Lancet Global Health* in Dec 2022. DOI: 10.1016/S2214-109X(22)00413-2

# **Publications** (continued)

James Doub, MD, Assistant Professor of Medicine, Director of Infectious Diseases Ambulatory Practice, Division of Clinical Care and Research, was the author of "Use of α-Defensins to Help Diagnose Nosocomial Ventriculitis," which was published in *Neurocritical Care* in Apr 2023. DOI: <u>10.1007/s12028-022-01643-8</u>

James Doub, MD, Assistant Professor of Medicine, Director of Infectious Diseases Ambulatory Practice, Division of Clinical Care and Research, was the author of "A pilot study for evaluating the feasibility of using alpha-defensin to support the diagnosis of ventriculitis," which was published in *International Journal of Infectious Diseases* in Apr 2023. DOI: <u>10.1016/j.ijid.2023.04.389</u>

**Robert Gallo, MD,** The Homer & Martha Gudelsky Distinguished Professor in Medicine, Co-Founder and Emeritus Director of IHV, Special Advisor to the Dean, Co-Founder and Chair of the Scientific Leadership Board of the Global Virus Network, was a co-author of "Choosing the Right Path toward Polio Eradication," which was published in *New England Journal of Medicine* in Feb 2023. DOI: <u>10.1056/NEJMp2215257</u>

Alip Ghosh, PhD, MSc, Research Associate in Medicine, Poonam Mathur, DO, MPH, Assistant Professor of Medicine, both of the Division of Clinical Care and Research, and Shyam Kottilil, MBBS, PhD, Professor of Medicine, Interim IHV Director, Director of Division of Clinical Care and Research, were among co-authors of "Persistent CD38 Expression on CD8 + T Lymphocytes Contributes to Altered Mitochondrial Function and Chronic Inflammation in People With HIV, Despite ART," which was published in *Journal of Acquired Immune Deficiency Syndromes* in Dec 2022. DOI: <u>10.1097/QAI.000000000003080</u>

Lottie Hachaambwa, MB, ChB, Assistant Professor of Medicine, Division of Clinical Care and Research, Center for International Health, Education, and Biosecurity Global Health, was among co-authors on "Phenotypic and genotypic antibiotic susceptibility profiles of Gram-negative bacteria isolated from bloodstream infections at a referral hospital, Lusaka, Zambia," which was published in *PLoS Global Public Health* in Jan 2023. DOI: <u>10.1371/journal.pgph.0001414</u>

Sarah Kattakuzhy, MD, Associate Professor of Medicine, Co-Director of the Research Initiative on Infectious Disease and Substance Use Disorder, Shivakumar Narayanan, MBBS, MD, Assistant Professor of Medicine, Director of Hepatitis Research, Elana Rosenthal, MD, Associate Professor of Medicine, Associate Chief of Clinical Research, Co-Director of the DC Partnership for HIV/AIDS Progress Hepatitis Clinical Research Program, all of the Division of Clinical Care and Research, and Shyam Kottilil, MBBS, PhD, Professor of Medicine, Interim IHV Director, Director of Division of Clinical Care and Research, were among co-authors of "Hepatitis C cure and medications for opioid use disorder improve health-related quality of life in patients with opioid use disorder actively engaged in substance use," which was published in the *International Journal on Drug Policy* in Jan 2023. DOI: <u>10.1016/j.drugpo.2022.103906</u>

Arshi Khanam, PhD, Research Associate of Medicine, Division of Clinical Care and Research, and Shyam Kottilil, MBBS, PhD, Professor of Medicine, Interim IHV Director, Director of Division of Clinical Care and Research, were co-authors of "New Therapeutics for HCC: Does Tumor Immune Microenvironment Matter?," which was published in *International Journal of Molecular Sciences* in Dec 2022. DOI: <u>10.3390/ijms24010437</u>

Shyam Kottilil, MBBS, PhD, Professor of Medicine, Interim IHV Director, Director of Division of Clinical Care and Research, was a co-author of "Abnormal brain diffusivity in participants with persistent neuropsychiatric symptoms after COVID-19," which was published in *NeuroImmune Pharmacology and Therapeutics* in Mar 2023. DOI: <u>10.1515/nipt-2022-0016</u>

Shyam Kottilil, MBBS, PhD, Professor of Medicine, Interim IHV Director, Director of Division of Clinical Care and Research, was a co-author of "Immune drivers of HBsAg loss in HBeAg-negative CHB patients after stopping nucleotide analog and administration of Peg-IFN," which was published in *Hepatology Communications* in Apr 2023. DOI: <u>10.1097/HC9.000000000000098</u>

Shyam Kottilii, MBBS, PhD, Professor of Medicine, Interim IHV Director, Director of Division of Clinical Care and Research, Poonam Mathur, DO, MPH, Assistant Professor of Medicine, Division of Clinical Care and Research, were among co-authors of "Viral hepatitis elimination challenges in low- and middle-income countries-Uzbekistan Hepatitis Elimination Program (UHEP)," which was published in *Liver International* in Apr 2023. DOI: 10.1111/liv.15514

Shenghan Lai, MD, MPH, Professor of Epidemiology and Public Health, Division of Epidemiology and Prevention, was a co-author of "Lipoprotein(a) concentrations in acute myocardial infarction patients are not indicative of levels at six-month follow-up," which was published in *European Heart Journal Open* in Apr 2023. DOI: <u>10.1093/ehjopen/oead035</u>

Shenghan Lai, MD, MPH, Professor of Epidemiology and Public Health, Division of Epidemiology and Prevention, was a co-author of "The Relationship Between Impaired Coronary Endothelial Function and Systemic Markers of Inflammation in People Living With HIV," which was published in the Journal of Acquired Immune Deficiency Syndromes in May 2023. DOI: 10.1097/QAI.00000000003162

Joseph Lakowicz, PhD, Professor of Biochemistry and Molecular Biology, Associate Member in the Division of Virology, Pathogenesis, and Cancer, was a coauthor on "TLR5-Derived, TIR-Interacting Decoy Peptides to Inhibit TLR Signaling," which was published in *Journal of Immunology* in May 2023. DOI: <u>10.4049/</u> jimmunol.2200394

**Marie-Claude Lavoie, PhD, MSc,** Assistant Professor of Epidemiology and Public Health, Center for International Health, Education, and Biosecurity (Ciheb) Director of Strategic Information and Evaluation, was a co-author of "Scale-up of HIV index testing in an urban population: Experiences and achievements from Nairobi County, Kenya," which was published in *Tropical Medicine and International Health* in Feb 2023. DOI: <u>10.1111/tmi.13843</u>

George Lewis, PhD, The Robert C. Gallo, MD Endowed Professorship in Translational Medicine, Professor of Microbiology and Immunology, IHV Deputy Director, Director of the Division of Vaccine Research, **Krishanu Ray, PhD**, Associate Professor of Biochemistry and Molecular Biology, and **Greg Snyder, PhD**, Assistant Professor of Medicine, both of the Division of Vaccine Research, were among the co-authors of "Development of an anti-*Pseudomonas aeruginosa* therapeutic monoclonal antibody WVDC-5244," which was published in *Frontiers in Cellular and Infection Microbiology* in Apr 2023. DOI: <u>10.3389/fcimb.2023.1117844</u>

George Lewis, PhD, The Robert C. Gallo, MD Endowed Professorship in Translational Medicine, Professor of Microbiology and Immunology, IHV Deputy Director, Director of the Division of Vaccine Research, and **Mohammad Sajadi, MD**, Professor of Medicine, Division of Clinical Care and Research, **Zahra Tehrani, PhD**, Research Associate of Medicine, Division of Clinical Care and Research, and **Kapil Saharia**, **MD**, **MPH**, Associate Professor of Medicine, Chief of the Solid Organ Transplant Infectious Diseases Service, Division of Clinical Care and Research, were among the co-authors of "Maternal transfer of IgA and IgG SARS-CoV-2 specific antibodies transplacentally and via breast milk feeding," which was published in *PLoS One* in Apr 2023. DOI: <u>10.1371/journal.pone.0284020</u>

# **Publications** (continued)

Shivakumar Narayanan, MBBS, MD, Assistant Professor of Medicine, Director of Hepatitis Research, Division of Clinical Care and Research, was the author of "Solo with Cancer," which was published in JAMA Internal Medicine in Mar 2023. DOI: 10.1001/jamainternmed.2022.6304

**Rebecca Nowak, PhD,** Assistant Professor of Epidemiology and Public Health, Division of Epidemiology and Prevention, was a co-author of "Incidence and Clearance of Anal Human Papillomavirus Infection in 16,164 Individuals, According to Human Immunodeficiency Virus Status, Sex, and Male Sexuality: An International Pooled Analysis of 34 Longitudinal Studies," which was published in *Clinical Infectious Diseases* in Feb 2023. DOI: <u>10.1093/cid/ciac581</u>

**Rebecca Nowak, PhD,** Assistant Professor of Epidemiology and Public Health, Division of Epidemiology and Prevention, was a co-author on "Associations between punitive policies and legal barriers to consensual same-sex sexual acts and HIV among gay men and other men who have sex with men in Sub-Saharan Africa: a multicountry, respondent-driven sampling survey," which was published in *Lancet HIV* in Mar 2023. DOI: <u>10.1016/S2352-3018(22)00336-8</u>

**Chozha Rathinam, Dr. rer. nat.,** Associate Professor of Medicine, Division of Virology, Pathogenesis, and Cancer, was a co-author on "Fibroadipogenic progenitor cell response peaks prior to progressive fatty infiltration after rotator cuff tendon tear," which was published *in Journal of Orthopedic Research* in Dec 2022. DOI: 10.1002/jor.25321

Krishanu Ray, PhD, Associate Professor of Biochemistry and Molecular Biology, Division of Vaccine Research, was a co-author on "Nucleolin mediates SARS-CoV-2 replication and viral-induced apoptosis of host cells," which was published in *Antiviral Research* in Mar 2023. DOI: <u>10.1016/j.antiviral.2023.105550</u>

Krishanu Ray, PhD, Associate Professor of Biochemistry and Molecular Biology, Division of Vaccine Research, was a co-author on "Fluorescence Lifetime Imaging of Human Sub-RPE Calcification *In Vitro* Following Chlortetracycline Infusion," which was published in *International Journal of Molecular Sciences* in Mar 2023. DOI: 10.3390/ijms24076421

Krishanu Ray, PhD, Associate Professor of Biochemistry and Molecular Biology, Division of Vaccine Research, was a co-author on "DNA-Patched Nanoparticles for the Self-Assembly of Colloidal Metamaterials," which was published in *Journal of the American Chemical Society Au* in Mar 2023. DOI: <u>10.1021/jacsau.3c00013</u>

Kapil Saharia, MD, MPH, Associate Professor of Medicine, Chief of the Solid Organ Transplant Infectious Diseases Service, Division of Clinical Care and Research, was a co-author on "Successful lung transplantation using an allograft from a COVID-19-recovered donor: a potential role for subgenomic RNA to guide organ utilization," which was published in *American Journal of Transplant* in Jan 2023. DOI: <u>10.1016/j.ajt.2022.09.001</u>

Kapil Saharia, MD, MPH, Associate Professor of Medicine, Chief of the Solid Organ Transplant Infectious Diseases Service, Division of Clinical Care and Research, was a co-author on "SARS-CoV-2 infection and persistence in the human body and brain at autopsy," which was published in *Nature* in Dec 2022. DOI: <u>10.1038/</u><u>s41586-022-05542-y</u>

Kapil Saharia, MD, MPH, Associate Professor of Medicine, Chief of the Solid Organ Transplant Infectious Diseases Service, Division of Clinical Care and Research, was a co-author on "Impact of high MELD scores on CMV viremia following liver transplantation," which was published in *Transplant Infectious Disease* in Feb 2023. DOI: <u>10.1111/tid.14001</u>

Kapil Saharia, MD, MPH, Associate Professor of Medicine, Chief of the Solid Organ Transplant Infectious Diseases Service, Division of Clinical Care and Research, was a co-author on "Tixagevimab/cilgavimab pre-exposure prophylaxis and breakthrough infection risk in vaccinated solid organ transplant recipients: concern for immortal time bias effect," which was published in *American Journal of Transplant* in Mar 2023. DOI: <u>10.1016/j.ajt.2022.11.021</u>

Kapil Saharia, MD, MPH, Associate Professor of Medicine, Chief of the Solid Organ Transplant Infectious Diseases Service, Division of Clinical Care and Research, was a co-author on "Infection and clinical xenotransplantation: Guidance from the Infectious Disease Community of Practice of the American Society of Transplantation," which was published in American Journal of Transplant in Mar 2023. DOI: <u>10.1016/j.ajt.2022.12.013</u>

Kapil Saharia, MD, MPH, Associate Professor of Medicine, Chief of the Solid Organ Transplant Infectious Diseases Service, Division of Clinical Care and Research, and Mohammad Sajadi, MD, Professor of Medicine, Division of Clinical Care and Research, as part of the NIH COVID-19 Autopsy Consortium, were co-authors on "Histopathology and SARS-CoV-2 Cellular Localization in Eye Tissues of COVID-19 Autopsies," which was published in *American Journal of Pathology* in Mar 2023. DOI: 10.1016/j.ajpath.2023.02.016

**Mohammad Sajadi, MD,** Professor of Medicine, Division of Clinical Care and Research, as part of the LBD Triple Burden Collaborators, was published in "The overlapping burden of the three leading causes of disability and death in Sub-Saharan African children" in *Nature Communications* in Dec 2022. DOI: <u>10.1038/</u><u>s41467-022-34240-6</u>

Mohammad Sajadi, MD, Professor of Medicine, Division of Clinical Care and Research, was a co-author on "Death of a medical colossus: The course, cause and fatal outcome of Avicenna's colic," which was published in American Journal of Medical Science in May 2023. DOI: 10.1016/j.amjms.2022.12.030

Paul Saleeb, MD, MSPH, Assistant Professor of Medicine, Director of Mycobacterial Programs, Division of Clinical Care and Research, as part of the Bone Allograft Tuberculosis Investigators, was published in "Transmission of Mycobacterium tuberculosis to healthcare personnel resulting from contaminated bone graft material, United States, June 2021- August 2022" in *Clinical Infectious Diseases* in Jan 2023. DOI: <u>10.1093/cid/ciad029</u>

Nadia Sam-Agudu, MD, Senior Technical Advisor of Pediatric HIV, Associate Professor of Pediatrics, Division of Epidemiology and Prevention, was a co-author of "Associations between mental health and HIV status among sexual minority and heterosexual adolescents in Nigeria," which was published in *BMJ Global Health* in Dec 2022. DOI: <u>10.1136/bmjgh-2022-010231</u>

**Nadia Sam-Agudu, MD,** Senior Technical Advisor of Pediatric HIV, Associate Professor of Pediatrics, Division of Epidemiology and Prevention, as part of Perinatal COVID PMA Study Collaborators, was published in "Adverse maternal, fetal, and newborn outcomes among pregnant women with SARS-CoV-2 infection: an individual participant data meta-analysis" in *BMJ Global Health* in Jan 2023. DOI: <u>10.1136/bmjgh-2022-009495</u>

# **Publications** (continued)

Nadia Sam-Agudu, MD, Senior Technical Advisor of Pediatric HIV, Associate Professor of Pediatrics, Division of Epidemiology and Prevention, was a co-author of "A global update of mpox (monkeypox) in children," which was published in *Current Opinions in Pediatrics* in Apr 2023. DOI: <u>10.1097/MOP.00000000001232</u>

Nadia Sam-Agudu, MD, Senior Technical Advisor of Pediatric HIV, Associate Professor of Pediatrics, Division of Epidemiology and Prevention, was a co-author of "Implementation Science for Eliminating HIV Among Adolescents in High-Burden African Countries: Findings and Lessons Learned from the Adolescent HIV Prevention and Treatment Implementation Science Alliance (AHISA)," which was published in *AIDS and Behavior* in May 2023. DOI: <u>10.1007/s10461-023-04038-8</u>

Nadia Sam-Agudu, MD, Senior Technical Advisor of Pediatric HIV, Associate Professor of Pediatrics, Division of Epidemiology and Prevention, was a co-author of "Moderating effects of resilience and self-esteem on associations between self-reported oral health problems, quality of oral health, and mental health among adolescents and adults in Nigeria," which was published in *PLoS One* in May 2023. DOI: <u>10.1371/journal.pone.0285521</u>

Sarah Schmalzle, MD, Associate Professor of Medicine, Chief of the Center of Infectious Disease Ambulatory Practice, Medical Director of the THRIVE Program, Medical Director of the Center for Infectious Disease, Division of Clinical Care and Research, was a co-author of "Documentation quality of patient-directed discharge and early warning interactions in an adult inpatient service," which was published in *International Journal of Quality in Health Care* in Feb 2023. DOI: 10.1093/intghc/mzad001

Kalpana Shere-Wolfe, MD, Assistant Professor of Medicine, Director of the Lyme Program, Division of Clinical Care and Research, was a co-author of "A Comprehensive Review of Herbal Supplements Used for Persistent Symptoms Attributed to Lyme Disease," which was published in *Integrative Medicine* in Mar 2023.

Kristen Stafford, PhD, MPH, Associate Professor of Epidemiology and Public Health, Technical Deputy Director for Center for International Health, Education, and Biosecurity (Ciheb), Division of Epidemiology and Prevention, was a co-author of "Intersectionality of Socioecological Factors Associated with Cognitive Function Among Older Women with HIV in the United States: A Structural Equation Model Analysis Using Data from the Women's Interagency HIV Study," which was published in *Journal of the Association of Nurses in AIDS Care* in Jan-Feb 2023. DOI: <u>10.1097/JNC.00000000000376</u>

Kristen Stafford, PhD, MPH, Associate Professor of Epidemiology and Public Health, Technical Deputy Director for Center for International Health, Education, and Biosecurity Center for International Health, Education, and Biosecurity (Ciheb), Division of Epidemiology and Prevention, was a co-author of "Comparison of one single-antigen assay and three multi-antigen SARS-CoV-2 IgG assays in Nigeria," which was published in *Journal of Clinical Virology Plus* in Feb 2023. DOI: <u>10.1016/j.jcvp.2023.100139</u>

Lishan Su, PhD, The Charles Gordon Smith Professor for HIV Research, Director of the Division of Virology, Pathogenesis, and Cancer, Interim Director of the Division of Immunotherapy, Professor of Pharmacology, **Mingyue Liu**, PhD, Xu Wang, PhD, and **Musleh Muthana**, PhD, Research Associates of Pharmacology, Division of Immunotherapy, were among co-authors of "Soluble CTLA-4 mutants ameliorate immune-related adverse events but preserve efficacy of CTLA-4- and PD-1-targeted immunotherapy," which was published in *Science Translational Medicine* in Mar 2023. DOI: <u>10.1126/scitranslmed.abm5663</u>

Lishan Su, PhD, The Charles Gordon Smith Professor for HIV Research, Director of the Division of Virology, Pathogenesis, and Cancer, Interim Director of the Division of Immunotherapy, Professor of Pharmacology, was a co-author of "Herpes Virus Entry Mediator Costimulation Signaling Enhances CAR T-cell Efficacy Against Solid Tumors Through Metabolic Reprogramming," which was published in *Cancer Immunology Research* in Apr 2023. DOI: <u>10.1158/2326-6066.CIR-22-0531</u>

Yutaka Tagaya, BM, PhD, Assistant Professor of Medicine, Division of Virology, Pathogenesis, and Cancer, was a co-author on "Coagulation potential and the integrated omics of extracellular vesicles from COVID-19 positive patient plasma," which was published in *Scientific Reports* in Dec 2022. DOI: <u>10.1038/s41598-022-</u>26473-8

Yutaka Tagaya, BM, PhD, Assistant Professor of Medicine, Division of Virology, Pathogenesis, and Cancer, was a co-author on "Accessory cells precondition naïve T-cells and regulatory T-cells for cytokine-mediated proliferation," which was published in *Proceedings of the National Academy of Sciences* in Apr 2023. DOI: <u>10.1073/</u> pnas.2217562120

**Rohit Talwani, MD**, Associate Professor of Medicine, Division of Clinical Care and Research, as part of the COVID-19 Prevention Network, was published in "Rapid Development of an Integrated Network Infrastructure to Conduct Phase 3 COVID-19 Vaccine Trials" in *JAMA Network Open* in Jan 2023. DOI: <u>10.1001/</u> jamanetworkopen.2022.51974

Isaac Witz, PhD, Professor of Microbiology and Immunology, Division of Virology, Pathogenesis, and Cancer, was an author of "The cross talk between cancer cells and their microenvironments," which was published in *Biochemical and Biophysical Research Communications* in Dec 2022. DOI: <u>10.1016/j.bbrc.2022.09.066</u>



IHV2023 celebrates the Institute's 25th Anniversary with a Symposium, "Viruses of Yesterday, Today, and Tomorrow," highlighting dramatic breakthroughs made by the IHV and leading scientists throughout the world. Please join us for this two-day event and evening Gala Reception and Dinner on Thursday, September 28th.

www.IHV.org for more information on the program, registration, and abstract submission