

## Honoring Dr. Robert “Bob” Gallo’s 80th Birthday

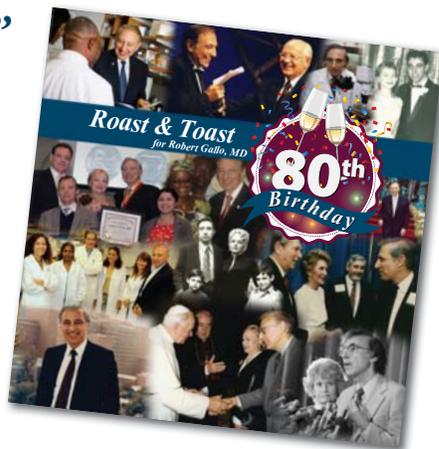
On March 23, 1937, Francis Anton and Maria-Louisa (Louise) Gallo welcomed baby, Robert Charles Gallo, into the world. Eight decades later, IHV’s Co-founder, Director and The Homer & Martha Gudelsky Distinguished Professor in Medicine, Dr. Robert “Bob” Gallo, has been a trailblazer in medical research. His life and legacy stand on their own—his accomplishments and groundbreaking work have transformed the field of human virology. Dr. Gallo’s discovery of human retroviruses beginning with the Human T Cell Leukemia Virus (HTLV) and his co-discovery of HIV as the cause of AIDS have revolutionized how we research, diagnose, and treat chronic and deadly viral and immune disorders.

This past May, IHV honored Dr. Gallo with a celebratory Roast & Toast on May 11, 2017. IHV’s Board Chair *Terry Lierman* emceed the event, while “roasters and toasters” included, *E. Albert Reece, MD, PhD, MBA*, Vice President for Medical Affairs, University of Maryland, *John Z. and Kiko K. Bowers* Distinguished Professor, Dean, University of Maryland School of Medicine; *The Honorable Parris N. Glendening*, Governor,

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*The Honorable Martin O’Malley, Governor, State of Maryland (2007-2015), toasts Dr. Robert Gallo*



## Director’s Message:

For this issue of *Discovery* newsletter, I want to reprint with permission an important article I published in *Frontiers in Microbiology* with my IHV colleague Yutaka Tagaya, PhD, Assistant Professor of Medicine and Head of the Flow Cytometry Core and the Laboratory of Cell Biology.

### *The Exceptional Oncogenicity of HTLV-1*

Yutaka Tagaya\* and Robert C. Gallo

Division of Basic Science, Institute of Human Virology, University of Maryland School of Medicine, Baltimore, MD, United States

Human T-cell leukemia virus-1 (HTLV-1) is the first pathogenic human retrovirus identified in 1979 by the Gallo group. HTLV-1 causes fatal T-cell leukemia (adult T cell leukemia) and a progressive myelopathy (HTLV-1-associated myelopathy/ tropical spastic paraparesis, HAM/TSP) and other disorders. Since the discovery of

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Robert C. Gallo, MD

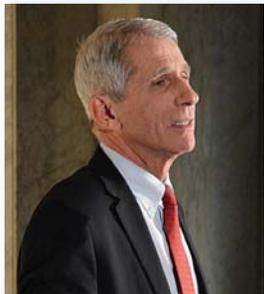
## “Roasters and Toasters” for the 80th Birthday Celebration



Terry Lierman, Roastmaster, Chairman, Board of Advisors, IHV and The Honorable Kathleen Kennedy Townsend, Lt. Governor, State of Maryland (1995-2003), Managing Director, The Rock Creek Group



The Honorable Parris N. Glendening, Governor, State of Maryland (1995-2003), President, Smart Growth America's Leadership Institute



Dr. Anthony Fauci, Director, National Institute of Allergy and Infectious Diseases



The Honorable Martin O'Malley, former Governor of the State of Maryland (2007-2015)



The Honorable Nancy Kopp, Treasurer, State of Maryland

State of Maryland (1995-2003), President, Smart Growth America's Leadership Institute; *The Honorable Martin O'Malley*, Governor, State of Maryland (2007-2015); *Anthony S. Fauci, MD*, Director, National Institute of Allergy and Infectious Diseases; *Robert Anthony, MD*, Dr. Gallo's cousin, and Chief of Cardiology Emeritus, Saint Mary's Hospital; *The Honorable Nancy Kopp*, Treasurer, State of Maryland, IHV Board Member; *Jeffrey Schlom, PhD*, Chief, Laboratory of Tumor Immunology and Biology, National Cancer Institute; *John D. Evans*, Chairman and CEO, Evans Telecommunications Co. & The John D. Evans Foundation, IHV Board Member; *William A. Blattner, MD*, Retired, IHV Co-Founder and Board Member; and, *The Honorable Kathleen Kennedy Townsend*, Lt. Governor, State of Maryland (1995-2003), Managing Director, The Rock Creek Group, IHV Board Member.

Dr. Gallo and his colleagues saved hundreds of thousands of lives with the development of the HIV blood test. His laboratory laid the path for effective antiviral therapy and HIV preventive vaccine development. His leadership of the Institute of Human Virology has galvanized a new generation of medical researchers and clinicians to battle future global virus pandemics.

Dr. Gallo's unwavering commitment to mentor junior scientists in their pursuit of innovative biomedical research and discovery was honored with a newly formed "Against the Tide Research Fund" for IHV's next generation of risk-taking young scientists who, like Dr. Gallo, are tenacious in their pursuit of discovery. Under Dr. Gallo's guidance, these young, risk-taking researchers are primed to uncover answers that shape treatment, cures, and more.

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## Director's Message (continued)

HTLV-1, several other microorganisms are demonstrated to cause cancer in humans. In this article, we investigated the oncogenic capacity of HTLV-1, in comparison with those of other oncoviruses and one oncobacterium (*Helicobacter pylori*, *H. Pylori*) based on published literature. We conclude here that HTLV-1 is one of the most and may be the most carcinogenic among them and arguably one of the of the known human carcinogens. This fact has not been noted before and is particularly important to justify why we need to study HTLV-1 as an important model of human viral oncogenesis.

At the time of discovery of HTLV-1 (Poiesz et al., 1980a,b; Hinuma et al., 1981), the concept that viruses could cause cancer (ATL, adult T-cell leukemia/lymphoma by HTLV-1) in humans was a far-fetched idea that the medical community eventually accepted, despite the earlier identification of Epstein-Barr virus in cultured lymphoblasts from Burkitt's lymphoma (Epstein et al., 1964). After 35 years, the concept of viral oncogenesis has become a textbook fact and several viruses have joined the group of human oncoviruses. In addition, there is now one oncogenic bacterium (*Helicobacter pylori*) and a strong suspicion of more. The list of these oncogenic microbes, their global burden, and the incidence of malignant disorders involving them are provided in Table 1 and summarized below.

Infectious organism	Global burden (% in population)	Lifetime risk of malignancy development following infection
<i>H. Pylori</i>	5.5%	3%
HPV	5.2%	0.29%
HCV + HBV	4.9%	HCV, 1~3%/HBV, <1%
HHV-8	2~5%	Minimally oncogenic by itself
EBV	>90%	0.3~0.4%
HTLV-1	0.3% (~40% in central Australian aboriginals)	5~10%
MCV	0.06%	

Table 1. Summary of the statistics on malignancy development associated with oncogenic microorganisms.

The mechanism by which a virus causes tumor differs from virus to virus. While some viruses seem to require co-factors, and/or work indirectly such as by micro-environmental

alterations, others directly transform host cells. One thing in common is that there are not yet effective cures for viral malignancies in humans. We conducted a literature survey in order to compare the carcinogenic potency of known oncoviruses, and present the risk of malignancy development following the infection of each oncovirus.

### Epstein Barr Virus (EBV)

In developing countries, the prevalence of EBV infection reaches over 90% before the age of 20. But even in high-risk area (East Asia), the incidence of nasopharyngeal carcinoma in association with EBV is at best 0.05% or less. Numbers for endemic Burkitt's lymphoma is more imprecise but estimated as 3-4/100,000 among Ugandan children (Hjalgrim et al., 2007), one of the most endemic area of EBV-related Burkitt's lymphoma (BL). It is also of note that the EBV-mediated malignancy development generally requires a co-factor, especially malaria in the case of BL and dietary factors in nasopharyngeal carcinoma. Elsewhere, the role of EBV as an oncogenic agent remain unclear. Thus, EBV is an oncogenic virus but one with very low level of oncogenicity and appears to be only one factor in a multi-factorial cause.

### Human Herpesvirus-8 (HHV-8)

Though it is a cause of Kaposi's sarcoma (HHV-8 is thus also known as the Kaposi Sarcoma-associated herpesvirus) and a more special and very atypical form of lymphoma in collaboration with HIV, HHV-8 is very minimally oncogenic in the absence of HIV. We also note that in most of primary effusion lymphoma cases associated with HHV-8, EBV is detected along with HHV-8, another support that HHV-8 is not potently oncogenic on its own (Bhutani et al., 2015).

### Human Papilloma Virus (HPV)

More than 100 HPVs exist, and at least 13 of them are associated with human cancers (zur Hausen, 2009). The high rise types 16 and 18 are particularly responsible for 60-70% of cervical cancer worldwide (Khan et al., 2005). More than 80-90% of sexually active men and women will be infected with at least one type of HPV at some point in life and nearly 50% of these infections are with a high risk HPV type (Hariri et al., 2011). In the US, these high-risk HPV causes 2-3% of all cancer cases among men and women (Jemal et al., 2013). This translates to 0.29% of the newly infected individuals with high-risk HPVs eventually developing HPV-related cancer. HPV infection can cause cervical, vaginal, and

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## *Dr. Gallo's 80th Birthday Celebration . . .*



*Dr. Robert Gallo, Mary Jane Gallo, and Dr. Anthony Fauci of the National Institute of Allergy and Infectious Diseases*



*Dr. Patrick Dakum of the IHV-Nigeria, Dr. Man Charurat of the IHV, and Dr. John McHutchison of Gilead Sciences, Inc*



*Dr. Robert Gallo and Dr. Jeffrey Schlom of the National Cancer Institute*



*L to R: From the IHV, Dr. Olga Latinovic, Dr. Fiorenza Cocchi, Dr. Francesca Benedetti, Dr. Davide Zella, and Franco Nuschese of Georgetown Entertainment Group*



*Ada Anthony and Dr. Robert Anthony of Saint Mary's Hospital*



*Dr. Robert Gallo and Dr. Jay Perman of the University of Maryland, Baltimore*



*L to R: Dr. Amy Yerkes Schmaljohn of Friends School Baltimore, and from the IHV, Dr. Alan Schmaljohn, Dr. Marzena Pazgier, and Dr. Anthony DeVico*



L to R: Mary Jane Gallo, Dr. Robert Gallo, Dean E. Albert Reece of the University of Maryland School of Medicine, and Jeff Trammell of Trammell and Company



L to R: The Honorable Nancy Kopp, Treasurer of the State of Maryland, Dr. Jay Perman of the University of Maryland, Baltimore, The Honorable Brooke Lierman of the Maryland House of Delegates, and Michael Cryor of the Cryor Group



L to R: Dr. Thomas Traill of Johns Hopkins Medicine, Dr. Robert Gallo, and Dr. Kay Redfield Jamison of Johns Hopkins Medicine



Dr. Ed Tramont of the National Institute of Allergy and Infectious Diseases and Dr. Max Essex of the Harvard T.H. Chan School of Public Health



L to R: John Evans of Evans Telecommunications Co., Dr. Robert Gallo, and Steve Wozencraft of the John D. Evans Foundation



Michael Greenebaum of Greenebaum Enterprises and Marlene Greenebaum of the University of Maryland Marlene and Stewart Greenebaum Comprehensive Cancer Center



IHV's Dr. Robert Redfield and Franco Nuschese of Georgetown Entertainment Group



L to R: Diane Blattner, Mary Jane Gallo, and Joy Redfield

## Director's Message (continued)

vulvar cancers, cancers of the penis or anus, as well as some head and neck cancers. Vaccines against HPV 16 and 18 have received approval in many countries.

### Hepatitis C Virus (HCV)/Hepatitis B Virus (HBV)

[HCV] 85% of acute HCV infections will be unresolved, developing into chronic infection. Importantly, there is no evidence to support the conclusion that HCV is directly oncogenic, nonetheless it is clearly associated with hepatocellular carcinoma (HCC). That said, one study estimates that the HCC develops in 1-3% of HCV infected persons after 30 years and the mechanisms are obscure (Goodgame et al., 2003). A chronic infection with HBV establishes when infection occurs in infants and children.

[HBV] <10% of healthy adults over 19 years will develop chronic hepatitis following HBV infection. A study conducted in Taiwan, a hyperendemic area of chronic HBV, shows that lifetime risk of HCC with HBsAg seropositive is 6.96% among women, but is an amazing 27.4% among men with HBsAg seropositivity (Huang et al., 2011). In a study conducted in the US, the 5 year HCC cumulative incidences with HBV-associated cirrhosis was 10% (Fattovich et al., 2008). Considering that <10% of HBV infected healthy adults develop chronic infection, the percentages of HCC development by HBV infection should be much lower than 1%.

### Adeno-Associated Virus Type 2 (AAV2)

This is the newest member to the family of oncogenic microorganisms (Nault et al., 2015). The oncogenesis of AAV2 is associated with HCC without cirrhosis (thus distinguishing then from those caused by hepatitis virus B or C). A clonal integration of AAV2 was found in 11 of 193 HCC cases in which AAV2 integrations occurred in cancer driver genes such as cyclin A2, E1, Telomerase reverse transcriptase etc. These insertions of AAV2 led to the over-expression of target genes. There is still very limited information available for the epidemiological facts about HCC caused by AAV2.

### Merkel Cell Polyomavirus (MCV)

MCV was discovered in 2008 (Feng et al., 2008) and causes a rare but aggressive neuroendocrine tumor (Merkel cell carcinoma, MCC) of the skin and its incidence seems rising. A 5 year mortality rate is as high as 46%. The annual incidence of MCC is 0.6 per 100,000 persons (0.06%) and about 1,600 new cases annually appear in the US. This

rise in incidence may be partly because of the increased awareness and improved diagnostic methodology. The median age at diagnosis is >70 years. Only 4% of patients are diagnosed at 50 year or younger and it is extremely rare in children (Hughes et al., 2014). The oncogenic mechanism of MCV is still under investigation. No viral elements have been shown to directly cause cellular transformation. Nor does MCV seem to exploit cellular oncogenic mechanisms (p53, PTEN, Raf, Ras, etc.) (Lemos and Nghiem, 2007). Increase of MCC upon UV irradiation is reported, suggesting a potential involvement of defective DNA repair mechanism in the carcinogenesis (Lunder and Stern, 1998). In addition, a weakened immune function may be related to the occurrence of MCC. For example, the incidence of MCC is 5-10 fold higher in immune-compromised individuals with AIDS or solid organ transplant (Becker, 2010). Some anecdotal regression of MCC has been observed following improvement in immune function (Wooff et al., 2010). As with most other oncogenic viruses, the presence of MCC seems insufficient to induce MCC and additional cellular events together with the loss of immune-surveillance are postulated. In summary, there is still missing information to evaluate the oncogenic potential of MCV in comparison with other oncogenic viruses, however MCC caused by MCV may represent another case of aggressive viral oncogenesis.

### Human Immunodeficiency Virus-1 (HIV-1)

HIV is not generally listed with the oncogenic viruses by most virologists. However, in some reports it is analogous to HCV in that from an epidemiological view it is related to the frequency of developing cancer, notably non-Hodgkin lymphomas, Kaposi sarcoma, and cervical cancer that are known as AIDS-defining malignancies (reviewed in Levine, 1993). The mechanism(s) of cancer is indirect and relates to the microenvironment and perhaps to the diminished immune surveillance because the virus is rarely found in the tumor cells. The incidence of cancer development in HIV infected persons is about 40% (Levine, 1993) and usually accompanies co-infection with other oncoviruses.

### Human T-cell Leukemia Virus-1 (HTLV-1)

The oncogenic nature of HTLV-1 is solid; (1) Epidemiology studies (recently reviewed by Gessain and Cassar (Gessain



and Cassar, 2012), (2) Clonal integration of the HTLV-1 in ATL cells (Hahn et al., 1983). This indicates that the virus was present at the level of the progenitor cell that gave rise to the leukemia. (3) Animal models that recapitulate human leukemia/lymphoma development by HTLV-1 or its genetic components (Tax-1, HBZ) of HTLV-1 (Hasegawa et al., 2006; Satou et al., 2011), (4) Immortalization of T cells by the Tax-1 gene of HTLV-1 (Grassmann et al., 1989), (5) Reproduction of the leukemia/lymphoma by the whole virus. The prevalence of ATL is 3–5% among infected persons and HTLV-1 infection is 0.1% as global average but the epidemiological data are still incomplete because those from highly populated areas such as China, India, the Maghreb, and East Africa are still unavailable. ATL is extremely difficult to treat, to the point that patients diagnosed with aggressive forms (acute and lymphomatous phases) were estimated to have <1 year of life left. However, recent years have seen promising developments of novel treatment modalities including arsenic trioxide (Bazarbachi et al., 2011), allogeneic stem cell transplant (Utsunomiya et al., 2001; Katsuya et al., 2015) and antibody therapy involving humanized anti-CCR4mAb (Ishida and Ueda, 2011; Katsuya et al., 2015). However, the establishment of a curative treatment for ATL probably needs more creative ideas.

### **Helicobacter Pylori (H. Pylori)**

Helicobacter is a bacterium, and represents the first example of what may be emerging examples of bacterial oncogenesis. It has been somewhat controversial how infection with helicobacter pylori would increase or decrease various type of cancer in humans. A recent study in Japan (involving 1,526 patients) reported that gastric cancer develops in approximately 3% of H. pylori-infected patients, compared to none of the uninfected patients (Uemura et al., 2001). This number matches the development of Adult T cell Leukemia/lymphoma (ATL) in HTLV-1 infected individuals.

In summary, we note here that HTLV-1 is one of the most oncogenic entities known among human viruses and even among most known human carcinogens. The oncogenic mechanism of HTLV-1 is more direct compared with other entities and to date there is no evidence for any particular co-factor requirement. This striking characteristic of HTLV-1 seems overlooked because of its low prevalence in the U.S. and Europe. As discussed in an accompanying paper, we propose to revert the name of HTLV-1 back to the original, Human T-cell leukemia virus. This is also supported by a recent survey among 21 HTLV-1 experts from all over the world who belong to the HTLV-1 task-force of the

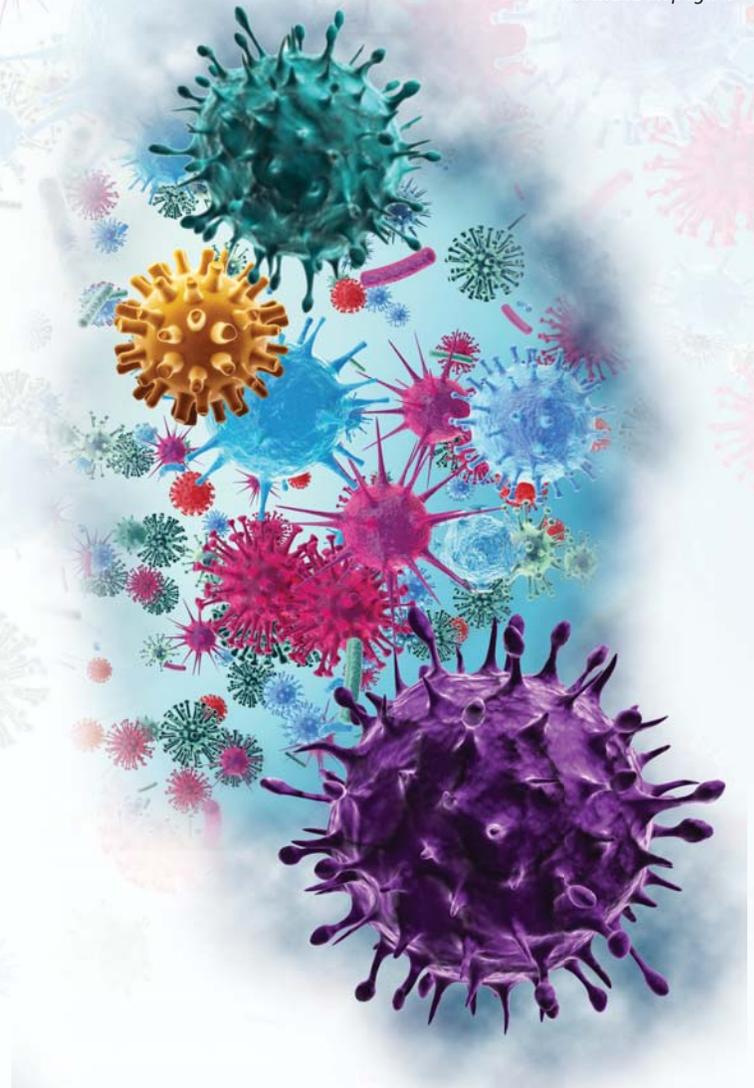
Global Virus Network (GVN, <http://gvn.org>), a coalition of virologists on a global scale, as the result of the vote (16 vs. 5) supported the original name “leukemia”. Another vote conducted at the 18th International HTLV-1 meeting (Tokyo, 2017) again showed majority support (78 vs. 26) on the “leukemia” name. We believe that this most carcinogenic virus deserves the “leukemia” name.

**Author Contributions:** YT and RG conceptualized the idea, conducted literature search and investigation, and wrote the manuscript.

**Funding:** This work was supported by an internal funding of the Institute of Human Virology.

**Conflict of Interest Statement:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Keywords: HTLV-1, retrovirus, oncogenicity, T-cell leukemia, oncoviruses

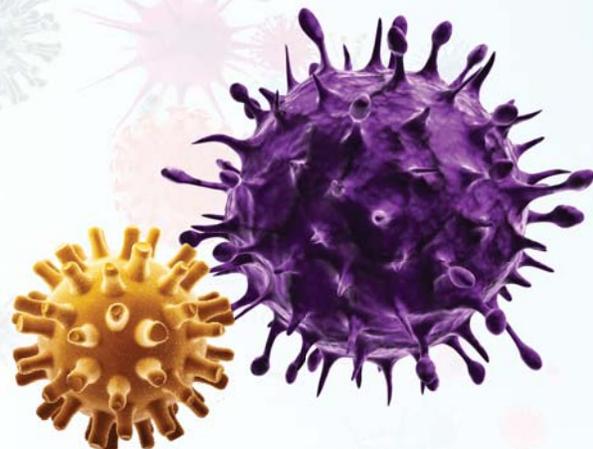
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## *Dr. Joseph Bryant Retires*



*Dr. Joseph Bryant is surrounded by former and current Division colleagues*

### **A Letter of Retirement**

By, **Joseph L. Bryant, DVM**, formerly Associate Professor of Pathology, Director, Animal Models Division, Institute of Human Virology, University of Maryland School of Medicine

It has been a joy for me to have been a member of the Institute of Human Virology (IHV) family for 21 years. I am retiring as an Associate Professor of Pathology/Director Animal Models Division and Director Animal Core Facility. My retirement became effective July 1, 2017.

It was in the summer of 1996 that Dr. Robert C. Gallo, and his colleagues, Dr. William A. Blattner and Dr. Robert R. Redfield, co-founded the Institute in Baltimore, Maryland. This meant a move for me, as I was working at the National Institutes of Health (NIH) at the time. Dr. Gallo wanted an Animal

Model Division to develop animal models under the same roof with the other Divisions, as it relates to HIV/AIDS and AIDS-associated diseases. Therefore, the rest is history.

The 21 years I spent at the Institute was an extension of a close collaborative research relationship, as well as a social relationship that was started at the National Institute of Dental Research (NIDR) at NIH. I was at NIDR in Building 30 and Dr. Gallo was of course at the National Cancer Research (NCI) at NIH. His lab was the Laboratory of Tumor Cell Biology (LTCB) and I established a strong working relationship with two of his scientists, Dr. Yanto Lunardi-Iskandar and Dr. Barbara Ensoli on developing a model for Kaposi Sarcoma (KS). This collaborative relationship was extended to other scientists around 1990 at LTCB including, Dr. Felipe

Samango and Dr. Marvin Reitz (Adjunct Professor of Medicine in IHV's Division of Basic Science).

Our collaborations began with the development of an animal model for KS from AIDS patients and from a non-AIDS patient, and we were successful. The AIDS patient KS model was established by Dr. Lunardi-Iskandar from cells from an AIDS patient with KS. This was the first time that the model was developed, which would eventually lead to a model to study the pathogenesis and drug development treatment. The AIDS KS cell line was designated KSY-1 in recognition of Dr. Lunardi-Iskandar, who was the first to isolate the KS cells. At the same time, we were able to grow the KSY-1 cells in an immune deficient mouse model. We observed that the tumor grew in male mice and in non-pregnant mice. However, they did not grow in

pregnant mice. This led to studies in mice and humans on a pregnancy factor(s) that caused the tumor not to grow. We had also developed the first HIV transgenic mouse model at NIDR in 1988. After the observation in the immune-deficient mouse model with the pregnant animals, we tested this same principle in the transgenic mice and was able to show that early pregnancy in these mice blocked the expression of HIV genes in the mice.

It was at this point that we moved to IHV in Baltimore and continued our studies on the KS model and HIV transgenic mouse model. At the Institute, we established the first HIV-1 Transgenic Rat Model, the first HIV transgenic mouse model that develops a B cell Lymphoma, and set up Non-Human Primate colonies for testing Vaccines against HIV. Over the past two years we have established Humanized mouse models for studying HIV pathogenesis, vaccines, and AIDS associated cancers.



*Maurice White pays tribute to his mentor, Dr. Joseph Bryant*

Over the 21 years, I was pleased to have established a strong relationship with everyone at IHV, both the professional staff and non-professional staff. My fondest memories will always be how the Institute made a difference in Baltimore, and in the world, on HIV. I have been so impressed with what the Institute has accomplished that I had hoped to write a book after retirement titled, A STORY THAT NEEDS TO BE TOLD. I will now have time to work on this.

I will always cherish the trips Dr. Bob Gallo and I went on with our wives, the many meals we shared in Bethesda and Baltimore at some of the best restaurants, pool parties, movies in Bethesda, baseball at Camden yards, and, oh yeah, football at the stadium and at Dr. Jeff Schlom's house. Finally, I will really miss those great "TENNIS Matches" in Bethesda in the Parks and at the Potomac Tennis Club: a total of over 25 years on the court, and we were good. I leave one more thing to Bob, my friend..... "Old Man River." It just keeps rolling along, as will Bob.



*Dr. Robert Gallo and Dr. Joseph Bryant sing "Old Man River"*



*Many colleagues gather at the IHV to celebrate and honor Dr. Joseph Bryant*

# THE BALTIMORE SUN

## A wallet recovered, faith restored at Lexington Market

Dan Rodricks, April 15, 2017



UMB President Jay Perman, Baltimore Police Commissioner Kevin Davis, Chris Roberson, Dr. Bob Padousis, and Dr. Robert Gallo honor Mr. Roberson during a ceremony held at the IHV

There are a million stories in the daily life of a city, and some of them—too many of them—validate the misanthrope’s hateful view of mankind and confirm the realist’s lack of faith in human decency. This story, about a wretched, little crime against a senior citizen, might do all that.

But then, you might be as surprised by the turn of events as Bob Padousis was.

Let’s make that Dr. Padousis, if you please, because he is a retired dentist, 78 years old, and a Vietnam War veteran who was stationed in Cam Ranh Bay with the U.S. Army Dental Corps in the 1960s.

These days, Dr. Padousis lives with his wife in Essex. He has a disability for which he relies on a walker—and the help of a caregiver when he needs to go somewhere.

A couple of Wednesdays ago, Dr. Padousis had an appointment at the Veterans Administration Medical Center in downtown Baltimore. Afterward, he and his caregiver, Gladys Jackson, decided to visit Lexington Market a few blocks away. “I hadn’t been there in 20 years,” Dr. Padousis says.

They had lunch at Faidley’s Seafood—always a good choice—on the Paca Street side of the market. Then, around 2 p.m., they walked through the main hall toward Eutaw Street. When they reached the glass doors, Jackson held one of them open. As he walked through, Dr. Padousis tripped and fell. He thinks he caught his foot on a rubber mat.

“I landed in a prone position, on my stomach, face down,” he says. “It happened so fast. My wallet was in my jacket pocket on the left side, and it must have been visible after I fell.”

In the next instant, someone grabbed the wallet and pulled it away.

“He’s stealing my wallet!” Dr. Padousis yelled.

The thief—described as a man in his 40s, with eyeglasses, a gold-plated incisor, wearing a cap, tan pants and a gray jacket — started to run south on crowded Eutaw Street.

Some witnesses pointed at him and called for help: “He just took that man’s wallet!”

But others yelled encouragement to the thief: “You got it! Go ahead. You’re good. Go!”

Chris Roberson heard all this, sized it up quickly and decided to get involved.

He’s 38 years old, a nurse practitioner at the Institute for Human Virology on the University of Maryland School of Medicine campus a few blocks south of the market. He works with patients with HIV infections.

Roberson had just come from lunch when he heard the commotion and saw an old man on the ground and a younger man running away. Roberson, dressed in blue jeans and a polo shirt, his UM identification tag dangling about his neck, decided to follow the thief.

“He was jogging, not too fast, and I saw him cut into the alley across from the market,” Roberson says. “I figured he would not want to be too conspicuous, you know? So I predicted he would cut through the alley and pop up on Fayette Street. So I went to Fayette and saw him pop up in the crowd. I heard police sirens.”

Roberson thought he could track the robber and help the police locate him.

But after following the guy for a couple of blocks, Roberson decided to escalate his effort. Near a fast-food restaurant at the corner of Fayette and Howard streets, he got in front of the guy. Got in his grill.

“Did you really take that older gentleman’s wallet?” Roberson asked.

“No, I didn’t,” the guy in the cap said.

Roberson could see the wallet tucked in a stack of papers under the guy’s left armpit.

“I don’t have no wallet,” the guy in the cap insisted.

“The one right under your armpit?” Roberson said. “You’re going to give me that wallet right now or I’m gonna ...”

And, just like that, the robber, hearing the police sirens, handed the wallet to Roberson and jogged off toward Park Avenue.

Roberson hustled back to Lexington Market, where he found the elderly man who’d been robbed resting against his walker, his caregiver at his side.

“Here you are, sir,” Roberson said.

“Is this my wallet?” Dr. Padousis looked up and asked.

“Yes,” said Roberson. “I encountered the gentleman who took it from you and got it back from him.”

“I can’t believe it,” Dr. Padousis said.

He offered the younger man a cash reward. But Roberson declined it.

Dr. Padousis spoke of having visited Lexington Market since boyhood. But here was his first visit in 20 years: He fell, and some lowlife picked his pocket while he was down.

“That shouldn’t have happened to you,” Roberson said. “I hope it won’t deter you from future visits.”

Dr. Padousis tried to offer him a reward again, but Roberson declined again. “Try to enjoy the rest of your day,” he said, then walked back to work.

Permission from The Baltimore Sun

# Institute of Human Virology Marks National Gay Men's HIV/AIDS Awareness Day

Wednesday, September 27 as HIV/AIDS Increases in Baltimore's Youth



Participants of the event's paint party with the theme, "Be Authentically YOU!!!"

## The proportion of newly reported HIV diagnoses among Maryland youth has tripled over 20 years

The Institute of Human Virology (IHV) at the University of Maryland School of Medicine hosted an event Wednesday, September 27 to raise awareness about the rise in HIV/AIDS among Maryland's youth ages 13-24, particularly among young black men. Of the 252 youth HIV diagnoses in 2015, 82.5 percent were male and 17.5 percent were female in Maryland while 82.1 percent of these new diagnoses were African American. The statistics are astounding considering the availability of prevention therapy.

"During our Care and Support Access study, we found that HIV infection is not only disproportionately affecting young

black gay men, but we found that these young men face significant personal challenges as they attempt to remain on treatment for HIV. Being on treatment reduces the risk of new infections and poor health," said Carla Alexander, MD, Assistant Professor of Medicine, Institute of Human Virology, University of Maryland School of Medicine. "We co-founded the non-profit Baltimore Project to Save Lives to create a positive, safe place for Baltimore's young men to congregate to learn about prevention and treatment options in addition to providing resources for homelessness and other socio-economic conditions that impact self-care."

"These data inspire us to do more to ensure that all those we serve at risk for HIV infection get engaged in our provider services, including PREP," said Robert Redfield, MD, The Robert C. Gallo, MD Endowed Professorship in Translational Medicine, Co-founder, Associate Director, Director, Division of Clinical Care and Research, Institute of Human Virology, University of Maryland School of Medicine. "Today's event, and Dr. Alexander's non-profit, Baltimore Project to Save Lives, are terrific initiatives needed to effectively reach the hardest hit minorities in our community."

*continued on page 14*

# National Gay Men's HIV/AIDS Awareness Day *(continued)*



IHV's Dr. Robert Redfield and Dr. Carla Alexander

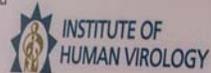
The event honored public servants, elected officials, and community physicians who are fighting this illness. The day included a paint party—"Be Authentically YOU!!"—for young Same-Gender-Loving Men as well as an awards ceremony for HIV doctors, care providers and advocates including Lynda Dee: Director, AIDS Action Baltimore; Ronald Johnson: Vice President of Policy and Advocacy, AIDS United; Michael Levin, MD: Clinical Assistant Professor of Medicine, Institute of Human Virology, University of Maryland School of Medicine; Patrick Mutch, MPH: President and Chief Executive Officer, Chase Brexton Health Care; Frank Oldham Jr.: An openly gay, African American HIV-positive activist, who helped found National Gay Men's HIV/AIDS Awareness Day, along with successfully living with HIV since the early epidemic; and, Robert Redfield, MD: The Robert C. Gallo, MD Endowed Professorship in Translational Medicine; Co-Founder, Associate Director, Director of the Division of Clinical Care and Research, Institute of Human Virology; Associate Chair, Chairman's Office; Division Head, Infectious Diseases; Chief of Infectious Diseases, Department of Medicine; Vice Chair of Medicine for Clinical Affairs, Department of Medicine, University of Maryland School of Medicine.



## National Gay Men's HIV/AIDS Awareness Day 2017

what each of us can do to reduce the toll of HIV among gay, bisexual, and other same gender loving men

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FEBRUARY 7  
NATIONAL  
BLACK  
HIV/AIDS  
AWARENESS DAY

ACT  
AGAINST  
AIDS

## Half of those with Hepatitis C in Baltimore don't know they have it!

Sally Altland Bjornholm, LCSW-C, MPH, Program Manager, HIV/HCV Routine Testing and Linkage to Care The JACQUES Initiative, Institute of Human Virology, University of Maryland School of Medicine | 7/21/2017, 6 a.m.

***“I was an IV drug user and shared needles,” she said. “I used to go to a clinic for routine testing. One day in 1994, they found I had hepatitis C.”***

Despite the test results, it took Richardson a while to get her life together. ***“I stopped drinking and drugging, and I’ve been clean for 14 years,” she said.***

Hepatitis C, a virus known as HCV, is curable with pills, and new medicines are on the way. Despite the cure, HCV accounts for 30 percent of liver transplants in the United States and can lead to fatal liver disease.

One of the big issues with HCV is how easily it can spread through blood or blood products.

That reality has made Richardson, a peer educator and navigator at the University of Maryland Medical Center Midtown Campus, a strong advocate for hepatitis C testing, providing support and education and assisting newly diagnosed Hep C patients and those who dropped out of treatment get back into care.

In many ways, Richardson sees her own risky behavior mirrored in the people she tries to help each day. The risk-taking contributes to what she calls an epidemic of Hep C, intertwined with escalating drug abuse in and around Baltimore. Most troubling is the rising tide of opioid overdoses. If not outright deadly, the overdoses suggest habits that can lead to HCV infection.

“You know they’re sharing needles. And with that comes the risk that Hep C will keep spreading,” she said.

On Friday July 28, 2017, free Hepatitis C testing will be available at University of Maryland Medical Center (UMMC) Midtown Campus (Community Health Education Center-CHEC), 821 Eutaw Street; and at the UMMC University Campus, 22 S. Greene Street, from 10 a.m. to 3 p.m.

The free testing, sponsored by UMMC Community Outreach and the JACQUES Initiative at the University of Maryland School of Medicine’s Institute of Human Virology, is part of World Hepatitis Day, to raise awareness about what the hepatitis virus is, what it can do to the liver and how it’s spread and treated.

The most common blood-borne virus, HCV is a contagious disease usually spread when an infected person’s blood enters the body of someone not infected, primarily affecting the liver.



Cynthia Richardson, Linkage to Care Navigator, JACQUES Initiative, University of Maryland School of Medicine’s Institute of Human Virology  
Courtesy Photo/UMMC

“About half of those with HCV don’t know they have it, meaning they can spread the virus without intending to, so it’s important to get tested and protect yourself by not sharing razors or needles and practicing safe sex,” said Eleanor Wilson, MD, MHS, assistant professor of medicine at the University of Maryland School of Medicine’s Institute of Human Virology.

HCV can be acute— a short-term viral infection that spontaneously clears within six months. But people with what’s known as chronic HCV can live for decades without symptoms. Chronic HCV is the leading cause of cirrhosis (scar tissue that replaces normal liver tissue) and liver cancer.

“If we can identify and treat the HCV cases aggressively, then we can reduce the progression to cirrhosis and liver cancer, and the need for liver transplantation,” said liver disease specialist William R. Hutson, MD, professor of medicine at the University of Maryland School of Medicine and medical director of liver transplantation at the University of Maryland Medical Center.

Several groups of people are key targets for HCV testing: “Baby boomers” born between 1945 and 1965, anyone with a history of intravenous drug use, anyone who had a transfusion of blood products before 1992, and individuals who had tattoos done outside of a professionally licensed business.

After living with HCV for many years without symptoms, Richardson has begun taking a medication that can cure the disease.

***“Hepatitis C will keep spreading if people don’t get tested for it. Some people are afraid of finding out, or afraid their partner may reject them. But Hep C can be deadly, so why not be tested, especially when it can be cured,” Richardson said.***

For more information, call 443-682-1401.

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# Institute of Human Virology Hosts 19th Annual International Meeting of Top Medical Virus Researchers in Baltimore, Maryland

The Institute of Human Virology (IHV) at the University of Maryland School of Medicine hosted its 19th Annual International Meeting held Monday, October 24 through Thursday, October 26 at the Four Seasons Hotel in Baltimore, Maryland. IHV's Annual International Meeting attracts hundreds of elite scientists who descend upon Baltimore to share ideas and inspire medical virus research collaborations.

"Our meeting is designed to highlight cutting-edge science and provide a rare platform for provocative discussion," said Robert C. Gallo, MD, The Homer & Martha Gudelsky Distinguished Professor in Medicine, Co-Founder and Director, Institute of Human Virology, University of Maryland School of Medicine, who is most widely known for his co-discovery of HIV as the cause of AIDS and, along with his coworkers, for the development of the HIV blood test. "This year's meeting had more emphasis on cancer from the aspects of infectious agents to advances in cancer therapies, and there will be a special symposium on advances in viral diagnostics to analyze recent progress made in the field."

The meeting program's organization was led by Man Charurat, PhD, Professor of Medicine, Director of the Division of Epidemiology and Prevention, Institute of Human Virology, University of Maryland School of Medicine. In addition to emerging concepts in cancer therapy, cancer and stem cells, infectious agents and cancer, and viral diagnostics, the meeting included intense discussions on HIV "cure" research, preventative and therapeutic vaccines,

immunology and viral pathogenesis, public health science and responses on a global and local level, and clinical virology.

Global health representatives from around the world including, among others, Isaac Adewole, FAS, The Honorable Minister of Health from Nigeria, Anthony Fauci, MD, Director, U.S. National Institute of Allergy and Infectious Diseases (NIAID), and, John Martin, PhD, Executive Chairman, Gilead Sciences, focused on translating laboratory discoveries into public health practice.

During a gala held Wednesday, October 25, the 2017 IHV Lifetime Achievement Awardees, who are nominated and voted upon by IHV faculty, were honored.

The 2017 IHV Lifetime Achievement for Scientific Contributions was awarded to **Peter Palese, PhD**, Professor & Chair of Microbiology, Professor of Medicine, Infectious Diseases, Icahn School of Medicine at Mount Sinai, Director, Center of Excellence, Global Virus Network (GVN), Member, IHV Board of Advisors.

"When I think of the greatest virologists in the world who are making the most important contributions to translational medical research while concomitantly being on the top of fundamental research on viruses, Dr. Palese is always in the top few, if not the top of that list," said Dr. Gallo. "It is an honor for me to honor him for his fundamental studies in the biology of human viruses that cause serious disease and epidemics, most notably the influenza virus."



L to R: Dr. Salim Abdool Karim, Dr. Quarraisha Abdool Karim, Dr. Robert Gallo, and Dr. Peter Palese

Renowned Virus Researcher Peter Palese and Infectious Disease Epidemiologists Salim Abdool Karim and Quarraisha Abdool Karim received prominent Lifetime Achievement Awards

The 2017 IHV Lifetime Achievement Award for Public Service was awarded to **Quarraisha Abdool Karim, PhD**, Associate Scientific Director, Centre for the AIDS Programme of Research in South Africa (CAPRISA), Adjunct Professor in Public Health, Nelson R Mandela School of Medicine, University of KwaZulu-Natal, South Africa and **Salim Abdool Karim, MBChB, PhD, DSc**, Director & Professor for Global Health Department of Epidemiology, Centre for the AIDS Programme of Research in South Africa (CAPRISA), Pro Vice-Chancellor (Research), University of KwaZulu-Natal, South Africa.

“To me, both of these renowned individuals have made some of the greatest contributions in the history of HIV/AIDS in public health and epidemiology relevant to prevention and care of infected people,” said Dr. Gallo. “I don’t know any person or persons who have done more to advance the proper care of people with HIV infection or the prevention of HIV infection among a population.”

During the gala, Dr. Gallo also honored five IHV faculty members with an IHV

Special Director’s Awards including the following: **Alfredo Garzino-Demo, PhD**, Associate Professor of Microbiology and Immunology, Head of the Laboratory of Virus Host Interaction, Division of Basic Science, for his dedication and persistence to



L to R: Dr. Alfredo Garzino-Demo, Dr. Robert Gallo, Dr. Marzena Pazgier, Dr. Davide Zella, and Dr. Fabio Romerio

HIV pathogenesis with therapeutic implications; **Marzena Pazgier, PhD**, Associate Professor of Biochemistry and Molecular Biology, Head of the Laboratory of Biomolecular Recognition, Division of Vaccine Research, for her dedication, persistence and outstanding productivity to the field of HIV vaccine basic science; **Fabio Romerio, PhD**, Assistant Professor of Medicine, Head of the Laboratory of IHV-1 Persistence & Immunopathogenesis, Division of Basic Science, for his dedication and persistence in unraveling functions of a new gene of HIV; **Nicholas Stamatos, MD**, Assistant Professor of Medicine, Division of Clinical Care and Research, for his dedication and persistence to the science of human glycobiology as it relates to human infectious diseases and cancer; and, **Davide Zella, PhD**, Assistant Professor of Biochemistry and Molecular Biology, Laboratory of

## 19th Annual International Meeting (continued)



Dr. Mark Kaplan of the University of Michigan asks questions during a session

the Director, Division of Basic Science, for his dedication and persistence in finding new infectious agents associated with cancers of humans.

In 1996, Dr. Gallo co-founded the IHV with colleagues Robert Redfield, MD, The Robert C. Gallo, MD Endowed Professorship in Translational Medicine, Associate Director, Director of the Division of Clinical Care and Research, Institute of Human Virology, University of Maryland School of Medicine and William Blattner, MD, who is retired since January 2016 and a Member of the IHV Board of Advisors.

Since its founding, the Baltimore-based Institute faculty and staff have grown from 50 to more than 300, and the Institute's patient base has grown from just 200 patients to currently nearly 20,000 in Baltimore and Washington, DC, and more than 1,000,000 in 10 African and 2 Caribbean nations since 2004. IHV is also internationally renowned for its basic science research, which includes the search for a functional HIV "cure" and a promising preventive HIV vaccine funded largely by the Bill & Melinda Gates Foundation and, in part, by others including NIAID.



L to R: Dr. Manfred Dierich of Medical University Innsbruck, Dr. Robert Gallo, and Dr. Bernard Roizman of the University of Chicago



L to R: Dr. John Martin of Gilead Sciences, Dr. Robert Gallo, Dr. Thomas Quinn of the National Institute of Allergy and Infectious Diseases (NIAID), Dr. Anthony Fauci of NIAID, Dr. Salim Abdool Karim of the Centre for the AIDS Programme of Research in South Africa (CAPRISA), Dr. Quarraisha Abdool Karim of CAPRISA, Dr. Isaac Adewole, The Honorable Minister of Health from Nigeria, and Dr. Robert Redfield of the IHV

*“We hope you will join us next year as we look to invite new participants and diversify our program to inspire greater cross-collaborations and provocative discussions.”*

*Dr. Gallo*



*Terry Lierman, Chair of the IHV Board of Advisors, The Honorable Catherine Pugh, Mayor of Baltimore City, Ambassador James Woolsey of Lux Capital Management, Dr. Leonid Margolis of the National Institutes of Health, Dr. Jay Perman of the University of Maryland, Baltimore, Dr. Robert Gallo of the IHV, and The Honorable Kathleen Kennedy Townsend of The Rock Creep Group*



*Dr. Cornelia Trimble of the Johns Hopkins Medical Institute*



*Dr. Mary Klotman of Duke University School of Medicine*



*Dr. Savita Pahwa of the University of Miami*



*Dr. Anthony Fauci of the National Institute of Allergy and Infectious Diseases*



*Dr. Peter Palese of Icahn School of Medicine at Mount Sinai*



*Dr. John Martin of Gilead Sciences*



*Dr. Kashef Ijaz of the Centers for Disease Control and Prevention*



*The Honorable Catherine Pugh, Mayor of Baltimore City*

**SAVE THE DATE!**

**IHV 2018**  
**October 8-11, 2018**  
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**2018 IHV Lifetime Achievement Awards Banquet • October 10, 2018**



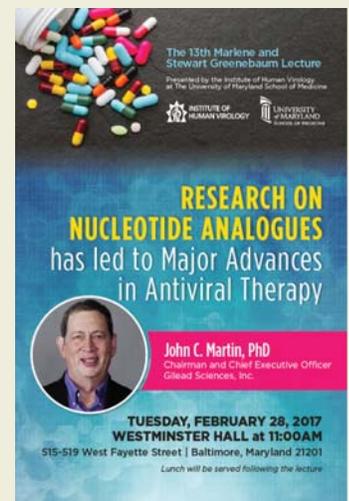
# Dr. John Martin Keynotes Greenebaum Annual Lecture



Back L to R: Dean E. Albert Reece of the University of Maryland School of Medicine, Terry Liernan, Chair of the IHV Board of Advisors, Dr. Robert Redfield of the IHV, Dr. John Martin of Gilead Sciences, Dr. Robert Gallo of the IHV, Dave Wilkins of the IHV; Front L to R: Michael Greenebaum of Greenebaum Enterprises, Stewart and Marlene Greenebaum of the University of Maryland Marlene and Stewart Greenebaum Comprehensive Cancer Center, Dr. Kevin Cullen of the University of Maryland Marlene and Stewart Greenebaum Comprehensive Cancer Center, and Dr. Shyam Kottlil of the IHV

The Thirteenth Annual Marlene and Stewart Greenebaum Lecture presented by the Institute of Human Virology at the University of Maryland School of Medicine hosted guest lecturer, John C. Martin, PhD this past February in Westminster Hall, a beautiful historic building located in downtown Baltimore. Dr. Martin is Executive Chairman and former CEO of Gilead Sciences, Inc. In 2014, Dr. Martin received IHV's Lifetime Achievement Award in Public Service for his steadfast commitment to make available to the world the lifesaving medicines that he and his team developed, so that these medications can have maximum impact on improving the human condition.

Dr. Martin joined Gilead Sciences in 1990 and was appointed Executive Chairman in March 2016. He served as Chairman and Chief Executive Officer from June 2008 through March 2016 and President and Chief Executive Officer from 1996 through May 2008. Prior to joining Gilead, Dr. Martin held several





*Gilead Sciences Regional Team Members join Dr. John Martin and Dr. Robert Gallo following the Greenebaum Lecture*

leadership positions at Bristol-Myers Squibb and Syntex Corporation.

Dr. Martin previously served as President of the International Society for Antiviral Research, Chairman of the Board of Directors of BayBio and Chairman of the Board of Directors of the California Healthcare Institute (CHI). He served on the National Institute of Allergy & Infectious Diseases Council, the Board of Directors of the Biotechnology Industry Organization, the Board of Directors for CHI, the Board of Trustees of the University of Chicago, the Board of Trustees of Golden Gate University and the External Scientific Advisory Board of the University of California School of Global Health. Additionally, Dr. Martin served on the Centers for Disease Control/Health Resources and Services Administration's Advisory Committee on HIV and STD Prevention and Treatment and was a member of the Presidential Advisory Council on HIV/AIDS.

With more than a hundred and fifty in the audience during the Greenebaum Lecture, Dr. Martin spoke about "Research on Nucleotide



*L to R: Dr. Shyam Kottilil, Dr. Robert Redfield, Dr. John Martin, and Dr. Robert Gallo*

Analogue Has Led to Major Advances in Antiviral Therapy." The Greenebaum family sponsors this series of prominent lectures insisting that the keynote speaker be someone who has made substantial scientific contributions, while caring for the betterment of the human condition.

## New Faculty



**Gambo Aliyu, MBBS, MS, PhD**, Assistant Professor of Epidemiology and Public Health, is the newest faculty member to IHV's Division of Epidemiology and Prevention. Dr. Aliyu received a Bachelor of Medicine, Bachelor of Surgery, from the Ahmadu Bello University, Zaria, Nigeria in 1995. He received a Master of Science in Clinical Research

from University of Maryland, Baltimore in 2008 and a PhD in Epidemiology from University of Maryland, Baltimore in 2012 through the University's Fogarty Scholar program: UM-IHV AIDS International Training Research Program. His education epitomizes his drive to be a physician-scientist in global health research. Currently, Dr. Aliyu is working very closely with the Center for Disease Control and Prevention (CDC) to conduct the country-wide Test and Start and Community ART studies under the Strengthen HIV Field Epidemiology, Infectious Disease Surveillance, and Lab Diagnostic (SHIELD Project, PI: Charurat) being implemented jointly with the Division of Clinical Care and Research. The goal of these impact evaluation studies is to evaluate specific interventions among specific populations to provide evidence of the effectiveness of the intervention. In Nigeria, under the leadership of the Division, the IHV and the University of Maryland Baltimore more broadly are recognized as the implementing partner with expertise in research evaluations, clinical quality improvement, and implementation science.



## Grants

**Alash'le Abimiku, MON, PhD**, Professor of Medicine, Division of Epidemiology and Prevention, and Executive Director of the International Center of Research Excellence at IHV-Nigeria, was awarded a National Institutes of Health (NIH) grant entitled, "Breast Milk Microbiota Influence on Infant Immunity and Growth." This five-year, \$1.25M study will focus on how breast milk affects the gut bacteria in infants exposed but un-infected by HIV, their growth, and their ability to respond to childhood vaccinations.



*Alash'le Abimiku, MON, PhD*



*Clement Adebamowo, BM, ChB, ScD*

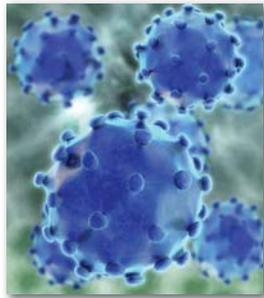
**Clement Adebamowo, BM, ChB, ScD, FWACS, FACS**, Professor of Epidemiology and Public Health, and Associate Director for Population Science, Marlene and Stewart Greenebaum Comprehensive Cancer Center, was recently awarded a five-year, \$1.25M NIH grant titled, "African Female Breast Cancer Epidemiology," which includes conducting breast cancer research in Nigeria to understand the epidemiology and genomic determinants of incident breast cancer and its molecular subtypes, and the role of diet in etiology of breast cancer in Nigeria. He also received a \$241K per year Fogarty International Center, NIH training grant entitled, "Entrenching Training and Capacity in Research Ethics in Nigeria (ENTRENCH)." This training grant is designed to further develop research ethics Master degrees at Nigerian institutions, and he is leading a research ethics H3 Africa supplement grant focused on building research ethics capacity in genomics, epigenomics and microbiomics of persistent hrHPV and cervical cancer in Nigeria.

**Nadia A. Sam-Agudu, MD**, Assistant Professor of Pediatrics, Division of Epidemiology and Prevention, and Senior Technical Advisor Pediatrics at IHV-Nigeria, received a \$1.13M NICHD R01 award entitled, "Adolescent Coordinated Transition (ACT) to Improve Health outcomes among Nigerian Youth" to test health-system-based innovative approaches to support adolescents living with HIV.



*Nadia A. Sam-Agudu, MD*

**Shashwatee Bagchi, MD**, Assistant Professor of Medicine, Division of Clinical Care and Research, received a \$938,807.00 for 5-years award from NIH on “Elucidating Hepatitis C Infection as a Risk Factor for Coronary Heart Disease in HIV-Infected Patients.” The study focuses on coronary heart disease (CHD) and HIV among the top three causes of mortality worldwide by 2030, and one third of those with HIV being infected with hepatitis C. Rates of heart disease are over twice as high in HIV- infected patients compared to uninfected patients, but the reasons for this remain unclear. Dr. Bagchi studies if hepatitis C increases CHD in HIV patients, if successfully treating hepatitis C will slow progression of CHD, and what host factors might explain the possible synergistic relationship between HIV, hepatitis C, and atherosclerosis in hopes of developing interventions to reduce heart disease in these patients.



**Deus Bazira, DrPH, MPH, MBA**, Assistant Professor of Medicine, Director, Center for Health, Education, & Biosecurity, Division of Clinical Care and Research, was granted a CDC grant for \$700,000.00 for five years titled “Partnership for Advanced Clinical Education (PACE)–Kamilisha.” PACE-Kamilisha (PACE-K) will build upon the successes of the PACE program also funded by CDC, implemented by IHV from September 30, 2009 through September 29, 2015, to strengthen HIV in-service and pre-service training in Kenya. PACE-K program is led by IHV as prime recipient and includes University of Nairobi (UON) as a sub-recipient, with the main role of continuing to develop and institutionalize advanced infectious disease training through the sustainable operationalization of Unit of Clinical Infectious Diseases (UCID) within the UON School of Medicine. By the end of the PACE-K program UCID should be a sustainable academic unit within UON that attracts its own funding and is a center of academic excellence for training, service and research in infectious diseases including HIV/AIDS in the country.



*Deus Bazira, DrPH, MPH, MBA*

**Cristiana Cairo, PhD**, Assistant Professor of Medicine, Division of Basic Science, was awarded a U01 from the Eunice Kennedy Shriver National Institute of Child Health & Human Development (NICHD), NIH in the amount of \$2,068,724 over 5 years to conduct research on “The impact of in utero HIV exposure on infant T and B cell responses in Malawi.” This study will test the hypothesis that infants born to mothers with suppressed HIV infection since conception will have adaptive immune responses similar to HIV-unexposed infants while infants exposed to high level of HIV infection through most of pregnancy will have a dysregulated adaptive immune response.



*Cristiana Cairo, PhD*



*Man Charurat, PhD*

**Man Charurat, PhD, MHS**, Professor of Medicine, Director, Division of Epidemiology and Prevention was granted a CDC continuation award of \$22.8M over 5-years for the SHIELD project that is designed to improve the quality of HIV service delivery in Nigeria. Additionally, he was awarded a Global Fund subcontract for DRTB Quality Improvement for \$515K annually for 5-years.

**Niel Constantine, PhD, MT (ASCP)**, Professor of Pathology, Head of the Laboratory of Viral Diagnostics, Division of Epidemiology and Prevention, was awarded a 1 year, \$214,500 contract with Chembio Diagnostics Systems, Inc. to perform an FDA clinical trial for assessment of a novel test to detect HIV and syphilis infections simultaneously, another \$166,392 from FHI360 for a five month extension of his contract “The USAID Global Health Supply Chain QA Program for Rapid Diagnostics”, and \$27,500 from USAID for a five month extension of his contract “Technical Assistance and Retention Store.” He also received a 1 year, \$18,200 contract from the Pharmaceuticals Fund and Supply Agency, Ethiopia to determine the suitability of test kits for HIV as claimed by manufacturers, and \$15,000 from Marie Stopes International for 1 year to evaluate rapid pregnancy tests.



*Niel Constantine, PhD, MT*



Patrick Dakum, MBBS, MPH

**Patrick Dakum, MBBS, MPH**, Assistant Professor of Epidemiology and Public Health, Division of Epidemiology and Prevention, and CEO of IHV-Nigeria, received a \$24.5M, 5-year, 3.0 President's Emergency Plan for Africa (PEPFAR) Nigeria grant entitled, "ACHIEVE" to work toward HIV epidemic control. Dr. Dakum is working on increasing uptake and yield of HIV testing

among high-risk individuals, decentralized drug pick-ups through differentiated community care models, and implemented a rigorous quality assurance programs in this grant.

**Alfredo Garzino-Demo, PhD**, Associate Professor of Microbiology and Immunology, Head of the Laboratory of Virus Host Interaction, Division of Basic Science, received a three-year, \$404,290 sub-agreement from Collaborations Pharmaceuticals, Inc. (prime PI: Dr. Sean Ekins) for "New Generation of Non-Nucleoside RT HIV Inhibitors Addressing Avoiding HIV-Associated Neurocognitive Disorder." As a sub-recipient, Dr. Garzino-Demo will evaluate the antiviral activity of NNRTI in cell lines (MT4, PM1, astrocytes) and in primary cells (CD4+ T lymphocytes, macrophages). Virus to be tested will include HIV strains that are resistant to reverse transcriptase inhibitors. Dr. Garzino-Demo will also evaluate the toxicity of NNRTI in tissue culture, using primary CD4+ T cells, macrophages, astrocytes, and neurons.



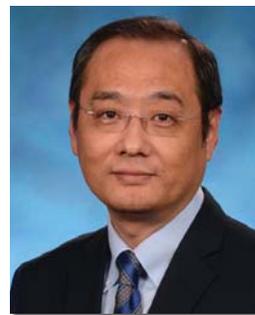
Shyamasundaran Kottlil, MBBS, PhD

**Shyamasundaran Kottlil, MBBS, PhD**, Professor of Medicine, Co-Director, Clinical Research Unit, Associate Director, Division of Clinical Care and Research, and Bhawna Poonia, PhD, Assistant Professor of Medicine Division of Clinical Care and Research was granted \$1,835,885.00 from NIH over 5-years for a project titled "Immune Correlates of long-term success with

DDA therapy in HCV/HIV infected people who inject drugs" and will look at HIV-infected patients and patients who inject drugs and are at significantly higher risk of getting re-infected with HCV while developing serious liver disease even after

achieving HCV cure using the highly efficacious directly acting antivirals. The study aims to elucidate mechanisms of long standing immunity that may offer protection from subsequent reinfection in these patients and is critical in achieving control of this epidemic.

**Shyamasundaran Kottlil, MBBS, PhD**, Professor of Medicine, Co-Director, Clinical Research Unit, Associate Director, Division of Clinical Care and Research, received an award from NIH for \$1,798,416 with 4 years option to renew. The project is titled "District of Columbia Partnership for AIDS Progress (DC PFAP) Protocol Implementation Task Order" and the scope of activities is to focus on providing support for the implementation of research protocols that focus on improving and enhancing prevention and treatment of HIV and HCV research in Washington, DC.



Wuyuan Lu, PhD

**Wuyuan Lu, PhD**, Professor of Biochemistry and Molecular Biology, and Co-Director, Division of Basic Science, was awarded an R01 from the National Cancer Institute (NCI), NIH in the amount of \$1,767,095 over 5 years to conduct research on "Anticancer peptide therapeutics." The overall goal of this proposed research is to develop ultrahigh-affinity, dual-specificity,

and proteolysis-resistant peptide antagonists of MDM2 and MDMX as a powerful p53-activating modality for the treatment of acute myeloid leukemia—where mutations of the TP53 gene are rare and MDM2 and MDMX are often amplified or over-expressed.

**Marzena Pazgier, PhD**, Associate Professor of Biochemistry and Molecular Biology, Head of the Laboratory of Biomolecular Recognition, Division of Vaccine Research, received a received an R01 from the National Institute of Allergy and Infectious Diseases (NIAID/NIH), total cost \$2,437,990 for five years titled "Unlocking Env: A New Strategy for a Functional Cure Through Antibody-Dependent Cell-Mediated Cytotoxicity."



Marzena Pazgier, PhD



Fabio Romerio, PhD

**Fabio Romerio, PhD**, Assistant Professor of Medicine, Head of the Laboratory of IHV-1 Persistence & Immunopathogenesis, Division of Basic Science, received a two-year, \$484,275 grant from the National Institute of Allergy and Infectious Diseases (NIAID) for “Defining the HLA ligandome of HIV-1 latently infected CD4+ T cells.” He also received a two-year, \$199,999 grant from the American Foundation for AIDS Research (amfAR) for “Permanent Silencing of HIV-1 Expression through the Polycomb Repressor Complex 2 Epigenetic Pathway.”

**Eric Sundberg, PhD**, Professor of Medicine, Co-Director, Division of Basic Science, was awarded an R01 from NIAID, NIH in the amount of \$2,418,095 over 5 years to conduct research on “Molecular mechanisms of IL-33 cytokine signaling.” The proposed studies are designed to fully demonstrate the differences in molecular mechanisms of IL-1 and IL-33 signaling and to leverage this growing mechanistic knowledge to engineer novel therapeutic activators and inhibitors of IL-33 signaling.



Eric Sundberg, PhD

**The JACQUES Initiative**, a program of the Division of Clinical Care and Research, was

**the JACQUES initiative**  
*Changing Lives, Engaging Communities*

awarded a two-year \$175,000 Boston University School of Public Health/CAHPP HRSA Cooperative Agreement titled “Improving Access to Care: Using Community Health Workers (CHWs) to Improve Linkage and Retention in HIV Care.”

## Awards

**Robert Gallo, MD**, The Homer & Martha Gudelsky Distinguished Professor in Medicine, Co-Founder, Director, Division of Basic Science and Division of Vaccine Research, received the ASI Lifetime Achievement Award from the AIDS Society of India (ASI), a national network of HIV medical experts. ASI conferred the prestigious honor upon Dr. Gallo in recognition of his pioneering role in advancing path-breaking HIV science over the decades. Dr. Gallo received this award at the Pioneers in Infectious Agents and Cancer meeting in Naples, Italy, on March 23, which also marked his 80th birthday. “Dr. Gallo, a globally-acclaimed biomedical researcher, is best known for his role in the discovery of the Human Immunodeficiency Virus (HIV) as the infectious agent responsible for Acquired Immune Deficiency Syndrome (AIDS) and in the development of the HIV blood test apart from being a major contributor to subsequent HIV research for several decades now,” said Dr. Ishwar Gilada, president of AIDS Society of India (ASI).



Robert Gallo, MD



Shyamasundaran Kottlil, MBBS, PhD

**Shyamasundaran Kottlil, MBBS, PhD**, Professor of Medicine, Co-Director, Clinical Research Unit, Associate Director, Division of Clinical Care and Research, was inducted on April 21, 2017 into the American Society for Clinical Investigation (ASCI). The ASCI is an honor society of physician-scientists, those who translate findings in the laboratory to the advancement of clinical practice. Founded in 1908, the Society is home to nearly 3,000 members who are in the upper ranks of academic medicine and industry. Dr. Kottlil also recently received tenure.

## Presentations

**Nadia A. Sam-Agudu, MD**, Assistant Professor of Pediatrics, Division of Epidemiology and Prevention, delivered a plenary presentation, “*What Will It Take to End Pediatric HIV: The Emergency Plan*,” during the 9th IAS Conference on HIV Science (IAS 2017) in Paris, France July 25, 2017. IAS is the world’s largest open scientific meeting on HIV.



# Publications



Niel Constantine,  
PhD, MT

**Niel T. Constantine, PhD** Professor of Pathology, Head of the Laboratory of Viral Diagnostics, Division of Epidemiology and Prevention, was the lead author of an article published in the January 2017 issue of the *Journal of Applied Laboratory Medicine*, entitled: *“Assessment of Two Rapid Assays for Diagnostic Capability to Accurately Identify Infection by Treponema pallidum.”*



Robert Gallo, MD

**Robert Gallo, MD**, The Homer and Martha Gudelsky Distinguished Professor in Medicine, Co-Founder, Director, Division of Basic Science and Division of Vaccine Research, **George Lewis, PhD**, The Robert C. Gallo, MD Endowed Professorship in Translational Medicine, Director, Division of Vaccine Research, and,

**Anthony DeVico, PhD**, Professor of

Medicine, Division of Vaccine Research, and **Meron Mengistu, PhD**, former Research Associate, Division of Vaccine Research, co-authored an article published October 30, 2017 entitled: *“Patterns of conserved gp120 epitope presentation on attached HIV-1 virions.”*



Robert Gallo, MD

**Sarah Kattakuzhy, MD**, Assistant Professor of Medicine, Division of Clinical Care and Research, was the lead author of an article published in the August 2017 issue of the *Annals of Internal Medicine*, entitled: *“Expansion of Treatment for Hepatitis C Virus Infection by Task Shifting to Community-Based Nonspecialist Providers: A*



Sarah Kattakuzhy, MD

*Nonrandomized Clinical Trial.”* **Shyam Kottilil MD, PhD**, Professor of Medicine, Co-Director Clinical Care Research Unit, Division of Clinical Care and Research, also an author on the paper says that this trial provides evidence that treatment of uncomplicated hepatitis C infection can now successfully be task shifted to new



Shyamasundaran  
Kottilil, MBBS, PhD

providers, and that this study should pave way to expansion of HCV treatment by new providers including primary care physicians and nurse practitioners, much needed to treat over 70 million people carrying hepatitis C virus.



Jamie L. Mignano,  
PhD(c), MSN, MPH, RN

**Jamie L. Mignano, PhD(c), MSN, MPH, RN** (first author), Executive Director and **Travis Brown, MBA, MA**, Data Manager, Of the JACQUES Initiative, a program of the Division of Clinical Care and Research, and **Robert Redfield, MD**, The Robert C. Gallo, MD Endowed Professorship in Translational Medicine, Co-Founder, Associate Director, Director, Division of

Clinical Care and Research and colleagues from the University of Maryland Medical Center were co-authors of *“Results and Implications of Routine HIV Testing in the Inpatient Setting: A Descriptive Analysis”* in *Population Health Management* on June 14, 2017.



Robert Redfield, MD

**Megan Morales, MD**, Assistant Professor of Medicine, Division of Clinical Care and Research, was the lead author of a review of azole cross-allergenicity and report of the first desensitization protocol for isavuconazole, published in the November 2017 issue of *Transplant Infectious Diseases* titled *“Graded Isavuconazole Introduction in a Patient with Voriconazole Allergy.”*



Marzena Pazgler, PhD

**Marzena E. Pazgler, PhD**, Associate Professor of Biochemistry and Molecular Biology, Head of the Laboratory of Biomolecular Recognition, Division of Vaccine Research, was last author on an article published October 12, 2017 in *Structure* entitled:

*“Targeting the*

*Late Stage of HIV-1*

*Entry for Antibody-*

*Dependent Cellular*

*Cytotoxicity: Structural Basis for Env Epitopes*

*in the C11 Region.”* Co-authors from the

Division of Vaccine Research included

**William D Tolbert, PhD**, Research

Associate of Biochemistry and Molecular

Biology, first author, and **Chiara Orlandi,**

**PhD**, Research Associate of Biochemistry and Molecular

Biology, **George Lewis, PhD**, The Robert C. Gallo, MD Endowed

Professorship in Translational Medicine, Director of the Division

of Vaccine Research, and, Krishanu Ray, PhD, Associate Professor

of Biochemistry and Molecular Biology.



Chiara Orlandi, PhD



Kristen Stafford, MPH, PhD

**Kristen Stafford, MPH, PhD**, Assistant Professor of Medicine, Division of Clinical Care and Research (first author) and **Robert Redfield, MD**, The Robert C. Gallo, MD Endowed Professorship in Translational Medicine, Co-Founder, Associate Director, Director, Division of Clinical Care and Research (last author), and colleagues from the Department of Epidemiology and Public Health were co-authors of *“Immunologic response to ART by age among treatment-naïve patients in sub-Saharan Africa,”* in *AIDS*. 2017 Oct 12. [Epub ahead of print].



Eric Sundberg, PhD

**Eric Sundberg, PhD**, Professor of Medicine, Head of the Laboratory of Structural Immunology & Oncology, Co-Director, Division of Basic Science, co-authored an article published September 19, 2017 in *Immunity* entitled: *“IL-1 family cytokines use distinct molecular mechanisms to signal through their shared co-receptor.”*



Fabio Romerio, PhD

**Fabio Romerio, PhD**, Assistant Professor of Medicine, Head of the Laboratory of IHV-1 Persistence & Immunopathogenesis, Division of Basic Science, was last author on *“The Human Immunodeficiency Virus 1 ASP RNA promotes viral latency by recruiting the Polycomb Repressor Complex 2 and promoting nucleosome assembly”* in *Virology* 2017 Jun; 506:34-44. **Juan Carlos**

**Zapata, PhD**, Research Associate of Medicine, Division of Basic Science, was the first author. The Editorial Board of *Virology* chose this article to be highlighted in the journal’s online blog.

**Yutaka Tagaya, PhD**, Assistant Professor of Medicine, Head of the Flow Cytometry Core and the Laboratory of Cell Biology, Division of Basic Science and **Robert Gallo, MD**, The Homer and Martha Gudelsky Distinguished Professor in Medicine, Co-Founder and Director, Division of Basic Science and Division of Vaccine Research, co-authored an article published August 2, 2017 in *Frontiers in Microbiology* entitled: *“The Exceptional Oncogenicity of HTLV-1.”* They also published in September 22, 2017 in *Frontiers in Microbiology* entitled *“Time to go Back to the original name,”* regarding human T-cell leukemia virus (HTLV).



Yutaka Tagaya, PhD



### Trammell Honored with William & Mary Alumni Medallion

IHV Board Member Jeff Trammell, president and founder of Trammell and Company, a public affairs consulting firm in Washington, DC, last February was awarded the highest and most prestigious award given by the William & Mary Alumni Association, the Alumni Medallion, for serving as William & Mary Rector from 2011-13, and making history as the first openly gay board chair of a major public university in this country. Trammell is dedicated to improving affordability for students.



He was instrumental in the creation of the W&M Thomas Jefferson Program in Public Policy in 1987 and served as its founding chair. Today, Trammell is a member of the Monroe Commission that oversees Highland, home of W&M alumnus President James Monroe. He is a regional co-chair of the For the Bold campaign and chair of W&M's Harriman Fellows.

## IHV Adds New Board of Advisors Members



Mr. Joseph Berardino

**Mr. Joseph Berardino** is Managing Director of the Firm's Corporate Transformation Practice and is in charge of the East Region of Alvarez & Marsal's Corporate Performance Improvement practice. He is based in New York. He brings more than three decades of executive leadership and board service experience to the firm. Previously, Mr. Berardino was an audit partner with Arthur Andersen, where he spent more than 30 years in various client-serving and leadership roles, including CEO of Andersen Worldwide.

Mr. Berardino has lectured extensively on corporate governance, leadership and ethics before senior corporate executives and college campuses. He has served on several public company Boards of Directors. Further he served in various capacities, from CEO to Chairman of the Board for Profectus Bio Sciences. Mr. Berardino earned a bachelor's degree from Fairfield University, where he served as a member of the Board of Trustees for 18 years, and has chaired the Advancement and Finance Committees.



*Dr. William A. Blattner*

**William A. Blattner, MD** is Co-Founder of the Institute of Human Virology (IHV) and retired in January 2016 after 20 dedicated years as the Associate Director of IHV, Director of IHV's Division of Epidemiology and Prevention and Professor of Medicine and Epidemiology, University of Maryland School of Medicine. Dr. Blattner received his undergraduate bachelors (Phi Beta Kappa) and medical doctor (Alpha Omega Alpha) degrees from Washington University in St. Louis. His training in Internal Medicine at University of Rochester, Strong Memorial Hospital and New York Cornell Medical Center and Memorial Sloan Kettering Cancer Institute, and Medical Oncology training at the National Cancer Institute in Bethesda led to his Board Certification in Internal Medicine and Medical Oncology.

From 1974 to 1995 his seminal research in collaboration with Dr. Robert C. Gallo documented the role of HTLV-1 in the etiology of adult T-cell leukemia and other diseases and from 1981 the role of HIV-1 in AIDS including studies that proved Koch's postulates in causation, its modes of transmission and natural history, studies of pathogenesis and the first peer-reviewed publication of the sensitivity and specificity of the HIV blood test. He has authored over 400 peer reviewed publications, many targeting

the international dimensions of the epidemic. In 1995 he retired as Chief of the Viral Epidemiology Branch with the rank of Captain in the Public Health Service to cofound IHV. He received continuous funding from National Institutes of Health until his retirement from IHV in 2016.

In 2004 he founded the Institute of Human Virology, Nigeria that through the President's Emergency Plan for AIDS Relief (PEPFAR) program has screened over 6.6 million for HIV infection including 2.6 million women screened for prevention of mother to child transmission and among HIV positives, 342,000 receive basic care and support, 242,000 receive ARV therapy including 16,000 children. He received the John Snow Award of the American Public Health Association in 2002 and the Washington University Distinguished Alumnus award in 2015 for his pioneering research on human retroviruses. He has previously served an advisor to the Department of Health and Human Services, to the US Military, the NIH, the CDC, the Doris Duke and Bill and Melinda Gates Foundation, and several pharmaceutical and biotechnology companies. Currently, he is Editor-in-Chief of the Journal of Acquired Immune Deficiency Syndromes and CEO of Salt Run Global Health and Research.



*Mr. John R. Kelly*

**Mr. John Kelly** is the Chief Innovation & Strategy Officer of KELLY, a family owned and operated business providing workforce management solutions to clients of all sizes. KELLY specializes in group insurance as a broker, consultant, administrator and technology provider. Additionally, Mr. Kelly is the president of KELLY Benefit Strategies and KELLY Advisory, and provides the strategic leadership to KELLY Administrative Services. He works together with his three brothers, Frank, David and Bryan and alongside his father Francis X. who founded KELLY in 1976. What was started in the basement of the family's Timonium home has grown to a company that employs more than 500 people and serves more than 15,000 businesses.

In his overall innovation and strategy role, Mr. Kelly is the company's chief visionary and long-range thinker. His core motivation is driven by his relentless commitment to helping make KELLY clients better through delivering leading-edge strategies and solutions that increase efficiency and satisfaction while saving time and money. KELLY calls this "The Business of Better – Making Businesses Better to Help Make a Better World." Mr. Kelly's foresight has helped make KELLY the industry leader in tailored benefit and payroll management. He also pioneered KELLY's revolutionary Total Benefits Solution® philosophy and

approach that integrates industry leading expertise with customer-friendly administration and a proprietary web-based technology.

Mr. Kelly graduated from Washington College in Chestertown, MD with a business degree in 1987. He enjoys cycling, hunting and fishing and is active in his community. He sits on the Board of Visitors at the University of Maryland School of Medicine, has been a longtime board member and past chair of Mt. Washington Pediatric Hospital, serves on the Board of Advisors for the Institute of Human Virology at the University of Maryland School of Medicine, and is chairman of the board for the Midshore Riverkeeper Conservancy. Mr. Kelly also serves as a ministry elder at Grace Fellowship Church and is dedicated to a variety of international causes, including the efforts of World Bicycle Relief, Antioch Network and Love, Light and Melody. He resides in Towson, Maryland with his wife Tee and their six children, Hannah, Johnny, Allie, Lydia, Micaiah and Boaz.

## IHV Adds New Board of Advisors Members



*The Honorable Catherine E. Pugh*

**The Honorable Catherine Elizabeth Pugh** was sworn in as the 50th Mayor of the City of Baltimore on December 6, 2016.

Mayor Pugh has been a public servant for more than 15 years. She served as a member of the Baltimore City Council, representing the 4th district (1999-2003). During her tenure as Council Member, Mayor Pugh served as: Chair of the Taxation Subcommittee on Economic Development, Vice-Chair of the Land Use & Planning Committee and member of the Urban Affairs Committee. In 2005 she was appointed to the Maryland General Assembly, House of Delegates, where she served for one year before running for her Senate seat in 2006. Her abilities to negotiate and her bipartisan approach catapulted her into various leadership positions in the Maryland Senate. She served as the Majority Leader, was Named Legislator of the Year (2010) by the City Paper, and passed over 150 pieces of legislation.

Mayor Pugh is the visionary, co-founder and Chair of the Baltimore Design School, a public school for sixth through twelfth graders, and a founder of the Baltimore Marathon, which is in its fifteenth year and has over a \$30 million impact on the city. Mayor Pugh holds an MBA from Morgan State University and has received qualification from the University of California as an Economic Development Specialist. She has been recognized for her leadership and commitment to diversity and inclusion by numerous organization both local and nationally to include: The United State Small Business Advocate of the Year, The National Association of Securities Professionals Joyce Johnson Award, The NAACP Legislator of the Year, The Mental Health Associations Legislator of the Year, and the African Methodist Episcopal Church's Living Legacy Award, to name a few.



*Mr. Guangqi Tian*

**Mr. Guangqi Tian** is the President and Founder of Sino Invest Limited. He founded multiple companies in Harbin, Tianjin, and Beijing since 2005 and is owner or partial owner of businesses in Beijing, Tianjing, Hong Kong, US, Panama, and Dubai. He is engaged in international trade, investment and other businesses and has advised several Chinese state-owned companies on projects and ventures overseas and played instrumental roles in helping them win more than ten construction and investment contracts in Africa, Latin America, and Asia. Mr. Tian has invested in and managed commercial real estate projects in Tianjing. He has established and maintained good working relationships with different social entities in China, including, but not limited to, central and local governments and various business communities.



*Mr. Danny Wong*

**Mr. Danny Wong** is CEO and Chairman of Medisun International Holdings Ltd. He is a graduate of China Central University of Finance, and he has over 20 years of experience in investment. He has successfully helped to launch dozens of high-tech companies in Hong Kong. In 1999 he founded the first venture capital company in China. Mr. Wong currently serves as Chairman of Beijing Financial Group Limited which covers a full financial industry chain, including brokerage, asset management and wealth management companies established in Hong Kong. In the past two decades, he has made substantial investments in the healthcare industry.



*Ambassador R. James Woolsey*

**Ambassador R. James Woolsey** is a Venture Partner with Lux Capital Management. He previously served in the US Government on five different occasions, where he held Presidential appointments in two Republican and two Democratic administrations, most recently (1993-95) as Director of Central Intelligence. From July 2002 to March 2008, he was a Vice President and officer of Booz Allen Hamilton, and then a Venture Partner with Vantage Point Venture Partners of San Bruno, California until January 2011. He was also previously a partner at the law firm of Shea & Gardner in Washington, DC, now Goodwin Procter, where he practiced for 22 years in the fields of civil litigation, arbitration, and mediation.

During his 12 years of government service, in addition to heading the CIA and the Intelligence Community, Amb Woolsey was: Ambassador to the Negotiation on Conventional Armed Forces in Europe (CFE), Vienna, 1989–1991; Under Secretary of the Navy, 1977–1979; and General Counsel to the U.S. Senate Committee on Armed Services, 1970–1973. He was also appointed by the President to serve on a part-time basis in Geneva, Switzerland, 1983–1986, as Delegate at Large to the U.S.–Soviet

Strategic Arms Reduction Talks (START) and Nuclear and Space Arms Talks (NST). As an officer in the US Army, he was an adviser on the US Delegation to the Strategic Arms Limitation Talks (SALT I), Helsinki and Vienna, 1969–1970.

Amb Woolsey serves on a range of government, corporate, and non-profit advisory boards and chairs several. He currently serves on the staff of the Congressional EMP Commission and on the Board of Advisors of the Task Force on National and Homeland Security, a Congressional Advisory Board.





## IHV Clinical Trials

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Clinical trials are studies designed to find new and better ways to treat patients. Through clinical trials, scientists and physicians at the Institute of Human Virology have broken new ground in the development of treatments. **To enroll in a study call 410-706-1684.**

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The following clinical trials are currently open and accepting participants—for more information you can also visit [www.ihv.org](http://www.ihv.org).

**HOPE—An Omnibus Protocol to Characterize Patients with Hepatitis B and C:**

A research trial for adults who have or have had viral hepatitis B and/or hepatitis C and sometimes healthy volunteers (for comparison) and adults with chronic hepatitis B.

**MAVERIC:** A research study to test whether the HIV medication called maraviroc affects the hepatitis C virus. All study visits will be conducted at the Institute of Human Virology at the University of Maryland. All study medicine and testing are provided free to participants. Compensation for travel and time is provided.

**MISP:** A study evaluating the use of FDA approved medication Zepatier (Grazoprevir and Elbasvir) for the treatment of hepatitis C in individuals with kidney disease. Research blood samples are drawn to determine if there is a difference in the immune system response to treatment either before or after kidney transplant. Medication will be provided free of cost.

**RESOLVE:** An investigational hepatitis C retreatment study for people with hepatitis C who have previously failed treatment with combination directly-acting antiviral agents, including Harvoni, Viekira Pak, and Zepatier. The study aims to assess the safety, tolerability, and efficacy of 12 weeks of an investigational all oral combination DAA therapy composed of sofosbuvir/velpatasvir/voxilaprevir in subjects with chronic HCV infection who have previously failed DAA-based therapy, either with compensated cirrhosis or without cirrhosis.

**RT5:** A study to evaluate the use of FDA approved medications (Maraviroc and Sirolimus) in HIV+ kidney transplant recipients to determine if it will reduce HIV DNA. Medications will be paid for through the volunteer's insurance, research blood samples will be collected.