



DEAN'S MESSAGE: What's On My Mind



What's on my mind this month is how 2014 ended on an incredible "high note," with the 2014 Festival of Science rounding out a very successful calendar year.

The 2014 Festival of Science was an incredibly exhilarating day of intellectual discourse. Our 11 faculty speakers gave us just a small sampling of their exemplary work, summarizing their most cutting-edge projects for our distinguished Scientific Advisory Council and the attendees at last year's event—a herculean task considering the breadth and depth of innovative biomedical research going on at the School of Medicine. **Their outstanding presentations represented our School proudly.** My only "regret" of the Festival is that we could not include more speakers on the day's agenda, as so many of our faculty investigators conduct remarkable work in the fields of infections, inflammation and vaccines. I applaud and commend our entire School of Medicine community for the tremendous work you do every day.

Last year, we made a concerted effort to share the ambitious goals of our **Shared Vision 2020**. Shared Vision 2020 was the roadmap to success that we established with our UMMS partners in 2013. The research component of **Vision 2020** was embodied in the **ACCEL-Med** (Accelerating Innovation and Discovery in Medicine) **Initiative**, aimed at significantly and measurably increasing the pace and scope of discovery and innovation, with the ultimate goal of dramatically improving human health and wellbeing. I hope that, by now, the spirit with which the **ACCEL-Med Initiative** was established is deeply ingrained in your approach to the goals you have set for your research. My goal is to highlight all of our faculty's work at a future Festival of Science, the cornerstone of the **ACCEL-Med Initiative**.

For those of you who couldn't join us at the 2014 Festival, we closed the program by announcing the projects that received **Dean's Challenge Awards**. This award opportunity was announced at the 2013 Festival of Science, and I was extremely pleased at the response from the faculty. Here are the inaugural awardees and their projects:

- **Role of TLR4 in Virus-Induced Allergic Hypersensitivity**—Achsah Keegan, PhD; Stefanie Vogel, PhD; Rose Viscardi, MD; Kari Ann Shirey, PhD; and Dayanand Bagdure, MD
- **Pathogenic Role of HIV-1 p17 Variants in AIDS-Associated Lymphoma**—Robert Gallo, MD; William Blattner, MD; Joseph Bryant, DVM, MS; Alfredo Garzino-Demo, PhD; Wuyuan Lu, PhD; and Fabio Romerio, PhD
- **A Genomic Vaccinology Approach to Malaria Vaccine Development**—Christopher Plowe, MD, MPH; Claire Fraser, PhD; Joana Carneiro da Silva, PhD; and Mark Travassos, MD, MSc
- **Metabolic Imaging and Sonodynamic Therapy for Invasive Brain Tumors Using 5-Aminolevulinic Acid**—Rao Gullapalli, PhD, MBA; Dirk Mayer, Dr. rer. nat.; Joseph Kao, PhD; Jeffrey Winkles, PhD; and Graeme Woodworth, MD

Although I do not want to set a precedent for future Festival of Science events, I also **announced a new award program**, the "**Special Interdisciplinary Recruitment Award**." This program is intended to accelerate and significantly expand the School of Medicine research portfolio and funding base; stimulate research to answer important, "**big science**" questions underlying human health and disease; and encourage multiple academic units to **jointly recruit well-funded scientists**. The awards will be given through a competitive process, with preference given to packages from a clinical department and basic science department, and will include contributions from the Dean's Office to a recruitment package for new investigators, or teams of investigators. More information will be forthcoming.

I encourage you to continue to thinking boldly and strategically about the goals you wish to set for yourself and for your laboratory. Despite the setbacks of 2013 from the federal government's "sequestration" issue, last year was a great success. I am confident that we can and will exceed our goals for 2015. In the words of the great artist Michelangelo, "*The greater danger for most of us lies not in setting our aim too high and falling short, but in setting our aim too low, and achieving our mark.*" May we all achieve our high aims in this New Year.

In the relentless pursuit of excellence, I am

Sincerely yours,

E. Albert Reece, MD, PhD, MBA
Vice President for Medical Affairs, University of Maryland
John Z. and Akiko K. Bowers Distinguished Professor and
Dean, University of Maryland School of Medicine

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Second Annual

FESTIVAL *of*

Highlights Latest Research and Discovery on Infectious

Some of the world's leading scientists gathered at the University of Maryland School of Medicine on December 12 for the second annual Festival of Science, a one-day celebration of research at the University of Maryland School of Medicine (UM SOM). This year's presentations included discussions on infectious diseases and global viruses that have made front page news over the past several months.

The keynote speaker was **Anthony Fauci, MD**, Director of the National Institute of Allergy and Infectious Diseases (NIAID) at NIH, who spoke about the current situation in the battle against Ebola. As head of the NIAID, Dr. Fauci has been at the center of U.S. efforts to deal with the disease, and his agency is overseeing several of the vaccine trials currently underway. In fact, he had to make his keynote via video when a last-minute meeting with President Obama kept him in DC.

The Festival of Science is a one-day celebration of research at the University of Maryland School of Medicine (UM SOM). It features a series of faculty presentations showcasing innovative work by UM SOM scientists. Topics this year included research on Ebola, malaria and HIV vaccine development, inflammation, and diabetes. The presentations were critiqued by our five-member Scientific Advisory Council.

"The Festival of Science has become a tremendous event each year for the School of Medicine," said **E. Albert Reece, MD, PhD, MBA**, Vice President for Medical Affairs, University of Maryland, and the John Z. and Akiko K. Bowers Distinguished Professor and Dean, University of Maryland School of Medicine. "The faculty presentations once again illustrate the impact that our scientific discoveries are having on critical global health issues. We are grateful to our presenters and, in particular, to our esteemed Scientific Advisory Council, for their invaluable questions and insights."

Robert Gallo, MD, the Homer & Martha Gudelsky Distinguished Professor in Medicine and Director of the Institute of Human Virology (IHV), is a towering figure in the fight against HIV/AIDS. He helped discover that HIV causes AIDS, and has spent much of his career studying the disease. He spoke on continuing efforts to create a vaccine to prevent HIV transmission—a possibility that would revolutionize the fight against the disease.

Myron M. Levine, MD, the Simon and Bessie Grollman Distinguished Professor in the Department of Medicine and Director of the Center for Vaccine Development (CVD), talked about his work testing an Ebola vaccine. He is currently leading the first-ever human trial in West Africa of an Ebola vaccine. The study is taking place in Bamako, Mali, in collaboration and conjunction with its sister institution, The Center for Vaccine Development of Mali (CVD-Mali) and the Ministry of Health of Mali. Dr. Levine also spoke about CVD's work on developing other vaccines for typhoid, *Salmonella* and *Shigella*, among other diseases.

Dr. Fauci has made many major contributions to the battle against infectious diseases, including HIV/AIDS. He has been one of the leaders of the President's Emergency Plan for AIDS Relief (PEPFAR), the multi-billion-dollar prevention and treatment program that has saved millions of lives throughout in Africa and elsewhere. In his talk, Fauci mentioned that in America, public concerns over Ebola have been overblown. He noted that of the recent travelers banned from leaving West Africa due to symptoms, none had Ebola. Instead, they were infected with malaria.

Christopher V. Plowe, MD, MPH, leader of the Malaria Group at CVD, thanked Dr. Fauci for mentioning this. Dr. Plowe, whose presentation was about the difficulty of developing a malaria vaccine, noted that every minute, 25 people die from malaria—millions more than die from Ebola. Dr. Plowe and his colleagues are trying to understand the molecular mechanisms of drug-resistant malaria. His team has developed methods to quickly test for mutations that allow the malaria parasite to resist antimalarial drugs.

Also presenting in this group was **Aaron P. Rapoport, MD**, the Gary Jobson Professor in Medical Oncology in the Department of Medicine and Director of Lymphoma/Gene Medicine at the University of Maryland Marlene and Stewart Greenebaum Cancer Center. He has focused his research on the use of immune cells and vaccines to enhance immune recovery after stem cell transplants. He hopes to harness the ability of a patient's own immune system to recognize, target and eradicate blood cancers such as multiple myeloma.



Dr. Plowe



(From left) Drs. Kaper, Levine, Plowe, Rapoport and Gallo

Another of the Festival's key focus areas was inflammation, and several speakers focused on their work in that area.

Stefanie Vogel, PhD, a professor in the Department of Microbiology and Immunology, talked about her work exploring how immune cells can be modified to reduce the excess inflammation that sometimes occurs in cases of influenza. Immune cells recognize infectious agents, like the flu virus, and send out chemical signals to activate immune cells that migrate to the lungs to fight the infection. But sometimes in severe cases of flu, too many immune cells accumulate in the lungs and cause extensive lung damage. Her studies suggest that this lung injury may be treated with medicines that inhibit immune cell signaling.

Inflammation also plays a role in another lung problem, asthma. **Achshah Dorsey Keegan, PhD**, a professor in the department of Microbiology and Immunology, is examining a previously undiscovered role for a signaling molecule that might stop the chronic allergic inflammation such as asthma. Her studies indicate that increasing the activity of this molecule might help alleviate symptoms of asthma.

Inflammation can also lead to diseases not associated with infection or allergy. **Stephen N. Davis, MBBS**, the Theodore E. Woodward Endowed Chair, and the professor and chairman of the Department of Medicine, is studying the link between glucose metabolism and inflammation, and his discoveries may help to explain why people with diabetes often suffer from atherosclerosis and heart disease. He cites evidence from studies of groups of healthy, diabetic, and obese people, which suggest that improper glucose metabolism increases inflammation in blood vessels.

The Festival of Science is the cornerstone of the School of Medicine's ACCEL-Med Initiative. ACCEL-Med stands for "Accelerating Innovation and Discovery in Medicine," and encompasses the research component of our shared Vision 2020. Vision 2020 was established in conjunction with our hospital partners, led by System President **Robert Chrencik**. The research component of Vision 2020 was aimed at significantly and measurably increasing the pace and scope of discovery and innovation, with the expectation that the results of this growth would significantly impact human health and wellbeing. The achievements showcased at this year's Festival of Science show that we are well on our way to meeting those goals.

SCIENCE

► BY DAVID KOHN, AMBER MUELLER, AND KARLA PAOLI

and Inflammatory Diseases and Vaccines



The Scientific Council

Members of the Council include:

Rita Colwell, PhD

Distinguished Professor at the University of Maryland, College Park and the Johns Hopkins University Bloomberg School of Public Health ■ Senior Advisor and Chairman Emeritus, Canon US Life Sciences, Inc. ■ President and Chairman of CosmosID, Inc.

Carol Greider, PhD

Daniel Nathans Professor and Director, Department of Molecular Biology and Genetics, Institute of Basic Biomedical Sciences, Johns Hopkins University School of Medicine ■ Awarded 2009 Nobel Prize for Physiology or Medicine

Philip Needleman, PhD

President/CEO, St. Louis Science Center ■ Former President, Searle R&D

Ralph Snyderman, MD (Council Chair)

Chancellor Emeritus, Duke University and the James B. Duke Professor of Medicine, Duke University School of Medicine

Elias Zerhouni, MD

President of Global R&D, and member of the Executive Committee Sanofi Pharmaceutical

Festival of Science Sessions

SESSION 1: Infections and Vaccines

• Introduction

Alan R. Shuldiner, MD, John L. Whitehurst Endowed Professor, Department of Medicine, and Director, Program in Personalized and Genomic Medicine

• University of Maryland School of Medicine Research in Infections, Inflammation and Vaccines

James B. Kaper, PhD, Professor and Chair, Department of Microbiology and Immunology, and Senior Associate Dean for Academic Affairs

• "CVD," an Academic Vaccine Development Enterprise

Myron M. Levine, MD, DTPH, Simon and Bessie Grollman Distinguished Professor, Department of Medicine, Director, Center for Vaccine Development; and Division Head, Geographic Medicine

• Malaria Vaccines

Christopher V. Plowe, MD, MPH, FASTMH, Professor, Department of Medicine; Leader, Malaria Group; Associate Director for Research Training, Center for Vaccine Development; Investigator, Howard Hughes Medical Institute

• Adoptive T-cell Transfers as a Strategy for Rebuilding Immune Function after Autologous Stem Cell Transplantation for Blood Cancers

Aaron P. Rapoport, MD, Gary Jobson Professor of Medical Oncology, Department of Medicine, and Director, Lymphoma/Gene Medicine and Bone Marrow/Stem Cell Transplant Program, Greenebaum, Cancer Center

• HIV Preventive Vaccine: Where We Are, Where We Want to Be and Why It Is Such a Hurdle

Robert C. Gallo, MD, Homer & Martha Gudelsky Distinguished Professor in Medicine, and Director, Institute of Human Virology

SESSION 2: Inflammation

• Introduction:

Curt I. Civin, MD, Professor, Department of Pediatrics; Director, Center for Stem Cell Biology and Regenerative Medicine; Associate Dean for Research

• Overview of Inflammation Related Research at the University of Maryland School of Medicine

Jeffrey D. Hasday, MD, Professor, Department of Medicine, and Head, Pulmonary and Critical Care Division

• Novel Host-targeted Innate Immune Interventions in Severe Infection

Stefanie N. Vogel, PhD, Professor, Department of Microbiology and Immunology

• Regulation of Allergic Inflammation by IL-4 and IL-13 Signaling

Achsah D. Keegan, PhD, Professor, Department of Microbiology and Immunology and the Center for Vascular and Inflammatory Diseases, and Associate Director, Medical Scientist Training Program

• Acute Effects of Hyperinsulinemia, Hyperglycemia and Hypoglycemia on Inflammation, Atherothrombotic Mechanisms and Endothelial Function in Healthy, Obese and Diabetic Humans

Stephen N. Davis, MBBS, Theodore E. Woodward Professor and Chair, Department of Medicine; Co-Director, University of Maryland Clinical Translational Sciences Institute; and Program Director, University of Maryland General Clinical Research Center



DR. CLAUDIA BAQUET Retiring After 20 Years of Service



Claudia R. Baquet, MD, MPH, Professor, Department of Medicine and Associate Dean for Policy and Planning at the University of Maryland School of Medicine, has announced that she will be retiring from the School of Medicine on February 1, after 20 years of service.

Dr. Baquet, who is also director of the Center for Health Policy & Health Services Research, has spent her entire career working to improve healthcare for poor and minority communities. She is regarded as a leader and pioneer in conducting research on health disparities and barriers to clinical trial research participation, and is known throughout the community for her role in the Mini-Med School Program, special Bioethics Mini Med School sessions, and other public health initiatives, and for her research on bioethics literacy in Baltimore, on the Eastern Shore, and in Southern Maryland.

“My career has been devoted to improving health care for those who need it most, and to removing persistent barriers to healthcare and research participation for medically underserved communities,” said Dr. Baquet. “Being at the University of Maryland School of Medicine has been a wonderful, important chapter for me, both professionally and personally. I will cherish the memories and partnerships developed during my time here.”

Dr. Baquet has also mentored hundreds of faculty, students and residents—especially younger female physicians just starting their careers.

“Claudia Baquet has had a long, accomplished career,” said Dean E. Albert Reece, MD, PhD, MBA, Vice President for Medical Affairs, University of Maryland, and the John Z. and Akiko K. Bowers Distinguished Professor and Dean, University of Maryland School of Medicine. “Her tireless work for the poor and underserved has led to significant changes in our health care system, both regionally and nationally. She has been a valued member of the School of Medicine community for many years, and we will miss her.”

Dr. Baquet has studied the issue of health disparities for more than three decades, dating back to her work on cancer care in the 1980s. Her research led to a policy change at the National Cancer Institute, requiring the reporting of race and ethnicity in cancer data, a key development in addressing disproportionate cancer rates, variations in cancer screening and tobacco cessation for African Americans, and later cancer control research and education for Native Americans, rural, Samoan and Hispanic communities.

Her research has found that bi-directional collaborations between rural community based health education centers and academic health centers can help reduce health disparities in underserved communities. In 2000, Dr. Baquet helped start the UM SOM Mini-Med School, an annual health literacy program that links the school’s faculty with the wider Baltimore community, teaching the public about important health issues, including obesity, clinical trials and biobank donation, heart disease and diabetes. Over the course of the program, she has played a major role, helping to plan sessions, serving as a host and teaching for the program. Over the past 14 years more than 1,500 people have participated in the Mini-Med program. With NIH grant support, Dr. Baquet established a four-week bioethics Mini-Med program, which was designed to explain the

process of biomedical research to the public. This intensive program led to increased willingness to participate in trials and biobank donation among participants and even led to some community members participating in the University of Maryland, Baltimore’s institutional review board.

Dr. Baquet has been awarded more than \$79 million in research grants. Her nationally recognized work in the development of sustained bidirectional community-academic research partnerships helped to legitimize the important role of diverse communities on strong research teams. She provided more than \$18 million in grant funds to community organizations, such as AHECs, to foster community partnered health disparities research, increase participation of diverse communities in clinical trials and participation in biobanks.


She came to UMSOM in 1994 and was appointed program director for the Maryland Area Health Education Center (AHEC). The next year, she was named associate dean for policy and planning. She later was appointed director of the Center for Health Policy and Health Services Research. Throughout her career, she has worked hard to reduce disparities in the state and across the U.S. In 1997, she initiated a partnership between ESAHEC and UM SOM. This program works to increase access to quality health care for rural communities through educational partnerships. The partnership supports medical student and other health professions student education and training and encourages future health care professionals to practice in underserved regions.

Over the years, Dr. Baquet has won many awards, including the American Heart Association Watkins-Saunders Award, which recognizes those who have reduced healthcare disparities in Maryland; the National Institute of Health’s Dr. Martin Luther King, Jr. Special Award for “Closing the Health Gap in the Communities We Serve”; the American Public Health Association’s David P. Rall Award for Advocacy in Public Health; the National Medical Association’s Council on Concerns of Women Physicians Research Award; the American Cancer Society National Board of Directors’ St. George Award; and the Maryland Governor’s Cancer Council’s Martin Abeloff Award for Excellence in Cancer Research, Education and Cancer Control. In 2014, she was recognized by the American Medical Women’s Association with the “Women Science Award” for scientific contributions to women’s health and health disparities research. Also in 2014, she received the “Outstanding Rural Program Award” from the Maryland Rural Health Association.

Dr. Baquet received her MD in 1977 from Meharry Medical College in Nashville, TN, and her MPH in epidemiology in 1983 from Johns Hopkins University. She also trained in pathology at St. Louis University and Wadsworth Veterans Administration Hospital in Los Angeles.


We would like to thank Dr. Baquet for all she has done for the School of Medicine and the surrounding community and wish her all the best in her retirement!

SAVE THE DATE
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UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE JANUARY 2015 VOL. 16 No. 5

SOMnews is produced by the University of Maryland School of Medicine, Office of Public Affairs
▲ E. Albert Reece, MD, PhD, MBA, Vice President for Medical Affairs, University of Maryland, and Dean, University of Maryland School of Medicine ▲ Chris Hardwick, Executive Editor ▲ Caelie Haines, Managing Editor
▲ Tom Jemski and Mark Teske, Head Shot Photos ▲ Brushwood Graphics Design Group, Design
▲ Submitting information to SOMnews: Please email your submission six weeks prior to the month you wish to see your submission included to Caelie Haines, Public Affairs Manager, at chaines@som.umaryland.edu.
▲ Printed using environmentally-responsible low VOC inks.

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