Indeed, UMB and the School of Medicine have made extraordinary strides in the last decade. The School of Medicine, in particular, has enjoyed unprecedented growth in research funding and philanthropic giving, to name just two areas.

The next few months will be exceedingly busy ones. Last month we hosted another successful Fund for Medicine Gala, where we celebrated the outstanding accomplishments of our scientists and physicians and raised much-needed funds for our unprecedented $500 million capital campaign. In addition, we just established a new Office of Postdoctoral Scholars for graduate students and postdoctoral fellows (more on this in the May issue of SOMnews), and we are finalizing our 2010-2015 strategic plan entitled “Taking a Quantum Leap Forward.”

I have expanded my work schedule to ensure that my responsibilities are met and our goals are achieved, and to ensure that we lose no ground. I look forward to welcoming Dr. Jay Perman back to the University of Maryland when he assumes the presidency on July 1. Until then, we have an opportunity before us. I challenge us all to rise to the occasion.

In the relentless pursuit of excellence, I am Sincerely yours,

E. Albert Reece, MD, PhD, MBA
Acting President, University of Maryland, Baltimore
John Z. and Akiko K. Bowers Distinguished Professor and Dean, School of Medicine

Elijah Saunders, MD, FACC, FACP, FAHA

Elijah Saunders, MD, FACC, FACP, FAHA, professor of medicine at the University of Maryland School of Medicine, was awarded a Diversity Recognition Award as Outstanding University of Maryland, Baltimore Faculty/Staff member at a February 3, 2010 Black History Month Event commemorating Dr. Martin Luther King. “The annual Martin Luther King Jr. lecture series event is very important, because it commemorates the principles Dr. King stood for,” said Dr. Saunders.

The next month, Dr. Saunders was the first black resident in internal medicine at the University of Maryland School of Medicine, from which he graduated in 1960. He was also the first black cardiologist in Maryland and was integral in abolishing segregated hospital wards at what was then University Hospital (now the University of Maryland Medical Center). Dr. Saunders created Health program, which trains barbers and hairstylists to pre-screen their customers for hypertension and make appropriate referrals for medical care.

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Dr. Saunders, who was out of town giving a lecture, was unable to accept his award personally. Sharon E. Saunders, MD, clinical assistant professor of medicine, accepted the award from Dean Reece on her husband’s behalf.

Elijah Saunders Receives UMB Diversity Award

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University of Maryland School of Medicine

Dean’s Message: What’s On My Mind

hat’s on my mind this month is the continued excellence of the School of Medicine and the University of Maryland, Baltimore. In the month since I assumed the role of acting president of UMB, I have had the opportunity to see the University and the School of Medicine with “new eyes,” and have been privileged to forge enhanced working relationships with the deans, vice presidents and other campus leadership as we navigate together the path to continued excellence.

In this transition period, during which I will remain in my role as dean of the School of Medicine, our challenge will be to maintain the momentum that we have worked so hard to achieve. The School of Medicine’s senior leadership has gracefully agreed to expand their efforts to ensure that the medical school’s goals and objectives are met, if not exceeded, while I am fulfilling my duties in the president’s office.

Last month I attended hearings before the Maryland House of Delegates and Senate budget committees. In both venues it was evident that the leadership of the two legislative chambers recognize and greatly appreciate UMB’s and the School of Medicine’s tremendous contributions and our importance to the state, in terms of our economic impact and our service to the people of Maryland.

Indeed, UMB and the School of Medicine have made extraordinary strides in the last decade. The School of Medicine, in particular, has enjoyed unprecedented growth in research funding and philanthropic giving, to name just two areas. I am fully aware that this high level of performance is due to the commitment, hard work and dedication of you, our faculty, staff and students.

The next few months will be exceedingly busy ones. Last month we hosted another successful Fund for Medicine Gala, where we celebrated the outstanding accomplishments of our scientists and physicians and raised much-needed funds for our unprecedented $500 million capital campaign. In addition, we just established a new Office of Postdoctoral Scholars for graduate students and postdoctoral fellows (more on this in the May issue of SOMnews), and we are finalizing our 2010-2015 strategic plan entitled “Taking a Quantum Leap Forward.”

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E. Albert Reece, MD, PhD, MBA
Acting President, University of Maryland, Baltimore
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University of Maryland School of Medicine researchers have addressed some critical issues facing senior men. Hip fractures—traditionally an injury more often seen in women—is an increasing problem for male patients, especially as baby boomers age. The number of men who will fracture their hips is expected to double over the next four decades. A recent symposium examined how men with hip fracture differ from women.

“Because most of the clinical research is aimed at women, little is really known about the consequences and long-term effects of hip fracture in men,” said Jay Magaziner, PhD, MS/Hyg, professor and chair, Department of Epidemiology and Preventive Medicine, and associate director of the BHS. One current study, funded by the National Institute on Aging, plans to enroll 400 hip fracture patients, half of them men. Eligible patients are enrolled within 15 days of being admitted to one of eight study hospitals in the BHS network. Study participants undergo a comprehensive assessment of physical functioning, cognitive testing, measures of bone (density, strength and quality) and body composition. Follow-up data are collected two, six and 12 months post-admission. Dr. Orwig said, “We examined various measures of memory and concentration, depression, frailty, bone mineral density, and body composition at time of fracture, which may play a role in eventual recovery one year later.”

Ann Gruber-Baldini, PhD, associate professor, Department of Epidemiology and Preventive Medicine, Marc Hochberg, MD, professor, Department of Medicine, Department of Epidemiology and Preventive Medicine, and Dr. Orwig looked at baseline psychosocial differences between men and women who had hip fractures. Study participants were given neuropsychiatric testing to look at visual integration and psychomotor speed test, which is important in balance, movement and risk of falling. The men did not perform as well on tests as the women. This study also found that men were more likely to be married or living with others and seemed to be less physically active before their fractures.

Contrary to a previously held hypothesis that women are weaker than men, prior to hip fracture women were actually more robust than men, according to a study by Daniel Andersen, PhD, academic post doctoral fellow at the University of Maryland National Study Center for Trauma and EMS, Ray Miller, MD, CM, assistant professor, Department of Epidemiology and Preventive Medicine, and Dr. Orwig. Men in this study were found to have a higher proportion of weakness, exhaustion and lower amounts of physical activity.

Bone mineral density is another area where male and female patients differ, according to a study by Julia Chan, MS, doctoral student in the Department of Epidemiology and Preventive Medicine, William Hawkes, PhD, assistant professor, Department of Epidemiology and Preventive Medicine, along with Drs. Miller, Hochberg and Orwig. The scientists were surprised to find that men tended to have less osteopenia and greater bone mineral density scores at the femoral neck and total hip at the time of fracture. Dr. Miller also looked at thigh muscle composition two months after admission to the hospital from a hip fracture, as a measure of post-injury atrophy. This study found that men appeared to have less atrophy than women on the side of the fracture, which presumably should have a positive impact on physical performance and recovery.

While these studies highlight the different challenges men face with hip fractures, the information is still applicable to everyone. According to Dr. Magaziner, “Our hope is to eventually design interventions and treatments to enhance the recovery of all hip fracture patients.”

The NHLBI launched the Pediatric Circulatory Support program in 2004 by funding the development of five neonatal circulatory support devices for infants and young children with congenital and acquired cardiovascular disease. The PumpKIN program is the next phase of NHLBI support for the development and clinical realization of these devices. The program’s goal is to complete the needed animal studies and other tests in artificial environments for the most promising devices in order to gain approval from the Food and Drug Administration to begin clinical testing.

The adult heart is about the size of a fist but a child’s heart is much smaller; in an infant, the heart is about the size of a large walnut. Devices in the PumpKIN program will provide circulatory support for newborns, older infants, and children weighing less than 5 pounds who experience heart failure due to congenital and acquired cardiovascular disease.

“The tiny devices that result from the PumpKIN research will make all the difference in the world for infants with these serious cardiac problems, particularly babies who have not responded to surgical or other measures to correct their heart defects,” said Dr. Griffith, who is the principal investigator for the Maryland arm of the project.

Dr. Griffith has been working for several years with one of the other grantees in the pumpKIN project, Robert Jarvik, M.D., developer of the Jarvik heart pump for adults, to develop a child-sized pump.

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A new vaccine to prevent the deadly malaria infection has shown promise to protect the most vulnerable patients—young children—against the disease, according to an international team of researchers led by the University of Maryland School of Medicine’s Center for Vaccine Development. Christopher V. Plowe, MD, MPH, MPhil, professor, Department of Medicine and chief, Malaria Section, Center for Vaccine Development, led the trial in collaboration with the Malaria Research and Training Center at the University of Bamako in Mali, West Africa. In a new study of the vaccine in young children in Mali, the researchers found it stimulated strong and long-lasting immune responses. In fact, the antibody levels the vaccine produced in the children were as high or even higher than the antibody levels found in adults who have naturally developed protective immune responses to the parasite over lifelong exposure to malaria.

“This finding implies that we may have achieved our goal of using a vaccine to reproduce the natural protective immunity that normally takes years of intense exposure to malaria to develop,” said Dr. Plowe, a lead author of the study published in February in PLoS ONE, the journal of the Public Library of Science. Dr. Plowe also is an investigator with the Howard Hughes Medical Institute and a Doris Duke Distinguished Clinical Scientist.

In areas of the world such as Africa, where malaria is particularly rampant, the young are most vulnerable to the disease and they have not built up the natural immunity as adults. According to the World Health Organization, a child dies of malaria every 30 seconds. There are about 300 million malaria cases worldwide each year, resulting in more than one million deaths, most of them African children.

Malaria is caused by a parasite spread to humans through mosquito bites. There is no approved vaccine to protect against the condition, though using bed nets or killing mosquitoes with insecticides can prevent infection. The parasite is treatable using medications, though drug resistance is a relatively common problem. Evaluating the disease has become a priority for scientists and health officials worldwide. An effective and broadly protective vaccine is a key step toward that goal.

In addition to the Howard Hughes Medical Institute’s support of Dr. Plowe’s research, the study was funded by the U.S. Army and funded by the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health, and the United States Agency for International Development (USAID).

The vaccine, called FM72-1/AS02A, was developed as part of a longstanding research collaboration between the Walter Reed Army Institute of Research (WRAIR) and GlaxoSmithKline Biologicals (GSK). The vaccine consists of a form of the AMA-1 protein, inverted and manufactured by WRAIR, and the AS02 Adjuvant System, developed and manufactured by GSK. The Adjuvant System is a compound that boosts the immune response to the vaccine. Previous studies in the U.S. and in Mali already have found the vaccine to be safe and to trigger strong immune responses in adults.

The vaccine, based on a single strain of the fal操iunculus malaria parasite—the most common and deadliest form of the parasite found in Africa—targets malaria in the blood stage. The blood stage is the period after the mosquito bite, when the parasite multiplies in the blood, causing disease and death. Other blood stage vaccines have been tested but none has shown the ability to prevent malaria disease.

For the study, the CVD team collaborated with a group of Malian researchers from the Malaria Research and Training Center, led by Mahamadou Thera, MD, PhD, and Ophirba Dourou MD, PhD. The study also included collaborators WRAIR, GSK, NIAP, and USAID.

The scientists tested the vaccine in 120 Malian children ages 1-6 at the Bandiagara Malaria Project in rural Mali. The children were randomly assigned to receive either one of three escalating doses of the malaria vaccine or a control rabies vaccine. All three doses of the vaccine proved to be safe and well tolerated, and all three doses also showed very strong antibody responses that were sustained for at least a year.

Based on the vaccine’s apparent success in this early trial, the same international team of U.S., Malian and European investigators now are subjecting it to further study in a much larger trial of 400 Malian children to evaluate its effectiveness against malaria disease. That study also will examine whether the vaccine—though it is based on a single strain of malaria—can protect against the broad array of malaria parasites that exist. The scientists hope the vaccine could be combined with other vaccines to create a multi-component immunization that is highly protective.

\[Image 647x52 to 793x281\]

**Study Finds New Malaria Vaccine Produced Strong Immune Response in Children**

Children exposed to cocaine in the womb face serious consequences from the drug, but fortunately not in certain critical physical and cognitive areas as previously believed, according to a new comprehensive review of research on prenatal cocaine exposure. The review was published March 1 in the journal *Pediatrics*. When a pregnant woman uses cocaine, it can interrupt the flow of nutrients and oxygen to the baby, putting such children at risk for premature birth, low birth weight and many other problems. The new review of multiple major studies conducted on cocaine-exposed, school-aged children found this negative impact significantly affected children in subtle areas such as sustained attention and self-regulated behavior. The research, however, showed surprisingly little impairment directly from cocaine in key areas such as growth, IQ, academic achievement and language functioning.

Many of the children did have low IQ and poor academic and language achievement. The research suggested, though, that these apparent impairments were often caused by the troublesome home environment that goes along with cocaine use, rather than directly from fetal cocaine exposure. The developmental areas that the cocaine exposure seemed to directly impact—sustained attention and self-regulated behavior—could become significantly problematic as children grow into adults. It is the first review of cocaine-exposed school-age children six and older; a previous review looked at younger children.

When rates of cocaine use began to grow in Ame-

cricas in the 1980s and 1990s, many researchers were concerned about the children who had been exposed to the drug or its derivative, crack cocaine, in utero were doomed for a lifetime of poor health, sub-par performance in school, behavioral problems and eventually for substance abuse themselves. The new review indicates otherwise, and could change the way medicine and social science approach outreach to and study of cocaine-exposed children, said Dr. Black.

“Cocaine can disrupt fetal growth and development, but this review tells us that just because a child has been exposed to cocaine it is not a foregone conclusion that they’re going to be in trouble,” said Dr. Black. “No one is saying cocaine use is good. We need prevention programs so women don’t use cocaine in the first place. Children experience serious negative effects from drug exposure in the womb. It looks, though, as if cocaine doesn’t work alone. Women who use cocaine are often from poor and dysfunctional families, where children do not receive the care and enrichment they need. In addition, women who use cocaine while pregnant often smoke cigarettes and drink alcohol as well, exposure their unborn children to legal substances with extremely negative consequences.”

The results suggest that the prevention efforts needed to be combined with other interventions to help caregivers improve the health and social environment for cocaine-exposed children. “If you cannot be sure of their significant problems and eventually for substance abuse themselves,” said Dr. Black. “No one is saying cocaine use is good. We need prevention programs so women don’t use cocaine in the first place. Children experience serious negative effects from drug exposure in the womb. It looks, though, as if cocaine doesn’t work alone. Women who use cocaine are often from poor and dysfunctional families, where children do not receive the care and enrichment they need. In addition, women who use cocaine while pregnant often smoke cigarettes and drink alcohol as well, exposing their unborn children to legal substances with extremely negative consequences.”

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Online Resource for Research Collaboration Now Available

The School of Medicine’s Office of Research and UMB’s Office of Research and Development have partnered with Collexis™ to develop University of Maryland “Research Profiles,” a Web-based resource that captures detailed information about faculty publications and expertise. This powerful data source can be used to identify collaborators and their associated works by searching robust, up-to-date research profiles of School of Medicine and School of Pharmacy faculty. “We are excited to launch this new tool to help researchers and departments identify who is working in major life science areas within the university,” says Tom Hooven, MA, executive director, Research Administration in the School of Medicine’s Office of Research and Graduate Studies.

This pilot includes 1,300 faculty profiles from the School of Medicine, 60 from the School of Pharmacy and 140 life science and bioengineering faculty from the University of Maryland, College Park. Faculty from the School of Nursing and Dental School will soon be added as well. In addition to highlighting individual research expertise, the research profiles tool is useful in identifying existing connections among School of Medicine researchers and can assist in identifying potential collaborators internally and at other organizations. This tool can also help find mentors and key knowledge holders, making connections between faculty, students and staff easier.

Collexis’ Research Profiles uses MEDLINE publication data (PubMed) to create a “fingerprint” of a researcher’s subject expertise. This fingerprint is updated weekly and automatically as publications enter the MEDLINE database, meaning researchers are not required to manually maintain their individual profiles.

The interface enables searches by faculty name, department and institute, and by subject expertise. A search can be narrowed by selecting additional terms such as procedures, chemicals or drugs, for example. “The tool will assist companies and foundations to identify potential collaborators at UMB for clinical trials and sponsored research projects,” says Jan Hughes, vice president for Research and Development at UMB.

For any questions about the SOM information shown in the profile, please contact Cathleen Smith, Office of Research and Graduate Studies, at csmith@som.umaryland.edu. The faculty research profiles can be viewed at http://www.researchprofiles.collexis.com/maryland/.

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