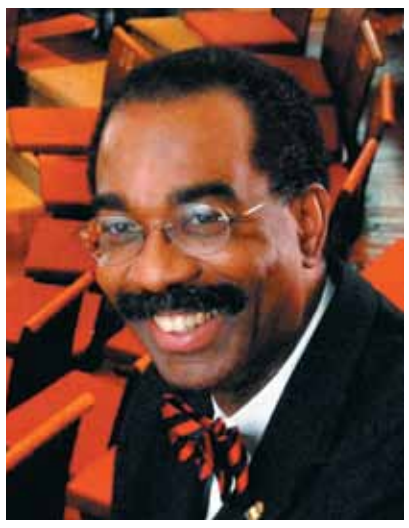
University of Maryland School of Medicine

somnews

January 2013 Vol.14 No.5

DEAN'S MESSAGE: What's On My Mind

What's on my mind this month is how heavily Maryland, with its high concentration of bioscience and federal employees, relies on federal research and development funding. As I contemplated what to share in this issue of *SOMnews*—recognizing that this would go to press before the White House and Congress, hopefully, had reached an agreement on a budget—I was struck by the potentially ominous consequences of the impending fiscal cliff for the State of Maryland. If the "sequestration" clause of the Budget Control Act of 2011 is allowed to kick in, it would trigger an approximately eight percent across-the-board cut in federal discretionary spending. Although all states would be negatively impacted, perhaps no state in the U.S. would be more adversely affected than Maryland. Indeed, our economy most likely would be pushed into a major recession with long-lasting economic consequences for the state, which stood to lose about $5.4 billion over the next four years in federal research funding under sequestration.



According to the Office of Management and Budget (OMB), sequestration would reduce funding for federal research agencies by approximately $3.6 billion in 2013 alone. By far, the single largest cut would have been to the budget of the NIH, which would have lost almost $2.5 billion. A dramatic cut to the NIH budget means, in practical terms, that the Johns Hopkins University School of Medicine and its hospital system and the University of Maryland School of Medicine and its hospital system—two of Maryland's largest life-science job creators and two of the largest recipients of federal research dollars in Maryland—would be adversely impacted. Many of the ongoing research activities would have been cut short and new research programs and initiatives delayed or cancelled. More importantly, however, it would curtail their ability to innovate and create spinoff companies.

The U.S. Government's impact on Maryland's economy goes far beyond supporting the life-sciences industry. In 2010, for example, federal operations and spending supported an estimated 821,000 jobs in Maryland, or 24 percent of the total jobs in the state. Sequestration would have resulted in $2.5 billion less in health-related spending for businesses and institutions and $2.1 billion less in defense spending from 2013 through 2017. Maryland's Board of Revenue Estimates projected that sequestration could have reduced Maryland's wage and salary base by about $2.5 billion and reduced employment by more than 12,600 jobs. However, a report from the Center of Regional Analysis at George Mason University more ominously suggested that direct, indirect, and induced job losses could have approached 100,000 lost jobs, possibly sending Maryland spiraling into a deep, protracted recession.

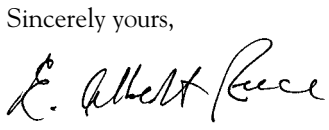
Again, hopefully, bipartisanship prevailed, and we will not go over the cliff. But the tenuous budget agreement does not change the fact that our national debt is real, and the federal government needs to take steps to address it in the long term. Or that the economic recovery in the U.S. remains fragile. It also does not change the fact that the NIH budget has remained almost flat since 2003. Failing to keep pace with inflationary costs, this means that federal research and development funding has been in a decline over the last several years.

Although fiscal responsibility remains of upmost importance, financial austerity cannot extend to our research endeavors. Maryland's bioscience sector is among the nation's largest, generating $29 billion in economic output annually, supporting 120,000 total jobs, $11 billion in income, and nearly $600 million in state government taxes annually. In other words, the sector supports nearly five percent of Maryland's total employment, more than eight percent of its wage/salary income, and over 11 percent of gross state product.

As a top-tier academic medical school, we must continue supporting ongoing programs and new initiatives. We must maintain our leadership role through research, identifying new ways to support our efforts and building collaborations to help stretch our dollars. The life-sciences sector is the one proven powerful economic engine in the State; I am confident that Maryland will remain one of its most crucial driving forces.

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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Kevin Cullen, MD

Record-Number of Faculty Named Top Doctors in *Baltimore Magazine*

AN ALL-TIME HIGH of 98 University of Maryland Medical Center doctors, all members of the School of Medicine faculty, were recognized as "Top Doctors" in *Baltimore Magazine's* November issue.

The results are based on a *Baltimore Magazine* survey of more than 10,000 randomly selected physicians in the Baltimore area, including Baltimore City and the surrounding seven counties, asking where they would send a member of their family in dozens of specialties. The University of Maryland Medical Center had more doctors on the list than any other hospital.

Also in the November issue were three separate articles about School of Medicine physicians. The magazine profiled Dr. Kevin Cullen and Dr. Silke Niederhaus on why they chose to pursue careers in medicine. There was an in-depth feature on the University of Maryland Brain Bank as well.

To see a complete list of our top doctors, visit http://bit.ly/UG1XQ1.

► BY KAREN ROBINSON

New Leadership for the Medical Scientist Training Program


Michael Donnenberg, MD

University of Maryland School of Medicine Dean E. Albert Reece, MD, PhD, MBA, has appointed Michael Donnenberg, MD, as the new director of the Medical Scientist Training Program and Achsah Keegan, PhD, as the program's associate director.

In their new roles, Dr. Donnenberg, professor, Departments of Medicine and Microbiology & Immunology, and Dr. Keegan, professor, Department of Microbiology & Immunology, will oversee the Medical Scientist Training Program, which guides medical students who are earning their medical degree at the same time they earn their PhD in a field of biomedical science. In this joint program, the MD is combined with the PhD degree offered by the Graduate Program in Life Sciences in the fields of biochemistry, molecular medicine, molecular biology & immunology, neuroscience, and epidemiology & public health.

"The National Institutes of Health (NIH)-funded Medical Scientist Training Program (MSTP) is an integral part of the School of Medicine, producing the world's next generation of outstanding physician-scientists," says Dean Reece, an active NIH-funded physician-scientist, and also vice president for medical affairs at the University of Maryland and the John Z. and Akiko K. Bowers Distinguished Professor at the School of Medicine. "Science is advancing at lightning speed, and modern medicine relies increasingly upon basic scientific discoveries to bring new treatments and diagnostic techniques to patients. To remain at the cutting edge of scientific discovery and medical education, we need to offer students an exceptional MD/PhD program, and educate exceptional trainees."

Dr. Donnenberg replaces Terry B. Rogers, PhD, who has served as director of the program since 1996. Dr. Rogers will remain at the School of Medicine as a professor in the Department of Biochemistry & Molecular Biology. "We are deeply grateful to Dr. Rogers for his many years of distinguished service at the helm of the Medical Scientist Training Program," says Dean Reece. "He has built a world-class program, and I have confidence that Dr. Donnenberg and Dr. Keegan will strengthen and build upon our already robust initiatives. Dr. Donnenberg has built an excellent career as an infectious disease physician-scientist, and he maintains an NIH-funded laboratory to research bacteria on the molecular level. Dr. Keegan is a renowned scientist whose discoveries in the basic science of immunology have changed the field. Together, they are excellent examples for our trainees, and I believe that our program will flourish under their watch."

The Medical Scientist Training Program, established in 1985, is a seven-year training program that began with small groups of just two to three students per year. It has grown to include 37 students, and has graduated 94 physician-scientists over the years.

The Medical Scientist Training Program, established in 1985, is a seven-year training program that began with small groups of just two to three students per year. It has grown to include 37 students, and has graduated 94 physician-scientists over the years. The program's participants generally enter the program as medical students and complete the normal two years of pre-clinical studies. They then enter the formal training of the PhD years, pursuing the research specialty of their choice, and complete their thesis work in three to four years, during which they are also required to complete a longitudinal clinical experience in an area related to their thesis work. After earning their PhD, the students then return for the last two years of medical school.

"I am honored to be chosen to help train the next generation of physician-scientists," says Dr. Donnenberg. "The University of Maryland School of Medicine offers an ideal environment to foster this process by providing an outstanding clinical foundation and a multitude of exceptional research opportunities. In the coming years, Dr. Keegan and I plan to build on Dr. Rogers's accomplishments, attract additional students of the highest caliber, strengthen the connection between clinical and research activities, and expand NIH support for the program."


Achsah Keegan, PhD

Adds Dr. Keegan, "I am very much looking forward to working with Dr. Donnenberg, our program director Jane Bacon, and our outstanding cadre of MSTP students to take this program to the next level of excellence. My hope is that our program will continue to be an absolute destination for the best and the brightest, and be at the top of the list for MD/PhD applicants nationwide."

"I am excited about the future of the MSTP program under Dr. Donnenberg and Dr. Keegan," says Dean Reece. "I feel confident that their strong leadership will elevate our program to the next level of excellence."

► BY NORA GRANNELL

IHV Co-Founders Named 2012 Entrepreneurs of the Year

William Blattner, MD, and Robert Redfield Jr., MD, associate directors and co-founders of the Institute of Human Virology (IHV) and professors in the Department of Medicine at the University of Maryland School of Medicine, were named the University of Maryland's 2012 Entrepreneurs of the Year at a ceremony held at the Biopark on October 23, 2012.

As a result of their success in building a sustainable business model and infrastructure in 10 African and Caribbean nations, nearly 500,000 patients have been treated with anti-retroviral medications and close to three million people have received prevention interventions and HIV testing. A foundation of their social entrepreneurship success is a high-impact service delivery model that has trained 35,000 in-country health care professionals, who have delivered more than 100 million doses of medication.

This is the seventh year the University has honored its Entrepreneur of the Year. "In the past, we have given this honor to faculty who have shown entrepreneurship in industry," says Jay A. Perman, MD, president of the University of Maryland, Baltimore. "But this year we are expanding the definition of the award to include social entrepreneurship."

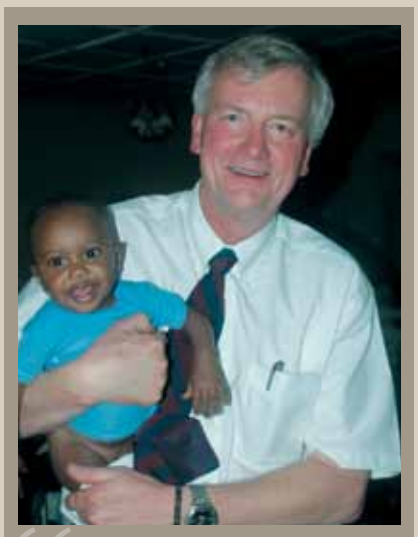

Dr. Redfield

In uncharted waters, Dr. Blattner and colleagues in the IHV established the Institute of Human Virology, Nigeria (IHVN), a not-for-profit corporation, as the mechanism that has brought $294 million in grant funding to the University in the last nine years. The impact of the effort is best measured, though, in the clinical care, treatment and prevention services to 944,004 Nigerians who were counseled and tested for HIV; 896,555 mothers who were screened to prevent infections of their babies; 139,857 patients who received antiretroviral therapy; and 22,639 health care workers who were trained. Says 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, "What this program means to me is nothing short of unimaginable."

The partnerships developed with the IHVN and multiple Nigerian universities position the University of Maryland, the Institute of Human Virology, and the School of Medicine to have sustained impact in our global research, clinical, and educational missions. Dr. Blattner admits that when then-President George W. Bush approved the President's Emergency Plan for AIDS Relief (PEPFAR), a $48 billion federal initiative to help save the lives of those suffering from HIV/AIDS around the world, "no one thought it was possible on such a scale."

From the beginning, says Dr. Blattner, "the mission's strategy has been excellence in care and treatment, training and research, and, the most important element, respect for the dignity of the people and providing hope for the people of Nigeria and beyond."

Since 2004, the IHV's Division of Clinical Care and Research, under the leadership of Dr. Redfield, has been awarded more than $189 million for the development of a consortium known as AIDSRelief. Dr. Redfield has built dedicated teams who are providing emergency response training, building local health care capacity, and strengthening key institutional partners in Ethiopia, Guyana, Haiti, Kenya, Nigeria, Rwanda, South Africa, Tanzania, Uganda, and Zambia.



> "The mission's strategy has been excellence in care and treatment, training and research, and, the most important element, respect for the dignity of the people and providing hope for the people of Nigeria and beyond."
> ~Dr. Blattner

The incidence of HIV/AIDS in Africa is going down, and life expectancy is increasing, Redfield notes. The IHV Clinical Division now has 276 sites in 10 African countries. "In each of these, we have strong, strong programs providing care and treatment," says Dr. Redfield.

Based on the success of their business model, Dr. Redfield's teams have been awarded 24 additional international grants.

"Drs. Blattner and Redfield have branded the Institute of Human Virology and the University of Maryland in all 10 countries," says Joseph O'Neill, MD, MS, MPH, director of the University of Maryland Office of Global Health and former director of the PEPFAR program. "They have built a reputation among the Ministries of Health and local in-country universities in all of these countries as the expert in global infectious diseases, HIV, TB, and malaria."

Dr. Redfield outlined three principles of the clinical side of the IHV's social entrepreneurship: 1.) The correct regimen of drugs; 2.) Develop a care system based on the Jacques Initiative (an IHV clinic in Baltimore); and 3.) Treatment strategy. "Today there is no reason that someone has to die [of HIV/AIDS], no matter how sick he is," Dr. Redfield says.

The Institute of Human Virology was co-founded in 1997 by Dr. Redfield, Dr. Blattner, and Robert Gallo, MD, the director of IHV and co-discoverer of the HIV virus and developer of the first blood test for AIDS. Dr. Gallo introduced Drs. Redfield and Blattner by saying, "No one could be more blessed to have two such colleagues as friends and to have two such friends as colleagues."

► BY KAREN ROBINSON

"Witnesses to Hunger" Exhibit Features Photos Taken by Hungry Baltimore Families

The School of Medicine partnered with several anti-hunger groups to create a month-long "Witnesses to Hunger" photography exhibit depicting the lives of food insecure or hungry families in Baltimore. The exhibit, which was free to the public, ran through November 1 at the University of Maryland Southern Management Campus Center. Maryland Hunger Solutions also hosted a conference called "Fighting Hunger in Maryland" on October 16 at the campus center. The conference was followed by a reception honoring the witnesses.

"Witnesses to Hunger" featured photographs taken by six Baltimore families who are food insecure—that is, they often do not know where their next meal is coming from. The participating families all receive services from the Department of Pediatrics and its Division of Growth and Nutrition, under the direction of division head Maureen Black, PhD, the John A. Scholl, MD, and Mary Louise Scholl, MD, Professor, Department of Pediatrics.

"Hunger is an issue that is critical to a child's development, and here in Baltimore it is affecting far too many of our children," said Dr. Black. "The goal of this exhibit is to show that hunger has a face and exists in every community. In the Department of Pediatrics, we provide services to the city's hungry children every day—they are our neighbors and part of the fabric of Baltimore. This photography exhibit is a wonderful, moving way to raise awareness about this problem that affects so many in our community."

At left: Maureen Black, PhD

To bring the exhibit to Baltimore, the University of Maryland partnered with Drexel University and with Maryland Hunger Solutions, a local initiative of the Food Research and Action Center (FRAC).

"The witnesses are the real experts on hunger and poverty," said Mariana Chilton, PhD, MPH, an associate professor at the Drexel School of Public Health and director of the Center for Hunger-Free Communities, and founder of Witnesses to Hunger. "They each have something powerful to say, and this exhibit is one way that they can have a microphone to the world—now it's up to everyone else to listen and learn."

The photography exhibit is intended to put in perspective the challenges many people face in meeting the basic needs of their family. "I've got to pay my rent. I've got to pay gas and electric. I've got to take care of the kids. I've got to make sure there's food in the house, you know, make sure they got clothes, make sure they got shoes, and make sure I got bus fare to even get to work," says Shaunte Bomar, a Baltimore Witness to Hunger. "Trying to struggle and juggle all of that on one income that's coming in the house is extremely hard."

The Baltimore witnesses all are participants in Children's HealthWatch, a national research program monitoring the health and well-being of children through age three. Dr. Black is principal investigator for the project in Baltimore, leading a team of researchers examining families' use of public assistance programs. "We have shown that food insecurity has a very negative effect on the health of young children, resulting in increased hospitalizations, poor health and developmental risk," said Dr. Black. "Our data show that public assistance can alleviate some of those risks. We hope this exhibit raises awareness about this crucial problem affecting so many children in America."

► BY SHARON BOSTON

Exercise Beneficial for Parkinson's Disease Patients

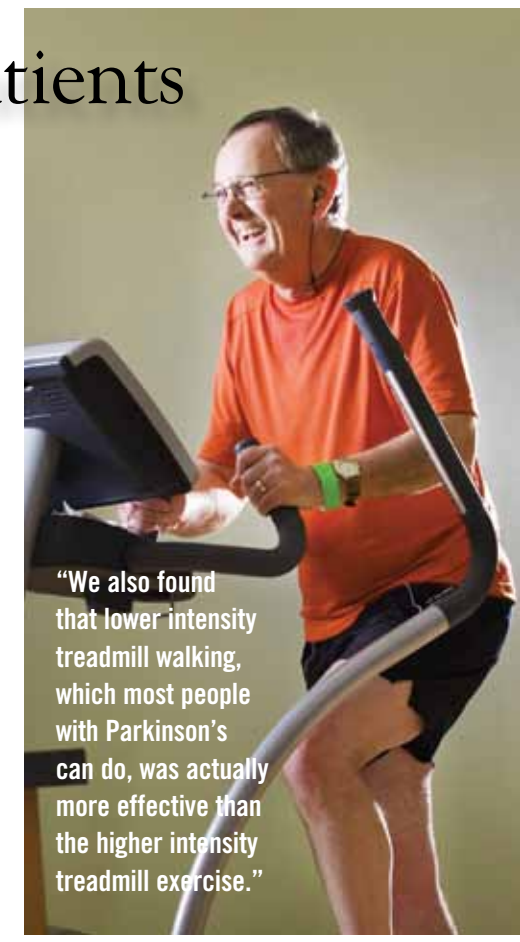
RESEARCHERS from the University of Maryland School of Medicine and the Baltimore VA Medical Center published results of a randomized, controlled trial showing that physical activity, including walking on a treadmill, and stretching and resistance exercise, appears to improve gait speed, muscle strength and fitness for patients with Parkinson's disease (PD). The results were published on November 6, 2012, in the online edition of *Archives of Neurology*, a publication of the *Journal of the American Medical Association* (JAMA).

"People with Parkinson's often see a serious decline in their quality of life when they begin to have trouble with walking, so many patients ask what kind exercise they should be doing to help them maintain their mobility and independence. Our research shows that treadmill walking and stretching and resistance training are effective in improving mobility, strength and fitness," says Lisa Shulman, MD, principal investigator and the Eugenia Brin Professor in Parkinson's Disease and Movement Disorders at the University of Maryland School of Medicine. "We also found that lower intensity treadmill walking, which most people with Parkinson's can do, was actually more effective than the higher intensity treadmill exercise," adds Dr. Shulman.

The researchers, who received funding from the Michael J. Fox Foundation, compared 67 people with Parkinson's disease who were randomly assigned to one of three exercise groups: walking on a treadmill at low intensity for 50 minutes; higher-intensity treadmill training to improve cardiovascular fitness for 30 minutes; and using weights (leg presses, extensions and curls) and stretching exercises to improve muscle strength and range of motion. Participants exercised three times a week for three months under the supervision of exercise physiologists at the Baltimore VA Medical Center.

"When we tested the participants, all three groups showed improvement, but low-intensity exercise (performed for 50 minutes three times a week) was the best in terms of helping participants to improve their mobility," notes Dr. Shulman, who is also co-director of the Maryland Parkinson's Disease and Movement Disorders Center at the University of Maryland Medical Center. "We are encouraged to see that the lower-intensity treadmill exercise, which is feasible for most Parkinson's patients, proved to have the greatest benefit for mobility while also improving cardiovascular fitness," says Dr. Shulman.

"This study by University of Maryland School of Medicine faculty provides a very practical, real-life option for doctors and patients," says 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 research builds a strong foundation, opening the possibility for future investigation, such as comparing different combinations of exercise or looking at the potential benefit of a longer training session."



Radiation Following Surgery Improves Survival

for Elderly Women with Early-Stage Breast Cancer

► BY KAREN WARMKESSEL

Elderly women with early-stage breast cancer live longer with radiation therapy and surgery compared with surgery alone, researchers at the University of Maryland School of Medicine have found. The researchers, who collected data on almost 30,000 women, ages 70-84, with early, highly treatable breast cancer, who were enrolled in a nationwide cancer registry, reported their findings at the 54th annual meeting of the American Society for Radiation Oncology (ASTRO) in late October 2012.

"Overall survival and breast cancer-specific survival were significantly better at all time points for elderly women with Stage-I, estrogen-receptor (ER)-positive breast cancer with no lymph node involvement who received radiation therapy following surgery to remove the tumor," says lead author Randi J. Cohen, MD, MS, an assistant professor in the Department of Radiation Oncology at the University of Maryland School of Medicine and a physician in the Department of Radiation Oncology at the University of Maryland Marlene and Stewart Greenebaum Cancer Center.

For women who had radiation and a lumpectomy, the overall survival rate was 88.6 percent at five years, 65 percent at 10 years, and 39.6 percent at 15 years. That compares with a survival rate of 73.1 percent at five years, 41.7 percent at 10 years, and 20 percent at 15 years for women who only had surgery. The median survival rate was 13 years for patients receiving surgery and radiation, compared with 9.9 years for patients receiving surgery alone.

"Our findings suggest that adjuvant radiation therapy should be strongly considered as part of the treatment regimen for otherwise healthy elderly women with early ER-positive breast cancer," Dr. Cohen says. "A woman's age alone should not dictate whether or not radiation is recommended."

The senior author, Steven J. Feigenberg, MD, an associate professor in the Department of Radiation Oncology at the University of Maryland School of Medicine and a researcher at the University of Maryland Greenebaum Cancer Center, notes that the data also showed that the use of adjuvant radiation decreased as the women grew older. Eighty percent of women age 70-74 received radiation, compared with 61 percent of women age 80-84.

[please turn to back page]

Impact of the 23rd Annual Project Feast

► BY CAELIE HAINES

Amanda Wong (in gray shirt) and other Project Feast volunteers

Students from the School of Medicine organized the 23rd annual University of Maryland Project Feast, a Thanksgiving meal for homeless and disadvantaged persons held November 22, 2012 in West Baltimore. Students, faculty and staff from all of the University's professional schools gathered at Booker T. Washington Middle School to host the midday meal. They also provided free clothing, non-perishable food items, blood pressure screenings and a warm, safe place for those who had nowhere else to celebrate the holiday.

Project Feast is a Thanksgiving tradition co-sponsored by the Medical Alumni Association, the University Student Government Association, and the School of Medicine Student Council. More than 100 students from across the campus helped to organize and staff the event. Amanda Wong, MPH, a second-year medical student, was one of the organizers of this year's event.

"Around 400 people were served lunch, mostly men but there were a fair number of couples and families," Amanda says. "Ms. Sheila Travers, the middle school's cafeteria manager, was there the night before to help prepare sides and the cooked turkey we brought her. She arrived at 6am on Thanksgiving Day to start the bulk of the cooking. We (the organizers) arrived at 7:30am to start setting up, and volunteers started arriving at 8am, as did attendees, who lined up outside to wait for the doors to open at 10."

The experience had quite an impact on Amanda, who was far from home on the holiday. "I'm originally from California—I moved here for medical school—and don't have many ties to the community. Medical school sometimes seems so all-consuming that I feel it's my only community here. But working on Project Feast changed that; I felt as though I was finally a part of this city. Most of our volunteers were associated with the University of Maryland, but we were all here for a common purpose: to make Thanksgiving special for everyone, even strangers we never even look at on the street."

The event also had a great impact on those who were fed. "I had an opportunity to sit and talk to a number of the attendees as they ate," Amanda says. "One man was here for the first time—he'd heard about it from a shelter he'd recently stayed at. He told me that he couldn't believe that this existed, and that he could take as much food with him as he wanted. His last meal was a day ago and he was grateful for this and the warm clothes donations. He said that he wished more people could have known about it and promised to spread the word. He also thanked every single volunteer who walked past him."

If you are interested in joining next Thanksgiving's event, email ProjectFeastUMD@gmail.com after September 1, 2013 for more information.

Friendraiser

The Second Annual University of Maryland School of Medicine Center for Stem Cell Biology and Regenerative Medicine "Friendraiser" was held on Sunday, October 28, 2012, in the rooftop Olive Room restaurant at the Inn at the Black Olive in Fells Point. A sell-out crowd turned out for the event despite severe weather conditions produced by Hurricane Sandy. Guests had the opportunity to interact with faculty members from the Stem Cell Center and hear about the exciting stem cell research being done at the University of Maryland School of Medicine.

Speakers included: Dr. Curt Civin, Director of the Center for Stem Cell Biology; Mr. Stelios Spiliadis, Owner, The Inn at the Black Olive; Ms. MB Lancaster, a former patient of Dr. Civin; Ms. Julie Taylor, a third-year medical student at University of Maryland School of Medicine; and Mr. Marty Taylor, a former Civin lab member. The event honored the work of the Honorable Pete Hammen and the Honorable Sandy Rosenberg in advancing stem cell research in Maryland. Delegates Hammen and Rosenberg, who have written and advocated for legislation supporting critical stem cell research, were presented with certificates of appreciation.

One hundred percent of the event proceeds will benefit stem cell research at the School of Medicine. Photos from the event and details for the 2013 Friendraiser can be found under News & Events on the Stem Cell Center's webpage at http://medschool.umaryland.edu/stemcell/default.asp.

Radiation Following Surgery *[continued from page 3]*

"Breast radiation is the standard of care following a lumpectomy for early-stage breast cancer, but previous research suggested that it helped to prevent the cancer from returning in the treated breast, but had no impact on survival in older women," Dr. Feigenberg says. "As a result, some elderly women may not have been offered radiation therapy as part of their breast cancer treatment. We wanted to look at a large, population-based database to determine if radiotherapy does offer some benefits in terms of survival, and we found that it does."

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, says, "Breast cancer is a very common problem for older women, with more than half of the women diagnosed with breast cancer in the U.S. are over the age of 65. Many of them have early-stage cancers, which can be removed with a lumpectomy. This large-scale study provides convincing evidence that adjuvant radiation therapy should also be offered to these older patients."

The researchers attributed the improved outcomes with surgery and radiation to better "locoregional control" of the cancer. They also noted that patients selected to receive radiation may have been healthier, with a longer anticipated life expectancy than those who did not receive radiation.

somnews

University of Maryland School of Medicine January 2013 Vol.14 No.5

SOMnews is produced by the University of Maryland School of Medicine, Office of Public Affairs
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▲ Printed using environmentally-responsible low VOC inks.

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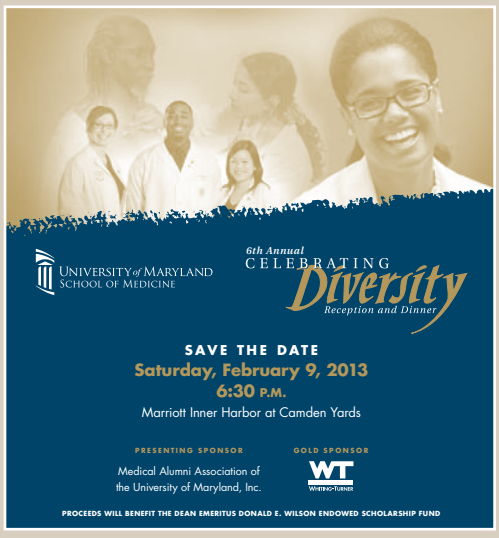

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