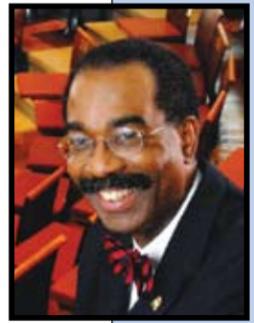




## DEAN'S MESSAGE: What's On My Mind



**W**hat's on my mind this month is how to avert a 'gathering storm'! We have witnessed in recent years historic advances in biomedical research, and meeting the challenge of translating basic science insights into effective therapies for patients is not as easy as some might think. We all know that it requires the creation of a robust translational research enterprise.

The foundation for this enterprise is currently being built. According to a number of recent reports, however, its full realization is likely to be hampered due to a looming shortage of physician-scientists to carry on this critically important work. This is a gathering storm, indeed.

Unfortunately, there are not enough medical students and physicians currently entering the MD/PhD or post-undergraduate medical education fellowship pipelines. In 1983, the total number of physicians in the United States was 479,439, and the number of physician-scientists was 18,535 (3.9 percent of the total); by the late 1990s, the total number of physicians had increased to 707,032, whereas the number of physician-scientists had fallen to 14,479 (2.0 percent of the total).

The physician-scientist population in the United States is becoming an "endangered species" compared to 25 years ago. Since the mid-1980s, the percentage of total research project grants awarded by the National Institutes of Health (NIH) to investigators younger than 50 has gradually decreased for MD, PhDs and MD/PhDs.

One beacon of hope in this otherwise disturbing picture is the NIH's Clinical and Translational Sciences Awards (CTSA) program. To date, the CTSA has provided

funding to about a dozen academic medical centers, which are required to include training in clinical and translational research and career development as part of their overall program. Although the NIH plans to fund 60 CTSA centers by 2012, the future of this critically important training program is not guaranteed as the NIH budget has been slashed by almost 16 percent in real dollars over the past five years.

There are many possible reasons why medical students and physicians are eschewing careers in clinical and translational research, including accumulated debt, long training periods and the uncertainty of success. However, I believe the most important factor involves the initial decision of whether or not to pursue a career in research, which often comes early in their training.

A major restructuring of medical education in which training in research methods takes center stage throughout the curriculum is one way we can avert this gathering storm of a significantly deficient workforce of physician-scientists. Stimulating students' curiosity, providing exposure to research and making research training an interwoven component of medical education curricula would require the development of a new paradigm for how we educate and train our doctors—one where every future physician receives thorough instruction in the basic principles of research methods, beginning at virtually the first day of

medical school and continuing through residency training.

We at the University of Maryland School of Medicine could, of course, change our curriculum to reflect this paradigm shift. However, in order to ensure that all medical students in the United States graduate with research competency, the two major accrediting bodies for undergraduate and subspecialty medical school training—the Liaison Committee on Medical Education and the Accreditation Council for Graduate Medical Education—would need to include training in research as one of the core competencies for medical school and residency program accreditation. Such a standard would give medical schools a powerful incentive to stimulate students to understand the importance of research and give them the opportunity to participate in it.

This is likely to motivate many medical students to enter into research careers, but even for the students who do decide against a full-time career in research, there are still many ways for them to contribute. They could become part-time researchers, associate investigators, part-time clinical consultants, or members of an institutional review board or clinical trial data safety monitoring committee.

By accelerating training in research through a careful modification of medical school curricula, those trainees who do decide to become independent physician-scientists may be able to do so much earlier in their careers. The current average age for new investigators to receive their first R01 grant from the NIH is 42 years old for a PhD and 43 years old for an MD and rising. This clearly must change. Many significant contributions come from younger investigators and we must find ways to help them to receive ROIs earlier in their careers.

Reversing this trend not only would avert the impending tempest, it would also permit graduates to begin contributing to science during their years of highest creativity and have more productive years in their careers. Furthermore, providing trainees with opportunities to develop a record of accomplishment would significantly enhance their ability to obtain faculty appointments. Ultimately, I believe such a trend reversal would translate into much-needed therapies reaching patients far earlier than would otherwise be possible.

Only when we begin to teach young, aspiring physicians the true value of research from the outset will we be able to maximize the potential of these talented individuals. Moreover, it will greatly improve our ability to fully reap the benefits tomorrow of the unprecedented level of research findings being generated today.

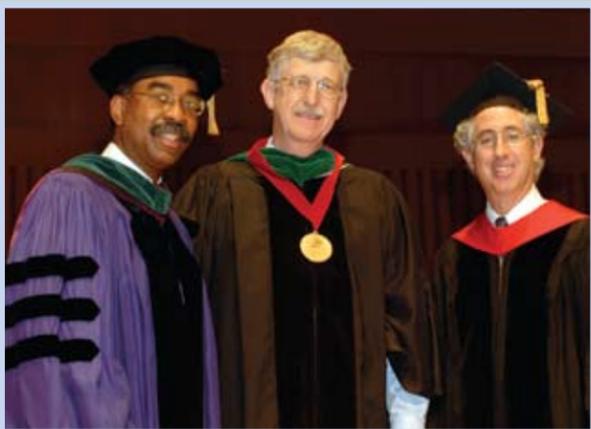
In the relentless pursuit of excellence, I am  
Sincerely yours,

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

The physician-scientist population in the United States is becoming an "endangered species" . . .

Only when we begin to teach young, aspiring physicians the true value of research from the outset will we be able to maximize the potential of these talented individuals.

## Francis Collins Receives Dean's Gold Medal



Dean Reece and Alan Shuldiner, MD, (right) presented the School of Medicine's pre-commencement guest speaker, Francis Collins, MD, PhD, (center) director of the National Human Genome Research Institute, with the Dean's Distinguished Gold Medal for Biomedical Research. In his address to the graduating medical students Dr. Collins said, "At a time when many decry the deterioration of service to the community by medical students today, compared to those in the past, you stand as a beacon saying, 'No, we're not interested in those material gains.' You're here because you want to serve. You want to reach out and do something for humanity. That is the mission of the profession you have chosen."

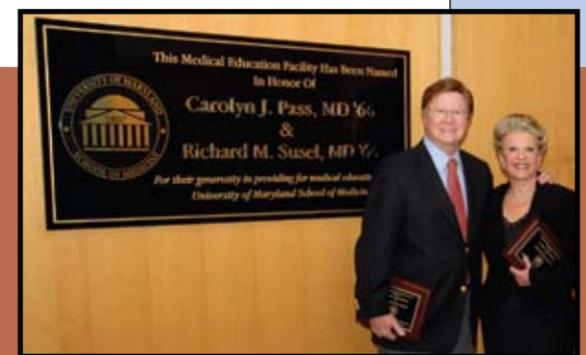
## Medical Education Labs Are Dedicated to Generous Alumni Couple

On May 2, 2008, the medical education labs in Howard Hall were dedicated to Carolyn J. Pass, MD, and Richard M. Susel, MD, alumni from the Class of '66. Thanks to a generous donation from the couple, the labs—fondly referred to by students as "the pods"—will receive a state-of-the-art makeover.

A plaque in the hallway thanking Drs. Pass and Susel was unveiled during a ceremony hosted by Dean Reece. "Their extraordinary generosity and passionate commitment to medical education make them an inspiration to their fellow alumni as well as to current students and the students of tomorrow," he said.

Drs. Pass and Susel were high school sweethearts who applied together to the University of Maryland School of Medicine. "We are very grateful that we found a dean who believed in us, because in those days it was very unusual to have a couple accepted into the same class in medical school," Dr. Pass recalled. "We've never forgotten that, and we are so grateful to all of our educators, friends and classmates. We knew that one day we wanted to give back, so we started saving early on for what has come to fruition today."

The couple hopes to give even more to the school in the future. "We feel like our lives have been enriched to the highest degree by being physicians and taking care of people," said Dr. Susel. "It's just been a wonderful ride, and we're glad to be here today to share it."



Richard Susel, MD, and Carolyn Pass, MD, stand in front of a plaque that honors their generous gift to the School of Medicine's medical education labs in Howard Hall.

# New Federal Awards

(\$100,000 and above)

## Center for Vaccine Development

Name	Amount	Granting Agency	Grant Title
Karen L. Kotloff, MD Department of Pediatrics	\$3,094,812	National Institute of Allergy & Infectious Diseases	Vaccine & Treatment Evaluation Units (VTEUs): Evaluation of Control Measures against Diseases Other Than AIDS

## Medicine

Terez Shea-Donohue, PhD	\$375,000	National Institute of Allergy & Infectious Diseases	GI Nematodes & Gut Functional Responses to Inflammation
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## Physiology

Scott M. Thompson, PhD	\$328,125	National Institute of Neurological Disorders & Stroke	Pre & Postsynaptic Consequences of Traumatic CNS Injury
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## Institute of Human Virology

Name	Amount	Granting Agency	Grant Title
Igor S. Lukashevich, MD Department of Medicine	\$194,846	National Institute of Allergy & Infectious Diseases	MOP/LAS Chimeric Vaccine against Lassa Fever

## Biochemistry & Molecular Biology

Richard L. Eckert, PhD	\$186,916	National Institute of Arthritis & Musculoskeletal & Skin Diseases	Map Kinases Regulate Involucrin Gene Expression
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# New Non-Federal Awards

(\$100,000 and above)

## Biochemistry & Molecular Biology

Name	Amount	Granting Agency	Grant Title
Terry B. Rogers, PhD	\$226,718	University of Maryland Biotechnology Institute	Human Stem Cell Therapeutics for Heart Disease

## Center for Vaccine Development

Myron M. Levine, MD Department of Medicine	\$390,520	Wyeth Pharmaceuticals	Prospective, Systematic Surveillance for Hospitalized & Ambulatory Invasive Pneumococcal Disease in Infants & Children in Chile
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## Center for Vascular & Inflammatory Diseases

David W. Scott, PhD Department of Surgery	\$110,032	EpiVax, Inc.	T1D Tolerance Inductin with Natural Treg Epitopes
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## Institute for Genome Sciences

Lynn M. Schriml, PhD Department of Epidemiology & Preventive Medicine	\$101,225	University of Maryland, College Park	Bioinformatics Tools for Rapid Pathogen Detection & Analysis
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## Medicine

Stephen S. Gottlieb	\$177,750	New England Research Institute	TOPCAT—Treatment of Preserved Cardiac Function Heart Failure with an Aldosterone Antagonist
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## Microbiology

Ricardo A. Feldman, PhD	\$115,000	Maryland Technology Development Corp.	Generation of Gaucher's-Specific Human Embryonic Stem Cells
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## National Study Center

Name	Amount	Granting Agency	Grant Title
Patricia C. Dischinger, PhD Department of Epidemiology & Preventive Medicine	\$214,300	Maryland Department of Transportation	Comprehensive Crash Outcome Data Evaluation System

## Neurology

Robert K. Shin, MD	\$166,563	Biogen Research Corporation	Global Observation Program in Safety (TYSA-BRI)
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## Program in Oncology

Maria R. Baer, MD Department of Medicine	\$202,017	ChemGenex Pharmaceuticals, Inc.	A Phase II Open-Label Study of Subcutaneous Administration of Homoharringtonine (CGX-635) in the Treatment of Patients w/ Chronic Myeloid Leukemia (CML) w/ the T3151 BCR-ABL Gene Mutation
Edward A. Sausville, MD, PhD Department of Medicine	\$131,028	Takeda Global Research/Development Center, Inc.	A Multicenter, Open-Label, Noncomparative Phase 1 Clinical & Pharmacokinetic Study of Oral TAK-285 in Patients w/ Advanced Cancer

## Program in Trauma

Grant Bochicchio, MD Department of Surgery	\$108,627	Musculoskeletal Transplant Foundation	A Case Controlled Study Comparing Flex-HD to Alloderm in Complicated Ventral Hernia Repair
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## Surgery

Matthew Cooper, MD	\$129,188	Pfizer Incorporated	Comparator-Controlled Trial of CP-690, 550 & Mycophenolate Mofeti / Mycophenolate Na, A3921030
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## {MINI-MED SCHOOL}

The University of Maryland School of Medicine will conduct its eighth annual Mini-Med School this fall. Classes will run for five consecutive Wednesday evenings from 6:00 p.m. to 8:00 p.m. and will be held in the MSTF Auditorium.

Mini-Med School is a community outreach program designed to enhance its participants' knowledge of preventive medicine, advances in medical technology and how to make healthier lifestyle choices.

For more information about and to register for Mini-Med School, check our Web site at <http://medschool.umaryland.edu/minimed>, or contact Heather Graham in the Office of Public Affairs at [hgraham@som.umaryland.edu](mailto:hgraham@som.umaryland.edu).

## Eighth Annual Mini-Med School Calendar

Date	Topic & Speaker
<b>Wednesday, 9/3</b>	Welcome ~ Dean E. Albert Reece, MD, PhD, MBA Violence & the Violence Intervention Program ~ Camell Cooper, MD Colds vs. Allergies ~ David Stewart, MD
<b>Wednesday, 9/10</b>	Genetics ~ Mimi Blitzer, PhD Positive Exposure—A Presentation on Genetic Diversity ~ Rick Guidotti, professional photographer and founder of Positive Exposure
<b>Wednesday, 9/17</b>	Irritable Bowel Syndrome & Celiac Disease ~ Alessio Fasano, MD Autism ~ Kenneth Rogers, MD
<b>Wednesday, 9/24</b>	The Brain: A Two-Part Series Understanding the Brain ~ David Mallott, MD Brain Disease ~ Neil Porter, MD
<b>Wednesday, 10/1</b>	Eating and Moving through the 21st Century: Nutrition and Fitness for a Lifetime ~ Pamela Peeke, MD Graduation ~ Dean Reece

# Center for Weight Management and Wellness Earns Center of Excellence Designation

**T**he University of Maryland's Center for Weight Management and Wellness has earned the prestigious Center of Excellence designation from the American College of Surgeons (ACS) for its bariatric surgery program, led by Mark Kligman, MD, professor, Department of Surgery, who is also the center's director. Both he and the Center for Weight Management and Wellness were awarded the three year designation after an extensive review of outcomes data as well as a site visit during which all aspects of the program were evaluated.



The newly-renovated bariatric rooms are all private and have extra space to accommodate larger patients and their families.

The goal of bariatric surgery is to get morbidly obese patients to a healthy weight through the use of surgical interventions. The most common procedure performed by Dr. Kligman is Roux-en-Y surgery, or gastric bypass, in which the stomach is divided and a small pouch is formed as, simultaneously, the majority of the stomach is sealed off. A portion of the small intestine is then divided and sewn to the newly created small stomach pouch. The size of the pouch limits the calories that can be taken in on a daily basis to less than 1,000 and also limits the body's ability to absorb calories.

In preparing to welcome another Center of Excellence, the University of Maryland Medical Center made a variety of critical additions. A special wing was created for bariatric surgery patients and other patients of larger size. Each of the 32 rooms on Weinberg 5, which are all private, have wider doorways, extra-sturdy bathroom fixtures that are floor-mounted to support post-surgical patients who might need to lean on them, and a loveseat that folds flat for family members who want to stay overnight with the patient. The furniture is bigger, sturdier and generously built for the comfort and safety of bariatric patients and their families. "The quality of the rooms is better than most hospitals. And

the number of rooms is definitely greater than any hospital around," said Dr. Kligman.

*"The quality of the rooms is better than most hospitals. And the number of rooms is definitely greater than any hospital around."*



Support groups, both online and in-person, were made available to patients, as were the services of a nutritionist. A second surgeon was added to the practice and nurses were specially trained to deal with obese patients. The Medical Center then voluntarily applied for the ACS accreditation, which was awarded the first time the program was reviewed.

"The reviewers seemed very satisfied; it was clear that we were doing very well," said Dr. Kligman. "It was absolutely worth all the work we had to do to achieve this accreditation. It demonstrates to patients and to our colleagues that we meet the standards necessary to achieve excellent outcomes in performing this surgery in this patient population." 



Mark Kligman, MD

## Researchers Compare Pediatric Seizure Medications

**R**esearchers at the University of Maryland School of Medicine are participating in a study to determine which of two commonly used medications is the safest, most effective treatment for children with status epilepticus, a condition marked by a continuous prolonged seizure. The study is the most comprehensive of its kind with participation by 10 hospitals around the country.

The drugs, lorazepam and diazepam, are both regularly administered to treat status epilepticus. The Pediatric Seizure Study, sponsored by the National Institutes of Health with the support of the Health Resources and Services Administration, will compare the safety and effectiveness of the two medications in treating status epilepticus in children admitted to hospital emergency departments.



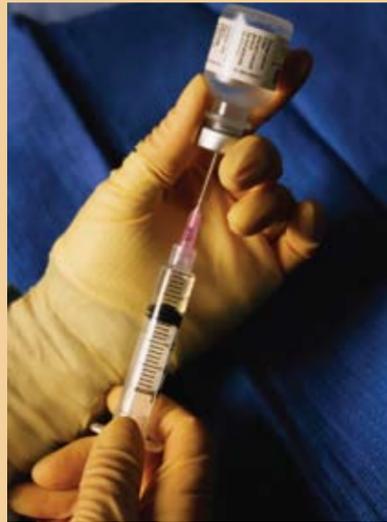
Richard Lichenstein, MD

"Currently, the choice of treatment for status epilepticus depends upon the best judgment of the treating physician," said Richard Lichenstein, MD, associate professor, Department of Pediatrics, and principal investigator for the study. "The Pediatric Seizure Study seeks to provide the most definitive information possible on which medication offers the greater chance for safe, successful treatment."

Status epilepticus affects between 50,000 to 60,000 children and adults in the US each year. Four to eight children per every 1,000 will experience status epilepticus before age 15. Status epilepticus may occur in people with epilepsy or in those patients without epilepsy who experience a seizure due to a high fever, low blood sugar, an infection of the central nervous system or a head injury. Children who have no apparent risk factors may also develop status epilepticus.

Diazepam, more commonly known as Valium, has been approved by the US Food and Drug Administration (FDA) for use in adults and children. Lorazepam, marketed under the name Ativan, is approved by the FDA only to treat seizures in adult patients but is widely prescribed off label for children.

To conduct the study, researchers at the University of Maryland will randomly assign children who are in status epilepticus to be treated with either lorazepam or diazepam. "Usually, the choice of which drug to prescribe would rest with the treating physician," said Dr. Lichenstein. "During the study, however, the medication will be



**Four to eight children per every 1,000 will experience status epilepticus before age 15.**

assigned randomly by a computer, to eliminate any potential human bias in assigning the medication. A roughly equal number of children will receive each medication. At the end of the study, a large enough number of children will have been enrolled to allow us to draw definitive conclusions about each medication."

Normally, researchers first ask the parent or guardian for permission to enroll a child in a study, explain the procedures of the study, its potential risks and benefits, and alternatives, and enroll the child only after the parent or guardian agrees. For the Pediatric Seizure Study, it will not be possible to explain the details and obtain parental permission in advance because of the urgent need to provide treatment within five minutes of the child's arrival in the emergency department. Moreover, status epilepticus may occur when a child is away from his or her parents and a parent may not be present when the child is taken to the emergency department.

Children seen in the pediatric emergency department who meet study criteria will be automatically enrolled in the study without prior parental consent. Dr. Lichenstein stressed that this sequence of events is no different from what would take place in an emergency department not involved in the study.

After a child has received treatment and has been stabilized, the doctor or a representative from the study team will contact the parent to let him or her know the child has been enrolled in the study. The details of the study will be explained to the parent, and the parent can choose to allow the child to continue or withdraw from the study. If the parent agrees to continue, blood samples will be taken from the child and the parent will be interviewed by phone 30 days after the

child is enrolled to ask about the child's condition.

The Pediatric Seizure Study has been reviewed and approved by the Institutional Review Board at the University of Maryland School of Medicine to ensure that all procedures comply with ethics and safety standards. Other independent reviewers will look for overall trends in study data. If it becomes clear that one drug is more effective, the national study will be ended early.

"Proper research on all emergency treatments for children is vital to be sure of their effectiveness," said Dr. Lichenstein. "The FDA emphasized the need to test all drugs used for children so that those used are known to be safe and effective. This study is being conducted under the highest ethical standards and the results we get will have important implications on how we treat seizures in children." 

# The Surprising Reality of Military Medical Scholarships

Each spring hundreds of students face the excitement of learning they've just been accepted into medical school. Many also face some anxiety as they start to think about how they're going to pay for it. Whether they gain funding through loans, scholarships, grant programs or private sources, it has never been more expensive to get a medical degree than it is today. In fact, according to a recent study by the American

Association of Medical Colleges, new physicians face between \$150,000 and \$200,000 in medical school debt by the time they complete their residencies.

For hundreds of students every year, military based scholarships such as the US Army's F. Edward Hebert Health Professions Scholarship Program (HPSP) are the answer. HPSP students receive the full cost of tuition, school fees, books and equipment and a monthly stipend of \$1,900 per month

to attend any accredited medical, dental or veterinary college in the United States. In addition, the Army is currently offering a \$20,000 signing bonus for HPSP recipients. The scholarship is available for two-, three- and four-year terms and requires a service commitment (fulfillment of which begins upon completion of residency).

Of her experience as an HPSP student, Sara Michael, MSII, said, "There's not much difference in my day-to-day life as an HPSP student compared to my peers. I actually had a ton of fun at Officer Training and I made some really good friends. The Army experience has given me a better sense of the teamwork I'll experience as a physician."

After the first year of medical school and completion of the Army Medical Department Officer Basic Course, HPSP recipients have the opportunity to perform clinical rotations in Army health care facilities for up to six weeks each year during the next two years of school. This is part of active duty training and all at the Army's expense.



Sara Michael, MSII, (second from the left) and fellow Army Medical Officers after their graduation from the Officer Basic Leader Course.

Participants work with top health care professionals, learn about Army health care first-hand and gain practical experience in their discipline, while earning officer's pay.

Ms. Michael added, "I'd say I'm less anxious about the future because my financial situation is more stable. That's a huge perk. There's also a lot of networking and we are able to meet the people we'll be working with before we get jobs. It's a tight knit community so if you work hard, the good reputation follows you."

Though Ms. Michael comes from a military medical background in which both parents served as Army physicians, others less familiar with HPSP may be surprised to learn that students can specialize in 47 practices ranging from anesthesiology to vascular surgery, and have access to clinical research opportunities that can take them around the world.

In fact, Ms. Michael's father's work as an infectious disease specialist studying the HIV vaccine with the Walter Reed Army Institute of Research took her family to Thailand for three and a half years when Ms. Michael was young. Currently, the Army has research projects in Kenya, Uganda, Nigeria, Tanzania, Thailand, and many other countries studying global health issues such as HIV, malaria and other infectious diseases. The Army also conducts numerous humanitarian missions across the globe.

Other HPSP graduates like Erin and Anne Spillane, twin sisters who graduated from the School of Medicine in 2007, also found the Army's HPSP program supported their goal of becoming dermatologists. Now a resident at Walter Reed Army Medical Center in Washington, DC, Dr. Erin Spillane said, "I continue to be impressed with the research and clinical opportunities available and the array of educational and global experiences that are possible." 

## About the Armed Forces Health Professions Scholarship Program

### What does the scholarship pay?

- ▶ 100 percent of tuition at any accredited school in the US or Puerto Rico.
- ▶ Required books, equipment and academic fees.
- ▶ A monthly allowance of \$1,900 (effective July 1, 2008), for 10-1/2 months of each school year. As the military pay scale increases, the monthly stipend also increases.
- ▶ A \$20,000 Critical Skills Accession Bonus is also available.
- ▶ Officer's pay during the remaining six weeks of the year, as second lieutenants on active duty. In addition, HPSP recipients can take advantage of training opportunities available at many of the Army's health care facilities.

### What's expected?

- ▶ Scholarship winners maintain full-time student status during the entire length of the program.
- ▶ Serve as a second lieutenant in the Army Reserve for six weeks each year.

### Service Obligation & Requirements:

The period of military service for participation in the scholarship program is a total active duty and reserve service period of eight years. The minimum period of military service is two years, or one year for each year individuals receive the HPSP, whichever is longer. However, other minimum periods of active duty may apply depending on the individual health care field. For example, the minimum obligation for medical students is two years, while dental, psychology, optometry and veterinary students are obligated to serve no fewer than three years.

### To qualify for the HPSP scholarship, individuals must:

- ▶ Be a US citizen with a baccalaureate degree from an accredited school.
- ▶ Be enrolled in or have a letter of acceptance or intent from an accredited graduate program located in the US or Puerto Rico.
- ▶ Maintain full-time student status during the entire length of the program.
- ▶ Qualify as a commissioned officer in the US Army Reserve.

For more information about the HPSP program, visit <http://www.goarmy.com/amedd/hpsp.jsp>.

# SOMnews

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE JUNE 2008 VOL.9 NO.10

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, School of Medicine ▶ Jennifer Litchman, Executive Editor ▶ Heather Graham, Managing Editor ▶ Caelie Haines, Sharon Boston and Drea Garrison, Contributors ▶ 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 Heather Graham, Public Affairs Manager, at [hgraham@som.umaryland.edu](mailto:hgraham@som.umaryland.edu).  
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