



DEAN'S MESSAGE: What's On My Mind



Dear Colleagues:
In keeping with the spirit of the season, I want to express my most sincere gratitude to each of you for your tremendous hard work and dedication to the advancement of science and medicine in the School of Medicine, Maryland and the nation. Indeed, the School of Medicine experienced numerous successes this past year, many of which were reported in my 2008 State of the School address. They include:

- ▶ An astounding increase of nearly 10 percent in research grants and contracts over 2007 totaling \$377 million
- ▶ An almost 11 percent increase in patient care revenue for our Practice Plan, reflecting a 99 percent net collection rate
- ▶ Private gifts increased by almost 7 percent to \$49.1 million, and endowments increased 6 percent from last year to \$173.8 million
- ▶ Total revenue, including grants and contracts, tuition, state funding, faculty practice revenue and philanthropic gifts, exceeded \$734 million
- ▶ The Marlene and Stewart Greenebaum Cancer Center earned the prestigious National Cancer Institute designation for research excellence and research-related patient care
- ▶ The School of Medicine received an eight-year reaccreditation from the Liaison Committee on Medical Education (LCME), with a number of laudatory comments and virtually no citations for deficiencies
- ▶ National media coverage of the School of Medicine's discoveries and innovations increased dramatically by 85 percent.

“... because of the remarkable dedication and commitment to teamwork of our faculty and staff, I am confident that we will be able to weather this period of uncertainty and economic challenges and achieve many more successes in this coming year.”

As you are well aware, we are facing difficult times. There is a great amount of uncertainty and trepidation nationally and internationally about the economy. We will, therefore, be greatly challenged to match the successes we achieved this past year. However, because of the remarkable dedication and commitment to teamwork of our faculty and staff, I am confident that we will be able to weather this period of uncertainty and economic challenges and achieve

many more successes in this coming year.

The holidays present us not only with an opportunity to spend time with our families, but with an opportunity to express gratitude to the friends and colleagues with whom we work. I want to say “thank you” for your many, many contributions, both collectively and individually, for our successes and wish each of you joyous, bountiful blessings and tranquility at this special time. Please accept my very best regards to you and your family.

Sincerely yours,

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

“I want to say “thank you” for your many, many contributions, both collectively and individually, for our successes and wish each of you joyous, bountiful blessings...”

William Regine, MD, Named Isadore & Fannie Schneider Foxman Endowed Chair in Radiation Oncology

An investiture ceremony was held November 6, 2008, to name William Regine, MD, as the first Isadore & Fannie Schneider Foxman Endowed Chair in Radiation Oncology at the University of Maryland School of Medicine. The endowed chair was a gift from Norty Foxman and his wife Carol and is named for Mr. Foxman's parents. Dr. Regine has been professor and chair of the Department of Radiation Oncology since 2002.

“Dr. Regine has taken the Department of Radiation Oncology to new heights and achieved tremendous success in research, clinical care and training and mentoring,” praised Dean E. Albert Reece, MD, PhD, MBA. “He brings a passion to his work that is matched by few and understands the importance of inspired and thoughtful leadership.”

“The word that defines Dr. Regine is authentic,” said Jeff Rivest, president and CEO of the University of Maryland Medical Center. “He is the epitome of an authentic leader and person. He's the real deal. What you see is what you get.”

Surrounded by many family members, friends and colleagues who had gathered to celebrate the honor with him, Dr. Regine expressed his deep gratitude for their support over his six years at the School of Medicine. Also present were many of the cancer survivors Dr. Regine has treated. “I want to thank all of you for being our inspiration,” he told them.

“Your generosity will have a generational impact on cancer patients,” Mohan Suntha, MD, said to Mr. and

Mrs. Foxman and the many members of their family in attendance. Dr. Suntha recently became the first Marlene and Stewart Greenebaum Endowed Professor of Radiation Oncology, and is also professor and vice chair of the Department of Radiation Oncology. “I say this without a doubt because of the man you have decided to honor with your gift.”

Dr. Suntha assisted Dean Reece with the presentation of Dr. Regine's endowed chairmanship medal. “As a young chair, he could have focused on establishing his own presence, but from the day he arrived in Baltimore he has been a tireless champion of us, his faculty,” praised Dr. Suntha. “We have collectively benefited from his fundamental belief that his success will ultimately be defined by us.”

Dean E. Albert Reece Named Chair of AAMC Council of Deans

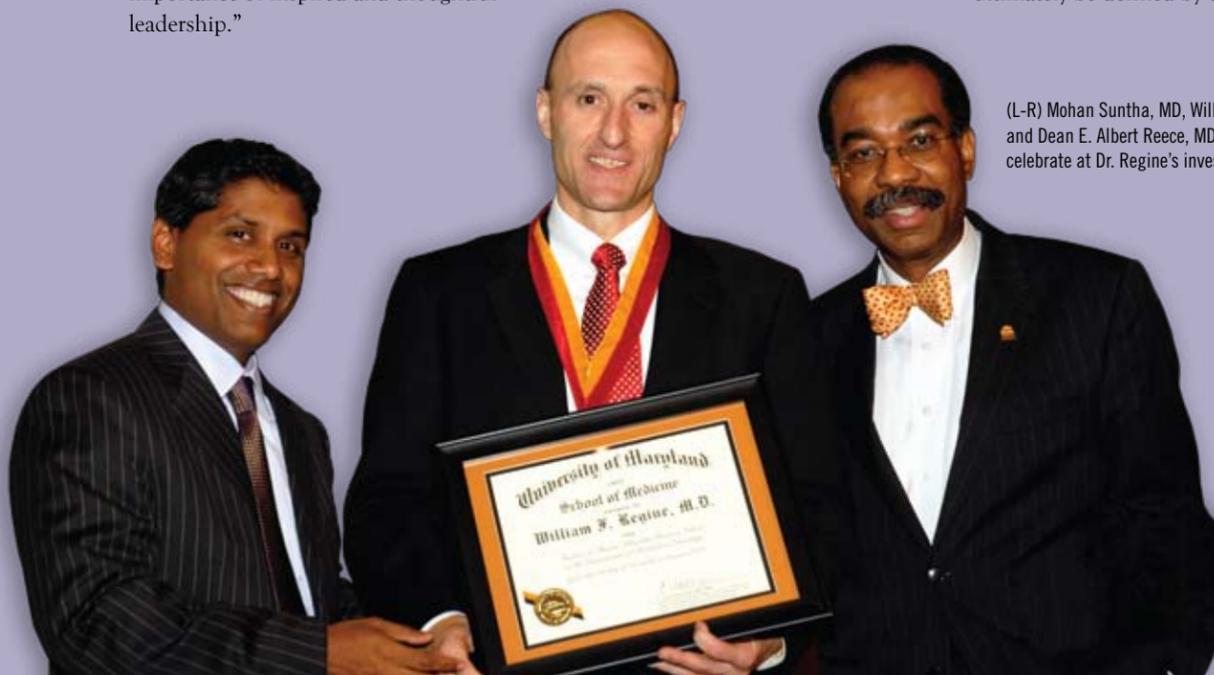
Dean E. Albert Reece, MD, PhD, MBA, has been named chair of the Association of American Medical Colleges (AAMC) National Council of Deans for 2008 to 2009. Dr. Reece began his one-year term at the association's 119th annual meeting in San Antonio, Texas, in November 2008.

The AAMC Council of Deans strives for the continuing improvement of the nation's medical schools through identifying issues affecting academic medicine and developing strategies to achieve the various missions of medical schools across the United States.

As chair of the Council of Deans, Dr. Reece will be an advocate for the AAMC and the nation's medical schools, promote the advancement of institutional management and support fellow deans in guiding individual schools toward excellence in medical education, research and patient care.

During his tenure as chair, Dr. Reece plans to take an active role in the national health care debate. Dr. Reece says funding for research is even more important during tough economic times. “Biomedical research is a proven economic engine, and investment in this sector needs to be part of any economic stimulus package,” he said. Another priority will be to make the AAMC the nation's authority on medical-school rankings.

The Association of American Medical Colleges is a not-for-profit association representing all 130 accredited U.S. and 17 accredited Canadian medical schools, nearly 400 major teaching hospitals and health systems, including 68 Department of Veterans Affairs medical centers, and nearly 90 academic and scientific societies. Through these institutions and organizations, the AAMC represents 125,000 faculty members, 70,000 medical students and 104,000 resident physicians.



(L-R) Mohan Suntha, MD, William Regine, MD, and Dean E. Albert Reece, MD, PhD, MBA, celebrate at Dr. Regine's investiture ceremony.

Mordecai Blaustein, MD, Wins Novartis Award

Mordecai P. Blaustein, MD, professor, Departments of Physiology and Medicine, is a recipient of the prestigious Novartis Award for Hypertension Research. Dr. Blaustein received the award, one of the highest honors in the hypertension research field, at the annual conference of the American Heart Association's Council for High Blood Pressure Research in Atlanta, Georgia, on September 19, 2008.

The award recognizes Dr. Blaustein's ground-breaking discoveries exploring the biological mechanisms by which salt raises blood pressure. "It's been well documented that if you retain too much salt, your blood pressure goes up," Dr. Blaustein said. "Most people are interested only in why we retain too much salt, but my research helps to explain how. This could lead to new treatments for high blood pressure, and even new methods of predicting which patients will be prone to high blood pressure."

"Dr. Blaustein was honored for his basic science studies demonstrating how excess salt intake causes high blood

"My research could lead to new treatments for high blood pressure, and even new methods of predicting which patients will be prone to high blood pressure."

pressure," said L. Gabriel Navar, PhD, chair of the American Heart Association's Council for High Blood Pressure Research. "His studies demonstrated for the first time the release of an endogenous digitalis-like compound. This compound, called ouabain (pronounced WA-bane), inhibits the sodium-transporting membranes and leads to increases in calcium inside the cells, which causes contractions of the blood vessels, leading to increased blood pressure."

During more than 40 years of work, Dr. Blaustein and his colleagues have made important discoveries to explain the link between salt and hypertension. These include a hormone that originates in the body that is very similar to a plant compound called ouabain. Dr. Blaustein and his colleagues call it

endogenous ouabain because it is identical to the plant compound but is endogenous to the human body. A second factor is the sodium pump, a protein that controls the amount of sodium in cells and that is regulated by ouabain. The third factor is the sodium-calcium exchanger, which Dr. Blaustein discovered. Dr. Blaustein has determined how these three factors interact and cause the contraction of blood vessels that lead to salt-dependent hypertension.

Dr. Blaustein's laboratory is examining how to manipulate these factors to prevent blood pressure elevation. With collaborators in the U.S., Italy and Japan, Dr. Blaustein also is working to predict which patients will be prone to high blood pressure, with hopes of treating them proactively.

Since he began his work, Dr. Blaustein has steadily built the case for his hypothesis, even in the face of skepticism from some colleagues. He has answered criticism with solid scientific evidence, and has watched other laboratories worldwide corroborate his findings over the past four decades.

"Dr. Blaustein's research has helped set the stage for our current under-



Mordecai P. Blaustein, MD

standing of the role of sodium in blood pressure regulation," said Meredith Bond, PhD, professor and chair, Department of Physiology. "Despite the resistance he has faced from some in the field of blood pressure regulation, his extraordinary scientific contributions demonstrate the scientific heights that can be scaled as a result of a combination of dedication, passion, persistence, intellect and drive."

The Novartis Award for Hypertension Research has been presented to outstanding scientists in the field each year since 1966, when the American Heart Association first began to recognize the importance of hypertension to heart health. 

What Do We Do?

THE HUMAN RESEARCH PROTECTIONS OFFICE

The Human Research Protections Office (HRPO) is the coordinating office for the Human Research Protections Program—an integrated, university-wide system to protect the rights, welfare and safety of clinical trial participants and study volunteers. Led by Susan Buskirk, assistant dean for Human Research Integrity and Compliance, the HRPO provides professional and administrative support for the program, which ensures that investigators are in compliance with government regulations and university policies.

Mandated by federal law, the protection of human research participants is of paramount importance. "One problem can bring the whole research enterprise to a screeching halt," said Ms. Buskirk. She says institutions that have failed to adequately protect study participants have paid a high price in a loss of public confidence and government support. "Those programs lost money because their federalwide assurance was either suspended or revoked, which means no input of federal money," she reiterated.

The Human Research Protections Program unites all university organizations essential for the protection of research study volunteers, including the Institutional Review Board (IRB). "The IRB is comprised of scientists and non-scientists who review each application for research using humans as participants," said Ms. Buskirk. While the HRPO oversees IRB operations, the IRB is an independent body, which includes members of the community. The IRB may approve, disapprove or modify a research protocol based upon whether or not human subjects are adequately protected.

The HRPO is part of a multi-faceted approach to human subject protection, which includes the IRB, the University Counsel, the Investigational Drug Service, the Institutional Biosafety Committee, the Radiation Safety Committee, the Office of Research and Development, the Center for Clinical Trials, the General Clinical Research Center, or GCRC, and the Baltimore Veterans Affairs Medical Center Research and Development Committee, among many others.

With a staff of 26 research professionals, the HRPO coordinates a wide range of services to support research participants, assist investigators and research staff, and monitor ongoing research involving human subjects. The staff includes IRB analysts, research compliance monitors,

auditors, program managers, quality improvement specialists and education and support specialists. Importantly, the HRPO employs a research subject advocate and safety specialist.

The HRPO's IRB analysts provide administrative support and serve as liaisons between investigators and the IRB, providing technical and administrative review of human research applications. IRB analysts identify potential conflicts of interest and deficiencies in regulatory, ethical, clinical safety and scientific requirements. They also provide face-to-face consultations and writing assistance for individual investigators to improve the quality of research applications.

"We know we have a very good program. Still, we're continuing to strive to improve it and work with the entire campus to protect participants involved in research and produce good data from our studies."



Susan Buskirk

The HRPO's Quality Improvement Team monitors IRB Operations to ensure compliance with all applicable laws, regulations, policies, procedures and ethical standards. Eight full-time quality improvement specialists perform for-cause, routine and spot audits, spot audits of investigator self-assessments, and monitor high-risk sponsor-investigator studies to ensure that existing practices satisfy federal, state and university requirements.

Research monitoring and auditing is another critical responsibility for the HRPO. The HRPO's research compliance specialists work to ensure that all federal and university standards are strictly followed. Auditing and monitoring activities of selected protocols are ongoing, with the emphasis on ensuring participant safety.

The Education and Investigator Support Services Team counsels the research community on ethics, regulations and good clinical human participant research practices. The team develops and provides education and training programs to individuals and groups, provides one-on-one assistance to investigators and research staff in supporting the design, conduct and reporting of their clinical research activities, and provides orientation and continuing education to HRPO staff, IRB members and Human Research Protection Program leaders.

In recent months, the HRPO's responsibilities have been expanded to include research integrity oversight. The HRPO will develop, implement and monitor oversight plans when an investigator with a significant financial conflict of interest wishes to conduct research involving human subjects. These plans are required by the IRB and the university president as a condition of approval. Integrity oversight is also a new responsibility for Ms. Buskirk, who was promoted from executive director to assistant dean when the HRPO's duties were broadened.

Thanks to the dedication of HRPO leadership and staff, the program earned accreditation from the Association for the Accreditation of Human Research Protection Programs in 2005. The program was re-accredited in June 2008. Only 140 of the nearly 3,000 HRPP programs nationwide have earned this accreditation. "We know we have a very good program," said Ms. Buskirk. "Still, we're continuing to strive to improve it and work with the entire campus to protect participants involved in research and produce good data from our studies." 



Pediatric Medication Card for EMT's

Study Illustrates Danger of Pediatric Medication Mistakes in Ambulances and Offers Solution through Use of New Dosage Card

Before a child in crisis arrives at the hospital, every moment counts and every treatment decision is crucial. A University of Maryland School of Medicine study has found that a simple card printed with basic pediatric medication dosage information can save precious time and reduce dangerous errors when children are being transported to the hospital.

While adults receive standard doses of medications to keep them alive before they reach the hospital, children receive doses specifically tailored to their individual weights. In the ambulance with a child, in the heat of an emergency, paramedics are left to work mathematical formulas in their heads in a matter of seconds. At the same time the paramedics are managing the child's airway, placing IV lines and potentially performing CPR.

"It's a recipe for disaster. It's an antiquated system that demands too much of paramedics," said Morgen Bernius, MD, MS, clinical instructor, Department of Emergency Medicine, and lead investigator on the study published in the journal *Prehospital Emergency Care*. Co-investigators on the study included Dr. Bernius' fellow residents Bryan Thibodeau, MD, Abby Jones, MD, and Brian Clothier, MD. Dr. Bernius found that paramedics provided with a card listing weight-based drug doses and endotracheal tube sizes answered medication calculation questions more quickly and accurately than those without the card.

Paramedics with access to the pediatric code card Dr. Bernius designed correctly answered on average 94 percent of the medication calculation questions they were asked, compared to 65 percent among paramedics without the cards. The group without the cards took an average of 11.4 minutes to complete the questionnaire. The group with the cards took just 7.1 minutes.

"This solution is so simple, but so clever. It saves lives. The card is a great example of the innovative spirit we try to foster in our residents," said Steven Czinn, MD, professor and chair, Department of Pediatrics. Dr. Czinn is also chief of the University of Maryland Hospital for Children.

Medical errors are a serious problem in the hospital setting, where providers have access to computerized medication calculation, state-of-the-art technology and the advice or opinions of colleagues. But in an ambulance, paramedics don't have the same resources.

Dr. Bernius realized the risk of medication errors in the prehospital setting as an Emergency Medical Services (EMS) fellow with the Baltimore City Fire Department—shortly after completing her residency in the Departments of Pediatrics and Emergency Medicine.



To test her theory of the risks of medical errors in the prehospital setting, Dr. Bernius devised a pediatric code card first-responders could carry on their person or in the ambulance to use as a quick, on-the-spot reference guide. The card lists 13 common medications—including atropine, diazepam, epinephrine, lidocaine and morphine—and the appropriate dosages for children in 10 different weight categories, from 3.5 kilograms to 60 kilograms. The card also lists the appropriate size of endotracheal tube—used to keep the airway open—for children of various ages and weights, from newborn up to 12 years old. The card also includes a chart to assist paramedics in converting pounds to kilograms—an eight-pound baby makes for a 3.5 kilograms newborn; a child who weighs 100 lbs. also weighs 45 kilograms, and is likely about 13 years old.

Dr. Bernius and her colleagues distributed the cards to Advanced Life Support paramedics who took continuing education courses in Maryland and Washington between June and November 2006. The providers—paramedics or emergency medical technicians—then were asked to answer questionnaires requiring them to calculate medication doses and tube sizes. Of 523 providers, 246 used the pediatric code cards while answering the questions. The other 277 study participants did not use the cards. In addition to answering correctly on average 94 percent of the calculation questions, the group with access to the cards also calculated endotracheal tube sizes more accurately. Ninety-eight percent of the group with access to the cards calculated the correct tube sizes, compared to just 23 percent of the unaided group. In the overall pool of questions—including the eight calculation questions and the three tube-size questions—33 percent of the responses were incorrect in the group without the pediatric code cards. The group with the cards answered 6.6 percent of the questions incorrectly.

"The results of this study clearly demonstrate that the pediatric code cards in the prehospital setting are significantly more effective than relying on paramedics to simply do the math in their heads," said Dr. Bernius. "The high rate of error among the unaided group is very sobering. Previous studies have shown that medical errors are a significant risk in the hospital setting. This study seems to show the risks may be even higher before the child arrives at the hospital."

After the study, the Baltimore County Fire Department adopted the pediatric code cards into its EMS system, according to Dr. Bernius, who now serves as the fire department's associate medical director. The EMS system in Richmond, Virginia, also uses the cards, and other jurisdictions are evaluating the idea.

"I have confidence this study will have ongoing impact on the way children are cared for during the crucial time that passes before they reach the hospital," said Dr. Czinn. 



Morgen Bernius, MD, MS

The Department of Pediatrics Commemorates 60th Anniversary

The Department of Pediatrics celebrated its 60th anniversary October 24, 2008, with a day of learning and reminiscing.

"I am very impressed with the physicians, the staff, the quality of care and the incredible teaching and research here," said Steven Czinn, MD, who has been professor and chair of the Department of Pediatrics since 2006. "This is a great opportunity to reconnect with the physicians we've trained over the last 60 years and to let them know they are a part of our extended family and we're here to help them care for the children of Maryland."

It was not until the late 1800's that pediatrics began to emerge as a separate specialty in the United States. Prior to that, medical specialization generally focused on a particular body part or disease. The major impetus for pediatrics was to unravel the medical problems of infants and children. During the late 19th century, as many as 15 to 20 percent of all infants in urban areas died within their first year of life due to infectious disease. Expanded maternal education, implementation of child health and hygiene, immunization and assessment of growth and development all became the work of pediatricians.

Over the years, the department has educated more than half of the pediatricians in Maryland and contributed to the advancement of pediatrics along the way. In 1964, J. Edmond Bradley, MD, led the

statewide polio immunization campaign at a time when Maryland physicians declined to publicly endorse the Sabin vaccine. In 1969, Misbah Khan, MD, was the first physician to provide primary health services for students at the Maryland School for the Blind. In 1974, Myron Levine, MD, and Richard Hornick, MD, established the Center for Vaccine Development, which focuses on diseases affecting children and adults and leads a coalition of 16 Mid-Atlantic institutions selected to develop improved vaccines, diagnostics and therapeutics. In 1991, the department created the Brain and Tissue Bank for developmental disorders, the world's only repository of pediatric brain tissue. In 1996, Alessio Fasano, MD, established the Center for Celiac Research, the first center in the world which provides clinical care, support services, education and scientific research relating to celiac disease.

In celebration of these 60 years of advancing pediatric medicine, Maryland Governor Martin O'Malley, Baltimore City Mayor Sheila Dixon, the Maryland House of Representatives and the Maryland Senate all sent proclamations offering their congratulations, which were presented at a luncheon. Lunch was followed by the Abraham H. Finkelstein, MD, lecture and the Ruth W. Baldwin, MD, lecture—both named for graduates of the School of Medicine who support medical student and resident education in pediatrics—as well as other continuing education opportunities and tours of the department. A gala dinner for more than 200 capped off the celebration.



Members of the committee who organized *Love, Concern & Excellence*, a book commemorating the Department of Pediatrics' 60-year history. Top Row (L-R): Miriam Blitzer, PhD, Gail Olsen, RN, PhD, Pam King, and Alice Heisler, MD. Bottom Row (L-R): Ronald San Juan, MD, Jo Martin, Patricia Schmidt, Prasanna Nair, MD, and Misbah Khan, MD.

Additionally, a book commemorating the 60th anniversary made its debut. Entitled *Love, Concern & Excellence*, the book was created by a committee of pediatrics faculty members and staff. "Drs. Misbah Khan, Prasanna Nair and Alice Heisler sat on our committee. They've been in the department through much of this history, so we had access to their valuable, detailed memories," explained Gail Olsen, RN, PhD, who oversaw the book project. Each section of the book concentrates on the milestones that occurred during the tenure of each of the department's six chairmen—from the first chair, Dr. Edmond Bradley, up to Dr. Czinn.

Even as his department celebrates the past, Dr. Czinn looks toward the future. "Our first 60 years have been incredible and will enable us to move in the right direction," he said. "We are ranked 23rd out of 100 pediatric departments nationally, and we're looking to move into the top 20—hopefully even the top 10—within the next five years." 



Families Celebrate as Medical Students Receive White Coats

Medical school is a long and difficult road, but it is also extremely gratifying. This was one of the lessons the families of first-year students learned during Medical Family Day on October 30, 2008. Started four years ago as a precursor to the White Coat Ceremony, Medical Family Day gives family members a glimpse into what medical school is really like for their loved one. It is made possible through the Medical Family Fund, which has raised more than \$100,000 to help

our medical students in a variety of ways. The fund has paid for research trips and conferences and even created a student lounge on campus where students can gather in comfort.

During the morning session, Dean E. Albert Reece, MD, PhD, MBA, gave an overview of the School of Medicine, its rich history and its success in patient care and research. Sheri Slezak, MD, associate professor, Department of Surgery, shared her perspective as both a teacher and a parent of a med school student—her daughter Katie is a member of the Class of 2012. David Mallott, MD, associate dean of Medical Education, and Donna Parker, MD, associate dean for Student Affairs, let the families know that help is available to their students whenever they need it, be it academic, physical or psychological.

“I have been through highs and lows, and through both I’ve had the opportunity to define myself and the type of doctor I am working to become.”

Judy Kopinski, president of the Class of 2009, presented her view of medical school from a student perspective. “I’ve worked harder than I ever thought I would or could,” she admitted. “I have been through highs and lows, and through both I’ve had the opportunity to define myself and the type of doctor I am working to become.”

After a luncheon for the families came the event first-year students have long been waiting for—the White Coat Ceremony. This tradition, which started at the School of Medicine in 1997, involves the presentation of traditional white coats, long the symbol of physicians and scientists, to students. The coats are put on the students by School of Medicine faculty to welcome their new colleagues to the profession of medicine. After being “coated,” students recited an oath acknowledging their acceptance of the obligations of the medical profession. They also added their signatures to the school’s honor book, a leather-bound volume signed by all medical students in their first year and again in their final year, in which they pledge to maintain integrity throughout their years in the medical profession.

For Lindsay Dancy, getting her white coat was the culmination of a lot of hard work she’s completed—first, getting into medical school, and then, completing the nine-week Structure & Development (a.k.a. Anatomy) course that marks the students’ first educational hurdle. She had special plans for wearing her new coat out in public for the first time: the students’ next educational block is Introduction to Clinical Medicine, where they have their first opportunity to work with live patients rather than cadavers. “I’m going to put on my white coat and go see patients,” she said with a smile. 



(L-R) Larry Pitrof, executive director, University of Maryland Medical Alumni Association, directs student Joseph Apata to the space in the School of Medicine’s honor book where he will sign his name.



(L-R) Krystal Shafer receives her new white coat from Gina Perez, MD, assistant dean for Student Affairs, and assistant professor, Department of Psychiatry.



(L-R) First-year medical students Ashley Devonshire, Niki Deshpande and Lindsay Dancy are all smiles after receiving their white coats during the traditional White Coat Ceremony.

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