

Reach

A PUBLICATION OF MERCER HEALTH SCIENCES CENTER — MERCER UNIVERSITY

VOLUME 3
2016

Above and Beyond

Mercer's doctors, nurses, pharmacists and other health professionals combine scholarship with service — p.28

An Advocate for His Profession

College of Health Professions faculty member Joseph Donnelly works to make physical therapy accessible to all — p.20

A Complex Task

Targeted drug delivery via chromosomes is one of several ways Mercer scientists are trying to solve the cancer puzzle — p.10

SCHOOL OF
MEDICINE

COLLEGE OF
PHARMACY

COLLEGE OF
NURSING

COLLEGE OF
HEALTH PROFESSIONS

Learning through Service

The Department of Physical Therapy in Mercer's College of Health Professions partners with non-profit organization FOCUS to provide support for families of children with special needs. During FOCUS Respite Day, parents enjoy a break while children have fun in an environment designed specifically for them.



Reach

2016

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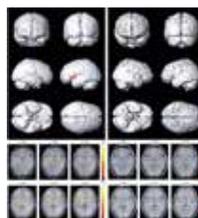
Mercer Health Sciences Center



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A Complex Task Cancer is actually many diseases, each with a unique set of problems. Mercer health scientists are taking many approaches to address those problems. **BY MARLENE GOLDMAN**

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SALDIVIA-JONES PHOTOGRAPHY; OPPOSITE: ERIK LESSER PHOTO; COVER ILLUSTRATION: GETTYIMAGES-MACEJ FROLOW

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DEAN, COLLEGE OF HEALTH PROFESSIONS Lisa M. Lundquist, Pharm.D.
EDITOR Kyle Sears
DESIGN EDITOR Steve Mosley
PHOTOGRAPHERS John Amis, David Burghardt, John Carrington, Roger Idenden, John Knight, Erik Lesser, Grace Lewis, Amy Maddox, Saldivia-Jones Photography, Matthew Smith
WRITERS Jen Brock, Jamie Dickson, Marlene Goldman
EDITORIAL ASSISTANT Janet Crocker
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Mercer and the Mercer Health Sciences Center were major sponsors of the Atlanta Science Festival for a third consecutive year

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All four of Mercer's Health Sciences units engage in a variety of service learning activities in addition to scholarship

2016



LETTER FROM THE SENIOR VICE PRESIDENT

Hewitt W. "Ted" Matthews, Ph.D.

At Mercer University, research is an integral part of who we are and what we do. We speak about "research that reaches out," and we strive to have an impact beyond the laboratory and classroom. We encourage our faculty and students to explore new solutions to difficult problems, and we challenge them to push beyond, to improve outcomes, and ultimately, to answer the seemingly unanswerable. This is especially the case with the cancer research being conducted at Mercer.

With more than 1.7 million people diagnosed with cancer last year, cancer research is a priority for both our University and our nation. Cancer comes in many forms, and the symptoms, treatment needs, and complications are as varied as the patients. We are not able to target one problem with one solution. Fortunately, our Mercer Health Sciences Center (HSC) was created to bring the best minds from medicine, pharmacy, nursing, and health professions together to solve difficult and complex problems. Although our collective focus is on cancer, the approaches and specific targets chosen by each researcher are different.

We are engaged in exciting and truly groundbreaking research endeavors, and we are determined to improve the health and well-being of those affected by cancer and decrease the number of future diagnoses. Cancer is a complicated and complex opponent, but we are a worthy adversary. Our work in cancer research reflects the quality and caliber of the faculty and students at Mercer University, and it reflects our mission "to teach, to learn, to create, to discover, to inspire, to empower and to serve."

As you look through these pages, I believe you will agree that this is an exciting time for Mercer University and the Mercer Health Sciences Center. I thank you for the part you play in helping us fulfill our mission, and I hope you enjoy this issue of *Reach* magazine.

Regards,

Hewitt W. "Ted" Matthews, Ph.D.
Senior Vice President for Health Sciences

news & notes

Medicine

► Bina Named Dean of Savannah Campus; Sumner to Succeed Bina as School of Medicine Dean

Mercer Provost D. Scott Davis, Ph.D., announced in October that William F. Bina III, M.D., M.P.H., FAAFP, will become dean of the Savannah Campus of the School of Medicine, a campus that developed into a full four-year medical school campus under his leadership. He also will take on additional responsibilities as senior vice provost for global medical programs for the University. Jean Sumner, M.D., currently associate dean for rural health, will succeed Dr. Bina as dean of the Mercer University School of Medicine. These new appointments are effective July 1.

“As the School of Medicine continues to expand its educational and research footprint in Savannah, Dr. Bina has volunteered to assume the vitally important responsibility of leading that campus,” Dr. Davis said. “It also will benefit the University and our students for him to devote more time to expanding the international healthcare components of the growing Mercer On Mission program, an initiative that he has been involved with and passionate about for several years.”

Dr. Sumner, who is a member of the School of Medicine’s first graduating class and a practicing physician in Washington and Johnson counties, has been leading a major telehealth initiative for the School of Medicine as associate dean for rural health.

“She is well positioned to assume leadership of the School of Medicine as Mercer seeks to faithfully fulfill the School’s mission to prepare primary care physicians for rural and medically underserved areas of our state,” Dr. Davis said. “The need has never been greater for primary care physicians in Georgia.”

A 1986 graduate of the School of Medicine, Dr. Sumner has been a community faculty preceptor for the School of Medicine since

completing her residency at the Medical Center of Central Georgia, Navicent Health, in 1989. She has served as hospital chief of staff and nursing home medical director, as well as a board member, chair and president of numerous community and statewide professional organizations. At the state level, Dr. Sumner has served most recently as a governor-appointed member, then president and medical director, for the Georgia Composite Medical Board.

“Mercer is a great institution committed to excellence in education and service to our state. I am honored to be asked to work with the medical school,” Dr. Sumner said. “Dr. Bina has a tremendous legacy, and all of Georgia should appreciate the contributions he has made and will continue to make to medical education and global medical initiatives. He has set the bar for all of us very high.”

Dr. Bina joined the Mercer School of Medicine in 1991 and has served in various family medicine and community medicine departmental roles, including director of the family practice residency

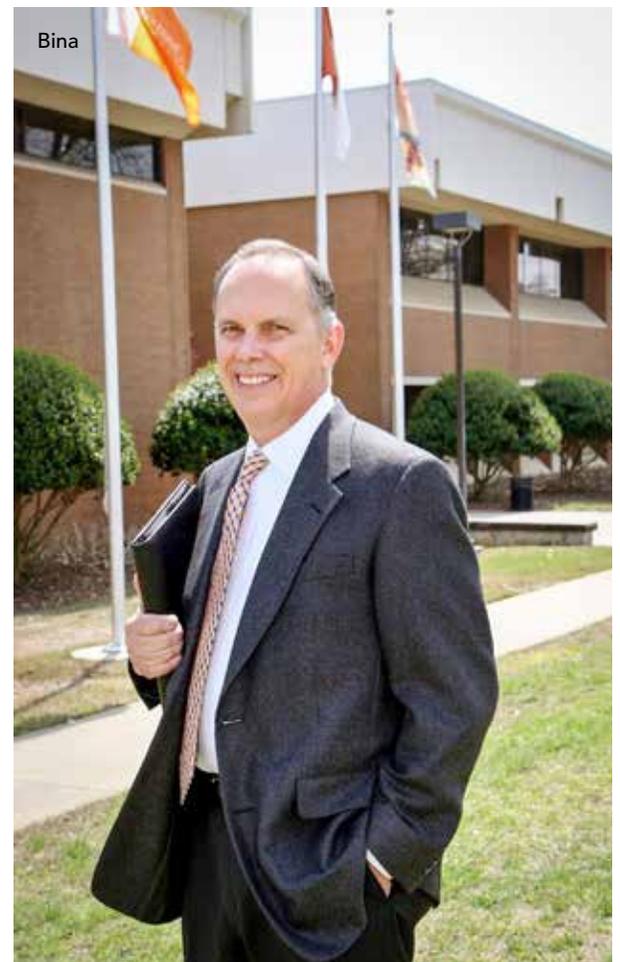
program, chair of community medicine and director of the nationally accredited Master of Public Health degree program. He served the School as executive associate dean and interim dean prior to appointment as dean in March 2009. Before coming to Mercer, Dr. Bina was director of the Occupational Health and Preventive Medicine Division, Bureau of Medicine and Surgery, Department of the Navy in Washington, D.C. The Georgia Academy of Family Physicians named Dr. Bina as its 2014 Georgia Family Physician of the Year.

“I am excited about the opportunity to focus on the continued development of our Savannah



Sumner

AMY MADDOX PHOTO; ROGER IDEHEN PHOTO



Bina

campus, which with the recent expansion of its facilities is now positioned to enroll the same number of M.D. students as the Macon campus, and to lead an expansion of Mercer's global medical programs," Dr. Bina said.

► School of Medicine, Partners Launch Hancock County Healthcare Access Initiative

Mercer University School of Medicine, Navicent Health, Putnam General Hospital, Georgia Partnership for TeleHealth, Community Healthcare Systems Inc. and around a dozen other organizations launched the Hancock County Healthcare Access Initiative last fall in the rural county in east central Georgia.

The initiative, which has received support from officials such as Gov. Nathan Deal and State Sen. David Lucas, serves as the pilot study for a groundbreaking project involving telehealth, which is the delivery of health-related services and information through telecommunications technologies.

"This initiative will provide a great opportunity for Hancock County as far as economic development, but it will also be the start of a program that we can implement across rural Georgia where health care is desperately needed," said Sen. Lucas, who represents Georgia's 26th District, which includes Hancock, Washington, Wilkinson and Twiggs counties as well as portions of Bibb, Jones and Houston counties.

"Telehealth is going to be a vital part of any sustainable rural health initiative," added Jean Sumner, M.D., associate dean for rural health in Mercer's School of Medicine. "Mercer is delighted to be able to lead this effort along with our partner organizations."

The Hancock County Healthcare Access Initiative is set in an area severely lacking health infrastructure. Hancock has no full-time primary care physician, and residents often seek help 25 or more miles away at one of the area's hospital emergency rooms. Some 68 percent of the calls to 911 are not emergencies, but they often tie up the county's sole ambulance service.

"Georgia Partnership for TeleHealth is excited to see this telemedicine initiative come to life in Hancock County. This program will become a model for the nation as other states struggle with the problem of getting health care to areas where

Dr. Jean Sumner speaks with local media about the benefits of telehealth for rural Hancock County in east central Georgia.



AMY MADDOX PHOTO

access is often difficult. As care becomes more patient-centered, it only makes sense to provide healthcare access where the patient is — in the home," said Sherrie Williams, executive director of Georgia Partnership for TeleHealth.

Last August, Excelsior Ambulance Service in Hancock County first employed a telehealth unit — including a high-resolution camera, stethoscope, EKG machine, basic lab equipment and a tablet computer — while responding to a call. Emergency medical technicians are trained to use these units to allow doctors working at partner hospitals to remotely examine and treat a patient and decide if he or she needs to be transported to one of these hospitals.

For the Hancock County initiative, EMTs, who are trained in the use of the equipment as well as physical examination skills, use the telehealth units to communicate with physicians at Putnam General and Navicent Health, who provide the patient consults.

"Emergency Department physicians and board leadership at Putnam General Hospital are behind the Hancock County Healthcare Access Initiative 100 percent," said Alan Horton, FACHE, administrator at Putnam General Hospital.

"Putnam General is committed to improving access to care in rural Georgia. If our physicians can examine and recommend treatment for

patients remotely, then potentially life-saving emergency personnel can remain in Hancock County to be more readily available to respond to emergency situations."

The project's partners believe telehealth offers a better way to save lives, time and money. They include Mercer, Navicent, Putnam General, Georgia Partnership for TeleHealth, Community Health Care Systems, Stratus Healthcare, the Hancock County Board of Commissioners, Sparta city leaders, the Georgia State Office of Rural Health, Department of Community Health, Department of Public Health, Emergency Management and Prevention, Verizon, AT&T, Roche Diagnostics and more. The Department of Public Health in Mercer's College of Health Professions plans to help publish the costs, outcomes and satisfaction of the project. Additionally, on Sept. 6, Grady EMS succeeded Excelsior as Hancock County's ambulance provider.

"I am proud that Hancock County was selected for this pilot project," said Hancock County Commission Chair Sistie Hudson. "Our county's healthcare needs will be greatly enhanced through telehealth technology, as non-emergency calls can be handled without unnecessary trips to our neighboring hospitals. It is a win-win for everyone."

The goal of the Hancock County Healthcare Access Initiative is twofold — first, to build the primary health infrastructure in Hancock County,

and second, to develop a telehealth-based business model that's sustainable.

Eventually, the approach may be replicated statewide. Subsequent phases that are planned for the project include elective home visits, post-hospital visits to make sure patients understand their discharge instructions and medications, and elective visits paid by credit card or cash for anyone who doesn't know a physician or doesn't want to make a trip to the doctor.

"Community Health Care Systems has been able to utilize this system to treat homebound patients by having an EMT present the patient to the provider in the Sparta office. Using the peripheral devices, the provider was able to conduct a face-to-face visit with the patient that provided the same information that would have been received if the patient had been in the office," said Carla Belcher, CEO of Community Health Care Systems Inc.

"Working with the EMT, the patient had a complete assessment without leaving the home. We believe this type of intervention can greatly enhance our access to patients that are homebound or have other transportation barriers that prevent them from being able to come in for a traditional office visit."

► School of Medicine Receives \$35 Million in Additional Funds from State

Gov. Nathan Deal announced on Feb. 10 that the state will invest an additional \$70 million in Mercer and Morehouse School of Medicine as a result of a settlement agreement offer from the Centers for Medicare and Medicaid Services. The recipients were selected based on their continued efforts to place graduates in rural and underserved areas throughout the state.

"The state should receive these funds as a result of a healthcare lawsuit settlement regarding Medicaid reimbursements," said Deal. "It is only fitting that we in turn invest this money in healthcare education programs, particularly those that prioritize placing primary care physician graduates in high-demand areas throughout the state. Likewise, this funding fulfills a decades-old commitment made to Mercer University by the state. With this investment in its healthcare program, we are making good on that promise. Finally, we look

forward to continue working with these two medical schools to advance their healthcare training and delivery efforts."

The funding will help Mercer's medical school reach its enrollment goal of 480 M.D. students for the upcoming fall semester.

"We are grateful to Gov. Deal and members of the General Assembly for their ongoing and steadfast commitment to improving the delivery of health care to Georgians in rural and underserved areas of our state, including exploring new and innovative approaches to meeting rural health challenges, said Mercer President William D. Underwood. "Mercer University is committed to use these funds to make a profound difference in the education of future physicians from Georgia. These funds will directly support future physicians who demonstrate a commitment to providing primary care in areas of the greatest need."

► School of Medicine Appoints Chief Diversity Officers in Savannah, Macon

Bonzo K. Reddick, M.D., M.P.H., and Richard F. Camino-Gaztambide, M.D., M.A., were appointed to the positions of chief diversity officer/associate dean for diversity and inclusion (CDO/ADDI) on the Savannah and Macon campuses, respectively, last July.

Dr. Reddick is a 2002 graduate of Morehouse School of Medicine. He completed his family medicine residency at University of North Carolina Hospitals in Chapel Hill, where he served as chief resident. He completed a fellowship at the UNC-Chapel Hill School of Medicine and earned a health disparities certificate and a master's degree in public health at the UNC-Chapel Hill School of Public Health.

Dr. Reddick is board certified in family medicine and has an appointment as an associate professor on the Savannah campus with a special interest in health disparities. He also serves as associate director of the Family Medicine Residency program at Memorial University Medical Center and is academic vice chairman of



Reddick



Gaztambide

family medicine for the School of Medicine.

Dr. Camino-Gaztambide is a 1983 graduate of Universidad Central del Caribe in Puerto Rico. He completed an internship in pediatrics at the Pediatric University Hospital. He then completed psychiatry residency and subsequently a child and adolescent psychiatry fellowship at the University of Puerto Rico School of Medicine.

He holds board certifications in psychiatry, addiction psychiatry and child and adolescent psychiatry. He completed his Master of Arts degree in religion and theology at the University of Notre Dame in 2014. He serves the school as psychiatry clerkship director and has an appointment as associate professor of psychiatry and behavioral science and associate professor of pediatrics on the Macon campus with a special interest in cultural sensitivity. He also serves as national co-chair of the of the Religion and Spirituality Committee of the American Academy of Child and Adolescent Psychiatry.

These two associate deans will work cooperatively to provide oversight and coordination of the diversity efforts for the School of Medicine and will work to create campus environments that are inclusive and supportive. They will collaborate with the dean of the Columbus campus on issues related to that location, and will lead efforts to encourage all members of the School of Medicine community to develop an abiding respect for human dignity and difference, support and cultivate awareness, appreciation and engagement of diversity and inclusion and its relevance at the School and in the healthcare profession.

► School of Medicine Joins Consortium to Examine Accelerated M.D. Programs

Mercer is one of eight medical schools that have formed a consortium to examine accelerated pathways to a medical degree in response to a looming doctor shortage coupled with increasing student debt.

The Consortium of Accelerated Medical Pathway Programs is funded by a four-year, \$257,000 grant from the Josiah Macy Jr. Foundation and met for the first time last July. Participating institutions aim to study and assess the logistical, financial, regulatory and competency concerns related to the formation

of accelerated medical pathway programs and to provide guidance to other medical schools that are considering the development of similar programs.

Since 2012, Mercer has offered an accelerated, three-year track in family medicine on its Savannah campus leading directly to a family medicine residency at Memorial University Medical Center.

The six other U.S. institutions in the consortium have also admitted their first accelerated pathway students in recent years, while McMaster University in Canada has offered a three-year program since 1972.

“There are very respected people who feel you can’t do this, that it will destroy what the system is and what’s worked,” said Robert Pallay, M.D., academic chair and director of Mercer’s family medicine residency program told the Association of American Medical Colleges in September. “I’m not saying we don’t train great doctors in our present four-year system. But we have to step back and see if there are other ways to do it with outcomes as good as we now have.”

The consortium, which will serve as the cornerstone for a national discussion of accelerated pathway programs, has developed four committees to evaluate how shortened programs could affect undergraduate medical education, graduate medical education, competencies and readiness for residency, and research.

The consortium intends to provide information regarding scalable, replicable and portable models that may be adopted by other medical schools building accelerated programs.

Three-year programs, such as Mercer’s, are typically designed to address physician shortages in areas such as primary care or family medicine, which pay less than some specialties. The opportunity to save one year of tuition and enter the workforce earlier is meant to encourage students to enter these areas of need.

The University annually receives funding from the state for its accelerated family medicine track, and that is currently being used to reduce student debt and expand the three-year program to the Macon and Columbus campuses. Students who accept state funds may be asked to practice in Georgia for up to three years.

Pharmacy

► Senior Vice President for Health Sciences Receives Prestigious Award from State Association

The Georgia Pharmacy Association (GPhA) last July presented its Larry L. Braden Meritorious Service Award to Hewitt W. “Ted” Matthews, Ph.D., longtime dean of the College of Pharmacy and Mercer’s senior vice president for health sciences, during the organization’s annual convention in Amelia Island, Florida.

The Braden Meritorious Service Award recognizes the Georgia pharmacist who, over his or her career, has made extraordinary, invaluable contributions not only to GPhA, but to the practice of pharmacy in the state of Georgia. As the highest honor GPhA bestows on a pharmacist, the award is not presented annually.

In his introduction, GPhA President Bobby Moody described Dr. Matthews as “a force for good, a force for progress in our profession ... simply an original in Georgia pharmacy.” Moody acknowledged Dr. Matthews’ visionary leadership at Mercer, his mentoring of countless

student pharmacists, and his service to GPhA, including chairing the committee that rewrote the Pharmacy Practice Act in Georgia.

Dr. Matthews is a graduate of Mercer’s pharmacy school and received his M.S. and Ph.D. degrees in pharmaceutical biochemistry from the University of Wisconsin in Madison, where he was a National Institutes of Health Pre-Doctoral Fellow and a Fellow of the American Foundation for Pharmaceutical Education. He joined the faculty of the Mercer School of Pharmacy in 1973, was appointed the Hood-Meyer Professor of Pharmacy in 1982, and was named dean of the College of Pharmacy in 1990.

He was appointed senior vice president for health sciences in 2012 and oversees the Mercer Health Sciences Center, composed of the School of Medicine, College of Pharmacy, Georgia Baptist College of Nursing and College of Health Professions. The Mercer Health Sciences Center enrolls more than 2,000 students on Mercer’s campuses in Macon, Atlanta, Savannah and Columbus.

College of Pharmacy Dean Dr. Hewitt W. “Ted” Matthews (left) receives the Braden Meritorious Service Award from Georgia Pharmacy Association President Bobby Moody.



DAVID BURGHARDT PHOTO

Health Professions

▶ Lundquist Appointed Dean of College of Health Professions

Lisa Murphey Lundquist, Pharm.D., who as interim dean led Mercer University's College of Health Professions since its founding, was appointed dean, effective Jan. 1.



Lundquist

"Dr. Lundquist has been a tremendous interim dean for the College of Health Professions since its inception in 2013," said Provost D. Scott Davis, Ph.D. "I am pleased that she has agreed to take the 'interim' off of her title, and I expect great things from the College under her continued leadership."

Dr. Lundquist was named interim dean, effective May 1, 2013, two months prior to the College of Health Professions opening as the University's 12th academic unit.

The launch of the College consolidated programs in physical therapy, physician assistant studies and public health that were previously housed in Mercer's College of Pharmacy and Health Sciences — now known as the College of Pharmacy — as well as the School of Medicine.

"Dr. Lundquist is a proven leader, manager and scholar who has demonstrated outstanding leadership as interim dean," said Hewitt W. "Ted" Matthews, Ph.D., senior vice president for health sciences and dean of the College of Pharmacy. "I am confident that, under her continued leadership, the College will achieve excellence in reaching all of its goals."

"I am honored to be appointed dean of the College of Health Professions," said Dr. Lundquist. "I am excited to continue to work with the outstanding College faculty and staff as we prepare our students to improve the health of the nation through excellence in education, service and innovation."

Dr. Lundquist joined Mercer's College of Pharmacy and Health Sciences in 2006 as clinical assistant professor in the Department of Pharmacy Practice. In 2009, she was promoted to assistant dean for administration and clinical associate professor. As assistant dean, her responsibilities

ranged from leading the accreditation self-study process of the College of Pharmacy to organizing interprofessional education activities for health sciences to strategic planning.

In 2011, Dr. Lundquist was named interim chair and program director of the Department of Physician Assistant Studies, a position she held for a year in addition to her responsibilities as assistant dean. In 2012, she was promoted to associate dean for administration, a position that expanded her responsibilities to include chairing the Mercer Health Sciences Center's Ad-hoc Interprofessional Education Committee as well as the planning committee for the College of Health Professions. In 2015, she achieved the rank of clinical professor.

Dr. Lundquist earned her Doctor of Pharmacy degree from Samford University's McWhorter School of Pharmacy. She completed a postgraduate residency in primary care and is a board-certified pharmacotherapy specialist. Prior to arriving at Mercer, she served on the faculty at the University of Mississippi School of Pharmacy.

▶ Health Professions Receives \$1.1 Million Grant to Train PAs for Underserved Communities

The Department of Physician Assistant Studies in the College of Health Professions has been awarded a \$1.1 million grant by the Health Resources and Services Administration (HRSA). The grant, which will provide a total of \$1,126,390 over a five-year period, was offered through HRSA's Primary Care Training and Enhancement (PCTE) Program.

The PCTE Program aims to address the nation's public health workforce shortage by preparing primary care practitioners to provide community-based and preventive care to medically underserved communities.

Dr. Sheena D. Brown, clinical assistant professor, will serve as the principal investigator and project director for the grant, which involves collaboration with Mercer's Department of Public Health.

"I applaud the Department of Physician Assistant Studies partnering with the Department of Public Health in this collaborative effort to train students to improve the health of the nation with a focus on prevention, health service delivery, health promotion and societal determinants of health," said Dr. Lisa Lundquist,

dean of the College of Health Professions and clinical professor.

Student trainees in Mercer's Department of Physician Assistant Studies will receive curriculum and clinical training specifically focused on providing evidence-based medical care to Georgia's rural and underserved communities.

Traineeship awards will provide financial support to eligible students with strong academic records who demonstrate an interest in community-based health promotion and primary care practice. Student clinical experiences in the program include providing care for minority, disadvantaged, underserved and rural populations.

HRSA, an agency of the U.S. Department of Health and Human Services, is the primary federal agency for improving access to health care by strengthening the healthcare workforce, building healthy communities and achieving health equity. HRSA's programs provide health care to people who are geographically isolated, economically or medically vulnerable.

▶ Health Professions to Expand to Include Clinical Medical Psychology Programs

The College of Health Professions on July 1 will expand to include Mercer's Clinical Medical Psychology degree programs, currently housed in the School of Medicine.

The Clinical Medical Psychology programs include the Doctor of Psychology (Psy.D.) and the Doctor of Philosophy (Ph.D.).

"We are pleased that the Clinical Medical Psychology programs will be joining the College of Health Professions," said Dr. Lisa Lundquist, dean of the College. "The programs' emphasis on integrated care to prepare skilled psychologists aligns nicely with the College's focus on excellence in training students to improve the health and quality of life of individuals and society."

These two five-year programs, exclusively offered on the University's Cecil B. Day Graduate and Professional Campus in Atlanta, are designed to produce graduates who are eligible for licensure as practicing clinical psychologists, particularly in integrative healthcare settings, and for careers in higher education.

Degree candidates must complete four years of coursework followed by a yearlong internship.





Health Sciences Center Once Again a Major Sponsor of

Atlanta Science Festival

Mercer University and the Mercer Health Sciences Center were major sponsors of the Atlanta Science Festival for a third consecutive year. The festival culminates in the Exploration Expo, held this year on March 26, in Centennial Olympic Park in downtown Atlanta.

Mercer provided five different demonstrations throughout the day among the more than 100 interactive exhibits, hands-on experiments and mind-blowing performances that took place.

The Mercer Health Sciences Center was represented by Jennifer Knaack, Ph.D., assistant professor of pharmaceutical sciences and co-director of the Center for High Complexity Diagnostics in the College of Pharmacy, who allowed participants to transfer their own DNA to necklaces, create their own silly putty from glue and liquid starch and see "fog bubbles" made from dry ice, water and dish soap.

College of Pharmacy students representing the American Pharmacists Association-Academy of Student Pharmacists offered a demonstration to help participants understand the composition of their medications using candies.

Alyssa Fiss, PT, Ph.D., PCS, associate professor and interim chair of physical therapy, and other College of Health Professions faculty and students provided a circuit of three stations to test cardiovascular fitness, muscle strength and flexibility, and discussed how these activities impact overall health.



A COMPLEX

MERCER SCIENTISTS TAKE MANY APPROACHES TO ADDRESSING CANCER

BY MARLENE GOLDMAN

Ed Perkins has seen multiple family members diagnosed with cancer. “But my family’s history is not much different than anybody else’s,” said the genetic engineer and faculty member at Mercer School of Medicine. “When I give talks about my work and ask groups if they have family members or friends who have been affected by cancer of any kind, about 80 to 90 percent of arms go up.”

In fact, cancer is the second leading cause of death in the country — 1.7 million patients were diagnosed with cancer last year. Its growing incidence is sounding alarms all the way to the White House, which earlier this year announced a \$1 billion jumpstart to find a cure.

Closer to home in the Mercer Health Sciences Center, cancer research is a high priority.

While recent progress in cancer research is impressive, the future is even more promising, said Senior Vice President for Health Sciences Hewitt W. “Ted” Matthews, Ph.D. “We’re getting closer because we are getting a better understanding of the causes of cancer. Once we do that, then we can design treatment modalities to stop its spread and cure it.”

The task is complex. Cancer actually is many diseases, each with a unique set of problems. What cancers do have in common is uncontrolled cell growth and the spread of abnormal cells, but they can present different symptoms, different treatment options and widely varying outcomes.

“For instance, drugs that might be effective in treating leukemia may or may not have any effect on pancreatic cancer or liver cancer,” explained Senior Vice Provost for Research Wayne Glasgow, Ph.D.

Working with clinical partners Navicent

Health in Macon, Memorial University Medical Center in Savannah, St. Francis Hospital and Midtown Medical Center in Columbus, and Atlanta Medical Center, Mercer scientists are trying to solve the cancer puzzle from many different angles.

They aim to target drug delivery to cancer cells, better understand the mechanisms of cancer, boost patients’ immune systems, develop anti-cancer vaccines and define patient-centered survivorship care.

Drug Delivery via Chromosomes

Despite advances in cancer drug development, the search continues for new, targeted therapies that do minimal harm to healthy cells.

While many existing drugs and radiation can inhibit or halt abnormal cell growth,

they kill healthy tissue, as well. Side effects range from hair loss to knocking out the production of bone marrow cells, which are key to a vigorous immune system.

“We are entering a new age where we can genetically engineer a patient’s cells to fight cancer and avoid a lot of those toxic side effects,” said Dr. Perkins, associate professor on the medical school’s Savannah campus.

With support from the National Institutes of Health, the Georgia Research Alliance, the Georgia Cancer Coalition and the Department of Defense, Dr. Perkins has devoted more than 15 years to trying to understand how chromosomes behave in cells and to use that knowledge toward a multipronged, targeted approach to treat cancer.

Over the past few years, Dr. Perkins’ lab has morphed into a kind of an engineering firm — one of the few in the world that has devised a way to build new chromosomes

TASK

“You can plug lots of things into a circuit board on a computer to get it to do many different functions. The chromosome that we manufacture has many slots into which we can plug a whole variety of genes and then insert the chromosome into cells that we know will migrate to the site of the tumor and kill cancer cells.

It’s like the Trojan horse with its hidden army.”

— Dr. Ed Perkins



and load them with multiple anticancer genes, tailor-made to attack and inhibit cancer growth. He calls it combination therapy on the cellular level, based on the old-fashioned idea of using two or three different drugs with or without radiation.

He explains that the human body normally has 46 chromosomes (23 from the mother, 23 from the father), each made of a single DNA molecule coated by proteins with specific instructions that make each person unique. He likens the new manufactured chromosome to a blank circuit board.

“You can plug lots of things into a circuit board on a computer to get it to do many different functions. The chromosome that we manufacture has many slots into which we can plug a whole variety of genes and then insert the chromosome into cells that we know will migrate to the site of the tumor and kill cancer cells. It’s like the Trojan horse with its hidden army.”

Key to this approach is tricking the tumor by taking advantage of its own natural properties as it grows. Studies show that tumors recruit mesenchymal stem cells manufactured in the bone marrow because they help with the formation of blood vessels and make a bed in which the tumor can grow and proliferate, usurping healthy cells. The idea is that the tumor would attract the engineered mesenchymal cells taken from patients’ own bone marrow, which would then release the anti-cancer properties loaded on the new chromosome.

Engineered chromosomes targeting triple negative breast cancer will be tested over the next two years on mice, in collaboration with Amy Green, Ph.D., assistant professor on Mercer’s Savannah campus, and colleagues at the University of Minnesota. Pancreatic and advanced bladder cancers are other potential candidates.

Hide-and-Seek in the Microenvironment

In his lab on the Macon campus, Associate Professor of Immunology Rob McCallip, Ph.D., has taken a different, but complimentary approach to outsmarting cancer cells.

“We’re trying to burn down a tumor’s house so it doesn’t have a place to live,”



“Time and time again, cancer cells have ways of evading everything thing we do.... It’s become clear that there’s more to cancer than just the growing cell; it’s also the immediate surroundings that the cell grows in.”

— Dr. Rob McCallip

AMY MADDOX PHOTO

he said. In other words, he wants to understand and change how the tumor cell interacts with its environment, then develop new therapies that target cells that escape elimination by our body's immune system or by current treatments for cancer.

"Time and time again, cancer cells have ways of evading everything thing we do. They know how to hide from the body's immune system and therapeutics," he said. "It's become clear that there's more to cancer than just the growing cell; it's also the immediate surroundings that the cell grows in."

Understanding how that microenvironment works may help explain why a cancer goes to one site rather than another.

Many drugs that work on cancer in Petri dishes are less effective in humans, he said, citing chronic myelogenous leukemia (CML).

Dr. McKallip wants to know why the drug Imatinib, once regarded as the magic bullet for CML, initially works in the vast majority of patients, but eventually the cancers become resistant to therapy and then return. The cells that don't respond to Imatinib hide quietly in bone marrow, the soft tissue inside bones that helps make all blood cells. Once patients get off Imatinib, they relapse. "So Imatinib is not a cure, but a lifelong treatment to keep that cancer at bay," said Dr. McKallip.

"What is it about that environment that makes those cancer cells go there and allows them to survive? If we can figure that out and target that environment so it's not so hospitable, cells will no longer find a refuge there and will be more susceptible to treatments."

He's found that cancers express a lot of the antigen (protein) CD44, a receptor for hyaluronic acid (HA), which influences the growth of tumors. Bone marrow is a high source of HA.

"Our theory is that HA provides a survival signal to cancer cells and attracts them to the bone marrow," said Dr. McKallip. His lab is using a naturally derived compound called 4-MU to target and inhibit HA production in the bone marrow. The compound already is used therapeutically for some human diseases



Dr. Jinping Li has confirmed that HE4 is highly elevated in patients with pancreatic cancer. Her lab is developing a blood test to check for elevated levels of that biomarker that would indicate abnormal cell growth.

JOHN CARRINGTON PHOTO

in Europe, but is just now being tested against cancer.

Breast cancer may be another good candidate for this type of treatment since the environments of those cancer cells are also highly enriched by HA.

While little attention has been paid to the cell microenvironment until recently, it's now suspected not only of playing a role in tumor growth, but also inflammation and a number of other diseases. "I think we will see microenvironments playing a huge role in the development of many future medicines," Dr. McKallip said.

Help in Diagnosis and Prognosis

Whatever the type of cancer, the earlier the diagnosis, the better the outcome.

But certain types, such as pancreatic and ovarian cancer, are difficult to detect early. When patients start to show symptoms, it's often too late and so advanced that most patients survive less than five years.

Assistant Professor of Histology Jinping Li, M.D., Ph.D., is trying to identify a biomarker for pancreatic cancer that may help in early diagnosis and management



Dr. Himangshu Bose's lab is looking to block biochemical pathways that are important for the cancer cell's survival.

JOHN CARRINGTON PHOTOS

of the disease. Currently, the gold standard test used as a tumor marker for pancreatic cancer is CA19-9, with only 60 percent accuracy and not specific to the type of cancer. Levels of CA19-9 and CEA — another, less frequently used tumor marker for pancreatic cancer — are not high in all people with this form of cancer, and some people who don't have pancreatic cancer may have high levels of these markers for other reasons.

Dr. Li, also based in Savannah, is particularly interested in a protein called HE4, which is expressed early on in the pancreas when a cell goes from normal to cancerous. In collaboration with the Anderson Cancer Institute (ACI), Department of Surgery at Memorial University Medical Center and the Mayo Clinic, she has confirmed that HE4 is highly elevated in patients with pancreatic cancer. Her lab is developing a blood test to check for elevated levels of that biomarker that would indicate abnormal cell growth.

That blood test, in combination with existing diagnostic tools, could improve the prognosis for patients with pancreatic cancer. With funding from ACI, her lab is also studying the drug resistance mechanism of HE4 in hopes of learning how to block that protein in order to make treatment more effective.

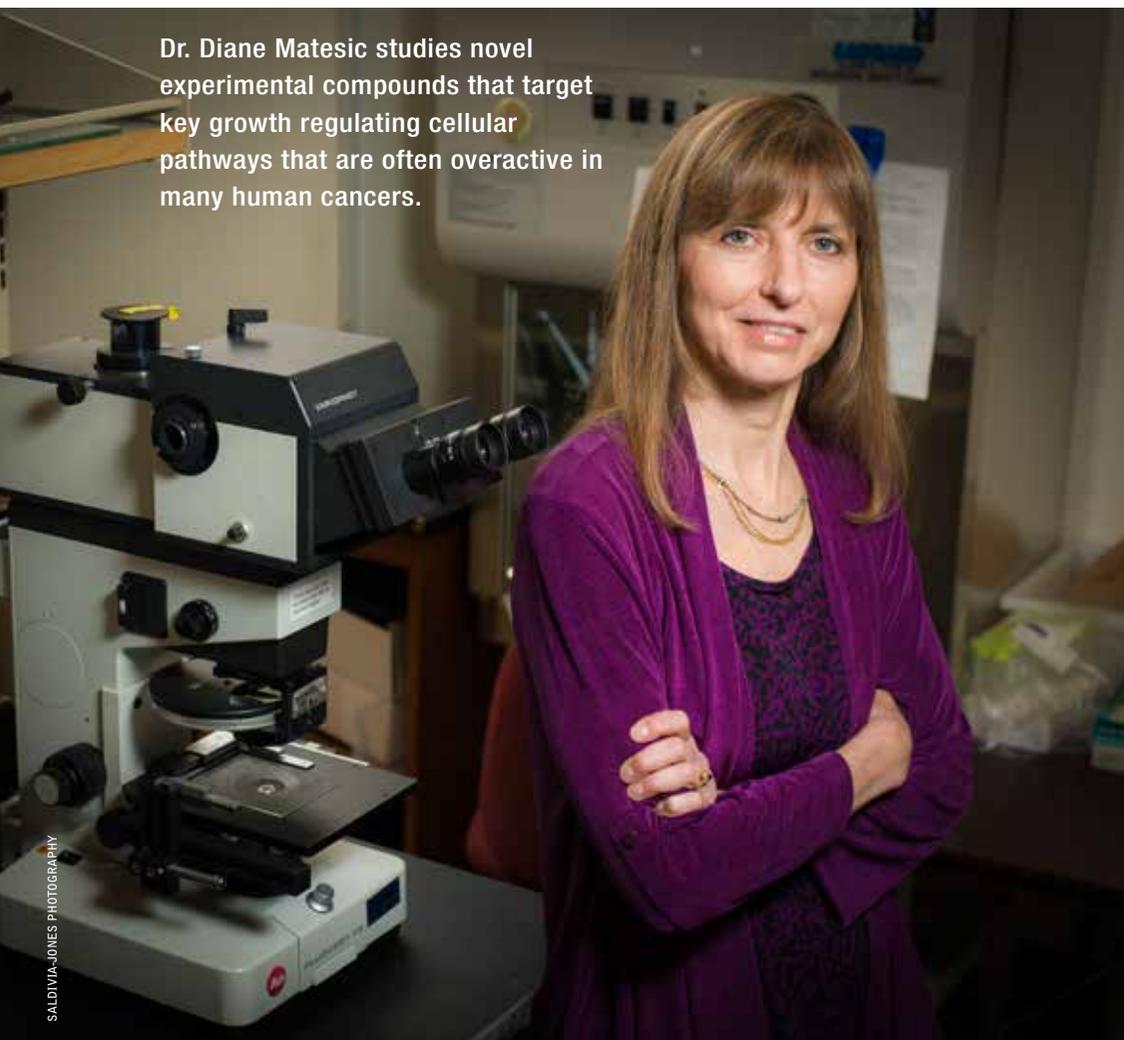
"If we can detect a tumor early, we hope to stop it or prevent its progression," Dr. Li said.

Understanding the Mechanics

How estrogen is made in a breast tumor cell versus a normal cell is the focus of Professor of Biochemistry Himangshu Bose, Ph.D. He believes that understanding the mechanisms behind cellular growth in patients with breast cancer is key to finding more effective therapies in the future.

One of the main drugs currently used to treat breast cancer is Tamoxifen, which has only a 30 percent success rate. It can inhibit ovarian function and hence future childbearing in women. Tamoxifen targets overproduction of estrogen by the ovaries. About two-thirds of all breast cancers are estrogen-driven, and a hallmark of cancer

Dr. Diane Matesic studies novel experimental compounds that target key growth regulating cellular pathways that are often overactive in many human cancers.



SALDIVIA-JONES PHOTOGRAPHY

therapy has always been how to block estrogen signaling.

“But we don’t know how aromatase (the key enzymatic step in estrogen synthesis) works,” said Dr. Bose, who is based in Savannah as well. His lab is looking to block biochemical pathways that are important for the cancer cell’s survival. A growth-signaling pathway comprises a group of molecules that work together to control cell functions, such as cell division or cell death.

Dr. Bose has found that estrogen is regulated by many other proteins, but thinks that a commonly known breast cancer biomarker, known as GRP78, acts on the cholesterol trafficker protein which may, in turn, act on the estrogen. Understanding how those proteins interact with each other could lead to a new drug to

reduce expression of estrogen.

By analyzing patient samples provided by ACI surgeon William Burak Jr., M.D., Dr. Bose hopes to determine where these steroids are coming from in each patient and then target drug therapy toward that particular patient.

How Drugs Work

“There’s no one way that a cell gives rise to cancers,” noted Nader Moniri, Ph.D., associate dean for research and associate professor for the College of Pharmacy in Atlanta. “It requires a lot of mechanistic study to understand precisely what goes wrong at the cellular level before we can understand how to stop different cancers. A preclinical approach to the study of cancer is just as important as clinical trials,

because we need to understand how cancer arises so we can develop treatments for it.”

For example, molecular biologist Diane Matesic, Ph.D., studies novel experimental compounds that target key growth regulating cellular pathways that are often overactive in many human cancers. She wants to know how the molecular mechanisms of these new compounds turn off the switch that’s stuck in the on position in these pathways. “Once we understand the mechanisms, these compounds could be useful in assessing new prototype agents to treat lung, prostate and other kinds of cancer,” said Dr. Matesic, professor of pharmaceutical sciences.

One compound under investigation, Chaetoglobosin K, a natural product derived from plant fungus *Diplodia macrospora*, prevents division of cancer cells in vitro in a variety of tumor cell types, including human lung carcinoma and human prostate cells.

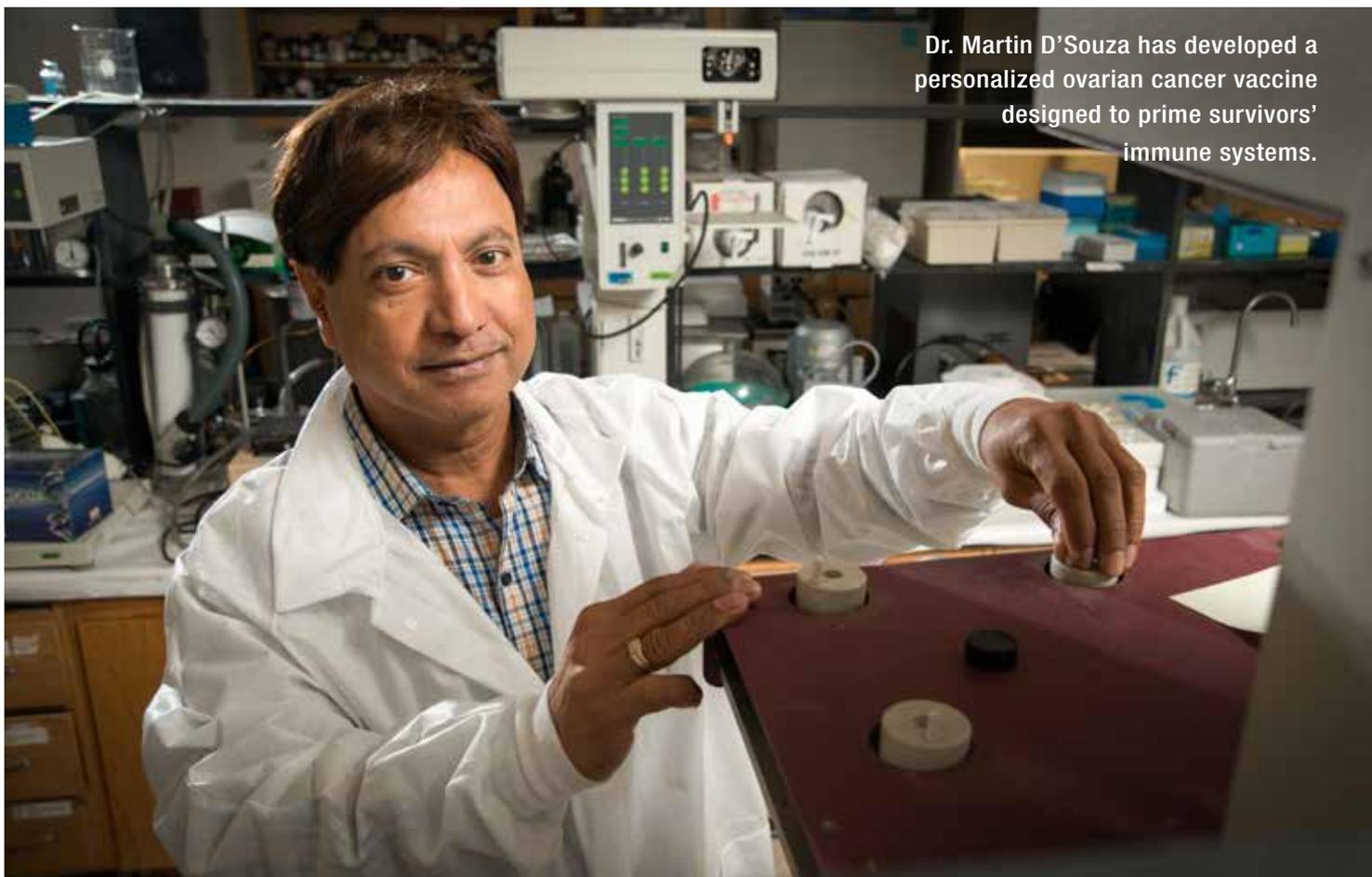
Collaborative studies have shown that a synthetic compound (AOPHA-Me), prepared in the laboratory of professor Sheldon May, Ph.D., at the Georgia Institute of Technology, can suppress cell growth by inhibiting or modulating two different pathways. Because it also inhibits HDAC (a DNA modifying protein), AOPHA-Me may represent a new, more powerful cancer drug than vorinostat, which is currently used to treat lymphomas.

Dr. Matesic’s work with Phil Bowen, Ph.D., who heads Mercer’s Center for Drug Design, highlights the utility of computer-assisted drug design (CADD) in identifying promising anti-cancer agents. Using this approach, they’ve found that three of five potential CADD drugs inhibited a growth-signaling pathway in tumor cells.

Boosting the Body’s Defense System

The body’s immune system normally does around-the-clock surveillance for mutated cells and eliminates or naturally fends off cancer and other diseases. When that immune system is compromised, cancers can have a field day.

That’s why Martin D’Souza, Ph.D., co-director of Mercer’s Center for Drug



Dr. Martin D'Souza has developed a personalized ovarian cancer vaccine designed to prime survivors' immune systems.

SALDIVIA-JONES PHOTOGRAPHY

Delivery Research, has developed a personalized ovarian cancer vaccine designed to prime survivors' immune systems.

The strategy involves creating patient-specific vaccines from the antigens (proteins) taken from each patient's tumor during its surgical removal. The antigen would then be formulated into microparticles and placed into regular gelatin capsules for oral administration, or formulated into microneedles for transdermal application. These would be administered back to the patient to allow their own immune system to create a natural defense system against those particular antigens.

Often, cancers reoccur in patients, explained Dr. D'Souza. "It happens all the time. Cells escape radiation, chemotherapy and surgery, and hide in remote tissues in the body. Five or 10 years later, they relocate and/or start growing again. But

this time they're even more robust and can't be destroyed because they've seen it all and are totally resistant to radiation and chemotherapy."

The vaccine will help to prime the body's immune system to detect cancer cells that have escaped from the original site and kill them. The patient takes the vaccine every six months or so, either in an oral capsule form or as a microneedle transdermal patch (hundreds of tiny needles made out of sugar that dissolve in the skin releasing their vaccine payload).

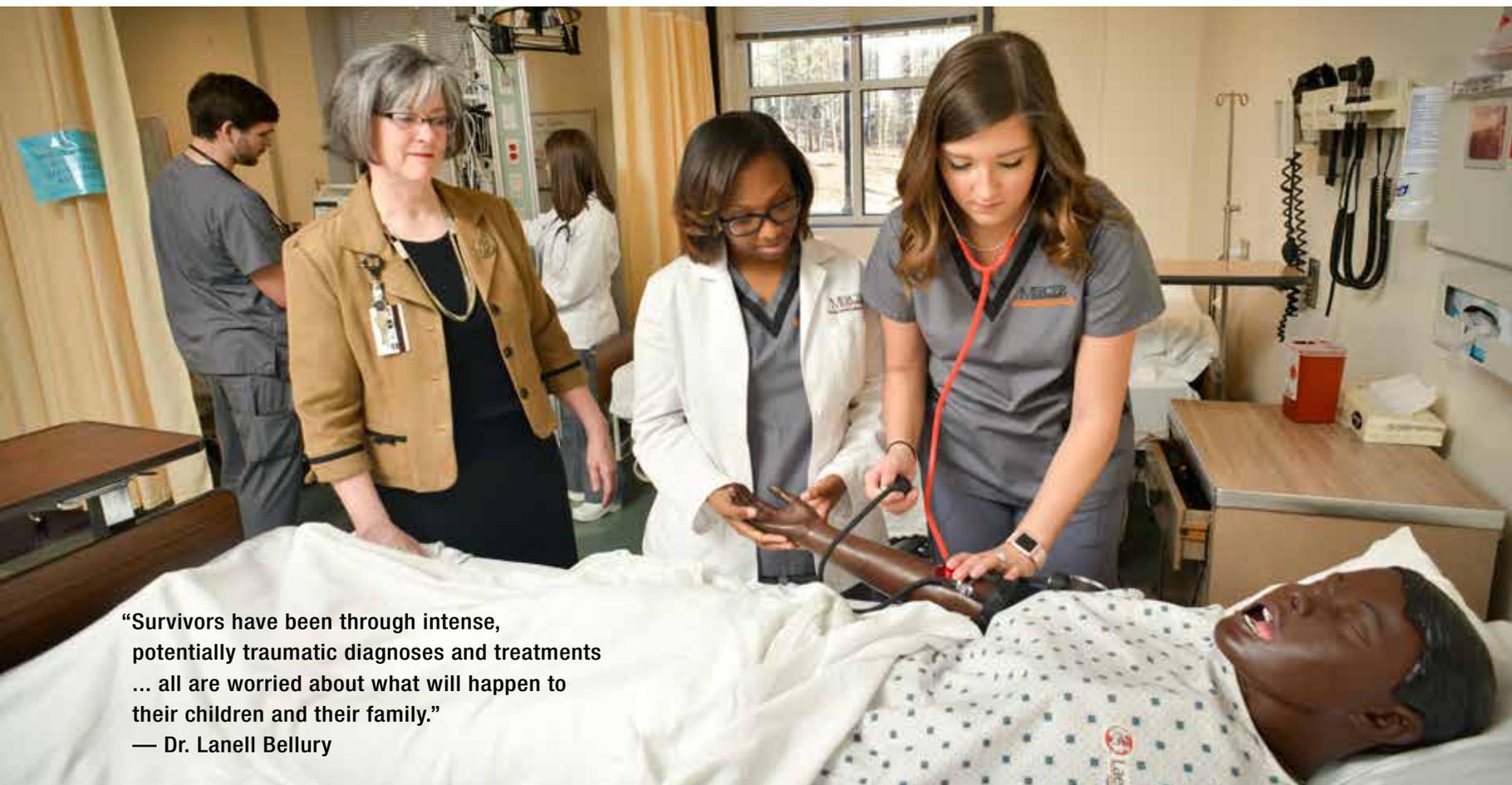
Both the capsule as well as the transdermal patch (which looks like a Band-Aid strip) are non-invasive, biodegradable and affordable because patients will be able to administer the vaccines themselves.

Initial test results of the vaccine in animal studies for ovarian, prostate, melanoma and breast cancer have been

"very good," Dr. D'Souza said. Tumor volume decreased by as much as 90 percent, and the vaccine totally prevented regrowth of tumors.

With almost \$2 million in funding from the National Institutes of Health and through a partnership with Kiromic — an oncology biopharmaceutical company in Texas that develops therapies that combat cancer by modulating a patient's own immune system — and several cancer institutes, the vaccine for ovarian cancer will be tested on humans over the next few years. Dr. D'Souza is looking for other partners who specialize in breast, melanoma or prostate cancer for future clinical trials.

"There's a lot of hope in the potential of cancer vaccines becoming the norm rather than the exception," said Dr. D'Souza, who expects many different types of cancer vaccines on the market in the next 10 to 15 years.



“Survivors have been through intense, potentially traumatic diagnoses and treatments ... all are worried about what will happen to their children and their family.”
— Dr. Lanell Bellury

Caring for Survivors

As diagnosis and treatment have improved, the number of cancer survivors has grown exponentially. By 2024, this number is expected to hit 19 million in the U.S. Some 20 percent of those survivors will have ongoing healthcare needs — physical issues, long-term and late effects of cancer including the cumulative effects of radiation or chemotherapy, emotional and social effects, employment concerns and other repercussions.

With an aging population and a shrinking number of professionals in cancer treatment and care, the question is how to best care for cancer survivors?

“Little evidence exists to guide us in that endeavor,” said Lanell Bellury, Ph.D., RN, AOCNS, OCN, associate professor in Mercer’s Georgia Baptist College of Nursing in Atlanta.

Dr. Bellury and Angie Patterson, a cancer survivor and vice president of the Georgia

Center for Oncology Research and Education, want to develop patient-centered outcomes research that addresses the needs of Georgia’s vulnerable cancer survivors, including older survivors, minorities and patients getting care in local or rural communities who are rarely reflected in survivorship research.

Supported by an award from the Patient-Centered Outcomes Research Institute (PCORI), the co-leaders are enlisting teams of stakeholders in the cancer survivorship world — patients, caregivers, physicians, social workers, nurses, caregivers and cancer researchers — to get their views on how to provide feasible, efficient and meaningful care.

Like Dr. Perkins and many of the other scientists at Mercer, Dr. Bellury’s own experiences with cancer — her father had four different kinds in his lifetime, her grandmother died of breast cancer and her father-in-law died of kidney cancer — drive her interest in cancer research. After 30

years as an oncology nurse, she has seen firsthand that cancer survivors have more physical and psychosocial symptoms and reduced quality of life when compared to non-cancer populations, and she has demonstrated the ongoing needs of older cancer survivors in her research.

“Survivors have been through intense, potentially traumatic diagnoses and treatments for cancer. Most fear they will get cancer again. Most experience anxiety and depression at times in their cancer journey, and all are worried about what will happen to their children and their family,” Dr. Bellury said.

By 2017, hospitals will be required to provide survivorship care planning for cancer survivors, she added. “A lot of people are interested in figuring out how to improve outcomes and demonstrate that resources devoted to survivorship care planning actually result in improved patient experience and the health of survivors.”



JOHN CARRINGTON PHOTO



MUSM Dedicates Savannah Campus Facility

Following the spring meeting of Mercer's Board of Trustees on April 22 in Savannah, a formal dedication ceremony was held for the School of Medicine's new medical education and research facility at Memorial University Medical Center.

The \$18 million Savannah campus expansion, which began in October 2014 and was completed in December 2015, includes renovation of approximately 26,500 square feet of classrooms, offices, research labs and library space in the Hoskins Center, as well as construction of 30,000 square feet of new space for additional classrooms, exam rooms and study areas.

This expansion will allow for a 50-percent increase in M.D. student enrollment — from 160 to 240 students — in Savannah, equaling the number of M.D. students on the School's Macon campus.



Top: Dignitaries in attendance at the dedication ceremony included (l-r) Mercer's Executive Vice President for Administration and Finance Dr. James Netherton, Mercer President William D. Underwood, Memorial Health President and CEO Maggie Gill, MUSM Board of Governors Chair Gus Bell and Mercer Trustee and former Memorial Board Chair Curtis G. Anderson. Bottom left: Curtis and Elizabeth Anderson with a portrait of Dr. William and Iffath Hoskins, for whom the biomedical research center on Mercer's Savannah campus is named. Bottom right: Mercer student and reigning Miss America Betty Cantrell performed a rendition of "America the Beautiful" during the ceremony.

DR. JOSEPH DONNELLY, PT, DHS, OCS

College of Health Professions Faculty Member Works to Make Physical Therapy Accessible to All

BY JAMIE DICKSON

Dr. Joseph Donnelly, PT, DHS, OCS, clinical associate professor in the Department of Physical Therapy within the College of Health Professions, is passionate about his profession. As president of the Physical Therapy Association of Georgia (PTAG), he leads some 2,300 physical therapists, physical therapist assistants and students in their efforts to change the way Georgians understand physical therapy.

PTAG's mission is to "promote the profession of physical therapy with integrity, excellence and collaboration to best serve and advocate for the people of Georgia," and under Dr. Donnelly's leadership, the organization is achieving its goals.

PTAG is launching a new effort to educate Georgians on the benefits of physical therapy. The consumer education campaign, titled "Physical Therapy (PT) Keeps Georgians Moving for a Healthier Life," aims to redefine what physical therapy means to Georgians. "One of the misconceptions is that [physical therapists] just primarily provide rehabilitation services after an injury," Dr. Donnelly said. "So the new campaign will define a broader category of interventions that can be sought for preventative measures."

During the state's last legislative session, Dr. Donnelly and PTAG worked to ensure that Georgia's laws reflect contemporary physical therapist practice and education standards. "It was determined that we needed to modernize the Physical Therapy Practice Act to meet the needs of healthcare consumers in Georgia," he said.

"This modernization included a new definition of what physical therapy means and what the practice of physical therapy means."

PTAG collaborated with several other organizations and legislators to rewrite the practice act, which included securing term and title protection of the words "physical therapy," "physical therapist," "physiotherapist," "PT," and

"PTA," "... so that consumers know that when they are getting physical therapy, it is being provided by a physical therapist or a physical therapist assistant under the supervision of a physical therapist," Dr. Donnelly said.

The result — on May 5, 2015, Gov. Nathan Deal signed the new practice

act into law. Dr. Donnelly said the legislation is vital. "It allows the healthcare consumer to self-refer for physical therapy services, which will ultimately decrease individual and societal healthcare costs," he said. "It also allows physical therapists to work collaboratively with other healthcare providers to provide more effective and efficient healthcare services without burdensome requirements. Providing the right healthcare services for the right patient at the right time will ultimately cut down healthcare costs and improve patient outcomes."

Dr. Donnelly praises the collaborative effort that resulted in the passage of this legislation. "The success of this legislation was built on collaborative relationships that have been forged with the Georgia Orthopaedic Society

and the Medical Association of Georgia," he said. "Chairman [of Health and Human Services] Sharon Cooper and State Rep. Matt Ramsey were very instrumental in moving this initiative forward on the House side, while State Sen. Renee Unterman and State Sen. Chuck Hufstetler were also instrumental in assisting with the process."

Dr. Donnelly is leading changes at Mercer, as well. As a clinical associate professor and director of postprofessional programs, residencies and fellowships in the College of Health Professions, he has recently secured accreditation for two new programs: a fellowship in orthopaedic manual physical therapy, as well as a residency in cardiovascular/pulmonary physical therapy, which is the eighth of its kind in the country.

"[Cardiovascular/pulmonary physical therapy] is a practice area that requires specialization, and there is definitely a need, especially in Georgia where we have a high prevalence of diabetes and hypertension," he said.

The Department of Physical Therapy also has a residency in orthopaedics, and a residency in neurologic physical therapy in partnership with the Shepherd Center.

Dr. Donnelly believes Mercer's physical therapy faculty practice clinic, the postprofessional programs and a commitment to service learning is what sets the University's physical therapy department apart. "I think service learning is an important aspect of the DPT program as it requires the students to reflect on their experience," he said. "It's not just about volunteerism. It's actually about their experience in the community project and how it's going to affect them as a professional."

For more information about PTAG and its consumer education campaign, visit the organization's Facebook page at www.facebook.com/PTMoveBetter.

"Providing the right healthcare services for the right patient at the right time will ultimately cut down healthcare costs and improve patient outcomes."





Nader H. Moniri, Ph.D.
College of Pharmacy, Atlanta

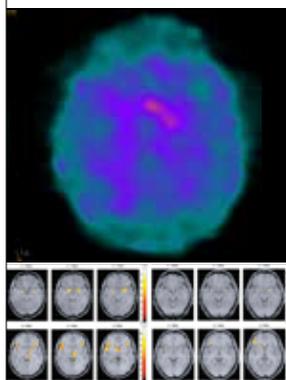
‘Identifying a new target for the treatment of Parkinson’s disease’

Nader Moniri, Ph.D., is an associate professor of pharmaceutical sciences and associate dean for research in the College of Pharmacy. His current research project, funded by a grant from the National Institutes of Health (NIH), is titled “FFAR4 and nigrostriatal function: A novel target for treatment of Parkinson’s Disease?”

Parkinson’s disease (PD) is among the most prevalent of brain neurodegenerative diseases and results in loss of neurons in the brain that synthesize the neurotransmitter dopamine (DA), which is critical for coordinating movement. Omega-3 fatty acids (Ω 3FA) have long-since been known to be of benefit in neurodegeneration, and have been shown to be neuroprotective in PD, although the mechanism of this effect remains unknown.

Dr. Moniri’s research shows that in cultured cells, stimulation of free-fatty acid receptor-4 (FFAR4), which is activated by fats including Ω 3FA, activates dopamine-synthesizing machinery and also offers protective effects from neurotoxins that can induce PD. The goal of the project is to assess the role of FFAR4 activation in DA synthesis in rat brain and to also determine if FFAR4 activity can be neuroprotective in rat models of PD. The work will be done in collaboration with Kevin Murnane, Ph.D., and Renee Hayslett, Ph.D., both faculty in Mercer’s College of Pharmacy, whose labs will be contributing to the movement and behavioral aspects of the study. Overall, this work will impact the understanding of the involvement of FFAR4 in dopamine pathways in the brain and could potentially identify FFAR4 as a new target for treatment of PD.

According to the Parkinson’s Disease Foundation, an estimated seven to 10 million people worldwide are living with Parkinson’s disease. The combined direct and indirect cost of Parkinson’s, including treatment, Social Security payments and lost income from inability to work, is estimated to be nearly \$25 billion per year in the United States alone.



Impacting the understanding of FFAR4 in dopamine pathways in the brain.



Continuing development of an activated carbon-based disposal system designed to deactivate residual drug in dosage forms.



Ajay K. Banga, Ph.D.
College of Pharmacy, Atlanta

‘Deactivation of residual psychoactive medications’

Ajay Banga, Ph.D., is a professor and department chair of pharmaceutical sciences, and co-director of the Center for Drug Delivery Research in the College of Pharmacy. Part of his current research, in collaboration with Minnesota-based company Verde Technologies, is funded by a Phase II Small Business Innovation Research (SBIR) contract with the National Institute on Drug Abuse. The project aims to continue development of an activated carbon-based disposal system designed specifically to deactivate residual drug in dosage forms, including transdermal patches.

The disposal system consists of a drug disposal pouch that contains granular activated carbon packaged within a water-soluble film reservoir. The pouch can render drugs inactive by adsorption in the presence of water, and is effective in different dosage forms such as sublingual films, liquid and solid. Although studies have lasted for 28 days, 80 to 98 percent of adsorption of tested psychoactive medications occurred within the first eight hours. Additionally, activated carbon did not release the adsorbed drug when exposed to large volumes of water and ethanol.

The National Survey on Drug Use and Health found that prescription drug misuse is usually initiated via a “diversion,” which most often occurs when people obtain and consume prescription medications that were not intended for them. Safe and prompt disposal of unwanted or unused drugs may help prevent diversion, but toilet flushing is now discouraged because of the increase in pharmaceutical contamination of watersheds. This disposal system is an option for safe medication removal by patients in a home setting.



**Ruth McCaffrey, DNP, FNP-BC,
GNP-BC, FAANP, FAAN**

Georgia Baptist College of Nursing, Atlanta

‘Creating healing and restorative environments’

Ruth McCaffrey, DNP, FNP-BC, GNP-BC, FAANP, FAAN, is a professor and coordinator of the Doctor of Nursing Practice Program in the Georgia Baptist College of Nursing. For the last 15 years, her research has focused on creating healing and restorative environments. The theoretical framework for her research comes from Florence Nightingale, who said “... and what nursing has to do is to put the patient in the best condition for nature to act upon him.” She has also been influenced by Martha Rogers, who theorized that humans and their environment are inexorably linked and constantly interacting and moving toward health. Therefore, creating environments that allow patients to experience and interact with the peace, serenity and support that nature can bring is essential to healing process.

One healing environment created by Dr. McCaffrey involves the ability of music to reduce post-operative pain and delirium in patients after hip and knee surgery. The findings of this study were published in several nursing journals and featured on the BBC Newshour. Dr. McCaffrey has also studied the ability of reflective garden walking using a guidebook to reduce stress and depression and stimulate personal growth, creating an intervention called the “Stroll for Wellbeing.” This study has led to many publications and presentations at nursing, medical, horticultural therapy and garden conferences. Programs using this intervention are ongoing at gardens around the country in locations such as Washington State, Florida, Illinois, Arizona, California and Oregon. Additionally, Dr. McCaffrey was the principal investigator on a National Institutes of Health-funded grant to study the effect of a seated yoga program on older adults who were unable to participate in standing exercise. This study demonstrated that the yoga program improved balance, decreased pain and promoted self-care among participants. In addition to her research, Dr. McCaffrey has developed a scale used to determine risk for deep vein thrombosis (DVT) during hospitalization. This scale is used in more than 100 hospitals and hospital groups around the country and has been translated into multiple languages for worldwide use.



Allowing patients to experience and interact with the peace, serenity and support that nature can bring.



Elevating the clinical practice of bedside pediatric nurses as it relates to evidence-based practice.



**Natasha Laibhen-Parkes,
Ph.D., RN, CPN**

Georgia Baptist College of Nursing, Atlanta

‘Developing an evidence-based practice curriculum for pediatric bedside nurses’

Natasha Laibhen-Parkes, Ph.D., RN, CPN, is a clinical assistant professor in the Georgia Baptist College of Nursing. Her nursing career spans 24 years, with the majority of her clinical experience in pediatric nursing in the acute care setting. Her research involves elevating the clinical practice of bedside pediatric nurses as it relates to evidence-based practice (EBP). She developed an EBP curriculum for pediatric bedside nurses that has been adopted by Children’s Healthcare of Atlanta (CHOA). A recent graduate of the College’s doctoral program, Dr. Laibhen-Parkes’ dissertation research involved modification of her EBP curriculum for web-based delivery followed by formal testing in a randomized clinical trial. This research was funded by the Jonas Nurse Leaders Scholarship, a program that supports the educational development of new nursing faculty.

Dr. Laibhen-Parkes’ research is influenced by her clinical experience as well as the work of nurse leaders, such as Dr. Bernadette Melnyk and Dr. Kathleen Stevens. She has served as an EBP champion within the acute care setting and led other staff nurses in EBP projects. She has given multiple scholarly presentations locally, regionally and nationally on EBP sustainability, and continues to serve as a champion for EBP at CHOA while developing her area of research at Mercer. As a result, she has published the findings of her dissertation research and previous work related to EBP in several peer-reviewed publications. One critical outcome from her dissertation research was the development of the adapted Fresno test, an instrument that measures EBP competence in pediatric nurses. The psychometric report from the adapted Fresno test is currently under publication review, and Dr. Laibhen-Parkes plans to conduct further research on this instrument to strengthen the psychometric evidence for its use in a wider population of nurses.



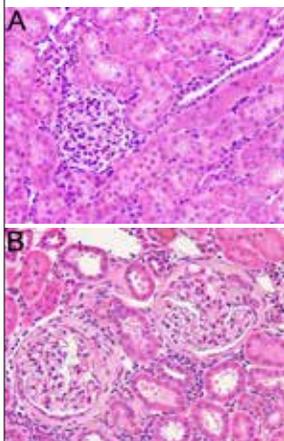
Christy Bridges, Ph.D.
School of Medicine, Macon

‘The effects of methylmercury on fetuses of women with chronic kidney disease’

Christy Bridges, Ph.D., is an associate professor of histology on the Macon campus of the School of Medicine. Her current research focuses on the effects of methylmercury on fetuses of women with chronic kidney disease (CKD). CKD affects more than 14 percent of the adults in the U.S. The disease, which is most often caused by diabetes and hypertension, can significantly reduce the ability of the kidneys to function correctly.

Pregnant females with CKD represent a patient group that is of particular concern. When the urinary elimination of toxic substances and wastes is compromised, pregnant women with reductions in renal function will have more of these substances in their blood. This may lead to increased exposure of the fetus to these toxic substances. Methylmercury is an environmental toxicant that is of substantial concern to pregnant women. The developing fetus is especially sensitive and susceptible to methylmercury exposure. U.S. citizens are exposed to methylmercury primarily via consumption of contaminated fish. Despite guidelines from the Environmental Protection Agency, females in certain populations continue to consume more than the recommended amount of fish.

Given the widespread incidence of CKD and the prevalence of methylmercury in the environment, it is important to have a thorough understanding of the effects of methylmercury on patients with CKD. Dr. Bridges has hypothesized that women with CKD and their fetuses are at a greater risk of adverse effects from methylmercury exposure. Recent studies using isolated, perfused renal tubules from uninephrectomized rabbits indicate that the uptake of mercuric ions is greater in tubules of the remaining kidney. Additional data from studies using pregnant rats also indicate that more mercury accumulates in fetuses of nephrectomized rats than in fetuses of normal rats. These initial data support the laboratory’s hypothesis. Studies that will further characterize the effect of CKD on methylmercury distribution and toxicity in maternal and fetal tissues are currently underway.



Investigating whether women with CKD and their fetuses are at a greater risk of adverse effects from methylmercury exposure.



Blocking mu opioid receptors prevents animals from forming an association between the environment and the rewarding effects of METH.



Ashley Horner, Ph.D.
School of Medicine, Macon

‘Developing treatments to address addiction’

Ashley Horner, Ph.D., is an associate professor of pharmacology on the Macon campus of the School of Medicine. The current focus of her laboratory is on the circuits in the brain that contribute to repetitive behaviors. Her research shows that treatment with psychostimulants, such as methamphetamine or cocaine, can induce intense repetitive motor behaviors, similar to what is observed with obsessive-compulsive disorder (OCD) or Tourette syndrome (TS). Dr. Horner found that these behaviors were blocked by compounds that act as mu opioid receptors, which are the same receptors that are targeted by opiate compounds, such as morphine.

Dr. Horner is also interested in the mechanisms that underlie drug reward and addiction, and recent studies in her laboratory indicate that mu opioid receptors also play a role in the rewarding effects of methamphetamine (METH). In these experiments, animals learn to associate a particular environment with the administration of METH. Over time, the animal will seek out this environment on his own, as it has learned to associate this environment with the rewarding effects of METH. Dr. Horner has found that blocking mu opioid receptors prevents animals from forming an association between the environment and the rewarding effects of METH. The data suggest that opiate blockers, such as naloxone (Narcan), can be used to treat the repetitive behaviors associated with OCD and TS, as well as METH addiction.

Additionally, a new project currently underway in her laboratory focuses on the pathways that are involved in habit formation. She posits that a specific population of neurons in the basal ganglia — a system that is involved with learning, movement and habit formation — is necessary for the development of habitual behaviors. Initial studies indicate that if this population of neurons is destroyed, animals can be prevented from learning to habitually self-administer a sucrose solution. Dr. Horner plans to expand these studies to determine if these neurons also contribute to the acquisition of drug self-administration.



Nannette Turner, Ph.D., M.P.H.
College of Health Professions, Atlanta

‘Improving health and well-being of Low Country families’

Nannette Turner, Ph.D., M.P.H., is associate professor and chair of the Department of Public Health and director of the Master of Public Health program in the College of Health Professions. Under her leadership, the department, in collaboration with the College’s Center for Evaluation and Applied Research (CEAR), has been evaluating a Low Country Healthy Start (LCHS) Program in the Low Country region of South Carolina, serving four rural counties.

The Healthy Start program aims to reduce infant mortality and to improve the health and well-being of women, infants, children, families and communities in rural areas with infant mortality of one-and-a-half to two-and-a-half times the national average. The task is complex and requires continuous tackling of multiple social determinants of health in the pre-pregnancy family planning, pregnancy and postpartum periods to ensure optimal conditions for the health of mothers and children.

The initial findings of this study indicate unintended pregnancy rates are still high in this target population, amplifying the need for effective contraception to prevent short interpregnancy periods among African-American women who recently gave birth — a major risk factor for poor maternal and child health. Breastfeeding among the study population continues to be a challenge. Additional research is recommended to understand the barriers particular to low-income, rural African-American women that influence the decision to breastfeed. Other findings from data analysis by the evaluation team pointed to several achievements of the LCHS staff, such as improvements in maternal postpartum depression rates through diligent in-home coaching for stress coping skills and depression counseling, immunization rates above the national average among infants two years of age and younger, as well as reported infant safe-sleep practices. A series of posters was presented on these topics at the Healthy Start National Convention in Washington, D.C., last November to recognize the merit of the home visitation program and delivering one-on-one health education.



Reducing infant mortality and improving the health and well-being of families and communities in rural areas.



Understanding how exercise changes the plantar skin acutely following exercise, as well as over a longer period of time.



Deborah Wendland, PT, DPT, Ph.D., CPed
College of Health Professions, Atlanta

‘Investigating the effects of exercise on the skin of those affected by diabetes’

Deborah Wendland, PT, DPT, Ph.D., CPed, is an assistant professor of physical therapy in the College of Health Professions. She is currently working on a project, funded by a subaward from the National Institute of Biomedical Imaging and Bioengineering, titled “Device to mechanically interrogate tissue and skin across research environments.” Dr. Wendland’s portion of this project uses the device being tested (MITS) to look specifically at the effects of exercise on the stiffness and viscosity of the skin on the feet of people with diabetes and loss of protective sensation. The larger study aims to develop MITS so that it is useful in both animal and human research. It is expected that the usefulness in human research will be largely related to the integument because of the non-invasive nature of the measurement.

Dr. Wendland is completing her portion of the study primarily at the Good Samaritan Health Center in Atlanta. The data she acquires will allow her team to better understand how exercise changes the skin acutely following exercise, as well as over a longer period of time. This may provide information that could inform clinicians working with patients with diabetes regarding changes that happen in the skin relative to exercise — and thus inform exercise prescription.

According to the Centers for Disease Control and Prevention, 29.4 million people in the U.S. live with diabetes. The importance of good glycemic control in people with diabetes has been shown to reduce complications, including the risk for skin breakdown. Exercise can be an important means to assist with glycemic control. Unfortunately, for some individuals with more severe complications, activity has resulted in skin breakdown, although it increasingly seems that consistent activity or exercise is beneficial and reduces one’s risk for skin breakdown. These competing issues make understanding skin changes with exercise among people with diabetes very important to help healthcare providers better prescribe exercise.

faculty scholarship & news

▼ School of Medicine Regional Dean Elected Chair of Georgia Composite Medical Board

Alice House, M.D., FAAFP, regional dean of the Columbus campus of the School of Medicine, was elected chair of the Georgia Composite Medical Board for fiscal year 2015-2016.

The board — composed of 16 members appointed by the governor and confirmed by the state senate — licenses physicians, physician assistants, respiratory care professionals, perfusionists, acupuncturists, orthotists, prosthetists, auricular detoxification specialists and residency training permits. The board also investigates complaints and disciplines those who violate the Medical Practice Act or other laws governing the professional behavior of its licensees.

“It has been a pleasure to serve the citizens of Georgia on the Composite State Medical Board. I am humbled by this honor entrusted to

me, and I look forward to continuing the work of the many talented and dedicated physicians who have worked so diligently to form one of the best medical boards in the country,” said Dr. House, who was originally appointed to the Georgia Composite Medical Board by Gov. Sonny Perdue in January 2010 and served as its vice chair during fiscal year 2014-2015.

As the current chair of the Georgia Composite Medical Board, Dr. House also serves a standing appointment on the Georgia Commission on Medical Cannabis.

The commission is composed of 11 members appointed by the governor and includes the commissioner of public health, director of the GBI, director of the Georgia Drugs and Narcotics Agency, commissioner of agriculture, chair of the Georgia Composite Medical Board and governor’s executive counsel. It is responsible for establishing comprehensive recommendations regarding the potential regulation of medical cannabis.

Dr. House is a 1995 graduate of the School of Medicine. She was appointed regional dean of Mercer’s Columbus campus, which enrolls up to 80 third- and fourth-year medical students, in July 2014. Previously, she served as senior associate dean for student affairs and admissions, director of student advising, professionalism program director and family medicine clerkship director.

▼ Senior Vice President for Health Sciences Receives Honor from University of Wisconsin-Madison

Hewitt W. “Ted” Matthews, Ph.D., dean of the College of Pharmacy and senior vice president for health sciences, was honored by his alma mater, the University of Wisconsin-Madison School of Pharmacy, this past fall.

In recognition of his numerous and esteemed accomplishments, Dr. Matthews received a Citation of Merit during the university’s Homecoming celebration in October. The Citation of Merit is one of the highest honors given by the university, second only to the honorary degree. Recipients are honored for their service to education, research or the profession.

Dr. Matthews was selected based upon his extensive achievements in the field of pharmacy education. The University of Wisconsin-Madison noted that Dr. Matthews — with more than 25 years of service — is one of the longest serving deans at the same pharmacy school in the nation, and that the College is ranked among the top five private pharmacy programs by *U.S. News & World Report*.

The citation also recognized Dr. Matthews being named the American Pharmacists Association Academy of Student Pharmacists Outstanding Dean in 2012; his numerous teaching and service awards, including the 2015 Larry L. Braden Meritorious Service Award for outstanding leadership and contributions to the pharmacy profession from the Georgia Pharmacists Association; and his service as a founder and the inaugural chairman of the board of directors of the National Pharmaceutical Association Foundation (NPhAF).

Dr. Alice House and
Gov. Nathan Deal



▼ College of Health Professions

Joseph Donnelly, PT, DHS, OCS, clinical associate professor of physical therapy and director of postprofessional education, received two prestigious national awards because of his efforts and accomplishments as president of the Physical Therapy Association of Georgia. They included the American Physical Therapy Association's Legislative Leadership Award and the American Physical Therapy Association, Private Practice Section's Legislative Award for 2015.

Alyssa Fiss, PT, Ph.D., PCS, associate professor of physical therapy and interim chair, received a sub-award of \$51,121 for continued data collection examining "Developmental Trajectories of Children with Cerebral Palsy" in the "On Track" study.

Ann Lucado, PT, Ph.D., CHT, assistant professor, received a grant for \$15,000 for "The effect of scapular muscle strengthening on functional recovery in lateral epicondylalgia: A pilot study" from the American Physical Therapy Association, Orthopedic Section. Dr. Lucado was also appointed to the board of directors of the American Society of Hand Therapists Director Research Division for 2015-2017.

Jill Mattingly, MMSc, PA-C, clinical assistant professor of physician assistant studies, received the 2015 Humanitarian of the Year Award at the Georgia Association of Physician Assistants Conference.

Martha Sikes, M.S., RPh, PA-C, clinical assistant professor of physician assistant studies, was selected chair of media relations for the Society of Dermatology Physician Assistant Association for 2015-2017.

Jimmie H. Smith Jr., M.D., MPH, assistant professor of practice in public health, was elected to serve a two-year term as section-councilor in the Community Health Planning and Policy Development (CHPPD) Section of the American Public Health Association. Dr. Smith also was awarded the Al Dohany Award for Community Service by the Georgia Public Health Association during the 86th Annual Meeting and Conference in Atlanta last April.

Leslie Taylor, PT, Ph.D., M.S., professor of physical therapy and interim associate dean, and **Huey T. Chen**, Ph.D., received a contract of \$107,271 for "Evaluation of evidence-based falls prevention programs" from the Georgia Department of Health and Human Services.

Nannette Turner, Ph.D., MPH, associate professor, Dr. Chen, and Brittany Taylor, grant project coordinator, received a contract in the amount of \$137,500 to be distributed over the next five years from Low Country Healthy Start Evaluation. Dr. Turner also was selected to serve as a member of the Academic Public Health Practice Committee of the Association of Schools and Programs of Public Health for 2015-2016.

Deborah Wendland, PT, DPT, Ph.D., CPed, assistant professor, received a sub-award of \$65,755 for "Device to mechanically interrogate tissue and skin across research environments" along with Columbia University New York Morningside from the National Institute of Biomedical Imaging and Bioengineering.

Cheryl Gaddis, DrPH, MPH, CHES, assistant professor of practice in public health, secured a contract for \$25,000 to conduct the Three Rivers AHEC Health Professional Needs Assessment with Dr. Chen (PI) and Dr. Turner (co-PI). Dr. Gaddis also received a contract for \$12,000 from the North Central Health District for the Health Promotions Asthma Initiative,

along with co-investigator Dr. Smith. Additionally, Dr. Gaddis received a \$10,000 contract from HODAC Alcohol Prevention Project Evaluation (2014-2015).

▼ College of Pharmacy

Ashish Advani, Pharm.D., clinical associate professor, was awarded the Upsher-Smith Excellence in Innovation Award at the 2015 Georgia Pharmacists Association Annual Meeting.

W. Klugh Kennedy, Pharm.D., was elected the 2015-2016 chair-elect of the American College of Clinical Pharmacy Central Nervous System Practice Regional Network (PRN). He will serve as chair for 2016-2017.

Christine Klein, Pharm.D., clinical assistant professor, was named an invited reviewer for the Georgia Pharmacy Association for Immunization Compliance Kit.

Jennifer Knaack, Ph.D., assistant professor, was awarded a \$77,500 grant from Shire Human Genetics for "Risk-Based Approach to Drug-Drug Interaction Studies - Analytical Methods" as well as a \$50,000 grant from Shire Human Genetics for "Risk-Based Approach to Drug-Drug Interaction Studies - Core Studies." She was elected chair-elect of the Georgia section of the American Chemical Society for 2015, appointed as an associate editor for *Medcrave Online Journal of Bioequivalence and Bioavailability* and appointed to the editorial board of *SM Journal of Pharmacology and Therapeutics*.

Vivian Liao, Pharm.D., clinical assistant professor, was appointed as a member of the American College of Clinical Pharmacy Critical Care Practice Regional Network (PRN) Programming Committee and Communications Committee, as well as a member of the Clinical Leadership Section Advisory Group for the American Society of Health-System Pharmacists.

Kathryn M. Momary, Pharm.D., associate professor, was named grant reviewer for the American Heart Association, IRG Cardiac Biology Basic Sciences 1.

Nader H. Moniri, Ph.D., associate professor, was appointed to the editorial advisory board for *Biochemical Pharmacology*.

Sweta Patel, Pharm.D., clinical assistant professor, was invited to be an editorial board member for *Clinical Pharmacology and Biopharmaceutics Journal*.

Maria Thurston, Pharm.D., clinical assistant professor, was appointed to the Georgia Society of Health-System Pharmacists Board of Directors as Northwest-Metro District Director. She was also appointed as a member of the 2015-2016 American Association of College of Pharmacy's Lyman Award Selection Committee, as well as the Paul Dawson Biotechnology Award Selection Committee. Dr. Thurston was appointed vice-chair of the American College of Clinical Pharmacy Ambulatory Care Practice Regional Network Membership Committee and named an invited peer reviewer for *The Permanente Journal* and *American Journal of Pharmaceutical Education*.

▼ College of Nursing

Lana Chase, M.N., RN, PMHCHS-BC, clinical associate professor, was elected to the board and program committee for advanced practice psychiatric nurse group MAPPING.

Susan S. Gunby, Ph.D., RN, professor, was appointed to a two-year term on the Nursing Education Committee of the Georgia Board of Nursing, and was selected as a reviewer for the *Journal of Professional Nursing*.

Elaine Harris, M.S., RN, CCRN, clinical associate professor, was selected to serve on the Education Advisory Committee at Emory St. Joseph's Hospital.

Ruth McCaffrey, DNP, ARNP, FNP-BC, GNP-BC, FAAN, professor, served as keynote speaker at the Horticulture Therapy Association's national conference in Seattle and at Red Cross of Arizona's Interdisciplinary Conference in Energy Care.

Cynthia Rubenstein, Ph.D., RN, CPNP-PC, associate dean and associate professor, gave podium presentations at the American Association of Colleges of Nursing Baccalaureate Conference in October in Washington, D.C., and at the Sigma Theta Tau International Honor Society of Nursing 43rd Biennial Convention in November in Las Vegas.

Linda A. Streit, Ph.D., RN, dean and professor, received the 2015 Leader of Leaders Award, sponsored by Elsevier, at the National Student Nurses Association 63rd Annual Convention in Phoenix, Arizona, in April.

▼ School of Medicine

Jennifer L. Barkin, Ph.D., assistant professor of community medicine and obstetrics and gynecology, developed the Barkin Index of Maternal Functioning for use by Sage Therapeutics as an outcomes measure in a Phase 2 clinical trial of a fast-acting, intravenous medication for severe postpartum depression. Dr. Barkin also was selected to serve on the review panel for the *Journal of Obstetric, Gynecologic, and Neonatal Nursing*.

Susan Cline, Ph.D., associate professor of biochemistry, was elected chair-elect of the Association of Biochemistry Course Directors for 2015-2017 and will assume the role of chair for 2017-2019.

Anna Krampl, MSLS, library assistant professor and head of public services, was elected secretary of the Georgia Health Sciences Library Association for 2015.

Sandra K. Keeper-Woodford, Ph.D., associate professor of physiology, co-authored the textbook *Integrated Systems*, published by Lippincott Williams and Wilkins.

Steve Livingston, Ph.D., LMFT, director of behavioral services, was elected chair of the Georgia Composite Licensure Board of Professional Counselors, Social Workers, and Marriage and Family Therapists for 2015-2016. He also was recently appointed to the American Association for Marriage and Family Therapy's national Ethics Committee for a three-year term.

Kim Meeks, MLIS, AHIP, library assistant professor and library director for medical libraries, was elected president of the Georgia Health Sciences Library Association for 2015.

Mike U. Smith, Ph.D., professor of medical education and director of AIDS education and research, was appointed associate editor of the *Journal of Research in Science Teaching* and section editor for the *Electronic Journal of Science Education*.

Tina L. Thompson, Ph.D., professor of biomedical sciences and senior associate dean of academic affairs, was reappointed for a sixth year to the National Board of Medical Examiners, USMLE Neurology/Neuroscience Test Material Development Committee, and for a third year to the Step 1 Interdisciplinary Review Committee.

Jacob Warren, Ph.D., endowed chair and director of the Center for Rural Health and Health Disparities, had his book *Rural Public Health* named as a "Book of the Year" by the *American Journal of Nursing*.

ABOVE AND BEYOND

MERCER HEALTH SCIENCES CENTER

DEDICATED TO SERVICE LEARNING

BY JAMIE DICKSON

On a busy Saturday in Atlanta, Mercer’s physical therapy students are participating in a FOCUS Respite Day, where parents of children with special needs enjoy a break while their kids have fun in an environment designed specifically for them. The University has partnered with FOCUS — a non-profit organization that helps families cope with the struggles of parenting a child with special needs — since its physical therapy program began. There, students play with children who have a variety of

special needs while also learning how to provide pediatric physical therapy.

“It is fabulous for us to have people who want to learn — who really sit and play with the children,” said Lucy Cusick, executive director of FOCUS.

These students aren’t volunteering. Instead, they’re participating in service

learning. Unlike volunteerism, students are required to approach these projects with learning in mind. Many are required to make presentations or keep reflection journals.

Hewitt W. “Ted” Matthews, Ph.D., dean of the College of Pharmacy and senior vice president for health sciences, said

that service learning is inherent in each component of the health sciences. “Service learning is really an activity that we use to teach our students how to provide patient care,” Dr. Matthews said.

Mary Alice Morgan, Ph.D., senior vice provost for service learning, points out that a university-wide focus on service



School of Medicine students help plant a community garden at Moses Jackson Advancement Center in Savannah.

learning is inspired by several elements of its mission statement — to empower, to inspire, to serve — and that the health sciences take that mission seriously. “Mercer offers some of the highest quality training in health care in the nation,” she said. “But we’re also equally committed to developing physicians, nurses, pharmacists and other health professionals who see their role as empowering and serving their patients and as building the community.”

Each of the four units of the Mercer Health Sciences Center requires service learning as a part of its coursework. “However, we’re also interested in our students being good citizens,” said Dr. Matthews. “Therefore, we require volunteer service learning to our community that’s basically outside of curriculum requirements. We do this because we want students, at least in my opinion, to have a responsibility to help others — especially the underserved and needy. We want them to subscribe to the saying, ‘Of those who have much, much is expected.’”

School of Medicine

Over the last academic year, the School of Medicine reported more than 42,200 service learning hours, most of which were completed through the Distinction in Service to the Community (DISC) program.

Jennifer Boryk-Ratner is coordinator of service learning and community engagement for the School. She is based on the Savannah campus but oversees the DISC program, as well as other service learning programs, across the medical school’s three locations in Macon, Savannah and Columbus.

While DISC projects are not required, the program is very popular, and a majority of students participate. “I think medical students inherently want to help people,” Boryk-Ratner said. “Volunteerism is already in what they do.”

Before starting their projects, students must go through an intensive application process, which is reviewed by a board of

faculty advisers and students. In order to meet the program’s requirements, students are responsible for planning and executing a sustainable service learning project with a local organization.

Students have to spend at least 60 hours working on the project, turn in progress reports and complete a final project portfolio consisting of a timeline, photos and a reflection piece. If students complete the project, they earn recognition in their Medical School Performance Evaluation (MSPE), or dean’s letter, and also at graduation.

Kristen Kettelhut, a third-year medical student in Columbus, had previous experience working in free clinics, so for her DISC project, she worked with the Macon Volunteer Clinic to centralize its grant history to more accurately run reports for future applications. The project has inspired her to consider continuing such work once she is a practicing physician. “I have a special place in my heart for free clinics,” she said. “From the information I brought to this project and the lessons I learned with grant organization, I hope to be able to use these experiences to either start or become a medical director of a free clinic near my future practice.”

In keeping with the medical school’s mission to serve rural and medically underserved areas of Georgia, Boryk-Ratner would like to see the DISC program spread to more rural areas. “We’ve done a good job of connecting with the Savannah and Macon communities, and somewhat in

Columbus, but I think we need to start casting a wider net,” she said. “I think that students want to do it. Rural areas have as many health problems as urban areas.”

College of Nursing

Last year, the Georgia Baptist College of Nursing completed 84,393 service learning hours. According to Cindy Rubenstein, Ph.D., RN, CPNP-PC, associate professor and associate dean for the undergraduate program, nursing students get 30 percent more hands-on experience than their

peers in the state.

“It’s part of our mission to excel in service,” Dr. Rubenstein said. “One of our core values is social responsibility, so it’s really an underlying principle. We care for the community.”

Nursing students participate in a variety of service learning activities throughout their time at Mercer. Undergraduate students are required

“We do this because we want students, at least in my opinion, to have a responsibility to help others — especially the underserved and needy. We want them to subscribe to the saying, ‘Of those who have much, much is expected.’”

— Dr. Hewitt W. “Ted” Matthews

to complete 700 clinical hours. “It takes learning to a different level,” Dr. Rubenstein said.

Students also serve at community events, such as Camp Inspiration and Lazarus Health Day. Camp Inspiration is a one-day summer camp for medically fragile children that occurs annually on the Cecil B. Day Graduate and Professional Campus in Atlanta. Student nurses provide health screenings and assist with camp activities. During Lazarus Health Day, nursing students serve Metro Atlanta’s homeless

community by checking blood pressure and performing other assessments.

Students are also presented with service opportunities through organizations such as the Georgia Baptist Association of Nursing Students (GBANS) and the National Student Nurses Association (NSNA). Unlike most nursing schools, the Georgia Baptist College of Nursing provides each student with a NSNA membership. “We’re so committed to leadership development and service that we’ve made the commitment that every student will be a member of that organization,” Dr. Rubenstein said.

College of Health Professions

The College of Health Professions — composed of the Department of Physical Therapy, Department of Physician Assistant Studies and Department of Public Health — completed 19,059 service learning hours during the previous academic year.

Each year, Mercer’s physician assistant program completes service learning projects across the state and across the world. From the South Georgia Farmworker Health Project in Bainbridge and Valdosta

to medical missions in Nicaragua and Haiti, students get hands-on training while also providing medical care to underserved populations.

The South Georgia Farmworker Health Project is a joint effort between Emory University and Mercer where PA students provide health care to migrant workers. Students take medical histories and provide health screenings and physical exams. While participation is voluntary, Jill Mattingly, DHSc, MMSc, PA-C, academic coordinator and clinical assistant professor, said the program’s students are eager to



Georgia Baptist College of Nursing students perform health checks during a Mercer On Mission trip to Cambodia.

get involved. “Mercer is sending 32 out of 50 second-year students this June. That is absolutely unheard of,” she said.

Mattingly said her department’s commitment to service learning is changing the way graduates are practicing medicine. “We’re building a Mercer community of incredible medical volunteers and service-oriented people,” she said.

Master of Public Health students in the Department of Public Health earn their service learning hours in the form of an internship, community service and a capstone project, said Jimmie Smith, M.D., M.P.H., assistant professor of practice. Students work closely with local and state public health districts to complete an area of research or fill a need that the district has but does not have the capacity or resources to accomplish.

“Service learning is beneficial for public health students, undergraduate and graduate, for it is the opportunity for the application and translation of evidence-based science in a community-based setting,” Dr. Smith said. “Through their projects and interactions with those engaged in public health activities, our students realize that translation of public health principles may not be readily accepted, and golden opportunities are often disguised as irresolvable problems. Service learning allows our students to address problems strategically, communicate effectively, correspond logically and assess their career goals in real time.”

Jeannette Anderson, PT, DHS, MTC, clinical assistant professor and director of clinical education, said that when she and her colleagues were designing the curriculum for Mercer’s physical therapy program, they wanted to ensure that its service learning component achieved two goals. “We wanted to attach it to health promotion, wellness and fitness across the lifespan ... [and] we wanted to have year-round engagement with our clinical partners,” she said.

In addition to its partnership with FOCUS, the Department of Physical Therapy works with the Cobb and Douglas community services boards for those with



ERIK LESSER PHOTO

College of Health Professions students work with children with special needs during a FOCUS Respite Day.

developmental disabilities as well as a U.S. Department of Housing and Urban Development independent living facility called Cathedral Towers. There, students lead weekly exercise classes.

“People will say that our students are different in the way they interact once they get out into the clinical environment,” Dr. Anderson said. “And I’m not sure if it’s because students know that we do service learning and that draws a different type

of student to our program, or whether the service learning changes the student. My suspicion is that it’s a little of both.”

College of Pharmacy

Jonathan Hamrick, Pharm.D., clinical assistant professor of pharmacy practice, said service learning allows student pharmacists — and the community — to see a different side of the profession.

“We’re advocating and promoting more of what pharmacists can do,” he said. “[Service learning] gets the pharmacist out in the community.”

During last academic year, the College of Pharmacy completed 9,218 service learning hours. Student pharmacists participate in a variety of events throughout the year, including providing health screenings, patient education and immunizations.

Last summer, more than 25 students volunteered as counselors at Camp Kudzu, a weeklong camp for children affected by Type 1 diabetes. There, students checked blood sugar, assisted with counting carbohydrates at meals and calculated insulin doses for camp participants.

In the fall, more than 100 student pharmacists participated in more than 20 flu clinics with graduates Monali Majmudar (COP ’98) and Adam Schnepf (COP ’10) to provide upwards of 5,000 influenza vaccines to the community. Students were involved with patient intake, pre-screening and vaccine administration.

Dr. Hamrick believes service learning encourages graduates to incorporate community service into their practices. “I’ve found that a lot of people have continued [volunteering] once they’ve graduated into their practice by offering these services for free or coming back and helping our students now with events,” he said. “We have a lot of alumni who come back and serve as preceptors and supervise students providing services, as well.”

Recent graduate Ashley Finney (COP ’15), Pharm.D., said her service learning experience has already proven helpful in her career. “Service learning provided a way for me to do what I love while giving back to the community,” she said. “In the short time I have been a community pharmacist, I have used many of the networking and communication skills I learned during service learning projects to develop relationships with my patients and grow my pharmacy.”

All told, the Mercer Health Sciences Center completed 161,487 service learning



MERCER UNIVERSITY COLLEGE OF PHARMACY PHOTO

College of Pharmacy students offer cholesterol and glucose screenings at various community programs and events.

hours during the 2014-15 academic year. The University’s commitment to service has not gone unnoticed. In 2015, Mercer earned the Classification for Community Engagement by the Carnegie Foundation for the Advancement of Teaching. Only 361 institutions of higher education have achieved this distinction since the program began in 2006. The University has also been named to the President’s Higher Education Community Service Honor Roll.

Dr. Matthews hopes service learning in the health sciences encourages students to incorporate service into their practices after graduation. “Clearly, the more service learning we have, the more we have a heightened awareness and appreciation of it by our students,” he said. “We hope it will translate into them actually being dedicated to it and carrying on this habit that we hope we have instilled in them ... to help create a better society.”

HEATHER CORBO, DOCTOR OF PHARMACY STUDENT

Combining Love of Arts and Sciences to Advocate for Her Profession

BY JAMIE DICKSON

Heather Corbo, a third-year student in the College of Pharmacy, knows a thing or two about multitasking. In addition to her studies and an internship at Emory St. Joseph's Hospital, she is a member of numerous student and professional organizations — and serves several of them in leadership roles.

Corbo hasn't always known she wanted to wear the white coat. In 2010, she was studying songwriting and music business near Nashville. After a year at Middle Tennessee State University, she started to rethink her decision. "I had a scholarship to do songwriting, and I liked it, but it just seemed like I really didn't need a degree for it," she said. After getting advice from several friends and family members in the medical field, she moved back to Atlanta to complete her pre-pharmacy requirements before enrolling at Mercer.

The Atlanta-area native didn't leave her creative side in the Music City. A self-taught guitarist and talented singer, she still plays music whenever she has a chance. "I've played with other pharmacy students for fun," she said. "I would like to start doing open-mics again in the future when I'm done [with pharmacy school]. If I do take some time for myself, I always play my guitar or go see a band. That's my way of having fun."

Corbo believes music and performing has helped her as a pharmacy student. She compared learning how to be a musician to learning how

to be a pharmacist. "I initially taught myself [how to play guitar] and then began taking lessons. I think having that ongoing learning process and knowing that I can always be better at playing guitar and making music has helped me in life," she said. "I can apply this process to school, because I can always learn something more within the realm of pharmacy."

Corbo is president of Mercer's American College of Clinical Pharmacy — Student College of Clinical Pharmacy chapter; communications vice president of the American Pharmacy Association — Academy of Student Pharmacists (APhA-ASP) chapter; a student representative of the Chemical Dependency/Impairment Intervention Committee; a member of the College of Pharmacy Honor Council; and a Pharmacy Ambassador for the College.

She said her music and performing experiences have helped her in those leadership roles. "The performance aspect has helped me in leadership positions because of my ability to get in front of people and convey a message. The music community is tightly knit, which has given me the ability to meet a lot of people in pharmacy school and work to bring students closer together through common interests," Corbo said.

In 2014, Corbo directed, co-edited and acted in a video titled "PharmCATS" for the PharmFlix video competition hosted by APhA-ASP. The

annual competition aims to bring awareness to a particular pharmacy theme.

Last year's theme was "Voice Your Value," and Mercer's chapter, under the direction of Corbo, took home the best overall picture award at the APhA-ASP annual meeting in March. This year, the group's PharmFlix video, titled "I Am Pharmacist," has been nominated in the most humorous and best overall categories.

"I was honored to accept the award for our chapter while the video was played in front of over 1,000 pharmacy students and pharmacists," Corbo said. "It was great to participate in a competition that allows students to be creative while also conveying a powerful message about the pharmacy profession."

Through her many leadership roles at Mercer, Corbo has had the opportunity to advocate for her profession. "Pharmacy as a profession is at a critical point in areas such as advocacy, and we are striving to encourage people to think of pharmacists as more than just a face behind a counter," she said. "As communications vice president for APhA-ASP, I have the opportunity to empower pharmacy students across the country by utilizing social media accounts, participating in the annual PharmFlix competition and networking with students from other chapters to gain and share ideas to better our chapter. Communication is more than just talking or emailing; it is the chance to use the personal stories and accomplishments of others to inspire and motivate people."

After graduation, Corbo said she would like to work in the hospital setting in pediatrics, infectious disease or transplants. She was recently accepted into the College's Advanced Clinical Track program, where she will be doing four of nine rotations at Children's Healthcare of Atlanta.

"Pharmacy as a profession is at a critical point in areas such as advocacy, and we are striving to encourage people to think of pharmacists as more than just a face behind a counter."



studentnews

▲ PA Student Selected for PAEA Student Health Policy Fellowship

Kelsey F. Cameron, PA-S, a second-year student in the College of Health Professions Physician Assistant Program, was one of 15 students from across the country selected to receive the Physician Assistant Education Association (PAEA) Student Health Policy Fellowship.



Cameron

Founded in 1972, PAEA is the national organization that represents all accredited PA programs in the U.S., providing services for faculty at its member programs, as well as applicants, students and other stakeholders.

To apply for the fellowship, Cameron submitted a creative presentation, including a video clip, paper and PowerPoint, on an

advocacy project she would like to undertake, in addition to an essay outlining her leadership and advocacy experience. Her topic was "Physician Assistant Prescriptive Practice Discrepancies Across the U.S."

Cameron and the 14 other fellowship recipients, representing schools such as Yale, George Washington, Emory and the University of California, Davis, traveled to Washington, D.C., in September for a three-day seminar designed to foster leadership and advocacy skills. They heard from key leaders in the world of health policymaking, including Bess Evans of the White House Office of Public Engagement, Emily Holubowich of the Coalition for Health Funding, Robert Wood Johnson Foundation Fellow David Keahey and representatives of the American Academy of Physician Assistants.

"I learned so much about advocacy and leadership and how to be an effective agent of

change for my profession," Cameron said.

On the third day, fellows were given the opportunity to put their newfound skills to practice on Capitol Hill by visiting with elected officials and their congressional staff.

Cameron spoke specifically about raising Stafford Loan Limits for PA students with Georgia Sen. David Perdue, Georgia Rep. Tom Price and Massachusetts Sen. Elizabeth Warren.

"Meeting with such powerful leaders was daunting and was definitely out of my comfort zone," Cameron said. "However, I quickly learned that the leaders I met with were eager to hear my concerns, proving that student advocacy and grassroots activism are two very important and effective tools."

The Student Health Policy Fellows are expected to spend the year working on their proposed advocacy projects with the help of mentors from PAEA's Government Relations and External Affairs Council.

▲ College of Nursing

Ryan Bannan, a senior in the Georgia Baptist College of Nursing, was one of four finalists for Sigma Theta Tau International's (STTI) United Nations youth representative position. This position promotes leadership to enhance STTI member engagement by attending and/or participating in various UN events, programs and activities with the purpose of gathering information to inform and advise the STTI Global Initiatives department, with the ultimate goal of fulfilling STTI's mission.



Bannan

Georgia Baptist College of Nursing pre-licensure students **Marcella Marks**, **Monica Cahal**, **Katherine Fayad** and **Sharon Smith** were selected to serve on the Georgia Association of Nursing Students Board of Directors. Through efforts in various specialty areas such



Marks

as community health, legislative issues, breakthrough to nursing and leadership development, the GANS board works throughout the year to support student nurse associations throughout the state.

Georgia Baptist College of Nursing Pi Gamma Chapter of Sigma Theta Tau International (STTI) received the prestigious Ethel Palmer Clarke Award for Chapter Excellence. This award is given to one chapter globally among STTI's more than 135,000 active members in 85 countries.

▲ School of Medicine

Third-year School of Medicine student **Kristen Kettelhut** and second-year School of Medicine student **Channing Bowers** were recognized by U.S. Sen. David Perdue for "dedicating numerous



Cahal



Fayad



Smith

hours in service to create a community based on respect and friendship." Kettelhut and Bowers were recipients of the School's Distinction in Service to the Community (DISC) honor, which requires that students create and implement a targeted community service project that is both meaningful and sustainable. They also dedicated countless hours to creating a forum to celebrate and encourage additional community service efforts. Mercer's inaugural Service Leadership Conference was held in January to showcase more than 20 projects from students in Macon, Savannah, Columbus and Atlanta.

Samah Ahmadi, a second-year student at the School of Medicine in Savannah, submitted an essay, titled "Palliative Medicine: A Crucial Element of Perinatal Ethics," to the American Academy of Pediatrics (AAP) Bioethics Essay Contest, and the essay was selected for publication in the AAP Section on Bioethics newsletter.



Kettelhut



Bowers

▲ Sigma Xi Chapter Inducts 26 New Members at Spring Meeting

Mercer's chapter of Sigma Xi, The Scientific Research Society, inducted 26 new members last spring at the Woodruff House in Macon.

The induction ceremony was organized by Dan Hagan, Ph.D., professor of physiology in the School of Medicine and past president of the Mercer chapter of Sigma Xi. Also participating were Rick McCann, Ph.D., associate professor of biochemistry in the School of Medicine; Jim Thomas, Ph.D., professor of pharmacology in the School of Medicine; Anna Walker, M.D., professor of pathology in the School of Medicine; and Philip McCreanor, Ph.D., professor of environmental engineering in the School of Engineering.

Dr. Walker, past chapter president, delivered the congratulatory and charge to the new members and the chapter for its successful 10th year. Dr. McCreanor, current chapter

vice president and past chapter president, administered the pledge and congratulated the chapter and its new members.

Medical and graduate students inducted into the Mercer chapter of Sigma Xi included Sahra Ahmadi, Madiha Aseem, Whitney D. Bembry, Robyn Bryde, Danny Bui, Kenny Cail, Mudit Chowdhary, Lindsey Cochran, Chelsea Fechter, Hannah Hulse, Sebastian Hyman, Kristen Kettelhut, Timothy Kim, Jacob Kirkpatrick, Leslie Meredith, Charles R. Moss, Torree C. Nwachukwu, Samantha J. Osteen, Sheetal Patel, Sugandha Singh, Carrie Stallings, George Teaford and Matt Warren.

Faculty members inducted included Gretchen Bentz, Ph.D., assistant professor of microbiology in the School of Medicine; Jaehwa Choi, Ph.D., assistant professor of physiology in the School of Medicine; and Mary Mathis, DrPh, assistant professor of practice in the Department of Public Health within the College

of Health Professions.

Sigma Xi, The Scientific Research Society, founded in 1886, is a nonprofit membership organization of 60,000 scientists and engineers who were elected due to of their research achievements or potential. The society includes more than 200 Nobel laureates and many other members who have earned election to the National Academy of Sciences and National Academy of Engineering.

Mercer's chapter includes members from its Macon, Atlanta, Savannah and Columbus campuses and locations, as well as from Georgia College and State University, Fort Valley State University and Wesleyan College.

Membership is by nomination and is open to faculty and students who have shown noteworthy achievement as an original investigator in a field of pure or applied science or engineering as evidenced by publications in refereed journals or patents.



JOHN KNIGHT PHOTO

Disease Detective

School of Medicine Graduate Investigates, Addresses Outbreaks for CDC

BY JAMIE DICKSON

“Disease Detective” might sound like the title of a primetime network television drama, but you won’t see Mary-Margaret Fill (MED ’11), M.D., on TV anytime soon. Instead, you can find her at the Tennessee Department of Health, where she serves as an Epidemic Intelligence Services (EIS) officer — also known as a disease detective — with the Centers for Disease Control and Prevention (CDC).

According to the CDC’s website, EIS officers identify causes of diseases and outbreaks and recommend prevention and control measures. They also implement strategies to protect people from injury, disability, illness and death, and support more than 100 field investigations each year in the U.S. and around the world. Some 550 scientists and physicians apply to become EIS officers each year, but only 80 applicants make the cut.

“EIS officers work across the United States and around the globe to keep Americans safe from a variety of health threats,” said CDC Public Affairs Specialist Callie Carmichael. “Many leave clinical practice and teaching opportunities because they know their work in public health will save thousands of lives instead of only one patient at a time.”

Dr. Fill, who completed her internal medicine/pediatric residency at Vanderbilt University Medical Center last summer, primarily works to identify communicable and environmental diseases in the community she serves.

“I am frequently involved with acute outbreak investigations, so if we have a cluster of illness of any kind all across the state, we work closely with our local partners — the metro and regional health departments in the state — to make sure that we have as clear an understanding as possible as to what’s going on,” Dr. Fill said. “We are able to quickly gather more information and intervene if there is some sort of chain of transmission that needs to be stopped.”

Dr. Fill was drawn to the EIS program because she enjoys using her medical degree and experience to make a big impact. “A lot of what drew me to EIS — and public health, in general — was that while I love being a clinician and

taking care of patients, I wanted to find a role where I could potentially make a bigger difference in a broader population,” she said. “We take a step back and take a look at the population as a whole to determine how to make things better for more than the person who is sitting in our office.”

According to the CDC, the 2014 class of EIS officers assigned to state or local health departments performed more than 200 epidemiologic

investigations in their jurisdictions.

Since starting her fellowship last August, Dr. Fill has worked on numerous investigations. In mid-April, she deployed to Barranquilla, Colombia, with the CDC to assist with its ongoing Zika virus response by setting up enhanced pregnancy surveillance.

She credits her Mercer education for the ability to problem-solve in the field. She said she chose Mercer School of Medicine because she valued its emphasis on small-group, problem-based learning. “There were not that many programs in the country that were doing a completely small-group, clinically case-based, problem-based learning curriculum, and that was really attractive to me,” she said. “I liked the idea of learning basic science through clinical cases and really starting from the very beginning to look at a patient.”

After she completes her two-year fellowship, Dr. Fill wants to continue working in public health while maintaining her clinical skills. “It’s hard for me to say definitively where my career will take me long-term, but I can say with certainty that I have really loved working in public health at the state level,” she said. “We are in the unique position of being able to impact the broader population through policymaking and larger programmatic interventions while also working closely with our local partners and understanding what’s happening in the community in real time.”

Dr. Fill said Mercer’s team-based approach has been helpful in her work as an EIS officer. “What we do in public health is exceptionally team-based in a lot of ways. You really have to be very team-oriented, and I think having that perspective engrained in me so early on in my training has absolutely served me well throughout my career so far.”

“EIS officers work across the United States and around the globe to keep Americans safe from a variety of health threats.

Many leave clinical practice and teaching opportunities because they know their work in public health will save thousands of lives instead of only one patient at a time.”

— Callie Carmichael, CDC Public Affairs Specialist



Degree Programs

School of Medicine

Doctor of Medicine (Macon, Savannah, Columbus)

Graduate Degree Programs

Ph.D. and Psy.D in Clinical Medical Psychology (Atlanta)

Master of Science in Biomedical Sciences (Macon, Savannah)

Master of Science in Preclinical Sciences (Macon)

Master of Family Therapy (Macon, Atlanta)

Post-Master's Certificate Program in Marriage and Family Therapy (Macon, Atlanta)

For more information, visit medicine.mercer.edu/programs

College of Pharmacy

Doctor of Pharmacy

Doctor of Philosophy in Pharmaceutical Sciences

Pharm.D./MBA Joint Degree Program

Pharm.D./Ph.D. Dual Degree Program

For more information, visit pharmacy.mercer.edu/programs

Georgia Baptist College of Nursing

Bachelor of Science in Nursing (Prelicensure and RN/BSN)

Master of Science in Nursing

Doctor of Nursing Practice

Doctor of Philosophy in Nursing

For more information, visit nursing.mercer.edu/academics

College of Health Professions

Physical Therapy

Doctor of Physical Therapy

DPT/MBA Dual Degree Program

Physician Assistant

Master of Medical Science

Public Health

Bachelor of Science in Public Health

Master of Public Health

DPT/MPH Dual Degree Program

MMSc/MPH Dual Degree Program

PharmD/MPH Dual Degree Program

For more information, visit chp.mercer.edu/academics

Teaching Hospitals

The Medical Center, Navicent Health (Macon)

Memorial University Medical Center (Savannah)

Midtown Medical Center (Columbus)

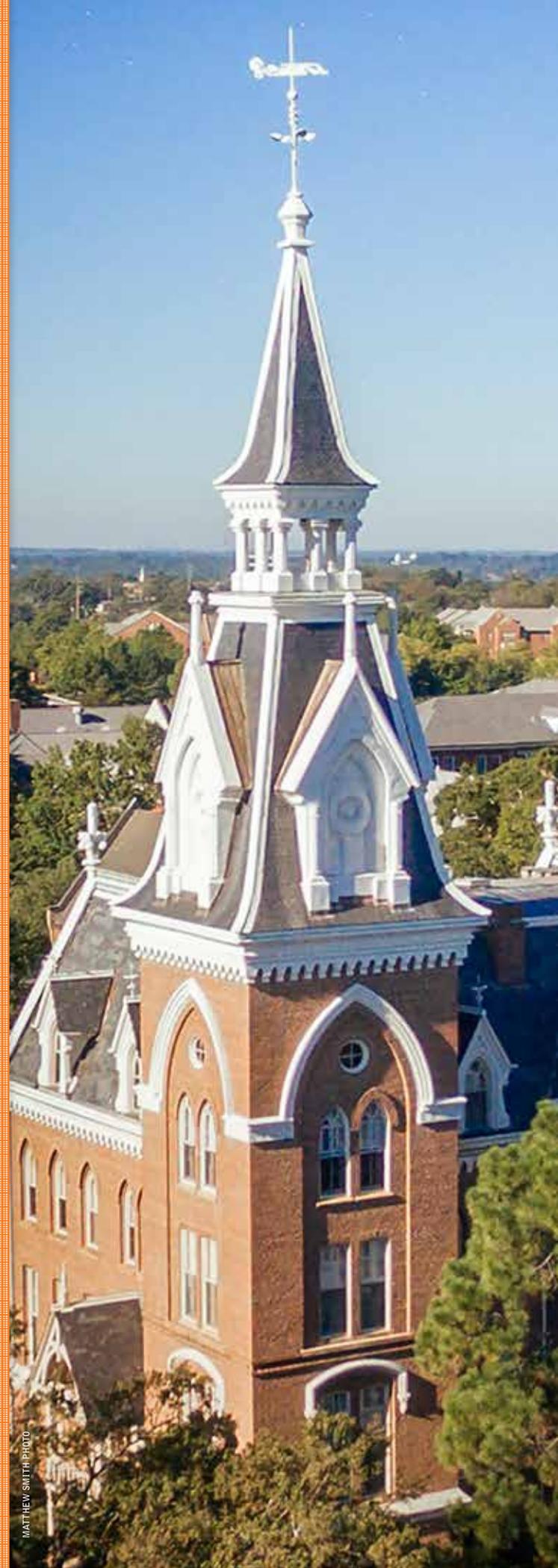
St. Francis Hospital (Columbus)

Affiliated Teaching Hospitals

Atlanta Medical Center

Floyd Medical Center (Rome)

Phoebe Putney Memorial Hospital (Albany)



MATTHEW SMITH PHOTO

2014-15 DEGREES AWARDED

161

School of Medicine

178

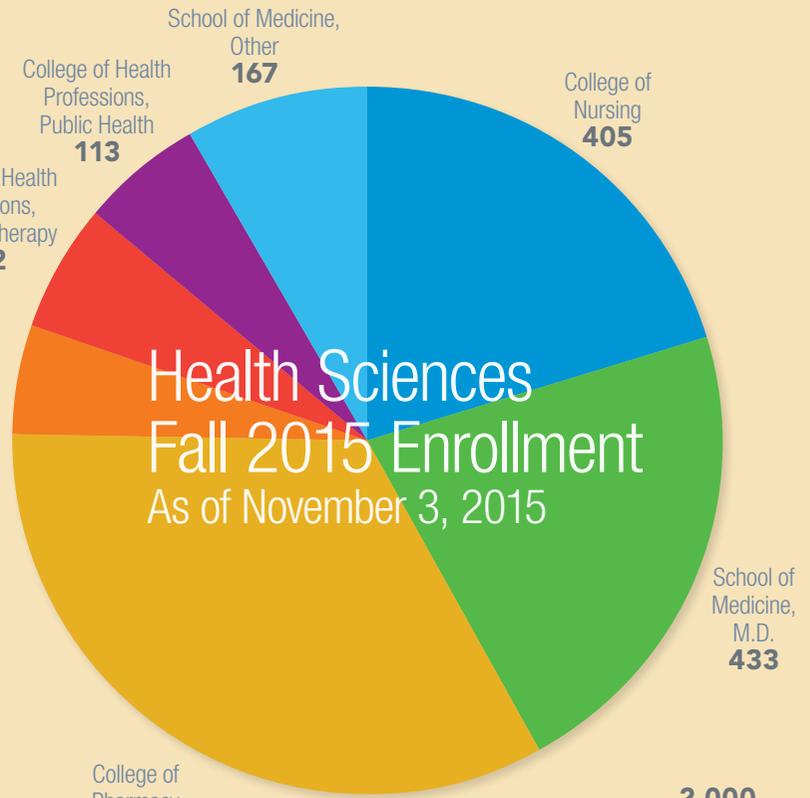
Georgia Baptist College of Nursing

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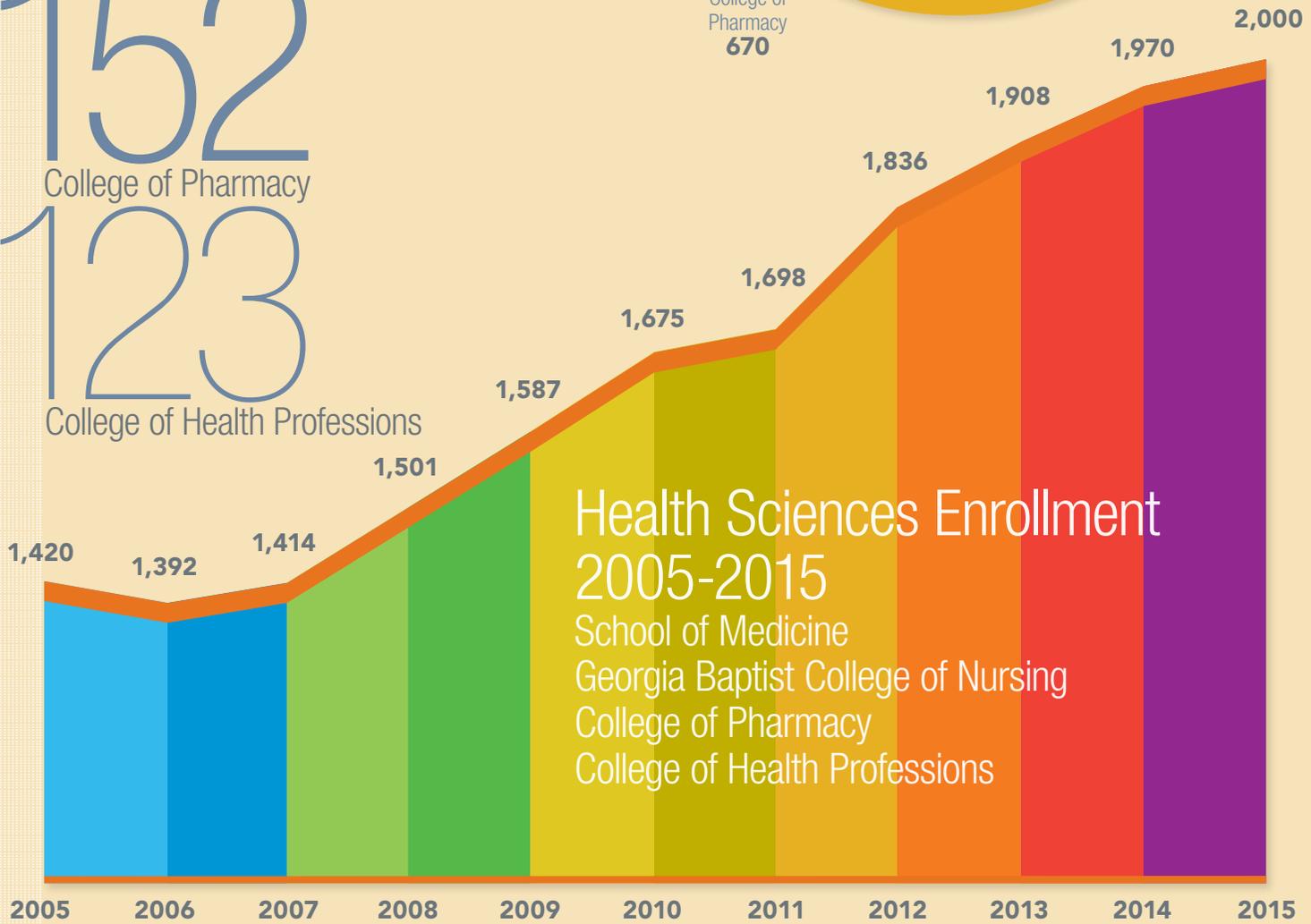
College of Pharmacy

123

College of Health Professions



Health Sciences
Fall 2015 Enrollment
As of November 3, 2015



Health Sciences Enrollment
2005-2015
School of Medicine
Georgia Baptist College of Nursing
College of Pharmacy
College of Health Professions

2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015

CDC 'Disease Detective'

Mercer University School of Medicine graduate Mary-Margaret Fill works for the Tennessee Department of Health, where she serves as an Epidemic Intelligence Services (EIS) officer — also known as a disease detective — with the Centers for Disease Control and Prevention.

