

UAB MEDICINE

A Magazine for Alumni and Friends of the School of Medicine

Volume 41 • Number 2 • Summer 2015

Building ON STRENGTHS

*Inflammation, Infection, and Immunity
Form Pillar for Future Research Excellence*



Discovery Meets Destiny



Senior vice president and dean Selwyn Vickers

Less than a decade before I entered medical school in 1982, Ralph Steinman, M.D., a research immunologist at Rockefeller University in New York, announced his discovery of a type of immune system cell that had never before been characterized, which he called “dendritic.”

Dr. Steinman devoted his life's work to understanding the dendritic cell, which absorbs and digests antigens and presents the bits of these foreign invaders to immune cells in order to activate an immune response. His work eventually helped to advance one of the most promising fields in cancer research.

Cancer immunotherapy seeks to mobilize the body's immune processes to identify and destroy cancer cells while leaving healthy cells alone. Not only did Dr. Steinman bet his career on the promise of immunotherapy, he later bet his life on it.

Ralph Steinman was diagnosed with pancreatic cancer in 2007. Ever the scientist, Dr. Steinman decided to put his theories about cancer immunotherapy to the test, launching a one-man clinical trial in personalized medicine with himself as the only test subject. He had the tumor surgically removed from his pancreas and divided into samples. These samples were sent to colleagues across the globe, some of whom were his former students, who set about learning everything they could about his cancer, right down to the genome, in hopes of determining which therapies might help him. Dr. Steinman even had his tumor engineered into experimental vaccines, which he alternated with chemotherapy drugs.

Dr. Steinman succumbed to cancer on September 30, 2011, four years after receiving a diagnosis that usually reduces survival to a matter of months. But his remarkable life story didn't end there. Three days after his death, notice was sent that Dr. Steinman had won the Nobel Prize in Physiology or Medicine for his discovery of the dendritic cell. Despite its rule against posthumous awards, the Nobel Foundation decided to let the award stand.

Dr. Steinman's story resonates with me for a number of reasons. As a pancreatic cancer surgeon and researcher, I witness daily the struggle of patients with this devastating disease, and am inspired by their courage to continue to pursue new and better treatments. Dr. Steinman's story also represents a fascinating milestone in the evolution of immunotherapy. Researchers across the UAB School of Medicine are striving to unlock the secrets of the immune system and to leverage that power to treat and cure a wide range of diseases.

We have identified five cross-cutting research areas that have a high translation opportunity for patient care, are national priorities for investigation, and can build on our existing strengths in order to increase the School of Medicine's national profile. Inflammation, infection, and immunity, or I-3, is one of those focus areas. Learn more about why we made I-3 a strategic focus, and explore the cutting-edge research in cancer immunotherapy that is currently under way in our laboratories, in our cover story on page 8.

Sincerely,

Selwyn M. Vickers, M.D., FACS

Senior Vice President for Medicine and Dean

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Inflammation, Infection, and Immunity
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Advancing Medicine



Herbert Chen

Taking the Helm

SCHOOL OF MEDICINE APPOINTS NEW CHAIR OF SURGERY

Herbert Chen, M.D., an internationally recognized surgeon-scientist and medical educator, will join UAB on October 1 as the Fay Fletcher Kerner Chair in the Department of Surgery and as surgeon-in-chief of UAB Hospital.

Chen comes to UAB from the University of Wisconsin School of Medicine and Public Health, where he is the Layton F. Rikkers, M.D., Chair in Surgical Leadership, chairman of the Division of General Surgery, and professor in the departments of surgery, biomedical engineering, and pediatrics.

Chen earned his medical degree from the Duke University School of Medicine in 1992. While in medical school, he was named a Howard Hughes Medical Institute Fellow in the Department of Surgery. He completed his surgical residency in general surgery at the Johns Hopkins School of Medicine in 1999, followed by a postdoctoral research fellowship in 1997 and a surgical oncology and endocrinology fellowship in 2000.

A specialist in endocrine surgery, specifically in thyroid disease, hyperparathyroidism, adrenal tumors, and neuroendocrine tumors, Chen is currently a principal investigator of eight active grants, including those from the National Cancer Institute and National Institute of Diabetes and Digestive and Kidney Diseases, American Cancer Society, and the American Association for Cancer Research.

Chen succeeds **Kirby I. Bland, M.D.**, who announced last fall that he would be stepping down from the surgery chair this summer after 15 years of service. Bland will remain at UAB, continuing to care for patients, conduct research, and educate and train the next generation of surgeons.

"Herb is an outstanding academic surgeon in the fullest extent of the term. He is an accomplished clinician, researcher, and educator, and I look forward to working with him to build on the legacy of prior department leaders," says **Selwyn M. Vickers, M.D., FACS**, senior vice president for medicine and dean of the UAB School of Medicine.

Cultivating Expertise

UAB SELECTED FOR NEW MOVEMENT DISORDERS FELLOWSHIP

UAB has been chosen by The Michael J. Fox Foundation for Parkinson's Research as one of five academic centers to host the inaugural class of the Edmond J. Safra Fellowship in Movement Disorders. By increasing resources for specialized training for clinician-researcher neurologists, the program—made possible by The Edmond J. Safra Foundation—seeks to grow the global base of movement disorder specialists treating people with Parkinson's and contributing to research toward breakthrough treatments for the disease. The other centers selected for the fellowship include Columbia University Medical Center; Emory University; Northwestern University; and Toronto Western Hospital in Ontario.

"There is a growing need for neurologists with additional training in movement disorders," says **David G. Standaert, M.D., Ph.D.**, the John N. Whitaker Endowed Chair in the Department of Neurology. "We are honored to have been selected by The Michael J. Fox Foundation to grow the number of clinician-researchers equipped to provide optimal care to Parkinson's patients and conduct the urgent work to learn more about this disease and to develop new therapies."

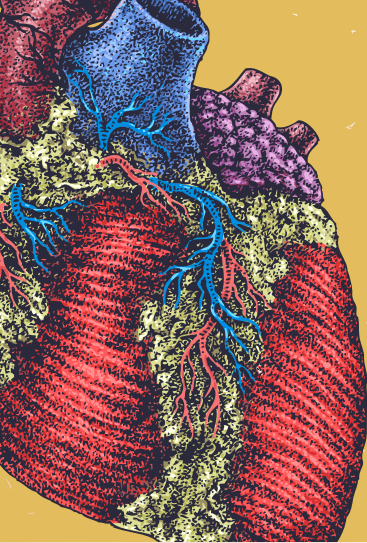
EYES ON THE PRIZE

Major Grant Funds Glaucoma Research



J. Crawford Downs, Ph.D., vice chair of research in the Department of Ophthalmology, was awarded a three-year, \$1.23 million grant from the National Eye Institute to explore intraocular pressure fluctuation as it relates to the development and progression of glaucoma, a potentially blinding disease that affects more than 2.2 million Americans.

Downs, a leading ocular biomechanics expert, is director of the UAB Ocular Biomechanics and Biotransport Program, and studies the eye using principles traditionally associated with mechanical engineering. He is exploring the underlying reasons that the elderly and people of African descent are more likely to develop glaucoma.



Heart to Heart UAB Selected as Site of Research Network on Hypertension

UAB is one of four institutions selected to study high blood pressure as part of the American Heart Association's (AHA) new Strategically Focused Research Network on hypertension. The AHA will support the network with an investment of \$15 million over four years, beginning in 2015.

At the UAB Hypertension Center, an interdisciplinary team of researchers is working on population health and clinical and basic science projects, and initiating a new training program for future hypertension researchers. The goal is to change how high blood pressure is diagnosed and treated, with a focus on whether nighttime hypertension can be treated through sodium reduction and how salt consumption leads to high blood pressure at night.

The team, led by **Paul Muntner**, Ph.D., professor of epidemiology in the UAB School of Public Health, includes **David A. Calhoun**, M.D., professor in the Division of Cardiovascular Disease, as the clinical project principal investigator, and **Jennifer S. Pollock**, Ph.D., professor in the Division of Nephrology, as the basic science project principal investigator. **Monika M. Safford**, M.D., of the Division of Preventive Medicine, will lead the training program. Co-investigators include **David M. Pollock**, Ph.D., **Edward W. Inscho**, Ph.D., **Martin E. Young**, Ph.D., **Suzanne Oparil**, M.D., **Cora E. Lewis**, M.D., **James M. Shikany**, Dr.P.H., **Orlando M. Gutierrez**, M.D., and the School of Public Health's **Leslie A. McClure**, Ph.D. Three investigators from Columbia University are partnering with the UAB investigators.

Legislative Action Carly's Law Enables Cannabidiol Oil Research

This spring, UAB launched two studies of cannabidiol oil (CBD oil), a derivative of the cannabis plant, as a treatment for severe, intractable seizures. The studies were made possible by legislation known as Carly's Law, which was approved by the Alabama Legislature in 2014. "What we learn from these investigations could have a profound impact on the lives of many adults and children with uncontrolled seizures," says **David G. Standaert**, M.D., Ph.D., the John N. Whitaker Endowed Chair in the Department of Neurology. "We are honored to have been entrusted with this effort by the Alabama Legislature."

UAB will enroll 100 subjects in the two studies, 50 adult patients and 50 pediatric patients. The school has contracted with a vendor to supply the oil, who has agreed to provide the amount of oil needed for these 100 patients at no charge. When fully enrolled, the UAB study will be among the largest in the nation to examine the potential of CBD as a treatment for epilepsy.

Watch the press conference
announcing the CBD oil studies
on UAB Medicine's iPad app.

Breakthrough Potential

POSSIBLE THERAPY FOR EARLY-ONSET DEMENTIA DISCOVERED

Drugs that boost the function of a specific type of neurotransmitter receptor may benefit patients with the most common type of early-onset dementia, according to research published in the *Journal of Neuroscience*. Patients with frontotemporal dementia (FTD) experience rapid and dramatic changes in behavior, personality, and social skills. FTD usually strikes people in their mid- to late 50s and the prognosis is grim; patients quickly deteriorate and usually die within 10 years after onset. Currently, there is no effective treatment for FTD.

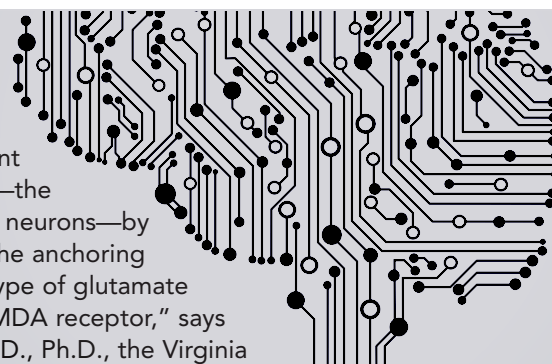
The research team's effort focused primarily on mutations in the gene that codes for tau protein. An accumulation of tau protein is associated with Alzheimer's disease, the most common form of dementia, but little is known about how tau mutations affect specific brain regions and cause FTD.

The researchers used a new mouse model expressing human tau with an FTD-associated mutation. The mice demonstrate physical behaviors similar to those seen in humans with FTD—compulsive, excessively repetitive actions such as grooming. The mice also had impaired function in certain brain network regions.

"We found that mutant tau impairs synapses—the connections between neurons—by reducing the size of the anchoring sites of an essential type of glutamate receptor called an NMDA receptor," says **Erik D. Roberson**, M.D., Ph.D., the Virginia B. Spencer Endowed Professor in Neuroscience in the Department of Neurology. "Smaller anchoring sites means fewer NMDA receptors available at the synapse to receive signals, which limits synaptic firing and network activity."

The team then employed the FDA-approved drug cycloserine, which is known to improve NMDA receptor function. Boosting NMDA receptor function with cycloserine restored synaptic firing and network activity in the animal model. The restoration of normal network activity then reversed the behavioral abnormalities seen in the mice.

"This study provides a potential therapeutic target, the NMDA receptor, which appears to correct the network and behavioral abnormalities," says Roberson. Further research may reveal that increasing NMDA receptor function benefits human FTD patients in a similar way.





Crowdsourcing Discovery

PATIENT-LED ARTHRITIS RESEARCH REGISTRY LAUNCHED

CreakyJoints, an online, nonprofit, patient support community with more than 80,000 members, has launched Arthritis Power, the first patient-led, patient-generated, patient-centered research registry for arthritis, bone, and inflammatory skin conditions. The new initiative has been launched in partnership with the School of Medicine. With a focus on rheumatoid arthritis, psoriasis, and psoriatic arthritis, as well as other musculoskeletal conditions, the goal of Arthritis Power is to securely collect health data from tens of thousands of arthritis patients to support future research.

Patients with rheumatoid arthritis, psoriatic arthritis, or other chronic conditions typically learn about opportunities to participate in research from their health care providers. Arthritis Power will include information on various clinical trials and research opportunities, allowing patients to proactively decide when and how to participate. Securely donated data will be used by patients, universities, research facilities, and physicians to better understand how to fight these diseases and, perhaps, contribute to finding elusive cures. Arthritis Power data can be collected using a smart phone, laptop, desktop, or tablet where there is an Internet connection.

Arthritis Power includes a steering committee of patients that identifies research needs for study development and prioritizes research requests from the CreakyJoints patient community around the world. "Patient-centered research means that we can more effectively use big data to answer questions that are important to those living with these illnesses. This opportunity will produce results that help patients weigh the value of health care options according to their personal circumstances, conditions, and preferences," says **Jeffrey R. Curtis**, M.D., M.S., M.P.H., the William J. Koopman Endowed Professor in Rheumatology and Immunology in the UAB Division of Clinical Immunology and Rheumatology. "The more people who join and share information about their symptoms and treatments, the more quickly we are able to find answers."

Learn more about the Arthritis Power Research Network at www.ArthritisPower.org. To learn more about CreakyJoints online arthritis patient community, visit www.CreakyJoints.org.

A WORLD OF GOOD

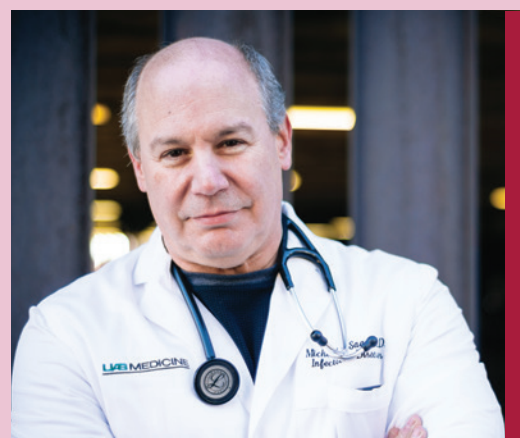
Saag Tapped to Lead Global Health Initiatives

Internationally renowned HIV researcher **Michael S. Saag**, M.D., the Jim Straley Endowed Chair in AIDS Research and director of the UAB Center for AIDS Research, has been named associate dean of global health in the UAB School of Medicine. In this new position, Saag is charged with developing new international research and service learning opportunities for students and faculty, strengthening established global health partnerships, and working with UAB's global health initiatives.

"We live in a global village. Because of the Internet and relatively easy travel, I think it's easier for us to perceive and address international needs in health care," he says. "With the School of Medicine's strategic focus of being the preferred academic medical center of the 21st century, we have to be engaged internationally."

Saag is working with **Rubin Pillay**, M.D., Ph.D., assistant dean for global health innovation in the School of Medicine, to identify and map themes in global health and international engagements across faculty and establish a global health resource center. The School of Medicine has several active global partnerships, including in Zambia and Saudi Arabia, and with Gorgas Memorial Institute in Peru and the Kwazulu-Natal Research Institute for Tuberculosis and HIV in Durban, South Africa.

"Dr. Saag is a world-class physician-scientist in his research and compassionate patient care in HIV, and has proven leadership in directing the Center for AIDS Research and in founding the 1917 Clinic," says **Selwyn M. Vickers**, M.D., FACS, senior vice president for medicine and dean of the School of Medicine. "His expertise is essential in growing the school's global health program in a strategic way and ensuring that we're playing a role in global citizenship."



Michael Saag

Warm Welcome

National Search Yields New Leader for UAB Biomedical Engineering

Jianyi Zhang, M.D., Ph.D., a national leader in myocardial bioenergetics, biomaterial, and stem cells for cardiac repair, has been named chair of the UAB Department of Biomedical Engineering, a joint department in the Schools of Medicine and Engineering.

Zhang will come to UAB from the University of Minnesota Medical School, where he is the Engdahl Family Foundation Chair in Cardiovascular Regenerative Therapies and a professor of medicine and biomedical, electrical, and computer engineering. He was chosen to lead the Department of Biomedical Engineering after a national search.

Zhang will officially join UAB on October 1 and will succeed longtime department chair Timothy M. Wick, Ph.D., who stepped down last year to accept a role as senior associate dean in the School of Engineering.



Jianyi Zhang

“I am very excited for this bold opportunity at UAB,” Zhang says. “The university is innovative in its establishment of the department as a joint venture between the schools of Medicine and Engineering. Pairing a top academic medical center and a successful School of Engineering creates the potential for impactful discovery for the field of biomedical engineering, for patient care, and in population health to benefit Alabama and its residents.”

Born in Shanghai, China, Zhang earned his M.D. from Shanghai Medical University in 1983 and his doctorate in biomedical engineering from the University of Minnesota in 1992. He also earned a Master of Science degree in engineering in 1987 and a certificate of business administration in 1987 from Tufts University. Prior to joining the faculty at Minnesota, Zhang completed postdoctoral work in the university’s cardiovascular division.

AWARDS AND ACCOLADES

- In March, UAB Hospital received a 2015 Women’s Choice Award (WCA) as one of America’s Best Breast Centers. Fewer than 350 centers met the WCA standards in 2015.
- Also in March, the annual *U.S. News and World Report* rankings of America’s Best Graduate Schools included several School of Medicine programs that either ranked among the nation’s top 20 or rose in the rankings from 2014. The primary care program moved up in the rankings from number 22 to 17, the Center for AIDS Research was ranked number 10, and the School of Medicine itself moved up six spots to number 37.
- In May, *Becker’s Hospital Review* named UAB Hospital as one of the 100 Great Hospitals in America. UAB is the only Alabama hospital to make the list, and one of only a dozen in the Southeast.

IN BRIEF

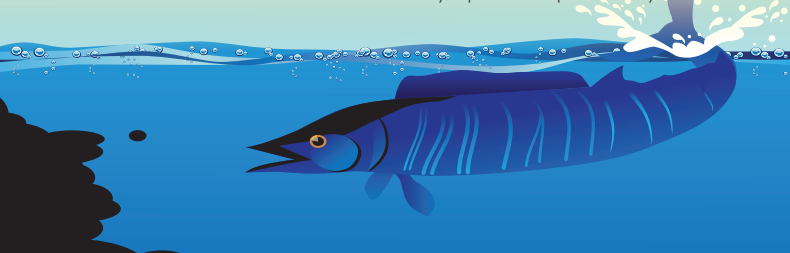
- **William C. Bailey, M.D.**, Eminent Scholar in Pulmonary Diseases in the Division of Pulmonary, Allergy and Critical Medicine, has been awarded a Lifetime Achievement Award for 50 years of exemplary service by the Tulane Medical Alumni Association.
- **James H. Baños, Ph.D.**, joined the Department of Medical Education and Medical Student Services as assistant dean for student success. Baños will lead the Office of Student Success team in helping students with academic advising and tutoring and in overcoming personal and academic challenges.
- **Cynthia J. Brown, M.D., MSPH**, the Emmett G. and Beverly S. Parrish Endowed Professor the Division of Gerontology, Geriatrics, and Palliative Care, was selected as a top reviewer for the *Annals of Internal Medicine*.
- **Ona Faye-Petersen, M.D.**, professor in the Department of Pathology, has been named president-elect of the Society for Pediatric Pathology.
- **William E. Grizzle, M.D., Ph.D.**, professor in the Department of Pathology, was recognized for his contributions to biospecimen research sciences by the International Society for Biological and Environmental Repositories.
- **Martin J. Heslin, M.D.**, the James P. Hayes Jr. Endowed Professor in Gastrointestinal Oncology in the Department of Surgery, has been named associate chief of staff for UAB Hospital.
- **Gustavo R. Heudebert, M.D., FACP**, professor of medicine and assistant dean of graduate medical education, has been named governor of the Alabama Chapter of the American College of Physicians, the national organization of internists.
- **Charles W. Hoopes, M.D.**, a prominent surgeon in thoracic transplantation and mechanical circulatory support, has joined the Department of Surgery as professor and chief of the Section of Thoracic Transplantation.
- **Gwendalyn King, Ph.D.**, assistant professor of neurobiology; **James Meador-Woodruff, M.D.**, the Heman E. Drummond Professor and Chair of the Department of Psychiatry and Behavioral Neurobiology; and **Christina Ochsenbauer, Ph.D.**, assistant professor of medicine in the Division of Hematology and Oncology, received the 2015 UAB Graduate School Dean’s Awards for Excellence in Mentorship.
- **Robin Lorenz, M.D., Ph.D.**, professor in the Department of Pathology and director of the UAB Medical Scientist Training Program, graduated from the Executive Leadership in Academic Medicine program at Drexel University College of Medicine, which prepares female faculty for leadership at the top levels in academic medicine.
- **James Meador-Woodruff, M.D.**, the Heman E. Drummond Professor and Chair of the Department of Psychiatry, was named editor-in-chief of a new scientific journal, *npj Schizophrenia*.

Cleanup Costs

Study of Oil Dispersant Used in Gulf Oil Spill Raises Concerns

A study by UAB investigators suggests that Corexit EC9500A, an oil-dispersal agent widely used in the Gulf of Mexico following the Deepwater Horizon oil spill of 2010, contributes to damage to epithelium cells in the lungs of humans and gills of marine creatures. The study, published in *PLOS ONE*, also identifies an enzyme that is expressed in epithelial cells across species that has protective properties against Corexit-induced damage. The investigators say that finding a way to boost or enhance that enzyme, heme oxygenase-1, could prevent lung damage in cases of exposure to oil dispersal agents.

The research team studied zebrafish and blue crabs that were exposed to Corexit. The team also studied a cell line of human epithelium tissue cultures. According to **Veena B. Antony**, M.D., professor in the Division of Pulmonary, Allergy and Critical Care Medicine and senior author of the paper, "There were some 48,000 workers involved in the cleanup operations, and it is possible that workers were exposed to Corexit via inhalation. Cough, shortness of breath, and sputum production were among the symptoms expressed by workers."



Rethinking Beta Blockers

\$11 MILLION GRANT FUNDS COPD STUDY

UAB researchers are leading a multisite study of the role of beta blockers in patients with chronic obstructive pulmonary disease (COPD). The study is funded by an \$11 million grant from the United States Department of Defense.

COPD is the third leading cause of death in the U.S. and is among the most costly chronic illnesses. While it is primarily a lung disease that causes difficulty breathing, COPD also puts patients at risk for heart disease. Beta blockers, commonly used to treat heart disease, are often not prescribed for patients who also have COPD because of safety concerns.

"Many physicians have been reluctant to prescribe beta blockers for patients who also have COPD due to concerns that they could cause constriction of the airways in the lungs, and worsen lung function," says **Mark T. Dransfield**, M.D., associate professor in the Division of Pulmonary, Allergy, and Critical Care Medicine and primary investigator of the study. "This practice continues despite the fact that the drugs are usually tolerated well in patients with COPD, and more recent published data suggests that they may also reduce the risk of exacerbations."

The objective of the study, which will be carried out at 14 research centers across the United States, including civilian and Veterans Affairs hospitals, is to determine whether beta blockers can reduce the risk of acute exacerbations of COPD and whether patients can take the drug without major side effects. Approximately 1,100 patients with at least moderately severe COPD will be enrolled and placed on either a beta blocker called metoprolol or a placebo for up to 12 months. At the end of the study, the research team will determine how well the beta blocker was tolerated and whether it reduced the risk of exacerbations compared to the placebo.

Spotlight on Excellence Inaugural Pittman Scholars Announced

Five faculty members in the School of Medicine have been named the inaugural James A. Pittman Jr., M.D., Scholars, a new program created to recognize the contributions of junior faculty and support the recruitment and retention of highly competitive scientists and physician-scientists. The Pittman Scholars, named for the late **James A. Pittman Jr.**, M.D.,

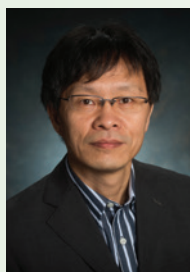
dean of the School of Medicine from 1973 to 1992, were nominated by their department chairs based on their research achievements and potential for continued discovery in the basic or clinical sciences. Each scholar will receive \$12,500 annually to support their research or scholarly activity. The inaugural Pittman Scholars are:



André Ballesteros-Tato, Ph.D., assistant professor of medicine, Division of Clinical Immunology and Rheumatology



Beatriz León Ruiz, Ph.D., assistant professor, Department of Microbiology



Lizhong Wang, M.D., Ph.D., assistant professor, Division of Research in the Department of Genetics



J. Michael Wells, M.D., assistant professor of medicine, Division of Pulmonary, Allergy and Critical Care Medicine



Adam R. Wende, Ph.D., assistant professor of pathology, Division of Molecular and Cellular Pathology



AIMing for Better Outcomes

Hospital-Based Arts Program Enhances Healing

UAB Medicine is now home to the first and only hospital-based arts program in Alabama. The UAB Institute for Arts in Medicine (AIM) is a new initiative that supports healing by providing engaging arts opportunities, from creative bedside interaction to exhibits and performances in common spaces. “We focus on the whole patient—mind, body, and spirit,” says AIM Director of Programming Kimberly Kirklin. “We are there to enhance the healing process.”

The program is based on established best practices and gives patients the opportunity to engage in creative expression. Services are provided by six professional artists in residence, each trained in creative activities for the health care setting. They use visual art, crafts, storytelling, dance and movement, guided meditation, theatre, creative writing, and music to deliver proven benefits such as reduced stress levels, decreases in perceived pain, improved moods, and faster recovery rates. Research shows that patients who take part in such programs require shorter hospital stays, less medication, and have fewer complications.

Watch a video about UAB's Institute for Arts in Medicine on UAB Medicine's iPad app.

Easing Access for a Rare Disorder

UAB Opens Transverse Myelitis Clinic

UAB has established the third multidisciplinary comprehensive clinic in the world for transverse myelitis (TM), a rare spinal cord disease, at UAB's Spain Rehabilitation Center. The clinic joins two others—at Johns Hopkins University and the University of Texas Southwestern—as the only comprehensive clinics for treating TM. It connects physicians and other medical professionals from multiple disciplines, including physical medicine and rehabilitation, neurology, neurosurgery, urology, and pain management, in caring for patients with TM, which can cause loss of motor function or paralysis.

The clinic offers immediate access to physical, occupational, and speech therapists, orthotic specialists, and many others. It also serves as an educational tool to expose medical students and residents to transverse myelitis. “Each patient can see all the medical professionals who have a role in their care at one time and in one place. For patients with mobility issues, this is a tremendous benefit,” says **Amie B. McLain, M.D.**, the Robert B. Kyle Professor and Chair in Rehabilitation Medicine in the UAB Department of Physical Medicine and Rehabilitation.

IN BRIEF

(continued from page 5)

• **John D. Mountz, M.D., Ph.D.**, the J.W. and Virginia Goodwin–Warren D. Blackburn Jr., Research Chair in Rheumatology, was named the 2015 Mentor of the Year by the Southern Society for Clinical Investigation.

• **David C. Pigott, M.D.**, professor in the Department of Emergency Medicine, was honored by the American College of Emergency Physicians as its 2015 Spokesperson of the Year.

• **Jean-Francois Pittet, M.D.**, the David Hill Chestnut Endowed Professor in the Department of Anesthesiology, will become editor-in-chief of the flagship journal of the International Anesthesia Research Society, *Anesthesia & Analgesia*.

• **Sumanth Prabhu, M.D.**, the Mary Gertrude Waters Chair of Cardiovascular Medicine; **Steven M. Rowe, M.D., MSPH**, associate professor of medicine and director of the UAB Cystic Fibrosis Clinic; and **Anath Shalev, M.D.**, the Nancy R. and Eugene C. Gwaltney Family Endowed Chair in Juvenile Diabetes Research, received the 2015 Max Cooper Award for Excellence in Research.

• **Richard S. Rosenthal, M.D., FACE**, associate professor in the Division of Endocrinology, Diabetes and Metabolism, was elected as the American Association of Clinical Endocrinologists Chapter President.

• **Kenneth G. Saag, M.D., M.Sc.**, the Jane Knight Lowe Professor of Medicine in the Division of Clinical Immunology and Rheumatology and director of the Center for Outcomes and Effectiveness Research and Education, was named a member of the Association of American Physicians.

• **Lisa M. Schwiebert, Ph.D.**, professor of Cell, Integrative and Developmental Biology and associate dean for postdoctoral education, was honored as the 2015 Becky Trigg Outstanding Woman UAB Faculty Member.

• **Karan P. Singh, Ph.D.**, professor in the Division of Preventative Medicine, was selected by the American Statistical Association Committee on Fellows as a 2015 outstanding fellow for his contributions to the statistical profession.

• **Lisa L. Willett, M.D.**, the Dr. Tinsley R. Harrison Endowed Chair in Medical Resident Education and program director of the Tinsley Harrison Internal Medicine Residency Program, was selected as the Southern Society of General Internal Medicine Senior Leader and Mentor.

• **Shih-Hsin (Eddy) Yang, M.D., Ph.D.**, the ROAR Southeast Cancer Foundation Endowed Chair in the Department of Radiation Oncology, was awarded the inaugural American Association for Cancer Research–Triple Negative Breast Cancer Foundation Career Development Award for Clinical/Translational Research.

Building ON STRENGTHS

Inflammation, Infection, and Immunity
Form Pillar for Future Research Excellence

It's no secret that research funding from agencies like the National Institutes of Health (NIH), the largest funder of biomedical research in the world, isn't what it used to be. Since 2004, the NIH budget has decreased by more than 20 percent, and in 2013, sequestration forced the NIH to cut a full 5 percent, or \$1.55 billion, from its budget.

But UAB has succeeded in raising its research profile nationally despite this unforgiving landscape. In 2014, NIH funding for the university rose more than 20 percent from the previous year. The School of Medicine's NIH ranking rose to No. 26, up from No. 31 in 2013 and the first positive growth in 12 years.

Maintaining this upward trajectory means thinking strategically about how the School of Medicine will expand its research enterprise. For that reason, School of Medicine Dean **Selwyn M. Vickers, M.D., FACS**, in consultation with faculty and leadership, has identified five research focus areas that have

a high translation opportunity for patient care and can build upon the school's existing strengths.

One of the most cross-cutting of these focus areas is called "I-3," which stands for **inflammation, infection, and immunity**. Why invest in I-3 research? The reason is simple: inflammation, infection, and immunity affect essentially every disease that is studied and treated at UAB, including diseases that are particularly common in Alabama and the South such as cardiovascular disease, obesity, and cancer. They encompass diseases that represent a significant portion of U.S. health care spending, are

of major global concern, and are increasing in prevalence, such as Alzheimer's and Parkinson's disease, asthma, and autoimmune diseases.

Frances E. Lund, Ph.D., the Charles H. McCauley Chair of the Department of Microbiology, directs the working group that proposed I-3 as a focus area. "The I-3 research pillar is already quite strong," she says. "It is represented by approximately 360 faculty who work in the realms of inflammation, infection, and immunity, and we have about 500 active awards, more than half of which are federal grants or contracts, that are specifically studying these processes."



Frances Lund, director of the I-3 working group, advocates for a focus on inflammation, infection, and immunity research.

Engaging Immunity Against Cancer

In the past, researchers tended to disregard the immune system when it came to developing cancer treatments. That attitude has changed dramatically in the past five years thanks to a mounting body of evidence indicating that it might be possible to leverage the power of the immune system to defeat cancer.

Ronald D. Alvarez, M.D., the Ellen Gregg Shook Culverhouse Chair in Gynecologic Oncology, is working with researchers at Washington University in St. Louis to develop oncolytic viruses, which preferentially infect and kill cancer cells, that can infect ovarian and pancreatic tumor cells.

"You can try to trick the immune system into thinking your tumor is actually an infection," says **Troy D. Randall**, Ph.D., the J. Claude Bennett Professor of Medicine in the Division of Clinical Immunology and Rheumatology. "So if the virus only infects the tumor cells, then the immune system will try to get rid of it by doing all the same things it would do if you had the flu. All these immune cells will come attack it.

"The trick is, how do we make sure the viruses exclusively infect the cancer cells? And once they do, how do we get the immune system to respond to that infection and help eliminate the tumor?"

Alvarez's team is exploring a strategy that introduces a cancer antigen gene into dendritic cells using a cold virus with the hope that this will activate a specific subset of immune cells. "We are looking to see if that could be an effective vaccine strategy,"

Alvarez says. "The dendritic cells present the cancer antigen to the T cells, which are then activated to go hunt down the cancer cells with this specific type of antigen on them.

"We have done gene-therapy studies using these cold viruses, and I have one long-term responder to this type of treatment who gives us hope that this may become an effective therapy one day."

Another cancer immunotherapy research project, led by **Donald J. Buchsbaum**, Ph.D., director of the Division of Radiation Biology, and **Andres Forero**, M.D., the O'Neal-Sokol Breast Cancer Research Foundation of Alabama Endowed Professor, is exploring potential new treatment options for patients with triple-negative breast cancer.

These patients often become resistant to chemotherapy, making the disease much more difficult to treat. Approximately 15 to 20 percent of all breast cancer cases are triple-negative, and it tends to strike women under the age of 50. "That disease is begging for a new therapeutic approach," Buchsbaum says.

Recent studies have shown that triple-negative patients who have high levels of immune proteins respond better to chemotherapy treatment than patients who have

medium or low levels of immune involvement. "It turns out there are certain proteins that are designed to turn on CD4 T-cells, which are an important component of the immune system," Randall says. "If these proteins get turned on, then the CD4 cells are activated to clear the tumor."

Buchsbaum says a clinical trial at UAB found a correlation between the level of antigens that stimulate an immune response and the infiltration of white blood cells into the tumor. "Nobody had recognized that these antigens may well be stimulating the immune responses to cancer," Buchsbaum says. "If that model works successfully, then we can develop combination treatments with other immunological approaches."

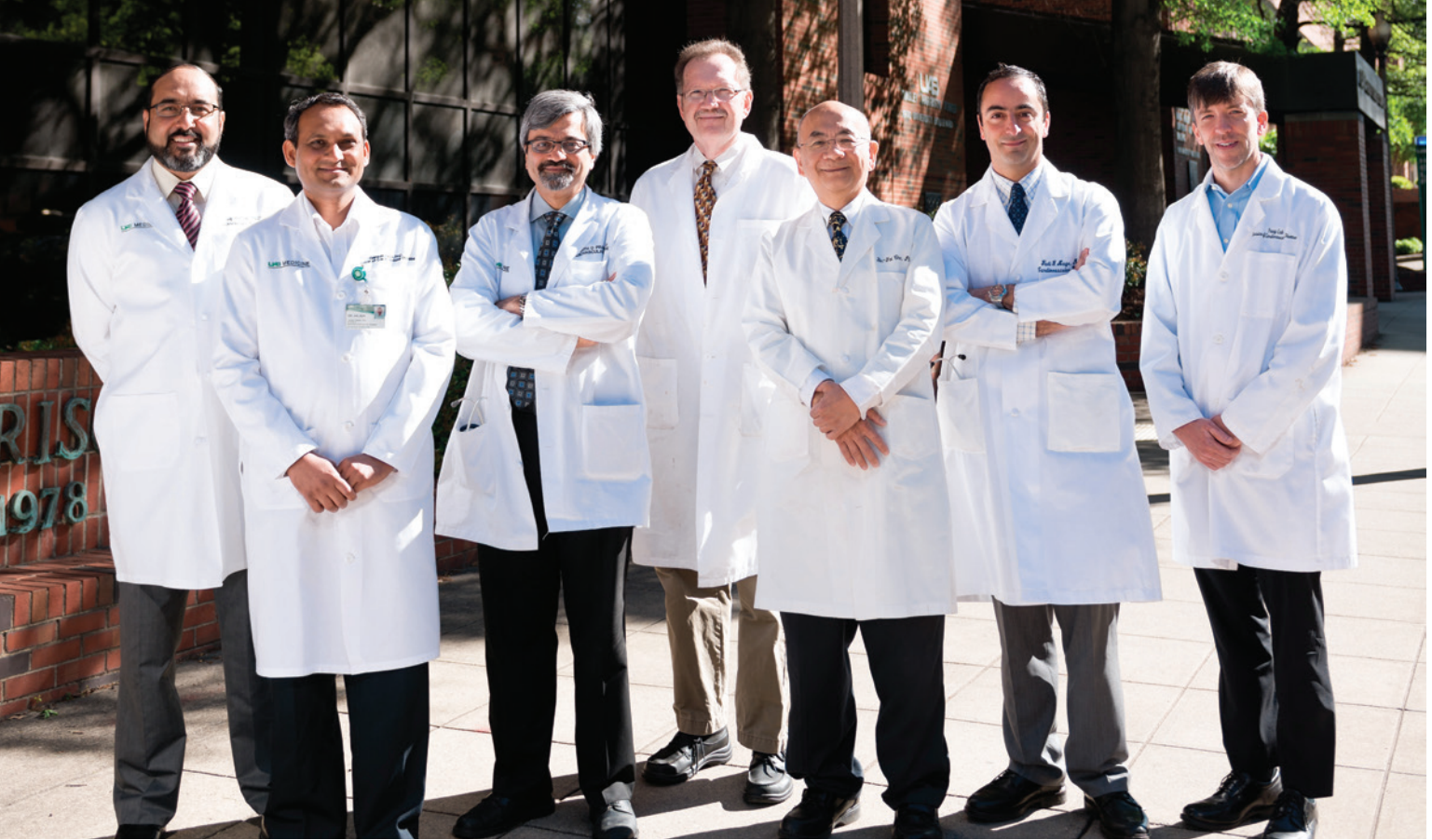
Forero says such findings are impressive for an area of research that basically is still in its infancy. "Five or 10 years ago, none of us were experts in this field," Forero says. "But we have learned a lot." — *Cary Estes*

Getting to the Heart of the Matter

Researchers increasingly are realizing, and attempting to capitalize on, the key role that inflammation plays in cardiovascular disease. Last year, **Sumanth D. Prabhu**, M.D., the



Finding ways to harness the power of the immune system to fight cancer is the goal of UAB researchers (left to right) Donald Buchsbaum, G. Yancey Gillespie, Troy Randall, Ronald Alvarez, and Andres Forero.



Researchers are exploring the myriad links between inflammation and cardiovascular disease, including Tariq Hamid, Ganesh Halade, Sumanth Prabhu, C. Roger White, Yiu-Fai Chen, Fadi Hage, and Martin Young.

Mary Gertrude Waters Chair of the Division of Cardiovascular Disease, used mouse models to demonstrate that immune cells from the spleen called splenocytes play a key role in the development of heart failure after a heart attack. Vividly, Prabhu and his colleagues found that when they transferred heart-failure splenocytes from heart-attack mice into healthy, non-heart-attack mice, the recipients developed cardiac dysfunction and enlarged hearts.

In a heart attack, the death of heart muscle cells first causes acute inflammation, the beneficial inflammatory response that removes dead cells and begins repair in the injured area. The real villain of cardiovascular disease appears later—unresolved chronic inflammation that lingers and is ungoverned, says **Ganesh V. Halade**, Ph.D., assistant professor in the Division of Cardiovascular Disease. This provokes a downward spiral in many cardiovascular conditions, including heart failure; atherosclerosis, or plaque build-up in the arteries; and peripheral artery disease, in which narrowed arteries reduce blood flow to the limbs.

Understanding inflammation and its mechanisms could open paths to sorely needed novel treatments. **Fadi G. Hage**, M.D., associate professor of medicine in the Division of Cardiovascular Disease, is

part of a multi-center study in the U.S. and Canada that will give low dose methotrexate, an anti-inflammatory drug, or placebo to 7,000 coronary artery disease patients with chronic inflammation from diabetes or metabolic syndrome. Physicians will then follow the patients for cardiovascular death, heart attack, or stroke. “This will directly test whether inhibiting inflammation has an effect on cardiovascular disease,” Hage says. “If successful, it will change the treatment paradigm for patients.”

Other interventions—still in the laboratory stage—may also signal big changes in cardiovascular treatment. Halade, Prabhu, and colleagues recently published a study of experimental-heart-attack mice that were given the lipid resolvin D1 a few hours after their infarctions. They found that resolvin D1 substantially reduced the amount of inflammation and heart failure compared to controls. “This study is the first to show resolvin’s effect on heart failure,” says Halade.

Resolvin D1 is naturally produced in the body as a metabolite of an omega-3 fatty acid that is especially present in fish oil. Omega-3-derived resolvins biomolecules have potent anti-inflammatory effects. Halade’s group found that resolvin D1 not only reduced the number of immune cells

in the left ventricle, it also modulated the splenocytes that Prabhu tagged as culprits in heart failure. The UAB group is now using the mouse-model to test resolvin D1 on inflammation reduction in chronic heart failure.

Martin E. Young, D. Phil, associate professor in the Division of Cardiovascular Disease, explores yet another intersection of inflammation and cardiovascular disease—the role of circadian rhythms. Every cell in the body has a biological clock, and Young knows that disrupting the clock in monocyte immune cells leads to a pro-inflammatory state. He plans to use a mouse model to see if disrupted monocyte clocks lead to greater heart damage after a heart attack. Young, Prabhu, Halade, and colleagues already have preliminary evidence that disrupting the circadian clocks in heart muscle cells impairs inflammation resolution and triggers diastolic dysfunction, a heart condition in which one part of the two-part pumping phase is abnormal.

“People disrupt their circadian rhythms all the time—nurses, shift workers, the police force, security,” Young says. Furthermore, he notes that a hospital’s ICU disrupts patients’ circadian clocks with constant lights, noise, and activity. “The clinical significance is huge.” — *Jeff Hansen*

“This is a classic UAB story. It’s a collaborative project that reaches across a large space.”

—David G. Standaert, M.D., Ph.D.

Inflammation on the Brain

The idea that there is a connection between inflammation in the brain and Parkinson’s disease is nothing new. It was noticed in postmortem cases involving Parkinson’s patients as far back as the 1980s. What has changed is the notion that instead of inflammation being merely a consequence of the disease, it might actually be a driver of it.

“Twenty years ago, the view was that, because a patient had a neurodegenerative disease and part of the brain was dying off, as a result you had inflammation in the brain,” says **David G. Standaert**, M.D., Ph.D., the John N. Whitaker Endowed Chair of the Department of Neurology. “It was viewed as not having that much importance in causing the disease. That thinking has changed a lot recently; now we’re wondering if inflammation actually drives the process forward.”

Standaert says one of the key reasons for this shift was the discovery of a connection between Parkinson’s and a gene called HLA-DR2, which he describes as being part of the master gene that regulates immune responses. The key discovery was made by **Haydeh Payami**, Ph.D., who recently joined UAB as a professor and the John T. and Juanelle D. Strain Endowed Chair in Neurology. “HLA-DR2 was known to be linked to all kinds of other immune diseases,” Standaert says. “Now we know that there is a genetic link between variations in this critical immune regulatory gene and Parkinson’s.”

For the next two years, researchers at UAB will explore this potential link in a project entitled, “Innate and Adaptive Immunity in Parkinson’s Disease,” which is being funded through an NIH grant. The objective is to gather enough collaborative data so UAB can compete for a Udall Award, establishing a multi-investigator, multi-project Parkinson’s disease research center at the university that will also be NIH funded. There currently are only nine such Udall Centers in the nation.

“The project is designed to study immune cells that normally reside in the peripheral blood, and try to discover how they get into the brain and what they are doing

there,” says **Ashley S. Harms**, Ph.D., the Frances and Beverly Dubose Fellow and an instructor in the Department of Neurology, who is coordinating the study.

“We want to identify different pathways for how these cells are activated and get into the brain, and potentially open up an avenue for a therapeutic. Because as of now, there are no therapeutics that slow or treat Parkinson’s.”

There are three separate components to the project. One is being led by **Andrew B. West**, Ph.D., the John A. and Ruth R. Jurenko Endowed Professor in the Department of Neurology. West is examining the interaction of inflammation and the LRRK2 gene, which has also been linked to Parkinson’s.

“Whenever there is a problem, there seems to be inflammation,” West says. “The genetics of the disease have been telling us that we were overlooking an important component. We’re now focusing on that aspect.

“If you tackle the root source that results in this chronic inflammation, we think we’ll have a more exact way to extract the benefit. It’s like the difference between using a scalpel and a battle ax. There are still questions to be asked, but the potential benefit is very high.”

Another part of the project is being led by **Etty “Tika” Benveniste**, Ph.D., the Charlene A. Jones Endowed Chair in Neuroimmunology. She, in conjunction with Associate Professor **Hongwei Qin**, Ph.D., is looking into the possibility of whether the JAK/STAT signaling pathway, which already has been identified as having a link to multiple sclerosis and other diseases, can also be employed as a therapeutic strategy for the treatment of Parkinson’s.

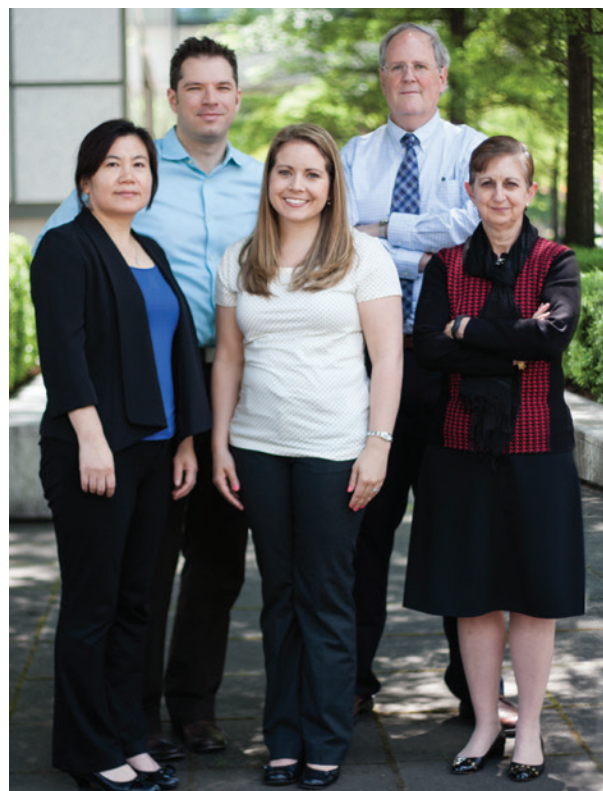
“The exciting thing about that is there are already drugs and medications in the pipeline that can affect the JAK/STAT pathway,” Standaert says. “So Dr. Benveniste and Dr. Qin are ask-

ing whether these drugs can also be used for Parkinson’s.”

The third component is a human study that will be led by Standaert. Researchers will examine patients who are in the very earliest stages of Parkinson’s and isolate the inflammatory cells from their blood to see if they can find evidence of activation of their inflammatory system.

“The big question is, would an anti-inflammatory treatment be beneficial for patients with Parkinson’s, and if so, what kind,” Standaert says. “There actually is some evidence that simple things such as ibuprofen have been shown to reduce the risk of Parkinson’s. We need to understand more about the details of this inflammation to get a better sense of where to attack it.

“This is a classic UAB story,” he continues. “It’s a collaborative project that reaches across a large space. You’re talking about linking up the Departments of Neurology and Cell, Developmental, and Integrative Biology, and then all the patient recruitment through the Kirklin Clinic. We’ve been able to bring those three parts together in this one study.” — *Cary Estes*



Probing the causal relationship between Parkinson’s disease and inflammation is the focus of (clockwise from top left) Andrew West, David Standaert, Etty Benveniste, Ashley Harms, and Hongwei Qin.

Big Data, Better Outcomes

Cimino Outlines Bold Vision for Informatics in Health Care

By Matt Windsor and Jane Longshore



James Cimino

“Data is a precious thing and will last longer than the systems themselves.”

That statement, from no less than the man credited with inventing the World Wide Web, Sir Timothy John Berners-Lee, presaged the critical role that data now play in almost every aspect of our lives, from advertising to weather forecasting to political campaigns. But experts continue to wrestle with the myriad complications—both practical and ethical—of leveraging big data to improve health care delivery.

The School of Medicine has stepped into the fray with the ambitious goal of becoming a leader in biomedical informatics. In January, **James J. Cimino, M.D.**, was named the inaugural director of the UAB Informatics Institute in the School of Medicine, one of three new initiatives—along with the Personalized Medicine Institute and the UAB-HudsonAlpha Center for Genomic Medicine—designed to stimulate the growth of personalized medicine and informatics research and implementation.

After graduating from Brown University and earning a medical degree at New York Medical College, Cimino interned and completed residency training in medicine at Saint Vincent’s Hospital in New York. He then completed a research fellowship in medical informatics at Massachusetts General Hospital and Harvard. After his fellowship, he joined the biomedical informatics and medicine faculty at Columbia University and rose to the rank of professor.

Previously chief of the Laboratory for Informatics Development at the National Institutes of Health’s Clinical Center and a senior scientist at the National Library of Medicine, Cimino is a recognized leader in the burgeoning field of biomedical informatics. He is one of the few informaticians

in the prestigious Institute of Medicine and co-editor of the most influential textbook on informatics, *Biomedical Informatics: Computer Applications in Health Care and Biomedicine*, Fourth Edition.

In the following Q&A, Cimino discusses his vision for how informatics may transform the practice of medicine, and his goals for the UAB Informatics Institute.

How do you define informatics?

I define biomedical informatics as the art and science of organizing knowledge of human health and disease, and making it useful for problem solving. I often hear people use the term ‘bioinformatics’ when referring to the broad domain, but bioinformatics concerns itself with informatics at the level of biology, while clinical informatics concerns itself with the clinical or human level.

How did you become interested in informatics?

I went to Brown, where you could create your own degree program, so I took all these different courses—computers and biology and math and physics. All the things you needed for pre-med, plus pretty

“If we don’t teach users why the way they document is important, it’s just a big electronic diary as far as they’re concerned. We need to build a system that will capture actionable data without increasing the amount of time required for documentation.”

much every computer science course they offered at the time.

I became interested in what is now called clinical informatics when I was in medical school. I did a rotation at the NIH in which I linked a desktop computer to the mainframe, and we were able to pull out electronic health record data and create graphs that allowed researchers to work with the data.

Around that time I learned about a meeting in Washington that was called Computer Applications in Medical Care, so I submitted a paper that was accepted. I went to the meeting and thought, ‘Wow, there are all these people doing computers in medicine. I want to do this, too.’ That was 1981, the year PCs came out.

What are your main research interests?

One research focus has been controlled terminologies—they called them terminologies back when I started, but we often use the term ‘ontology’ today to reflect the fact that terminologies can include formal, computable information about the meaning of terms. So, a disease term might include information about its causes and where in the body it’s located. Adding this kind of knowledge to a terminology enables computers to help with reasoning about data that are represented with the terminology, from helping diagnose or treat patients to finding information in patient records that can be used for research.

Some of the challenges in the development of EHRs (electronic health records) and expert systems (which help physicians make diagnoses) boiled down to the fact that there were not good terminologies. In building the EHR, you create ways to summarize data. You want to be able to say, ‘Give me all the blood sugars. I don’t care what they’re called in these different systems.’ The ontology is a way to get at that.

The other area I am involved in is infobuttons. An infobutton is a link between a system that has a context—a user’s context—and second system that returns information relevant to the user’s context.

For example, an infobutton can link an EHR to knowledge resources like PubMed or electronic textbooks. But it’s not just a link to a resource—it’s, ‘Oh, you’re looking at this drug order on a young adult female. Here are the questions you may have, such as the adult dose and safety in pregnancy,’ and each question is a link to a resource for the answer.

So my research is not just about technical solutions, it also involves empiric studies of the information needs of physicians, nurses, other clinicians, and patients in different settings so the system can say, ‘Aha, you’re a physician and here’s the situation you’re in. These are the things that you are probably going to be interested in.’ They’ll be instituting infobuttons in the EHR at UAB and I’ll be able to help them do that.

Do physicians need infobuttons?

There was a famous study in 1985 that asked physicians how many information needs they have and the physicians said, maybe a couple per day. Then after the physician saw a patient they’d ask, how many information needs do you have now? And it was a couple per patient. So when you do observational studies you find out they have a lot of information needs, but not only do they go unanswered, people don’t even recognize they have them. Study after study shows that 50 percent of the time, information needs are not pursued in the moment, or they are pursued but the answer is not obtained. So people are either deferring their decisions or making decisions with incomplete information.

What is the biggest problem with EHRs today?

I think a basic problem with EHRs is that the notes require too much effort and are not that useful. We’ve created this monster of documentation—we want to capture all these data, so we add more features, more pull-down menus, more things people have to do. Then we say, let’s make it structured so that it’s more usable for computerized decision support and research. So we add structure and

now we have these huge notes that you can’t wade through and tell what’s really going on with the patient. And the computer really can’t tell what’s going on with the patient.

How do we resolve that?

Part of the answer is changing the EHR to collect what we’re thinking—our reasoning and strategies. But we also have to teach people how to enter their thinking into the EHR in a way that makes the data actionable. If we don’t teach users why the way they document is important, it’s just a big electronic diary as far as they’re concerned—‘OK, I’ve added my note, I can keep going.’ We need to build a system that will capture actionable data without increasing the amount of time required for documentation.

I also want patients to add data to the record because they know things the clinician may not think to ask about. I think we have to send patients to ‘patient school’ to educate them about their role in the health system—their responsibilities, privileges, the power they have that they may not be aware of.

Fixing the EHR will help me carry out the mission they brought me here to do, which is to improve research, patient care, and operations through better information systems.

What made you decide to come to UAB?

The recruiter told me there was this fantastic job at UAB. I wasn’t looking to move, and I’m not big on heat and humidity, but I started thinking about what I was going to do next. At NIH I was mostly doing IT (information technology). They do some clever things but they’re not setting out to do science to figure out what’s the best way to build an EHR or to adapt an EHR.

Even being a department chair wasn’t going to give me the reach I needed. I needed something that spanned the whole enterprise, from the educational mission to systems development to practitioners and even patients. When I heard ‘institute director’ and understood the breadth of what Dr. Vickers was looking for, I knew this was the place to be.

The End of ~~Cervical Cancer~~?

New Advances in Vaccination and Screening May Eradicate This Once Common Killer

By Jeff Hansen

There was a time in recent memory when cervical cancer was one of the most common causes of cancer death for American women. According to the American Cancer Society (ACS), increased use of the Pap smear, which can detect cervical cancer at an early stage, contributed to a 50 percent decline in the cervical cancer death rate over the last 30 years. Despite this remarkable achievement, women are still dying of the disease—the ACS estimates that about 12,900 new cases of invasive cervical cancer will be diagnosed in 2015, and about 4,100 women will die from the disease.

It is widely known that most cervical cancer is caused by human papillomavirus (HPV) infection of the cervix. HPV is the most prevalent sexually transmitted infection—it is so common, in fact, that nearly all sexually active men and women will get it at some point in their lives. But a recent study of a new HPV vaccine and revised guidance on cervical cancer testing hold the promise of reducing the cervical cancer death rate even more, and possibly eradicating the majority of cervical cancer.



According to a paper published in February in *The New England Journal of Medicine*, a multinational study shows that a new nine-valent HPV vaccine, Gardasil 9, prevents cancers and other diseases caused by nine HPV genotypes, including the most common cervical cancer-causing types worldwide. The vaccine has the potential to dramatically reduce rates of cervical cancer, as well as the number of cervical exams a woman should have during a lifetime, says **Warner K. Huh**, M.D., the Margaret Cameron Spain Chair in the UAB Division of Gynecologic Oncology and one of the authors of the study.

The new vaccine is an advance from the four-valent Gardasil HPV vaccine, which was approved by the U.S. Food and Drug Administration (FDA) in 2006. Gardasil, which Huh helped to develop and test, targets four genotypes that cause about 70 percent of cervical cancer. The new vaccine

targets those four plus an additional five genotypes.

“We now have a second-generation vaccine that protects against 90 percent of the HPV viruses that cause cervical cancer,” Huh says. “This vaccine can literally eradicate the majority of cervical cancer, if given widely and appropriately.”

Clinical Trial

The trial of the Gardasil 9 vaccine included more than 14,000 women ages 16 to 26 from Australia, Austria, Brazil, Canada, Colombia, Denmark, Germany, Hong Kong, Mexico, Norway, Taiwan, Thailand, the United Kingdom, and the United States. Like the four-valent vaccine, the nine-valent vaccine requires three injections taken at day one, month two, and month six. Gardasil 9 was approved by the FDA in December 2014 for use in females ages 9 to 26 and males ages 9 to 15.

“We’re on the verge of a dramatic change that will positively affect all individuals, particularly women, in the United States,” says Huh, a senior scientist at the UAB Comprehensive Cancer Center. “The real issue is we need to improve vaccination rates in this country. The population benefit seen in countries like Australia has been truly impressive. We should learn from and adopt their vaccination practices.”

National Effort

Australia was one of the first countries to establish a nationally funded HPV vaccination program for girls and young women in 2007. By 2010, the vaccination coverage rate for girls in Australia’s school-based programs who received the three recommended doses was 73 percent. By contrast, the Centers for Disease Control and Prevention reports that only 37.6 percent of preteen and teenage girls in the U.S. received the three doses in 2013.

“Now, we have a second-generation vaccine that protects against 90 percent of the HPV viruses that cause cervical cancer. This vaccine can literally eradicate the majority of cervical cancer, if given widely and appropriately.”

Since implementing the program, Australia has seen a sharp decline in the number of new cases of genital warts, which are caused by HPV, among young men and women. Australia has also seen a decrease in the number of cases of cervical abnormalities, a precursor to cervical cancer. Because the incubation period from HPV infection to the development of a related cancer is usually 20 to 30 years, time will tell if the country will experience a similarly sharp decline in cervical cancer diagnoses, but the signs look promising.

Just like the public health need to increase HPV vaccination rates, there also is a crucial need to reach more women who go unscreened or underscreened for cervical cancer, Huh says. Both of these improvements in clinical practice are vital to ending cervical cancer for women.

Screening Evolution

Huh was also the lead author of the most defining change in women's cancer screening in the past 20 years. He led a group of cervical cancer-screening experts in writing a new interim guidance, released in January, about the health advantages of using an HPV test alone, rather than the customary Pap smear, as the primary method to detect cervical cancer or its precursors. Under the new guidance, the Pap smear, which dates back more than 80 years, will still be used for primary screenings of women ages 25 and younger and for follow-up tests if an HPV test of a woman age 25 or older is positive. This new guidance affects about 80 million U.S. women ages 25 to 65—including 1.2 million women across Alabama—who should be screened periodically by their health care providers for cervical cancer.

The publication of the new guidance coincided with the end-of-trial data of the

Roche Diagnostics ATHENA HPV trial that enrolled more than 47,000 women in a longitudinal, three-year study of Roche's HPV test.

“Because of equivalent or superior effectiveness,” the paper says, “primary HPV screening can be considered as an alternative to current U.S. cytology-based (i.e., Pap smears) cervical cancer screening methods.”

The authors note that, while previously published guidelines from 2011 recommend Pap smears alone, or co-testing with a Pap smear and an HPV test, for cervical cancer screening, those guidelines predate more recent clinical studies of HPV testing that were analyzed in the January paper.

The paper notes that a lower rate of false negative results is a key benefit of the HPV screening. Women who have a negative HPV test result from their primary screening can feel greater confidence that they have a very low risk for a future cervical cancer precursor lesion, as compared to women who have a negative Pap smear test in their primary screening.

Overall, the panel said, “While there continue to be numerous practical and research questions, primary HPV testing has the potential to further reduce morbidity and mortality of cervical cancer in the U.S.”

“The scientific evidence clearly demonstrates that primary HPV testing outperforms cytology or Pap as a screening test,” says Huh. “This has been confirmed from numerous European and Canadian studies as well as the ATHENA trial. There are going to be fewer false negatives with HPV, and arguably, we have been using a less sensitive test for screening for a while now.” Huh adds, “Pap smears miss a fair number of adenocarcinomas. We don't want a test that will miss diseases.”



Warner Huh

Watch a video of Dr. Huh discussing this important cervical cancer breakthrough on *UAB Medicine's iPad app*.

Grow Your Own Scientists

Undergraduate Neuroscience Major Feeds UAB Research

By Jeff Hansen

Nine years ago, UAB created an undergraduate neuroscience major to link the medical and university portions of UAB and produce skilled, young researchers destined for medical school or top graduate programs—ideally, right here at the School of Medicine.

The idea originated with **J. David Sweatt**, Ph.D., the Evelyn F. McKnight Endowed Chair in the Department of Neurobiology, who at that time was being recruited to come to UAB from Baylor University. Sweatt had grown up in a modest family background near Montgomery, and now he wanted to “pay it forward” in his home state, providing “something for kids in high schools in the state of Alabama.” UAB leadership at that time, including School of Medicine Dean Bob R. Rich, approved the idea, and Sweatt accepted the UAB job.

Sweatt found an ally in **Carl McFarland Jr.**, Ph.D., then chair of the Department of

Psychology in the former School of Social and Behavioral Sciences (now part of the UAB College of Arts and Sciences), who had been thinking of such a program as well. “Carl was enthusiastic, and we decided we would go for it,” Sweatt says.

Sweatt and McFarland recruited **Anne B. Theibert**, Ph.D., associate professor in the Department of Neurobiology, to the leadership team and to develop the curriculum and program proposal. The goal was a program that would attract very bright undergraduate students, challenge them with tough courses, and teach the fundamentals of research as they worked alongside leading UAB neuroscience investigators.

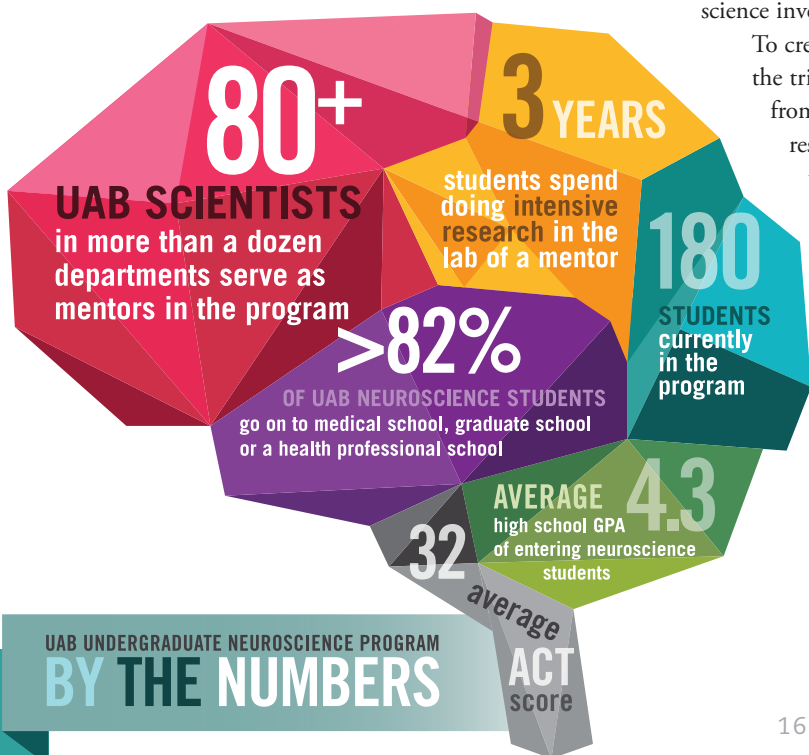
To create the program, the trio needed support from UAB neuroscience researchers unaccustomed to having undergraduate students work in their labs. They also needed to make UAB the choice destination for highly talented high-school students and their parents—students who could have been their pick of any number of elite universities.

The results have exceeded all expectations. The neuroscience major is expected to grow to 180 students in the fall, all members of the UAB Honors College. From 2011 to 2015, 57 UAB students graduated with neuroscience majors. Entering neuroscience freshmen have average ACT scores of 32 and high-school grade points of 4.3 on a 4.0 scale. Seventeen neuroscience majors graduated from UAB in 2015, 10 summa cum laude and six magna cum laude.

These students are attracted by rigor—the demanding coursework and a required 15- to 30-page senior thesis. But the biggest draw—and the core of the program’s success—is the chance to work for three or more years in the labs of more than 80 world-class biomedical researchers in the School of Medicine who have volunteered as mentors. By the time the students graduate, many have published their own research and given presentations at national or regional meetings.

“More than 80 percent of our graduates have advanced to professional or graduate schools, including medical school and graduate programs in neuroscience, public health, pharmacy, physician’s assistant, or behavioral and physical therapy,” says Theibert. “This is what we strived for when we developed the integrated course and research curriculum—to help prepare and propel the next generation of clinicians, researchers, scientists, and health care professionals.”

McFarland retired in December 2014, and the neuroscience program continues under the long-time leadership of Theibert, the





Anne Theibert and David Sweatt

program director, and co-directors **Rajesh Kana, Ph.D.**, and **David C. Knight, Ph.D.**, both associate professors of psychology.

“While the student metrics are impressive and important in recruitment and outcomes, I am most impressed with the students themselves,” Theibert says. “I’ve really enjoyed teaching and interacting with this remarkable group. They are incredibly bright, motivated, mature, and well-rounded; they achieve academic excellence; they get involved in a variety of service and volunteer activities; and most have flourished in their research laboratories.”

Hard Work Pays Off



Ameen Barghi

One recent graduate of the program stands out, even in a program composed entirely of exceptional students: Birmingham’s **Ameen Barghi** was admitted to UAB’s Early Medical School Acceptance

Program, is an author on five peer-reviewed articles, and was selected as one of 32 Rhodes Scholars for 2015. He is interested in developing clinical imaging systems and software technologies that could allow for earlier diagnosis of progressive diseases. Barghi will complete a doctor of philosophy degree in clinical neuroscience at Oxford University.

“As a member of the neuroscience program, I had opportunities at my disposal that few, if any, undergraduates have,” Barghi

says. “I got the chance to work with world-class leaders in my field. From the very beginning, our students got a one-on-one experience with a faculty-level adviser, something unheard of in any other major.”

Mentorship is the foundation of the program, Sweatt and McFarland explained in an article for the Association of American Medical Colleges. A student doesn’t learn to be a scientist from taking lab courses, reading journal articles, or going to seminars, they say. Rather, a student learns to be a scientist through hands-on mentorship, “where the culture and reality of scientific research is acquired both directly and indirectly.”

Neuroscience as a Roadmap

With this neuroscience success, plans are under way to launch three similar undergraduate majors focused on cancer biology, bioinformatics, and pathogens, immunity, and diseases.

“The vision is to [catalyze] other programs that are equally successful and equally unique,” Sweatt says. “These sorts of programs are where UAB can be nationally and internationally known—by marrying the outstanding strength of the research labs and the research faculty in the School of Medicine with faculty in the College of Arts and Sciences who are accomplished teachers.”

“A program like undergraduate neuroscience is what makes UAB special,” McFarland says. “It’s taking full advantage of everything UAB has to offer.”



Student Q&A

Undergraduate Neuroscience Program alumnus **Austin M. Luker, M.D.**, one of the earliest undergraduate neuroscience majors, graduated from the School of Medicine in May and entered psychiatry residency at UAB.

How did you discover the program?

“I knew I wanted to go to medical school, and I initially declared myself a biology major. I very much enjoyed my early coursework in biology, but I wasn’t particularly passionate about it as a major. I heard about the neuroscience major from a friend, who mentioned Dr. McFarland as one of the key developers. I emailed him right away, and I spoke to him after class the next day, and he gave me everything I needed to apply. He was so excited and passionate about the program, and it was infectious. I am so grateful to him for taking an interest in me and getting me plugged in, because it changed my entire undergraduate experience for the better.”

Who was your mentor?

“My research mentor was **John J. Shacka, Ph.D.**, in the Department of Pathology. He was an excellent mentor and became a good friend through our two years working together. I ended up being on two publications from the lab, and presented posters around three times.

How did the neuroscience program prepare you for medical school?

“I feel like the neuroscience program really gave me the mindset of a basic scientist, which has been very beneficial in how I approach problems. The neuroscience program really develops critical thinking, which is invaluable for medical training. Neuroscience gives you a great background for medical school, regardless of your eventual specialty choice.”

Watch a video about the Undergraduate Neuroscience Major on **UAB Medicine’s iPad app**.



Brian Hawkins

The Building Blocks of a Healthier Community

Innovative Partnership Fosters Homegrown Solutions to Local Health Issues

By Christina Crowe

The west Birmingham neighborhood of Ensley was once a city in its own right, known for its blast furnaces and lively jazz clubs. Today Ensley's historic "main street" on 19th Street is quiet, with many storefronts awaiting restoration. Brian Hawkins, director of We Are Rtists, a Birmingham artist collective, has plans for improving the health of the area. A collaboration with the UAB Center for Clinical and Translational Science—in the form of a Community Health Innovation Award (CHIA)—is allowing him to do so.

Hawkins, an Ensley High School graduate and former Ensley resident, has a bold vision for his old neighborhood. Through his work at the Norwood Learning Gardens, he learned about the Community Health Innovation Awards, a grant opportunity sponsored by the UAB Center for Clinical and Translational Science's (CCTS) One Great Community program. This key School of Medicine partner is benefiting Birmingham communities by helping to foster creative solutions to significant local health issues.

In his CHIA application Hawkins proposed a long-range project for Ensley aimed at targeting the World Health Organization's definition of health: "a complete state of physical, mental, and social well-being, and not merely the absence of disease or infirmity."

In 2014, We Are Rtists was awarded a \$14,500 grant from One Great Community to fund the first phase of "The Color Project," an initiative using public art—including gardens, light, and sound—to address issues of safety and general well-being in Ensley.

CHIA is an annual grant competition open to local 501(c)(3) organizations in the greater Birmingham area that enables participants to seek bold, creative solutions to health challenges their communities face. Applicants work with UAB experts and local businesses to propose and complete a project addressing a public health issue in their communities. Projects are supported by grant funding ranging from \$5,000 to \$25,000, awarded by One Great Community, the community engagement arm of the CCTS.

Plans for The Color Project include a gathering space featuring

This program continues to impress with the range of applicants and their innovative ideas for tackling public health issues in their own backyards.

—Robert Kimberly, M.D.

community garden plots, a contemplation path, and a teaching stage. Construction has begun on the garden area; meanwhile volunteers have spent hours gathering Ensley residents' stories about what their neighborhood means to them as subject matter for a mural. It will be installed by an Ensley native, artist Ukuu Tafari, on the side of the Bethesda Life Center, a nonprofit clinic located at 321 20th Street.

"We want the art in Ensley to be reflective of the people of Ensley," Hawkins says. "We're working on making the area look more appealing to draw in more people, by building a space to feel safe in, to be active in, and to enjoy."

Hawkins says the CHIA grant program has served as a network for finding experts and services, troubleshooting, and program support. Grantees report monthly to Shauntice Allen, Ph.D., director of One Great Community, on their progress. "The overall goal of CHIA is to fund interesting, innovative ideas; our singular commitment to that makes CHIA an attractive process to many community organizations," Allen says.

The program began in 2012, and the most recent cycle saw the most applicants and finalists to date. Funding for the program has increased each year, with seven winners in 2014 claiming a total of \$76,500. The funding for the program originates with nearly every school on the UAB campus, plus several UAB centers.

"Each year this program continues to impress with the range of applicants and their innovative ideas for tackling public health issues in their own backyards," says **Robert P. Kimberly**, M.D., director of the UAB CCTS and senior associate dean for clinical and translational research in the School of Medicine.

Another 2014 winner, Jerri Haslem with local the nonprofit Black People Run, Bike, and Swim, is well on her way to developing her CHIA project, the "Walk To" app. The app will allow users to track and compare their progress in making healthy choices, such as walking to lunch rather than driving, and partnering with local businesses to provide rewards for such healthy behavior, in the form of discounts on merchandise, for example.

"We believe in actually going into the community and making a difference, and with some 80 percent of residents in Alabama owning a smart phone, this is a great way to make an impact," Haslem says. "We are so grateful for the CHIA award—I love this, to see people make a difference in their behavior and realize this is something that I help change in my community."

Several CHIA grantees have used their CHIA funding to leverage additional funds for their projects. Haslem, for example, is awaiting word on a private technology grant application to support the Walk To app.



Taking Aim Against a Silent Killer

UAB Awarded Comprehensive Stroke Center Designation

By Bob Shepard and Jessica Dean

If you ask various people who have experienced a stroke, you will find that everyone has a different story to tell. Some people say they were blindsided and didn't see it coming, while others describe feeling symptoms for days leading up to the stroke. The stroke itself is often described as being accompanied by numbness, blurred vision, difficulty talking, and intense pressure in the head, just to name a few. Suddenly, people find themselves in a strange new world, where tasks that previously required little to no effort, such as brushing one's teeth or writing a note, are monumental challenges, and one's own body has become a foreign place.

A stroke occurs when a blood vessel either is blocked by a clot or bursts, which interrupts blood flow, depriving brain cells of the oxygen and nutrients they need to survive. Stroke is the third leading cause of death in the U.S., with 795,000 people suffering from stroke and 140,000 people dying each year from stroke. The prevalence of stroke in the South, which comprises the "stroke belt" of states with higher than average stroke mortality rates, is 15 percent higher than the rest of the country, and Alabamians are at a 30 to 40 percent greater risk of stroke than people in other parts of the country.

To help combat this alarming statistic, UAB has been named a Comprehensive Stroke Center by the Joint Commission and the American Heart Association/American Stroke Association. Comprehensive Stroke Center certification recognizes those hospitals that have the staff, training, and infrastructure to receive and treat patients with the most complex strokes. Because UAB met the Joint Commission's standards for Disease-Specific Care Comprehensive Stroke Center Certification, it joins an elite group of providers recognized as industry leaders and tasked with setting the national agenda in highly specialized stroke care.

"Designation as a Comprehensive Stroke Center means that UAB is prepared to offer immediate access to state-of-the-art stroke care every minute of every day," says **David G. Standaert**, M.D., Ph.D., the John N. Whitaker Endowed Chair in the Department of Neurology. "We provide advanced and potentially lifesaving services that are available nowhere else in Alabama, as part of our continuing commitment to

offer the best possible care to residents of our state, the surrounding region, and beyond."

UAB, which is the first hospital with Comprehensive Stroke Center certification in Alabama, has eight expert stroke physicians and the most board-certified vascular neurologists in the state, along with 350 critical care nurses specially trained in stroke care. UAB's Neurosciences Intensive Care Unit is one of the largest in the country, and UAB Hospital also boasts a dedicated stroke unit. UAB treats more than 1,100 strokes a year.

Toby I. Gropen, M.D., has been named the new director of the UAB Comprehensive Stroke Center and the Division of Cerebrovascular Disease. "The UAB Stroke Center is already well accomplished in so many areas—from prevention to research and education—and I plan to build upon these systems of care," Gropen says. "I am excited to join UAB's team and advance stroke care for patients across the Southeast."

Gropen's appointment as director of the Comprehensive Stroke Center was made possible through a generous gift from **James H. Halsey Jr.**, M.D., professor emeritus in the Department of Neurology, to establish the James H. Halsey Jr., M.D., Endowed Professorship of Neurology. Funds from the endowment enabled UAB to recruit Gropen from Ochsner Medical Center in New Orleans, La., where he served as chief of vascular neurology.

"By achieving this advanced certification, UAB has thoroughly demonstrated the greatest level of commitment to the care of its patients with a complex stroke condition," says Mark R. Chassin, M.D., president of the Joint Commission. "The Joint Commission commends UAB for successfully undertaking this challenge to elevate the standard of its care for the community it serves."

Comprehensive Stroke Center certification was developed in collaboration with the American Heart Association/American Stroke Association and was derived from the Brain Attack Coalition's "Recommendations for Comprehensive Stroke Centers" and "Metrics for Measuring Quality of Care in Comprehensive Stroke Centers," as well as on recommendations from a multidisciplinary advisory panel of experts in complex stroke care.

Student Rounds

Off the Beaten Path

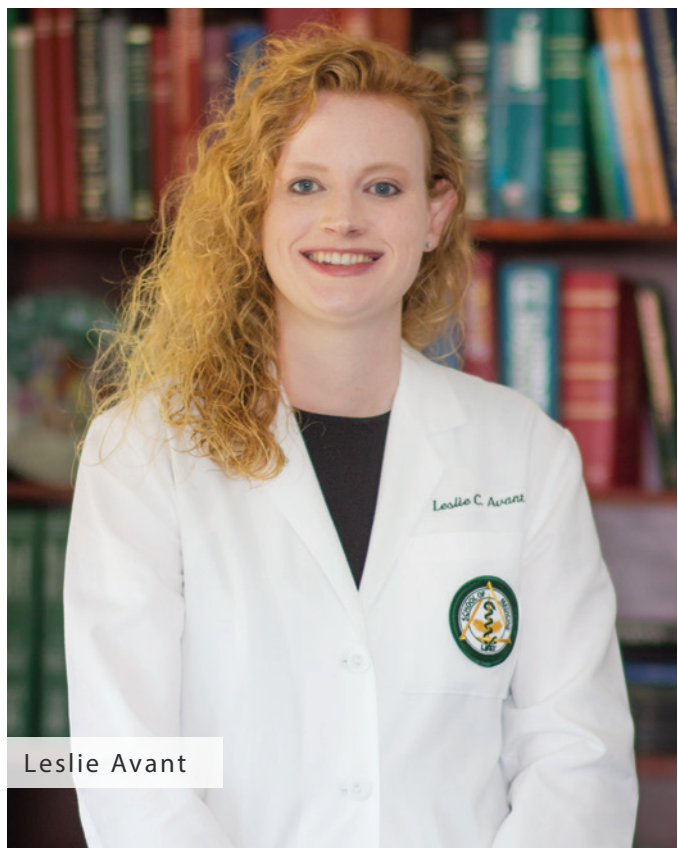
Detours on the Road to Medical School

Among its many goals when selecting each year's incoming class of medical students, the School of Medicine's admissions committee strives to create a class with diversity, not only in ethnicity and gender but also in experience. Below, two "nontraditional" students discuss the winding roads that brought them to the School of Medicine.

An Undeniable Calling

As a freshman at Auburn University, **Leslie Avant**, a native of Arab, Ala., considered pursuing a career in medicine. But when she realized the "huge time commitment" that would be required, she changed her major to accounting, she says. Sixteen years later, after working for seven years as a CPA and becoming a mother to two small children, Avant completed her second year of medical school in May.

As a wife and mother of two children under the age of five, and several years out of college, Avant faces challenges that are unique



Leslie Avant

among most of her classmates. But she is thrilled to be well on her way to pursuing the career she believes is right for her and will help her make a positive impact on the lives of women in Alabama.

Redirecting a Career

When she switched to accounting in college, Avant thought it would provide her with "a great career in around five years," including getting her bachelor's and master's degrees. "And it did," she says. But several years into her profession, Avant began to have second thoughts.

When she was 28 years old, her father suffered a second heart attack that landed him in the intensive care unit. "During the nine days he was in the ICU, I saw the huge impact doctors and nurses had on their patients' lives," Avant says. "I began to wonder if I made a mistake by changing my major to accounting." After her father passed away in the hospital, Avant dismissed the idea. "I was afraid my desire to pursue medicine was tied to my emotional state at the time," she says. "I kept telling myself that had I missed my chance."

But the following year, in 2009, Avant gave birth to her first baby and met someone who made her reconsider medical school. "The OB/GYN who delivered my daughter took a nontraditional path to medical school, having been an attorney for several years," she says. "I was very impressed by the way she practiced medicine and I started to think again about medical school."

Avant worked one more tax season after the birth of her daughter, and began to pray about the possibility of becoming a doctor. With the support of her husband, she says she "very clearly felt that God was calling me into medicine, and I was determined not to miss my second chance."

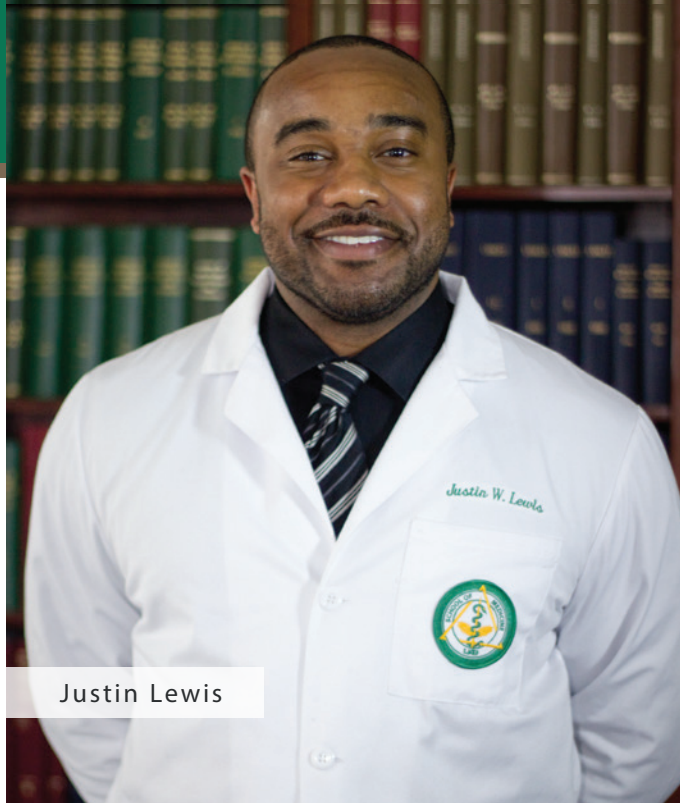
After quitting her job in 2010, Avant began taking prerequisite courses at the University of Alabama in Huntsville. She gave birth to her second baby in April 2012 and started classes at the School of Medicine in the fall of 2013.

Making It Work

Medical school is never a simple undertaking. For Avant, "juggling two kids and the medical school curriculum has been the biggest challenge," she says. "You very deliberately have to shut off your inner medical student to be a good mom, and conversely shut off being a mom to focus and study."

Although her husband works full-time as an attorney, he "is always willing to help manage things around the house," Avant says. And her mother has driven from north Alabama to Birmingham numerous times to help out with sick children or pre-school pickup.

While Avant looks forward to providing patient care during the



Justin Lewis

last half of medical school, she says that mastering the material for each module has offered her incremental successes along the way. “I would go to class on the first day of each module and think, ‘How can I possibly learn all this?’ But, by the last week of the module, you’re amazed at what you have accomplished,” she says.

After completing medical school, Avant hopes to pursue a residency in obstetrics and gynecology. “For many women, their gynecologist acts as their primary-care physician, providing them access to continuity of care,” she says. “OB/GYNs play not only an essential role in providing prenatal care and good delivery outcomes, but also are critical in the maintenance of the health and well-being of women.” —*Nancy Mann Jackson*

Pursuing a Dream Deferred

Justin Lewis, who will enter his second year of medical school this fall, says he “innately” knew he wanted to be a doctor when he was growing up in Montgomery, Ala. “I remember being in the third grade and being asked what I want to be when I grow up, and I kind of instinctively said a doctor,” he says.

Lewis attended UAB for his undergraduate education, where he became a member of Alpha Epsilon Delta, the pre-health honor society, and served as president of the Minority Association of Pre-health Students. He was well on his way to earning a B.S. in biology when a family emergency put Lewis’s dream of going to medical school on hold.

“During my senior year of college, my father developed a brain tumor,” he says. “After the initial surgery, he developed severe post-op complications that resulted in him almost losing his life, and he had to go through almost a year of rehabilitation. I don’t come from a very wealthy background—I’m the youngest of three children, and my parents put all three of us through college—and during this time period my parents experienced a severe financial crisis. My oldest sister had just started teaching kindergarten and she has two little girls, and my other sister was getting her Ph.D. in Chicago, so I stepped in to help my parents.”

I remember being in the third grade
and being asked what I want to
be when I grow up, and I kind of
instinctively said a doctor.

—Justin Lewis, Class of 2018

A Necessary Detour

Despite having earned his bachelor’s degree in biology from UAB in 2006 with the intention of applying to medical school, Lewis launched a career in retail management in order to help with his family’s finances.

But his heart remained in medicine, and in 2013, after seven years in business, he applied to medical school. Not only was Lewis accepted, he was also awarded an African-American Medical Students’ Scholarship, which further boosted his confidence. “Getting back on track toward achieving my goal of becoming a doctor, and then receiving a scholarship, was very emotional,” he says. “I’ll never forget the feeling of gratitude, sheer joy, and almost disbelief I felt in that moment. And then sharing the news with my parents and seeing their excitement—my mother began to cry, so it was a very profound experience for me and my whole family.”

Inspired by Passion and Responsibility

Lewis can look to his own family for role models who followed their dreams of becoming physicians—his aunt, a pediatrician in California, is married to an internal medicine physician. “My aunt, especially, has always been very passionate about what being a doctor means and how it’s such a powerful role, not just in the clinical setting but also in terms of impacting society and the community as a whole,” Lewis says. “She’s also a huge advocate for diversity in medicine and in addressing disparities in health care. Although we’ve made progress, I agree that there are still too many issues in terms of health care disparities that we need to address.”

Perhaps influenced by his aunt, Lewis says that, in addition to the responsibilities all medical students have, he feels an added duty to serve as an example for young people back in his hometown. “I used to tutor students in Montgomery, often students who are from rougher areas of the community. When I would tell them I’m working toward becoming a doctor, it almost seemed foreign to them—like, ‘Wow, this African-American male from Montgomery, Alabama, from way outside of town, is on his way to medical school.’ It’s like that they can’t conceive of that for themselves. So I think seeing someone who has achieved a certain goal can help inspire others to also believe they can achieve their goals despite whatever background they may have.”

Lewis says that he is leaning toward specializing in primary care because it allows physicians to develop strong, lasting relationships with their patients. As for where he plans to practice, he says he intends to stay close to home. “I definitely plan on practicing in Alabama.” —*Jane Longshore*



Nate Rogers and Anna Joy Rogers in Kenya.

Global Perspectives

International Fellowships Broaden Students' Horizons

By Nicole Wyatt

Increasingly, medical students and residents are encouraged to spend some portion of their training studying abroad. International experiences can promote cultural competence by expanding appreciation for cultural differences, improve students' understanding of global health concerns, and help foster humanistic attitudes.

Both **Anna Joy Rogers** and **Nate Rogers** won prestigious and competitive fellowships to study and conduct research in Kenya. Anna Joy, an M.D./Dr.P.H. student in her second year with the UAB School of Public Health Department of Health Care Organization and Policy, was selected for the Doris Duke Charitable Foundation International Clinical Research Fellowship. Nate, a recent graduate of the UAB School of Medicine, won the Benjamin H. Kean Travel Fellowship from the American Society of Tropical Medicine and Hygiene.

"We met on the first day of medical school at UAB and realized we both had a similar long-term vision of working internationally; we have the same passion for seeing developing communities get the best kind of health care they can," Anna Joy says.

Anna Joy and Nate married two years into medical school and sought out fellowships that would help them reach their goals. Anna Joy's interests abroad include strengthening health care systems through research and building research capacity among local investigators, while Nate wants to focus on providing continuing medical education for local health care providers, with a goal of raising the quality of care delivered.

Though they received different fellowships, they were able to go to Kenya together in October 2014. Nate's fellowship was only two months long, while Anna Joy remained in Kenya until May 2015.

"It was important for us to have this experience because we'd never been in that sort of challenging setting together," Anna Joy says. "It helped us determine whether or not we liked it and wanted to do it for the rest of our lives. Also, this opportunity gave us a trajectory for how

to design the rest of our careers."

Anna Joy is using her fieldwork to write a three-paper model for her dissertation. She has focused her work on repeated HIV testing among pregnant women who attend prenatal care clinics in western Kenya, trying to prevent women who are HIV-positive from transmitting the virus to their infants.

"Although Kenya has been successful in getting women to test once early on in their pregnancies, there are still women getting infected during pregnancy," Anna Joy says. "If they're not retested, they won't find out and can transmit HIV to their infant not only during pregnancy, but also during delivery and breastfeeding."

During Nate's time in Kenya, he was interested in HIV care, particularly among co-infected patients. "I was working with HIV-positive patients who also had tuberculosis plus other co-infections," Nate says. "The medical management of co-infected patients is much more complex, so the learning potential for me was much greater."

Both say their experiences have been invaluable. "As I applied to various residency programs, they saw the fellowship and knew it's something that's prestigious," Nate says. "Every interview I went to brought it up. To say 'I designed this project, went to a developing country where I implemented it, and saw these results' is something that gives you an edge over other students."

"The fellowship has allowed me to do incredible things I would not have been able to do otherwise. It's opened up a lot of doors for me," says Anna Joy, who will complete her two final years of medical school after graduating from the Dr.P.H. program.

While hiking through Kenya's largest rainforest, Kakamega Forest, the couple serendipitously ran into two medical residents from the University of Tennessee Health Science Center in Memphis. Little did they know that Nate would soon match into the same medical residency—a four-year combined program in internal medicine and pediatrics. Nate and Anna Joy plan to continue pursuing their international interests through UTHSC's medical programs abroad.

Fostering Fulfillment

Learning Communities Enhance Educational Excellence with Interpersonal Support

By Jessica Dean

“In medical school you have to decide who you are as a person and as a future physician. This can be a transformative time for our students, and we want them to walk through this journey surrounded by others who will help them reflect on who they are and where they fit in medicine.”

So says **Laura B. Kezar**, M.D., professor of physical medicine and rehabilitation and associate dean for students at the School of Medicine. She continues, “Simply surviving medical school is unacceptable—we want our students to thrive here.”

Learning communities are a concept the school has adopted to help guide and nurture students through what is often the most difficult and challenging experience of their lives. Launched in 2011 and now in place at all four School of Medicine campuses, these small, faculty-mentored student groups serve as students’ emotional, social, and intellectual homes during their medical school training. Each learning community bears the name of a current or former School of Medicine faculty member: the Birmingham campus, for example, is home to Kirklin and Pittman Communities, among others, while the Huntsville campus is home to the Harrison and Carter Communities.

Classroom and clinical experiences have always been bulwarks of the school’s innovative curriculum; learning communities add a key educational and interpersonal support layer to the medical school experience. The entering class of 2014 was composed of 186 students from diverse backgrounds, and learning communities helped orient these students to the medical school environment. Learning communities include students from each year of medical school, giving first-year students the opportunity to interact and learn from those in their second, third, and fourth years. Networking with peers and faculty mentors provides students with real-world insight about their classes, clinical rotations, and research opportunities.

Learning communities also allow students to explore cross-cutting themes such as ethics, study skills, clinical reasoning, and leadership in small groups, maximizing each student’s opportunity to learn what it takes to become a successful, highly-skilled, and well-rounded physician. “One of the things we know from adult learning theory is that we learn better when we are more activated to learn,” says **H. Hughes Evans**, M.D., Ph.D., senior associate dean for medical education. “A lecture hall, while it’s a very effi-

cient way to deliver information, is just that—efficient. It’s not necessarily ensuring that the learner is getting the information, is incorporating it, and knows how to use it. But if you are in a smaller group you have to work with the information, you have to confront the questions you have about it.”

Anecdotal evidence indicates that students have responded well to the learning communities initiative. “Learning communities are a great asset to medical students by serving as a forum for expanding communication and impact,” says second-year medical student **Kelsey Real**. “They provide time for small group mentorship with faculty members and allow us to learn about life as medical students outside of the classroom. The small group atmosphere makes a large school feel smaller and more personal. Participation by our peers really highlights the importance of our learning community.”

Learning communities also foster student success by providing tools and techniques to manage the emotional and psychological challenges of medical school. Social gatherings, good-natured sports competitions, and service projects offer students a healthy outlet to relieve stress, build lasting connections, and serve the community. The nurturing environment also allows faculty mentors to observe students outside the classroom, so that any students who may need additional resources can be helped quickly and appropriately.

“It’s a community that’s there when you want it, and when you need it,” says **Jason P. Noah**, M.Ed., program director for student success. “Life happens when students are in medical school, and it’s important that our students are surrounded by a community that can support them through the good times and the tough ones.”



Kelsey Real

Turn to page 30 to read about a family that is supporting the learning communities initiative with a naming gift.

Match Day 2015

The 2015 graduating class of the School of Medicine celebrated Match Day on March 20 at the Alabama Theatre in downtown Birmingham with family and friends, as well as plenty of excitement, laughter, and cheers. Match Day, coordinated by the National Resident Matching Program, is when graduating seniors at U.S. medical schools learn where they will conduct their residency training and in which field. This year's was the largest match in history, with more than 41,000 applicants from U.S. medical schools, international medical schools, and osteopathic schools competing for 30,212 residency positions.



CLASS OF 2015 MATCH RESULTS BY SPECIALTY

Count	Residency Type
33	Internal Medicine
22	Pediatrics
18	Family Medicine
16	Emergency Medicine
15	Obstetrics/Gynecology
15	Transitional
10	Surgery
7	Preliminary Medicine
5	Orthopaedic Surgery
5	Preliminary Surgery
4	Anesthesiology
4	Medicine-Pediatrics
4	Pathology
4	Psychiatry
3	Neurology
3	Oral & Maxillofacial Surgery
2	Child Neurology
2	Diagnostic Radiology
2	Plastic Surgery (Integrated)
1	Medicine-Emergency Medicine
1	Medicine-Psychiatry
1	Neurological Surgery
1	Otolaryngology
1	Physical Medicine & Rehabilitation
1	Primary/Preliminary Medicine

SNAPSHOTS OF MATCH DAY 2015



UAB GRADUATING CLASS OF 2015

student rounds ●

180



students in the Class of 2015 matched

for a match rate of



97%

School of Medicine students

will pursue residencies at

78 institutions in 34



states across the nation

76%

of students are staying in the Southern U.S. for training

34% of those are staying in Alabama

INCOMING RESIDENCY MATCHES

203 out of 210

residency positions at UAB were matched



25% of incoming matches

are UAB graduates

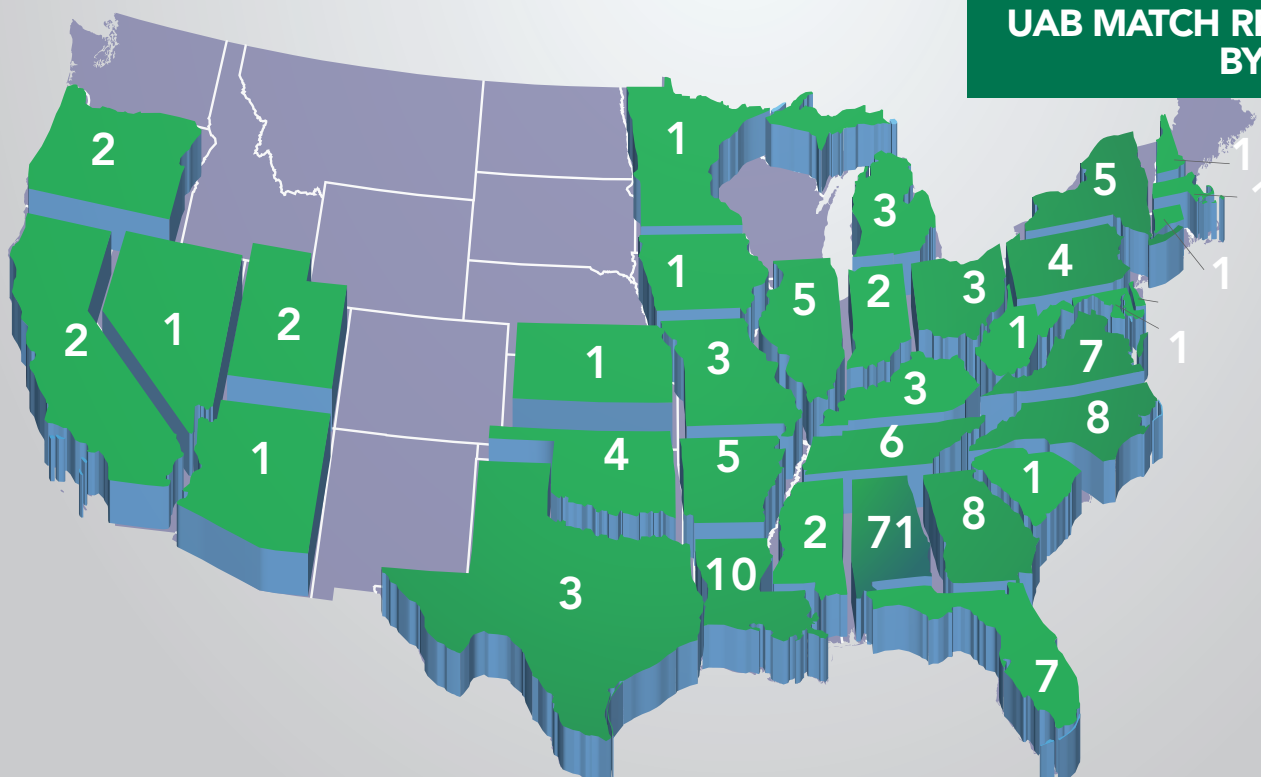
Among incoming residents,

63% are male



37% are female

UAB MATCH RESULTS BY STATE



State of Health

TUSCALOOSA

Providing Asthma Education via Telemedicine



Karen Burgess communicates with a student via telecommunication technology.

The University of Alabama College of Community Health Sciences (CCHS) has launched a school-based asthma education program in DeKalb County. The program is being conducted via telemedicine by **Karen Burgess, M.D.**, associate professor and chair of the Department of Pediatrics at CCHS, and Beth Smith, a nurse practitioner in the Pediatrics Clinic at University Medical Center, which the college operates.

Once a week for four weeks, a group of students at Ruhama Junior High School in Fort Payne along with their parents, school staff, and administrators, learn about asthma symptoms, medications, and treatments. After a group has completed four sessions, another group of students starts the program. Altogether, 44 individuals have been taken part in the program, and it continues to grow.

According to the U.S. Centers for Disease Control and Prevention, an estimated 137,091 children in Alabama had asthma in 2007, a prevalence rate of 12.3 percent, which compares to the U.S. rate of 9 percent. In addition to telecommunication technology, the program provided 15 asthma spacers (add-on devices for inhalers that allow for easier and more effective administration of medication) for students who otherwise might not have access to this type of equipment. Burgess says parents have also reported improved symptoms in their children.

Burgess says the informal classroom is helpful in engaging the students. "We provide asthma education every day in the clinic, and we never have kids ask questions the way they do in the classroom," Burgess says.

CCHS has provided health care services via telemedicine for a number of years, including telepsychiatry services to DeKalb County Youth Services and West Alabama Mental Health Care Center, with sites in Marengo, Choctaw, Greene, Hale, and Sumter counties; and diabetes education via telemedicine to several rural Alabama communities.

— Brett Jaillet



MONTGOMERY

Welcome to Montgomery

Members of the Classes of 2017 and 2018 assigned to the UAB Montgomery Regional Medical Campus participated in a day of information and entertainment on February 7. Students toured new developments in downtown Montgomery and the Riverwalk and met with members of the administration, clerkship directors, and current Montgomery students to ask questions ranging from where to live to what to expect from faculty on various clinical blocks. Students were then transported to the historic Cloverdale District for an outdoor lunch.

Kenamer Distinguished Lecture



Edward Partridge

Edward E. Partridge, M.D., director of the UAB Comprehensive Cancer Center and the Evalina B. Spencer Endowed Chair in Oncology, presented the 2015 S. Rexford Kenamer Distinguished Lecture at the Montgomery campus on March 19. Partridge's presentation, "Our Failure to Deliver and What We Can Do About

It," explored the reasons for unnecessary cancer deaths in Alabama because of failures in early detection and prevention. He discussed how incorporating community-trained volunteers into the health care team has been proven to increase the early detection of cancer in minorities in the Black Belt of Alabama. Additionally, these volunteers improve access to high-quality, cost-effective care for cancer patients in this population.

New Pediatrics Clerkship Director

Melissa S. McNally, M.D., has been named clerkship director for pediatrics at the Montgomery campus. A native of Fort Myers, Fla., McNally received a bachelor of science degree in biology from Emory University and served as a postgraduate fellow at the Centers for Disease Control in Atlanta. She earned her medical degree from the University of Florida College of Medicine, where she also completed her residency in pediatrics. She has been in practice with Partners in Pediatrics since 2012 and a UAB faculty member since 2014.



Melissa McNally



SELMA

Procedures Workshop Hones Skills

As part of orientation to the Montgomery Regional Medical Campus, rising third-year students assigned to the Montgomery campus participated in a procedures workshop in late April sponsored by the UAB Selma Family Medicine Residency Program. Since its inception in 2006, more than 370 medical students—193 from UAB—have attended the workshop. The workshop was instituted by the Selma program to address a recognized gap in students' procedure-oriented development during the transition from the second to third years of medical school. It also serves as an important exposure to primary care in rural and smaller towns.

According to **Boyd L. Bailey Jr., M.D.**, professor of family medicine and residency program director in Selma, the workshop is resident driven, providing opportunities for the family medicine house staff to acquire teaching skills. Upper level residents are assigned a specific procedure approximately two weeks prior to the workshop, during which time they research and prepare for the arrival of the students. The residents give a brief presentation to UAB Selma faculty for feedback and suggestions for improvement, and faculty supervise the workshop sessions.

During this year's workshop, students were taught simple suturing techniques utilizing synthetic skin. Using high-quality manikins, students also participated in airway management and intubation, insertion of central venous catheters, injection of joints, and the performance of lumbar punctures. There was also a session dedicated to sports medicine during which students learned about the role of the physician on the sideline at sporting events, providing care for head and neck injuries, concussions, and sprains.

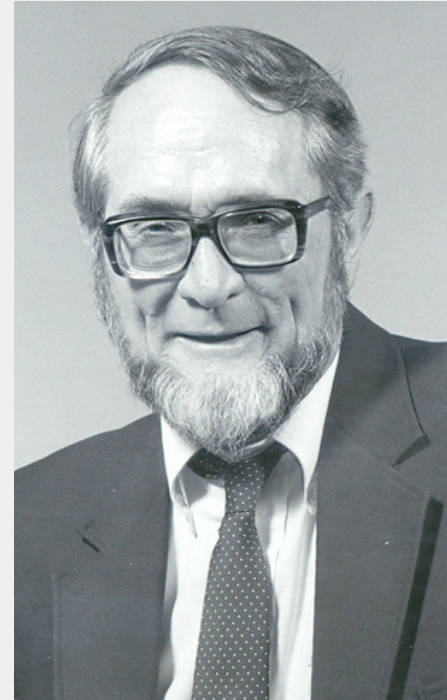
HUNTSVILLE

The Passing of an Icon

Donald V. McCalister

Sr., Ph.D., retired director of medical student affairs at the Huntsville Regional Medical Campus, passed away on May 7, 2015 after a long illness. He was 80.

McCalister was an integral part of establishing the Huntsville regional campus, serving first as its coordinator of program development and assistant to the dean for curriculum development before being named director of the Office of Medical Student Affairs, a position he held from 1975 until his retirement in 1994.



Donald McCalister

A California native, McCalister earned his doctorate in sociology from the University of Tennessee, Knoxville. His academic career took him to North Carolina State, Tulane, and Case Western Reserve University before he joined the University of Alabama Huntsville and its School of Primary Medical Care.

"Don was a great man to work with," says **Roland P. Ficken, Ph.D.**, former dean of the Tuscaloosa Regional Campus. "We got to know each other in our years working together, and you couldn't find a better student advocate than Don. He dedicated 20 years to guiding medical students through their time in Huntsville and beyond."

"Dr. McCalister impacted and inspired a generation of medical students at the Huntsville campus. He was always available, always had a kind word, and even though we were just third and fourth-year medical students, he made us feel important," says **G. Wright Bates, M.D.**, director of the Division of Reproductive Endocrinology and Infertility in the UAB Department of Obstetrics and Gynecology, who completed his medical school training on the Huntsville campus with guidance from McCalister. "He stressed not only being the best we could be in our academics but also in our lives outside the hospital and medicine."

A Legacy of Giving

Gifts from Gunavant N. Shah, M.D., Support Programs That Touched His Life

By Jane Longshore

The School of Medicine and UAB have played a remarkable role in the life of retired Birmingham OB/GYN Gunavant N. Shah, M.D. So, in the winter of 2014, while reading about the generosity of another physician who established a scholarship in the School of Medicine, he was inspired to make gifts of his own totaling more than \$2.6 million.



Shah was born in Bangalore, India, and earned his medical degree there before moving to New York City to complete his residency. After residency, he and his late wife, Gunvanti Shah, moved to Birmingham where he established an obstetrics and gynecology practice at Medical Center East that continued for more than 30 years.

Shah's initial gift of \$101,200 established the Dr. Gunavant N. Shah, Mrs. Gunvanti G. Shah, and Dr. Parul Shah Nguyen Endowed Medical Scholarship in honor of his late wife. A portion of the gift was set aside for a current-use scholarship award in academic year 2014/2015. Third-year medical student **Sarah Jenkins**, Ph.D., of Cartersville, Ga., was the inaugural recipient of the Shah scholarship.

Like her husband, Gunvanti Shah was born in India and earned a medical degree before coming to the United States, where she studied cytotechnology at Cornell University. After moving to Birmingham, Mrs. Shah joined the staff at UAB in 1974 and attained the position of director of the cytotechnology program in the School of Health Professions. She served in that role until her retirement in 2000 and, even after retirement, continued to volunteer at UAB.

Shah feels that an endowed medical scholarship, which will live on in perpetuity, is the perfect way to honor his wife's legacy and to demonstrate the couple's philanthropic philosophy. "I believe it is my duty to help the next generation, and I think the best gift one can give is the gift of education," says Shah. "Education gives one the tools to overcome any obstacle."

After a campus visit in summer 2014, Shah

decided to make an additional planned gift of \$2.5 million through a retirement asset to support the programs and people at UAB that directly affected his life.

The Shahs' daughter, Parul Shah Nguyen, M.D., met her husband while both were in medical school at UAB. After earning her medical degree in 1998, Nguyen followed in her father's footsteps and completed a residency in obstetrics and gynecology at UAB. She and her husband, Giang Dai Nguyen, M.D., practice medicine in Kansas.

In recognition of the training his daughter received, Shah designated a portion of his planned gift to the principal of his scholarship and another portion to support current-use educational and training needs for obstetrics and gynecologic care.

There is yet another profound tie between Shah and the School of Medicine—in the mid-1990s, he received a kidney transplant, performed by former Chair of the Department of Surgery **Arnold G. Diethelm**, M.D. In recognition of the transplant, as well as the excellent follow-up care he received from **Robert S. Gaston**, M.D., the Robert G. Luke Endowed Chair in Transplant Nephrology and director of the UAB Comprehensive Transplant Institute, and **Vineeta Kumar**, M.D., associate professor of medicine and medical director of the UAB Incompatible Kidney Transplant Program, Shah directed part of his planned



Above, clockwise from top left: Giang Nguyen, Parul Shah Nguyen, Gunavant Shah, Vikram Nguyen, and Preya Nguyen. Left: Gunvanti and Gunavant Shah.

gift to create the Dr. Gunavant N. Shah, Mrs. Gunvanti G. Shah, and Dr. Parul Shah Nguyen Endowed Support Fund in Organ Transplantation. The fund will support various components of the transplant programs, particularly organ transplantation training.

"Dr. Shah is now a 25-year beneficiary of a successful transplant. We are humbled that he has reaffirmed the family's ongoing commitment to medical education through a generous gift to UAB's Comprehensive Transplant Institute," says Gaston. "The Shah family has guaranteed that UAB will have the resources necessary to educate the next generation of transplantation researchers and clinicians."

"We are honored that the School of Medicine played such a prominent role in the Shah family's life, and are deeply grateful for the philanthropic commitment Dr. Shah has made to our programs," says **Selwyn M. Vickers**, M.D., FACS, senior vice president for medicine and dean of the School of Medicine. "Dr. Shah's life and career serve as an example of the impact a compassionate and skilled physician, and a generous and principled man, can have on his community."



Support Faculty



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Education Across All
Programs



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Research



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Strengthen
Residency and
Fellowship Training

More Mission, More Medicine

Alumni Campaign Kicks Off

By Jane Longshore

ALUMNI CAMPAIGN GOAL

\$30,000,000

The 42nd Annual Alumni Weekend this spring featured the kickoff reception for the landmark School of Medicine Alumni Campaign. **Selwyn M. Vickers, M.D., FACS**, senior vice president for medicine and dean of the School of Medicine, announced the largest goal for alumni giving in the school's history: \$30 million. The effort is part of the \$1 billion Campaign for UAB, which began in October 2008 and ends in September 2018. "A billion dollars is a lot of money, but it is also a lot of mission, which is why this campaign is so important to our school, our university, our city, state, and region," Vickers told the assembled crowd of alumni.

As ambitious as the Alumni Campaign goal is, so too are Vickers' aspirations for what can be accomplished with those funds:

- More scholarships for deserving students, recognizing both financial need and academic merit
- A greater ability to recruit a student body who reflects the communities they will serve—urban, rural, black, white, Asian, Hispanic—and who will provide both primary and specialty care
- Resources to ensure that house staff and fellows get every opportunity to hone their skills and their professionalism
- Continuing the tradition of excellent teaching by enabling the School of Medicine to recruit, retain, and reward those professors who will be remembered as legends by each successive generation

- Enhancing education across every program and platform, including increased simulation and interprofessional learning opportunities; expanded classrooms and labs; support for the Learning Communities initiative; and investment in service opportunities that feed students' spirit while giving them real-world, hands-on exposure to what it means to care for people.

The effort is already more than halfway complete—since October 2008, School of Medicine alumni have contributed nearly \$20 million toward the overall goal. Two-thirds of those funds were directed by alumni to the School of Medicine; the balance was directed by donors to other UAB programs for which they feel a passion.

Retired physician **Waid Shelton, M.D.**, is a '76 internal medicine residency and '78 pulmonary and critical care medicine fellowship alumnus. Shelton and his wife, Barbara, made a gift to establish the Shelton Endowed Medical Scholarship. "I received scholarship support when I was in medical school," he says. "We are fully aware of the difficulties of being a medical student today. We feel if we can lift a bit of stress off of students, it will allow them to express themselves more fully in medical school and beyond."

Watch the Alumni Campaign video
on UAB Medicine's iPad app.

More information: **Virginia Gilbert Loftin**
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Honoring a Mentor

Endowed Professorship in Infectious Diseases Established

Thanks to the overwhelming support of more than 200 contributors, the **C. Glenn Cobbs, M.D.**, Endowed Professorship in Infectious Diseases has been established. Now professor emeritus in the Division of Infectious Diseases, Cobbs is an esteemed physician-educator who has trained and mentored more than 40 fellows, the majority of whom have pursued careers in academic medicine and many of whom are considered international leaders in the field.

"Funding the Cobbs Endowed Professorship was a group effort on the part of the faculty of the Division of Infectious Diseases, others in the UAB community, and friends and colleagues from outside the university," says **Edward W. Hook III, M.D.**, director of the Division of Infectious Diseases and the inaugural holder of the professorship. "The effort was led by several division faculty as well as Dr. Cobbs' friends Hobart A. McWhorter Jr., Francis H. Crockard Jr., and Dr. George W. Matthews Jr. This sort of broad support is representative of the respect and appreciation that Dr. Cobbs has generated within UAB and throughout Birmingham."

The ultimate goal of the fund is to endow a chair in Cobbs' name, so gifts to the fund are still welcome.

More information: **Mallie Hale**
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C. Glenn Cobbs

Rooted in Giving

Heersink Family Supports UAB Learning Communities

By Jessica Dean

The Heersink family of Dothan, Ala., recently made a generous gift to establish the School of Medicine Heersink Family Learning Community for the 2015-2016 academic year. The Heersink Family Learning Community is one of 11 learning communities at School of Medicine campuses in Birmingham, Huntsville, Tuscaloosa, and Montgomery. These faculty-mentored student groups are designed to enhance the medical school experience by adding an element of interpersonal support (read more about learning communities on page 23).

“By supporting a learning community, my family is able to make an impact not only on the daily lives of medical students, but we can also support the faculty members who are giving their time to serve as mentors,” says Marnix E. Heersink, M.D.

Each learning community includes students from each year of medical school, providing opportunities for first-year students to learn from second, third, and fourth years. The Heersinks’



Marnix Heersink (back row center) with his wife Mary (front row right) and their children.

gift strengthens the School of Medicine’s efforts to connect diverse groups of medical students in small communities and to create a supportive environment for students to develop lasting relationships with faculty and peers.

“Being in a learning community is an amazing opportunity,” says third-year medical student **Timothy Fernandez**. “We work on managing stress and encouraging healthy habits, and we deal with topics that are not addressed during standard lectures.”

Heersink is a cataract and laser refractive surgeon in Dothan, where he has lived for more than 40 years with his wife Mary and their six children. Supporting the School of Medicine is

a family affair for the Heersinks. “We have five children who are doctors, or soon-to-be-doctors, and one dentist,” says Heersink. “We have strong connections to UAB since this is where five of our six children attended medical or dental school.”

“In the future of medicine, I believe we will learn that interconnectivity is crucial to a complete education,” says Heersink. “As medical schools evolve, providing nurturing, stable communities that allow students to develop strong interpersonal relationships will become increasingly important.”

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Taking on Brain Cancer

One Family’s Fight Inspires Others to Get Involved

By Jessica Dean

In July 2012, Austin Brown was diagnosed with a low-grade astrocytoma, a tumor located in the left occipital lobe of his brain, which can be very aggressive and difficult to treat. He immediately began treatment under the care of **L. Burt Nabors**, M.D., professor in the Department of Neurology and neuro-oncology leader at the UAB Comprehensive

Cancer Center. Austin’s treatment was successful and his tumor has not grown or spread, but his diagnosis prompted his wife, Mary-Margaret Brown, to join the Comprehensive Cancer Center Young Supporters Board and to take an extra step in fighting brain cancer.

“Brain cancer receives less than

one percent of national funding given toward cancer research—that has to change,” Mary-Margaret says. In January 2014 she organized the first Neuro-oncology Acceleration Initiative Dinner at the home of her in-laws, Janie and David Brown, in Birmingham. Nabors and **Edward E. Partridge**, M.D., the Evalina B. Spencer Chair in Oncology and director of the UAB Comprehensive Cancer Center, spoke at the event. “The brain is essential to defining everything there is about us as individuals. There is no other organ that determines our quality of life and our satisfaction with life as does our brain,” says Nabors.

“I think the small groups setting really made all of the difference because of the one-on-one interaction guests had with both physicians, allowing them to ask questions they felt were important,” Mary-Margaret says. The dinner was such a success that she planned two additional fundraising dinners, one in Mobile, Ala., at her grandmother’s home in August, and another that same week in Point Clear that attracted more than 100 guests.

“In one year we have raised over \$1 million, but my main objective continues to be spreading awareness of brain cancer in our community and raising funds for specific research projects that will be overseen by Dr. Nabors,” Mary-Margaret says. “I have been told many times that brain cancer is a disease that has no winners—I want to motivate others to help change that.”

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205-934-0930 • cthomason@uab.edu



Austin and Mary-Margaret Brown (left) with Janie and David Brown (center) and L. Burt Nabors and Edward Partridge of UAB (right).

Honoring Excellence

New Award Recognizes Professionalism Among Faculty

By Jane Longshore

Former Alabama Governor Albert P. Brewer has established an endowed fund to support an award at the School of Medicine recognizing faculty physicians who exemplify the highest ideals of professionalism. Brewer was inspired to make the gift by the professionalism he observed in **Martin J. Heslin**, M.D., the James P. Hayes Endowed Professor of Gastrointestinal Oncology, associate director for clinical programs of the UAB Comprehensive Cancer Center, and chief of the medical staff of UAB Health System.

Heslin has been named the inaugural recipient of the Brewer-Heslin Endowed Award for Professionalism in Medicine, which will officially be presented at the White Coat Ceremony in August. The award will be presented annually to a full-time faculty member. Selection will be based on qualities that Brewer believes are central to professionalism, including dedication to providing highly skilled and compassionate medical care to patients, and supporting access to care for all people; honesty and integrity in all matters; respect for all members of the health care team, including the patient and his or her family; and dedica-

tion to lifelong learning through the pursuit of new knowledge, and to sharing that knowledge with physicians in training as well as patients and the public.

Then-Lieutenant Governor Albert Brewer assumed the governorship in May 1968 upon the death of Governor Lurleen Wallace. Among his many achievements during his term as governor, Brewer issued an executive order to establish Alabama's first code of ethics for state employees, fought to eliminate waste and improve efficiency in the state government, and formed a commission to revise Alabama's 1901 state constitution. He was also a passionate advocate for reforming Alabama's public education system. To date, he is the only governor in Alabama history to have held the offices of speaker, lieutenant governor, and governor in succession. He returned to private practice after leaving the governor's office and later served as distinguished professor of law and government at Samford University's Cumberland School of Law, where he is currently professor emeritus.

"One of the courses I taught at the Cumberland School of Law was in professional



Governor Albert Brewer and Marty Heslin

responsibility," Brewer says. "Dr. Heslin was a surgeon of mine some years ago and I was impressed with his professionalism, not only with his competence and his relationship with me as his patient, but also with his interactions with the nurses and orderlies as well as his residents and colleagues."

According to Heslin, "It is a great honor to be recognized by Governor Brewer, and that he felt moved to create this award after the care he received at UAB. By all standards the Governor is a rare individual who has epitomized professionalism his entire career. I am very grateful to him for such a positive gesture to be given to the UAB School of Medicine, and quite humbled to be the first recipient."

Legacies of Hope

Donors Support UAB Programs in Memory of Loved Ones

By Jessica Dean

Mrs. Mayte M. Coghlan made a significant gift to support the **H. Cecil Coghlan**, M.D., Endowed Support Fund in Cardiovascular Medicine in memory of her husband, who was renowned at the School of Medicine as a highly skilled clinician and a master teacher. The gift will support the Division of Cardiovascular Disease's efforts to recruit and retain world-class physician-scientists. "Dr. Coghlan was the kindest, most patient, and most compassionate physician that I have ever met," says **Robert C. Bourge**, M.D., the E. A. and Abbie Drummond Endowed Chair in Cardiovascular Medicine. "He was a great bedside teacher and role model for many generations of physicians at UAB."

Susan Snook Holt, a UAB librarian from 1977 to 2007, has made a generous planned gift to grow the John Isaac Samuel Holt Endowed Memorial Scholarship. She and the late Verdie Marshbanks Holt established the scholarship in 2006 to honor her son John, who had been accepted to the School of Medicine and was on his way to fulfilling his dream of becoming a physician when a tragic accident took his life at the age of 23. The scholarship, which has supported 17 medical students, "is a reminder that his name is living on in the students who receive the scholarship, and he is doing some good even though he is no longer with us," says Holt.



Above: H. Cecil and Mayte Coghlan. Below: Susan Snook Holt.

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To preserve assets during your lifetime, plan a gift that will take effect only after your other obligations are fulfilled.

2. Gifts from a Retirement Plan

Make a gift of assets that are subject to double taxation, leaving more to your family.

3. Gifts of Life Insurance

Make a significant gift to the School of Medicine even if you don't have a large estate through gifts of life insurance.

For more information on planned giving, contact Virginia Gilbert Loftin at 205-975-5602 or vgloftin@uab.edu, or visit www.uab.edu/give/campaign/planned-giving

Connecting Alumni



Reunion Roundup

Friends and Colleagues Celebrate Alumni Weekend

By Jane Longshore

More than 400 medical alumni gathered to celebrate Alumni Weekend this March, with events taking place at the School of Medicine and the Birmingham Marriott.

Two new events were added to the Alumni Weekend schedule: a kickoff reception for the Alumni Campaign (learn more on page 29) and Mini-Medical School. According to Medical Alumni Association Executive Director Meredith Burns, Mini-Medical School was created to give alumni a taste of what medical school is like for today's students. "Medical school has changed so much in the last 20 or 30 years—even in the last 10 years," she says. "We wanted to give our alumni the chance to see what has changed since their days in training, and what has remained the same."

More than 25 alumni from various reunion years gathered for Mini-Medical School at Volker Hall on the UAB campus on the morning of Friday, March 6. Following a welcome by **Selwyn M. Vickers, M.D., FACS**, senior vice president for medicine and dean of the School of Medicine, and **H. Hughes Evans, M.D., Ph.D.**, senior associate dean for medical education, they listened to a series of short presentations by medical education and student affairs leadership.

Topics included an overview of the admissions process by **Nathan B. Smith, M.D.**, assistant dean for admissions, and **Hadyn K. Swecker, Ph.D.**, director of admissions; current curriculum and team-based learning by **Craig J. Hoesley, M.D.**, associate dean for undergraduate medical education; and the student experience with

Jason P. Noah, M.Ed., program manager for student success. The presentations were followed by a Q&A session with a panel of medical students—MS1 **Adam Beg**, MS2 **Rebecca Duron**, and MS2 **Alexus Perry**—during which participants asked students about their perspective on the medical school experience.

Following the presentations, participants were taken to the simulation area of Volker Hall where they joined a group of medical and nursing students to take part in active simulation learning exercises with standardized patients and manikins. They also got to try out some of the new ultrasound technologies that enhance contemporary medical school training, and learned about the school's newly developed learning communities from students who take part in them (read more about learning communities on page 23).

"Attending the Mini-Medical School program gave me more insight into how the medical school application process has changed," says **Jorge A. Alsip, M.D. '85, M.B.A., FACEP**, chief medical information officer for UAB Health System. "While the average MCAT and GPA has not changed that much, the emphasis on volunteerism,

This page: attendees at the Alumni Campaign Kickoff Reception and reunion dinners enjoyed refreshments while catching up with old friends.

Watch a tutorial of Anatomy.TV, an Internet-based educational resource used by today's medical students, on UAB Medicine's iPad app.



Top row, left to right: Wayne Finley was honored for his and his family's gifts to the School of Medicine; incoming MAA President Pink Folmar with outgoing President Norman McGowin; reunion classes gathered for pictures. Bottom row: Mini-Medical School participants joined medical and nursing students for simulation learning exercises.

research, and shadowing is much greater now.”

Many of the curriculum changes discussed in the presentations also impressed Alsip. “Providing clinical exposure early in the first year and the reorganization of the curriculum around organ systems are changes my class would have loved,” he says. “Along with the clinical simulation lab, these changes should better prepare our medical students for their third- and fourth-year rotations.”

Luncheons, Lectures, and Learning

This year, thanks to a generous gift from the family of **Wayne H. Finley**, M.D. '60, Ph.D., the Reynolds Historical Lecture was renamed the Reynolds-Finley Historical Lecture. Bert Hansen, Ph.D., professor of history at Baruch College, City University of New York, presented “Louis Pasteur and the Pleasures of Art,” which traced the artistic threads running from Louis Pasteur's childhood through his landmark scientific and medical discoveries until his death in 1895. The UAB Reynolds-Finley Historical Library, also newly renamed thanks to the Finley family, houses a unique treasure—a handwritten copy of Pasteur's revolutionary book, *Studies on Wine*, which features paintings by a leading illustrator of the time who worked in his laboratory.

This year's Constance S. and James A. Pittman Lecture lecture featured **George H. Karam**, M.D., chief resident in internal medicine in 1981, now head of the internal medicine department at the LSU Health Sciences Center in Baton Rouge, La., presenting “Principles of Medicine as Taught by Dr. **Tinsley Harrison**.” Karam is the co-creator of the Legacy Endowed Support Fund for the Tinsley Harrison Internal Medicine Residency Program in the UAB Department of Medicine.

As a member of the American Board of Internal Medicine, Karam sees a growing emphasis on what has been called the “mechanics of care.” His presentation explored the example that Harrison set for medical education and how it can provide a roadmap for the future of departments of medicine. “As I reflected on all that I had learned about Tinsley Harrison, I thought we should try to ensure that future generations understand the multiple layers of influence that he left,” Karam says.

This year's scientific program featured experts from the School of Medicine discussing the role of metabolic syndrome in a wide range of diseases, from depression to diabetes, cancer, cardiovascular risk, and stroke, as well as the impact of exercise medicine on metabolic syndrome and metabolic syndrome from the pediatric perspective.

Breaking Barriers

Carl E. Dukes, M.D. | Alumni Profile

By Jo Lynn Curry

Nephrologist Carl E. Dukes, M.D., the first African-American internal medicine chief resident at UAB, came of age during the civil rights movement of the 1960s and was deeply influenced by the events of the time.

Born in 1949 in Chicago, Carl Dukes moved with his family to Atlanta when he was 11. “My family lived close to Atlanta University, which included Morehouse College and Spelman College, the premier educational institutions for African-Americans,” Dukes says. “As a result, I was exposed to professors of mathematics, music, literature, and physics—basically the black intelligentsia. These were men and women who had received doctorates from top-tier universities like Harvard, MIT, and Berkeley. This exposure really reinforced my sense of confidence and purpose, so I never really thought of myself as being intellectually or culturally inferior.”

Dukes says his worldview evolved dramatically in his early teens when he and his family began attending Atlanta’s Ebenezer Baptist Church, where the Rev. Martin Luther King Jr. was the co-pastor with his father, Martin Luther King Sr. “I was 13, and I had the privilege of coming under the influence of the entire King family, including Dr. King. So I was just imbued with all of the philosophy that shaped the events of that time.”

A Return to Regional Roots

After graduating from a segregated Atlanta high school in 1967, Dukes was accepted to Cornell University in Ithaca, N.Y., where he studied theoretical mathematics and took pre-med classes. In 1971, he was invited to attend the University of Rochester’s School of Medicine and Dentistry. “That was an interesting experience, coming from the South,” he says. “Rochester was so covertly racist, I really couldn’t deal with it. People can say what they want about the South, but you don’t have to play games as much. They either like you or they don’t and then you move on from there.”

In an interesting twist of fate, it was at Rochester that Dukes learned of a medical opportunity that would bring him full circle back to his Southern roots. “My chief of medicine, Dr. William Morgan, was really excited about what he described as a fantastic clinical program that was under the tutelage of one of his dear friends, Dr. **Thomas N. James**. You can imagine my surprise when he told me the program was located in Birmingham, Alabama, at UAB. After all, I had spent the past eight years trying to get north of the Mason-Dixon line.”



Carl Dukes visiting with UAB internal medicine residents in November 2014.

The decision to come to UAB and be a member of the staff was “the best move I ever made,” Dukes says. “It was a beautiful experience, and I learned so much. The clinical program was so strong and they trained you so well.” He completed an internship in internal medicine in 1976 and an internal medicine residency in 1979.

Mentors like **Thomas E. Andreoli, M.D.**, **Stephen G. Rostand, M.D.**, and **Edwin A. Rutsky, M.D.**, who headed the nephrology program at UAB, convinced Dukes to specialize in the field. He recalls meeting Andreoli in “a very unflattering situation.”

“I was an intern and not paying as close attention as I should have, which resulted in some electrolyte problems for a patient. Nothing life-threatening, but I was told that Dr. Andreoli would have to be consulted. Now this was like a train coming; his reputation preceded him. Except that I was still so ignorant and naive that I didn’t even know I was in trouble.

“When Dr. Andreoli made his rounds, he asked, ‘Do you have any idea what’s going on?’ I said, ‘I don’t, sir, because if I knew, I probably wouldn’t have done that.’ At that, my resident, who was standing behind him, gives me a look like ‘you have just killed yourself.’ Dr. Andreoli looks at me and he chuckles and says, ‘Here is the first honest intern I’ve seen in a long time.’ And he kind of winked at me.”

Dukes points out that, although he arrived at UAB before the advent of highly sophisticated diagnostic equipment, he received superior clinical training. “I am of the Tinsley Harrison school, which means I can actually use my stethoscope,” he says. “I know what a heart sounds like and I can do a physical diagnosis, which is what we had to do then. We didn’t have CAT scans and so on, so we had to be very adept clinicians. And we were fortunate enough to have some of the best to learn from.”

From UAB, Dukes went first to Houston and then to San Antonio, where he now operates a dialysis treatment center. “The training I received at UAB has kept me heads above other clinicians since I’ve been in practice. And my clinic in San Antonio has been very successful. I’ve been very blessed.”

Dukes has translated his gratitude for the training he received into a commitment to help other young physicians, and particularly to advance the School of Medicine’s efforts to train a physician workforce that reflects our increasingly diverse society. He recently made a philanthropic gift to support minority recruitment within UAB’s internal medicine residency program, which will help more promising young physicians gain the skills that have served Dukes so well throughout his career.

Step by Step

James H. Alford Jr., M.D.

Alumni Profile

By Jo Lynn Curry

Cotton was still king when James H. Alford Jr., M.D. '63, was growing up on Sand Mountain in Albertville, Ala. Alford's father made his living buying cotton from local farmers and selling it to the mills. But that wasn't the life young Alford envisioned for himself; he had his sights set on becoming a doctor.

"Growing up, if you wanted to see a doctor, you went to the hospital right in the middle of town," he says. "The doctors did everything, including delivering babies. I was born in the Albertville hospital. I just thought it was an amazing profession."

After graduating from high school, Alford attended the University of Alabama, so applying to the Medical College of Alabama was a logical next step. "It was the only medical school I applied to, so if I hadn't gotten in I don't know what I would have done."

After medical school, Alford did what at that time was called a rotating internship in OB/GYN, surgery, medicine, and pediatrics. "During my two months on obstetrics, I got to deliver some babies, and I just thought, 'Wow, this is what I want to do.'" He says the family aspect of obstetrics is what sold him on the specialty.

Alford was fortunate enough to train during the tenure of such luminaries and mentors as **Tinsley R. Harrison, M.D.**, **Champ Lyons, M.D.**, **James A. Pittman Jr., M.D.**, and **Walter B. Frommeyer, M.D.** "You know, all those people whose portraits today grace the hallways of the Medical Center. I worked for Dr. **Clifton Meador** (the first director in 1962 of the UAB General Clinical Research Center) for six months. He is probably one of the smartest men I've ever known—we still keep in touch."

A Turning Point

After completing his internship and residency at University Hospital in Birmingham, Alford joined an OB/GYN group in Montgomery, Ala., where he practiced for

more than 30 years. It was during this time that Alford confronted his growing dependency on alcohol, which he speaks about candidly as part of a firm commitment to help other medical professionals who might be struggling—secretly and alone—with addiction.

Alford first tried alcohol as a teenager. "I probably only drank two or three more times until I graduated high school, and I drank frequently through college and in medical school—not all of the time, just when we had parties," he says. "I moderated when I went into practice, but I never quit. As I got further along in practice, I drank more often, but never when I was on call. I finally realized I couldn't quit."

In 1988, Alabama initiated an Impaired Physicians Committee to address addiction problems among doctors. "There were two or three local doctors who were alcoholics, and everybody knew it," Alford says. "I mean, I thought, 'I'm not *that* bad.' That's part of our denial—'If I were that bad, I'd get help.' But I probably was."

The Impaired Physicians Committee eventually gave way to the less pejoratively named Physicians Health Program (PHP). It was through this program that Alford got help. "I knew I couldn't stop drinking on my own," he says. "I had tried so many times."

Almost every state now has a PHP. "The primary purpose is to protect the public, but our goal is to help the doctor get into a recovery program and remain free from alcohol and other drugs," Alford says. "Our motto is 'Healthy doctors provide better care.'"

PHP recovery incorporates 12 step programs, according to Alford. "Sobriety and recovery are amazing things," he says. "You become a different person. There are some people who still don't believe the 12 steps work. But I can show you thousands of doctors who are sober because of the 12 steps and because of being in recovery—and I mean long-term. I've been sober for 23 years. And when I accepted the Distinguished Alumnus Award at the Medical Alumni Association Weekend this year, it wasn't because I was the greatest gynecologist or had written books or published articles—it was because I help people to get sober."

"Our Physicians Health Program has a 95 percent recovery rate," Alford says. "We have 95 percent of the doctors who have come through our program still working, still practicing. And they're better doctors, better colleagues, better spouses, better fathers, better people because of being in recovery."



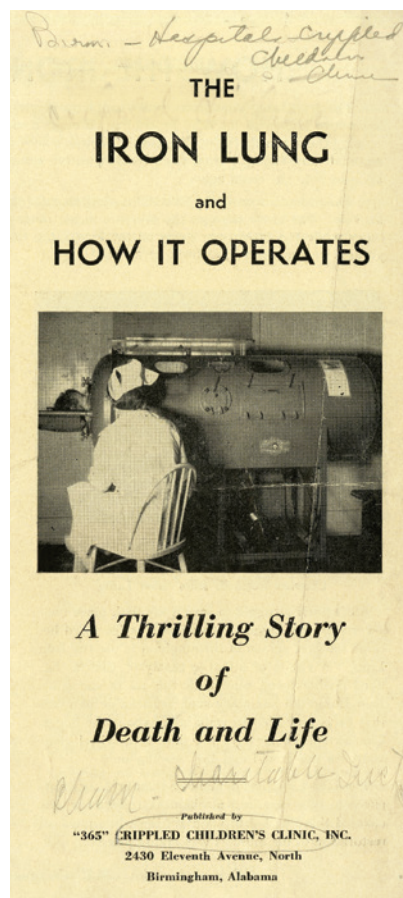
James Alford was presented with the Distinguished Alumnus Award at the 2015 Medical Alumni Weekend in large part for his work helping medical professionals affected by alcohol and drug addiction.

Transmitting Care

Tracing UAB's History of Infectious Disease Programs Through Photographs

By Tim L. Pennycuff • Images courtesy of UAB Archives

UAB Archives is home to a fascinating array of photographs and documents chronicling not only the earliest days of the Division of Infectious Diseases, but also infectious disease management efforts prior to the division's founding in 1957. Presented here is a selection of archival images that demonstrate the School of Medicine's commitment through the years to containing, alleviating, and, when possible, eliminating the threat of infectious diseases in our community.



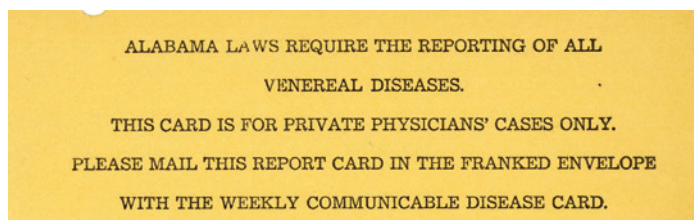
Clockwise from left: Iron lung brochure, circa 1940s; Crippled Children's Clinic and Hospital, 1952; Thomas F. Paine Jr., M.D., the first director of the Division of Infectious Diseases, circa 1958.



Top: University Hospital staff receive training in the use of the iron lung, 1959. The hospital had an entire floor designated for patients with polio. Bottom: UAB employees received inoculations in University Hospital as part of the nationwide swine flu vaccination effort, 1976.



Above: Measles quarantine sign in use in Jefferson County, circa 1940s.



Top: University Hospital's Isolation Unit, circa 1960—it was common for patients with undiagnosed infections to first be admitted into a hospital's isolation ward before being transferred to a patient room. Bottom: State of Alabama venereal disease reporting card, circa 1950. Jefferson County Health Officer George A. Denison, M.D., was a member of the medical school faculty. From 1945 until 1962 he also served as the first chair of the Department of Preventive Medicine and Public Health. This card is in Denison's archival papers.



Nancy E. Dunlap, M.D., Ph.D., M.B.A.
Internal Medicine Residency, 1984
Pulmonary Disease and Critical Care Medicine
Fellowship, 1987
Doctor of Philosophy, Microbiology, 1991



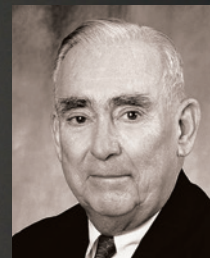
William C. Bailey, M.D.



J. Durwood Bradley, M.D.



Benjamin V. Branscomb, M.D.



Dick C. Briggs, M.D.

WHAT DO *you* WANT TO *change* TODAY?

Dr. Nancy Dunlap wanted to honor the mentors whose invaluable guidance, inspiration, and support she credits with forming the foundation of her success. Her gift to establish the Pulmonary Faculty Development Endowment is helping to provide today's teachers and mentors with career enrichment opportunities, from sponsoring speakers and educational symposia to helping faculty obtain advanced degrees and other continuing education.

"These mentors took the time and interest to teach and inspire the next generation of clinicians and scientists. My gift to the Alumni Campaign is a way to give back to UAB while honoring their commitment."

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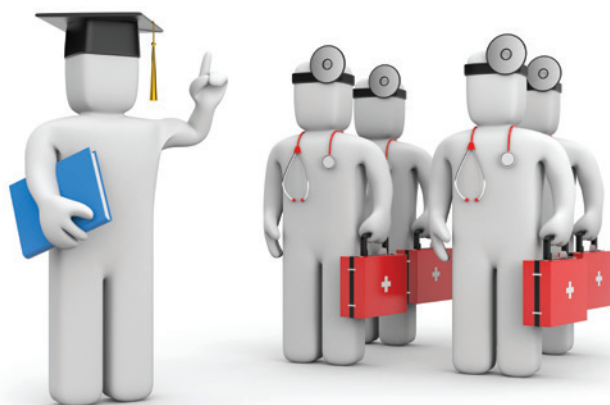
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