



UAB

MEDICINE

A Magazine for Alumni and Friends of the School of Medicine

Volume 38 • Number 2 • Summer 2012

Common CAUSE

UAB Comprehensive
Centers Translate Science
Into Solutions

The Unique Link



(Clockwise from lower left) Senior vice president and dean Ray Watts with Steven Rowe, M.D.; Kevin Kirk, Ph.D.; David Bedwell, Ph.D.; and Eric Sorscher, M.D., who lead components of the recently funded NIH/ UAB CF Research and Translational Core Center.

yielded many breakthroughs. Over the last 30 years, a UAB team of more than 50 basic and translational scientists and physicians has made significant contributions to new CF treatments, particularly drugs targeting an ion channel that is absent or malfunctioning in the lungs and airways of patients, which is the underlying cause of the disease.

Earlier this year, the FDA approved the first drug to treat this ion-channel abnormality. Dr. Steven Rowe led four studies of the drug at UAB. In fact, the first patient in the world to receive the drug was treated at UAB during clinical testing. Dr. Kevin Kirk, the UAHSF Endowed Chair in Biomedical Research, has developed new models of how the ion channel opens and closes, giving us a better understanding of the CF disease mechanism. Dr. David Bedwell in microbiology has developed a novel method of treatment for CF that is related to a genetic mutation. Drugs based on his discovery are in pivotal phase 3 trials now, and they may help patients with other diseases as well.

These are just a few of the success stories that have come out of our CF Center since it was established in 1981, and Dr. Sorscher informs me that our UAB team is on the verge of developing drugs with the potential to cure CF or dramatically improve life span for patients.

That is precisely why we are expanding our formal collaborations across campus. The UAB Comprehensive Cancer Center has made significant advances in research and treatment in its more than 40 years, serving as the model for parallel comprehensive centers in diabetes and neuroscience established in the last decade, and most recently inspiring the creation of comprehensive centers and institutes for cardiovascular disease and organ transplantation in 2011/2012. By putting our best minds together to concentrate on our greatest challenges, and through strategic investments that will accelerate their efforts, we will have a global impact on biomedical research and patient care.

That is powerful, meaningful advancement, not only for the patients who benefit, but also for the comprehensive teams who commit their careers to the pursuit of knowledge that can lead to disease-modifying treatments and cures.

Ray L. Watts

Senior Vice President for Medicine
Dean, School of Medicine
James C. Lee Jr. Endowed Chair

Get monthly updates from Dean Watts at www.uab.edu/deanwatts.

SCHOOL AND STUDENT LEADERSHIP

Senior Vice President and Dean

Ray L. Watts, M.D.

Senior Class President

Rohan Kambeayanda

ALUMNI ASSOCIATION BOARD OF DIRECTORS

President

Gerhard A.W. Boehm, M.D. '71

President-Elect

Norman F. McGowin III, M.D. '80

Secretary/Treasurer

J. Noble Anderson Jr., M.D. '89

Immediate Past President

Theodis Buggs Jr., M.D. '80

District Representatives

Timothy P. Hecker, M.D. '04—1st District

James H. Alford, M.D. '63—2nd District

R. Bob Mullins Jr., M.D. '68—3rd District

Lucian Newman III, M.D. '88—4th District

Kinney Copeland, M.D. '82—5th District

Darlene Traffanstedt, M.D. '01—6th District

Rufus C. Partlow Jr., M.D. '62—7th District

At Large

Jim Argires, M.D. '62

Julia L. Boothe, M.D. '02

Alan R. Dimick, M.D. '58

Pink L. Folmar Jr., M.D. '72

Norman McSwain Jr., M.D. '63

Leon McVay III, M.D. '83

Ex-Officio

John M. Ashurst Jr., M.D. '58

Executive Director

Meredith M. Burns

Assistant Director

Brenda Joseph

Administrative Associate

Laurie Dean

Contact Information

(205) 934-4463 • office@alabamamedicalalumni.org

DEVELOPMENT AND COMMUNITY RELATIONS STAFF

Vice President for Development, Alumni,

and External Relations

Shirley Sailoway Kahn, Ph.D.

Associate Vice President

Thomas I. Brannan

Executive Director of Development and Strategic Planning

Virginia Gilbert Loftin

Comprehensive Cancer Center

Thomas I. Brannan

Virginia Gilbert Loftin

Comprehensive Diabetes Initiative

Erica L. Hollins

Department of Medicine

Virginia Gilbert Loftin

David I. Allen

Department of Neurology/Neurosciences

Thomas I. Brannan

Katherine G. Tully

Department of Ophthalmology/Callahan Eye Hospital

Lindsay M. Knox

Departments of Anesthesiology and Obstetrics and

Gynecology

Kristen Farmer Hall

Departments of Genetics and Psychiatry and Behavioral

Neurobiology

M. Eve Rhea

Department of Surgery

Christopher N. Thomason

Friends and Family Program

Ivy Watson Cardwell

Medical Student Scholarships

Mandi D. Alexander

Minority Health and Health Disparities Research Center

Evelyn S. Jones

Grateful Patient Program

Melinda M. Craven

Prospect Research

Sabrina M. Latham

Planned Giving

Elizabeth Ponder

Contact Information

(205) 934-4469 • vgloftin@uab.edu • tbrannan@uab.edu

UAB MEDICINE STAFF

Executive Editor

Matt Windsor

Managing Editor

Charles Buchanan

Editorial Advisory Board

C. Bruce Alexander, M.D.; Noble Anderson Jr., M.D.; Pam Bounelis,

Ph.D.; Meredith M. Burns; H. Hughes Evans, M.D.; Wayne H. Finley,

M.D.; Forest Huls; Amie B. Jackson, M.D.; Laura B. Kezar, M.D.;

Robert Kimberly, M.D.; Kathleen G. Nelson, M.D.; Arielle Pentes;

Loring W. Rue III, M.D.; Ralph C. Samlowski, M.D.; Sharon A.

Spencer, M.D.; Carlton J. Young, M.D.; Leslie Zganjar

Executive Art Director

Ron Gamble

Art Directors

Laura Hannah, Jessica Huffstutler

Production Manager

Traci Bratton

Writers

Lisa C. Bailey; Charles Buchanan; Susannah Felts; Caperton Gillett;

Elizabeth Hartley; Tara Hulen; Jo Lynn Orr; Tim L. Pennycoff; Joe

Rada; Ralph C. Samlowski, M.D.; Bob Shepard; Gail Short; Matt

Windsor; UAB Media Relations

Photography

Nik Layman, Steve Wood

Multimedia

Charles Buchanan, Laura Hannah

Contact Information

(205) 975-6577 • charlesb@uab.edu

Cover Story

8

Common CAUSE

UAB Comprehensive Centers
Translate Science Into Solutions

Bridging gaps between researchers and clinicians—
and multiple specialties—helps patients benefit from
breakthroughs faster.

[Features]

Growth Factor 14

UAB's Stem Cell Institute branches out
following sickle cell success.

Leader for a New Age 16

Geriatrics pioneer becomes Department of
Medicine chair.

Picking Up the Pieces 16

New schizophrenia clinic emphasizes early
intervention and family support.

Taking Prevention to Heart 17

Meet the latest UAB expert to lead the
American Heart Association.

Time on Their Side 18

A clinical program supports cystic fibrosis
patients as they grow up.

Something in the Air 19

Clean Air Initiative targets diseases related
to air pollution.

Commencement 2012 24

Awards and photos celebrating the
class of 2012

[Departments]

Advancing Medicine 2

A roundup of recent headlines and highlights

Student Rounds 20

Surviving the Step 1 exam, solving global health
challenges, laughing for a good cause, and
looking to the future at Match Day

Tuscaloosa Report 26

New chair champions sports medicine programs.

Huntsville Report 27

Investments in pipeline programs pay off for
primary care and family medicine.

Investing in Innovation 28

Scholarship Dinner • The value of endowed
positions • Featheringill gift for Comprehensive
Cardiovascular Center • Battle support for
autoimmunity study • Volker Hall renovations •
Development Digest

Connecting Alumni 32

Aubrey Terry's giving nature • Path of Honor
• Alumni Profile: Luis Pineda • Young Alumni
Council • Auburn reception • Alumni Profile: Alan
Schooley

From the Archives 36

The Medical Center's contributions to cleaner air
in Birmingham

Medical Record (Inside Back Cover)

Every picture tells a story.



Connect with *UAB Medicine*

[Facebook.com/uabmedicinemag](https://www.facebook.com/uabmedicinemag)

[Twitter.com/uabmedicinemag](https://twitter.com/uabmedicinemag)

Medicine.uab.edu/magazine

© 2012 by the Board of Trustees of the University
of Alabama System for the University of Alabama
at Birmingham

UAB provides equal opportunities in education
and employment.

Advancing Medicine

Among America's Best: Where U.S. News and World Report ranked the School of Medicine in its 2013 edition of "America's Best Graduate Schools":

**#9 AIDS • #12 Primary Care
#12 Rural Medicine • #31 Research**

UAB also ranks first among public universities nationwide in the category of best places to work for postdocs, according to a new survey published by The Scientist. Overall, UAB tied for 16th place.

BRIGHT IDEAS: HDL FOR LUPUS

Just how good is "good cholesterol"? UAB microbiologist Janusz Kabarowski, Ph.D., is studying its ability to help protect lupus patients, winning him a 2012 Novel Research Grant from the Lupus Research Institute and S.L.E. Lupus Foundation—one of only 12 awarded nationwide. "We're investigating whether anti-inflammatory properties of high-density lipoprotein (HDL) known to protect the heart can stem the immune system's assault on other organs as part of autoimmune disease," says Kabarowski. "If so, therapies increasing HDL could be a new treatment approach for lupus nephritis." He and colleagues will measure the severity of lupus, inflammation, and end-stage kidney disease in animal models with normal, high, and deficient levels of HDL as well as a potential drug that mimics the effect of a major protein in HDL.



BRIDGING THE GAP: Collaboration Targets Cancer Disparities

A \$19-million award will help bring the benefits of cancer research to disadvantaged communities while shedding light on the causes of cancer disparities among African Americans. The five-year grant from the National Cancer Institute renews the partnership between UAB's Comprehensive Cancer Center, Morehouse School of Medicine, and Tuskegee University to conduct research, promote cancer awareness and healthy lifestyles, and encourage students to pursue careers in biomedical sciences. "A complex interplay of economic, social, and cultural factors influences cancer disparities, and we are working to understand it and determine methods to solve the problem," says Upender Manne, Ph.D., lead principal investigator and UAB pathology professor.

Girkin Named Ophthalmology Leader



Christopher Girkin

The UAB Department of Ophthalmology's new chair is an internationally known expert in glaucoma research and treatment. Christopher Girkin, M.D., joined the UAB faculty in 1999 and has won research support from Research to Prevent Blindness, the EyeSight Foundation of Alabama, the Glaucoma Research Foundation, and the National Eye Institute. He also has been honored with the American Glaucoma Society's Clinician-Scientist Award, the Research to Prevent Blindness Clinician-Scientist Award, and the title of EyeSight Foundation of Alabama Eminent Scholar. Listed among the "Best Doctors in America" since 2003, Girkin was recently named to the EyeSight Foundation of Alabama Endowed Chair of Ophthalmology.



The Path of a Pioneer

1965: Chow, a native of China, comes to the United States from Taiwan. She begins her career focusing on DNA tumor viruses as a postdoctoral fellow at the University of California-San Francisco.

1977: Working at Cold Spring Harbor Laboratory in New York, Chow and her collaborators discover the phenomenon of split genes and RNA splicing. This landmark discovery becomes the foundation for understanding the human and other eukaryotic genomes, the origin of most of their encoded proteins, and the cause of many different genetic diseases.

1984: At the University of Rochester, Chow and her team develop a novel strategy to detect HPV in patient cells and tissue that has become a global standard for molecular diagnosis.

1993: Chow joins UAB along with her husband and collaborator, Thomas Broker, Ph.D., professor of biochemistry.

2009: Culminating more than 25 years of research, Chow and her UAB team develop a process to reproduce the entire infection cycle of HPV-18, one of the dominant HPV types that causes cancers. This discovery has helped improve the study of HPV pathobiology and advance genetic analysis.

TODAY: Chow's lab is investigating virus-host interaction, crucial for identifying potential therapeutic agents to treat benign infections prior to progression to cancers.

Chow Elected to National Academy of Science

Louise Chow, Ph.D., a UAB biochemistry and molecular genetics professor and a Comprehensive Cancer Center senior scientist, has joined the ranks of Albert Einstein, Thomas Edison, Alexander Graham Bell, and more than 200 Nobel Prize winners as a member of the National Academy of Science.

Membership is one of the highest honors for a scientist or engineer in the United States. Chow, one of 84 new members and 20 foreign associates, is the only member located in Alabama and the second elected from UAB. (Max Cooper, M.D., was chosen in 1988.) Altogether, the academy includes 2,152 active members.

Chow has pioneered the study of bacterial, animal, and human viruses for more than 43 years. Today she is a leader in the study of human papillomaviruses (HPV), which are responsible for cervical and genital cancers, some head and neck cancers, laryngeal papillomas, and genital warts. She also mentors faculty and teaches students and postdoctoral fellows, and her contributions to science and medicine have "touched the lives of millions of people around the world," says School of Medicine dean Ray L. Watts, M.D.



INTERNAL MEDICINE RESIDENTS HEAD TO HUNTSVILLE

"Our community is growing, and so is the need for primary care physicians. The impact on health care in our community and region will last for decades." —David Spillers, Huntsville Hospital CEO



UAB and Huntsville Hospital have launched a new accredited residency program to train internal medicine physicians in the Rocket City. Sixteen physicians—eight first-year and eight second-year residents—began training in July; eventually, the program will include 24 physicians. Together with the UAB family practice residency program, operated with the hospital since 1973, 60 physicians will be in training in Huntsville.

First in Alabama

UAB DEBUTS HEART AND ASTHMA TREATMENTS

- For some patients, the **Melody Valve** can repair faulty pulmonary valves without open-heart surgery. The device has a valve mounted inside a stent, which is then attached to a balloon catheter and delivered from a small incision in the groin up into the heart. Currently the Melody Valve is used only in patients with congenital heart disease who already have had a pulmonary valve-replacement procedure. UAB cardiologists say the new valve offers a better alternative for these patients, who face multiple operations to replace valves throughout their lifetimes.

- **Bronchial thermoplasty** can improve airflow and bring long-term relief to patients with severe asthma that is not controlled well by medication. The therapy uses heat, delivered by thin wires, to reduce the amount of thickened smooth muscle along the airway that causes breathing difficulties when it contracts. Mark Dransfield, M.D., UAB Lung Health Center medical director, says the treatment helps patients gain better control over their asthma and can improve quality of life, reducing adverse asthma episodes by up to 40 percent. He adds that long-term safety data indicates stable lung function with no structural damage; UAB currently is participating in an FDA study to determine if the therapy's beneficial effects extend for five years.

ARTHRITIS AND INFECTION

Steroids Raise Risk for Children

Children with juvenile idiopathic arthritis (JIA) have higher rates of bacterial infection requiring hospitalization—and the use of high-dose steroids can significantly increase that risk. UAB researchers led by Timothy Beukelman, M.D., MSCE, associate professor of pediatric rheumatology, made the double discovery after studying Medicaid data on nearly 8,500 children with JIA and nearly 360,500 without the disease. They also compared data on children treated with methotrexate, tumor necrosis factor inhibitors, and steroids known as oral glucocorticoids—all commonly used medications—finding the higher rate only among children treated with the steroids. The results “suggest the inflammatory or autoimmune process may predispose children to infection regardless of therapy,” Beukelman says. In addition, “the use of a high dose of glucocorticoid, more than 10 mg of prednisone daily, was consistently associated with a doubling of the infection rate. This strongly indicates that a treatment strategy that limits steroid use may reduce the risk of serious infection in children with JIA.”



Family Medicine Role Model for Tuscaloosa

Richard Streiffer, M.D., will be both a leader and role model as the new associate dean of the School of Medicine and dean of the University of Alabama College of Community Health Sciences, the school's Tuscaloosa branch campus. For more than 25 years, he has trained future physicians for family and rural practice—most recently as professor and past chair of family and community medicine at Tulane University's medical school. He completed a family medicine residency at the Tuscaloosa campus in 1980 before operating a rural practice in Mississippi, where he began working with medical students as a preceptor and mentor. He later directed family medicine residency programs in Denver and Baton Rouge before joining Tulane to set up the family and community medicine department. Throughout his career, Streiffer has continued to maintain a primary care practice, and he has been a project director for federal training grants targeting primary care education and the development of a rural physician work force.



UPDATES FOR UROLOGY

Soon after the Board of Trustees established the new UAB Department of Urology—previously, it had been a division within the Department of Surgery—Dean Assimos, M.D., was named the department's inaugural chair. The internationally known researcher and clinician, formerly vice chair of urology at Wake Forest University, is an NIH-funded physician scientist whose research has focused on kidney stone formation. Clinically, he specializes in the surgical management of complex calculous disease, ureteral reconstruction, and metabolic stone evaluation and treatment.



Dean Assimos

“My goals and vision for the Department of Urology include developing a program that is regionally, nationally, and internationally recognized for providing excellent patient care in all domains of urology,” says Assimos, who has been involved in the establishment of practice guidelines in the field. “We will cultivate a stimulating educational environment for medical students, graduate students, residents, fellows, and postdocs, as well as practicing urologists and the public. On the research front, we will establish clinical, translational, and basic research programs that include studies of both benign urologic conditions as well as genitourinary malignancies with a goal of being in the upper tier of federal funding.”

IN BRIEF

• **Bruce Alexander, M.D.**, vice chair of pathology, is the new president of the American Society for Clinical Pathology.

• **Ronald Alvarez, M.D.**, director of the Division of Gynecologic Oncology and the Ellen Gregg Shook Culverhouse Chair in Gynecologic Oncology, is the new president of the Society of Gynecologic Oncology.

• **Stephen Barnes, Ph.D.**, a pharmacology and toxicology professor and senior scientist in the UAB Nutrition and Obesity Research Center, has been elected to the American Society for Nutrition's Fellows Class of 2012, which is the organization's highest honor.

• **Mark Hadley, M.D.**, the Charles A. and Patsy W. Collat Endowed Chair in Neurosurgery, has been named to a six-year term as a director of the American Board of Neurological Surgery.

• **Warner Huh, M.D.**, a professor of gynecologic oncology, is one of 11 cancer care providers to receive the American Cancer Society 2012 Lane W. Adams Quality of Life Award. Honorees are nominated by patients and their families.

• **Bruce Korf, M.D., Ph.D.**, chair of the Department of Genetics, director of the Hefflin Center for Genomic Sciences, and the Wayne H. and Sara Crews Finley Chair in Medical Genetics, has been named president of the American College of Medical Genetics Foundation for Genetic and Genomic Medicine.

• **Roslyn Mannon, M.D.**, director of research for the Alabama Transplant Center at UAB, is the new president of the American Society of Transplantation.

• **Navin Nanda, M.D.**, distinguished professor of cardiovascular disease, was named "the father of modern echocardiography" by the Indian Association of Cardiovascular and Thoracic Anesthesiologists for his pioneering contributions to cardiac ultrasound.

• The American Medical Association honored **Richard E. Powers, M.D.**, a UAB geriatric psychiatrist and neuropathologist, with a 2012 Nathan Davis Award for Outstanding Government Service in the category of outstanding career public servant at the state or local level.

• **Holly Richter, M.D., Ph.D.**, the J. Marion Sims Endowed Chair in Obstetrics and Gynecology and director of the Division of Women's Pelvic Medicine and Reconstructive Surgery, is the new president-elect of the Society of Gynecologic Surgeons.

• **David J. Sweatt, Ph.D.**, chair of the Department of Neurobiology and the Evelyn F. McKnight Endowed Chair for Learning and Memory in Aging, has been awarded the 2012 neuronal plasticity prize from the Fondation IPSEN, part of the Fondation de France, for his contributions in epigenetics and brain function.

• **Tim Townes, Ph.D.**, chair of the Department of Biochemistry and Molecular Genetics and the James C. and Elizabeth T. Lee Chair of Biochemistry, won the HudsonAlpha Prize, recognizing exceptional talent, dedication, and discovery by Alabama's top researchers, for his work on sickle cell disease and related blood disorders.

• **J. Michael Wyss, Ph.D.**, professor of cell biology, cardiology, medicine, neurobiology, and psychiatry and director of the UAB Center for Outreach Research Development, has received the Alabama Academy of Science's top honor, the Wright A. Gardner Award.

• **Shih-Hsin (Eddy) Yang, M.D., Ph.D.**, assistant professor of radiation oncology, won the American Association for Cancer Research-Genentech BioOncology Career Development Award for Cancer Research for junior faculty. Yang will use the \$100,000 award to investigate breast tumor susceptibility to PARP inhibitors, compounds targeting tumor cells that are defective in repairing damage to their DNA.

BREAKING GROUND, BREAKING BONDS

First, UAB researchers identified the protein-binding sites on molecules that cause kidney failure in some cancer patients. Then they discovered how to break those bonds, paving the way for lifesaving new drugs. Myeloma kidney, or cast nephropathy, develops when multiple myeloma, a bone marrow cancer, overproduces proteins usually eliminated by the kidneys. Components of immunoglobulin called free light chains bind with Tamm-Horsfall glycoprotein, forming a gel-like substance that leaves the kidneys unable to filter, often resulting in organ injury and failure.

Nearly half of multiple myeloma patients will develop kidney failure, and outcomes are poor. But after solving the mystery of where the binding occurs, UAB researchers developed a cyclized peptide that prevents the bond and inhibits cast nephropathy in animal models. Paul Sanders, M.D., director of the Nephrology Research and Training Center and holder of the Thomas E. Andreoli Endowed Professorship in Nephrology, says that the next step includes modeling the peptide's compounds, with the goal of finding an approved drug that mimics the process so that patients can benefit from the discovery quickly.

PARSING A PROTEIN

How MARCKS Could Help Combat Cancer

A protein named MARCKS (Myristoylated Alanine Rich C-Kinase Substrate) has been something of a mystery—particularly its role in brain tumors such as glioblastoma multiforme (GBM). Now UAB researchers, including Christopher Willey, M.D., Ph.D., assistant professor of radiation oncology, and John Jarboe, graduate student in the UAB Medical Scientist Training Program, are providing a clearer picture:

• **MARCKS may behave like a tumor suppressor:** In cell and animal studies, the team found that when MARCKS levels in cancer cells are low, tumor cells grow more rapidly and become resistant to radiation therapy, the standard treatment for GBM. But when MARCKS levels are high, tumors are much less aggressive and even enter a dormant state.

• **MARCKS could be a biomarker for prognosis—and a potential therapeutic target:** A study of the Cancer Genome Atlas, a database cataloging genetic and clinical information about various cancer patients, revealed that GBM patients with higher levels of MARCKS expression lived longer than patients with lower levels. High MARCKS expression also was protective for younger patients even when they had other poor prognostic markers.

CARDIO ACTIVITY

The Rewards of Rehab Cardiac rehabilitation is a cost-effective solution that could help heart patients lower the risk of future cardiac events, says Vera Bittner, M.D., head of the UAB Section of Preventive Cardiology. Research shows that fewer than 20 percent of patients eligible for cardiac rehabilitation are referred to a program, but there is a 35 percent reduction in mortality among people who go versus those who don't, according to analysis of the Medicare database. Other research studies show a 15 to 25 percent reduction in the number of recurrent heart attacks among people who have been to cardiac rehab.

“Cardiac rehab should be looked at as a comprehensive way to address secondary prevention in individuals who already have had an event,” says Bittner, medical director of the UAB cardiac rehab program and coauthor of a 2012 scientific advisory for the American Heart Association on increasing cardiac rehab referral and participation rates. “People who have had a myocardial infarction, bypass surgery, or stenting are at high risk of having another event within the next five years. And we know that risk-factor modification lowers these event rates.”

Cardiac rehab takes a multidisciplinary approach to teaching patients and their families about lowering risk, Bittner explains. The typical rehab prescription includes 36 sessions over 12 weeks, including lifestyle counseling, medication education, improvement of functional capacity, and assessment of psychological aspects, including the stress associated with a cardiac event.

More referrals to cardiac rehab could make a major impact on patients' lives, Bittner says. “We are trying to encourage a broad referral policy, a referral process that is a little bit more distributed than we traditionally do, and more than is currently in place at most institutions.”



Lose Pounds, Raise Risk? Many overweight people switch to high-fat, low-carb foods to shed pounds, but new UAB research indicates that such diets could be detrimental for people with ischemic cardiovascular disease or a predisposition to heart attacks. UAB cardiologist Steven Lloyd, M.D., Ph.D., reports that obese animal models fed a high-fat, low-carb diet—comparable to one that humans would consume—had larger, more damaging, and more deadly heart attacks than those eating a low-fat diet. He says the findings also suggest that, at the cellular level, a high-fat, low-carb diet impaired recovery of heart function immediately following a heart attack. Lloyd notes that the results are not definitive enough to label such diets harmful; however, research has not adequately assessed their safety.



BETTER TREATMENT THROUGH CHEMISTRY?

Islet Coating May Help Diabetes Patients

A polymer coating developed in a collaboration between UAB's Department of Chemistry and the School of Medicine could pave the way for a breakthrough in diabetes treatment. Currently, the innovative material protects animal and human pancreatic islets, allowing them to maintain viability and beta-cell functionality for at least 96 hours *in vitro*. But lead author Eugenia Kharlampieva, Ph.D., assistant professor of chemistry, says, “This eventually could lead to a new way to treat diabetes that would require only one initial surgery to transplant healthy pancreatic islets into the patient and replace the need for lifelong daily insulin injections.” The permeable, nano-thin coating, applied in layers, allows the islets to receive nutrients and secrete insulin—and it can even induce an anti-inflammatory response to macrophages and auto-reactive T cells that contribute to transplantation rejection. “As we move toward *in vivo* research, we are all excited about the potential to change how we treat the millions suffering from diabetes,” says microbiologist Hubert Tse, Ph.D.

JOINING FORCES AGAINST PAIN

UAB is one of 11 institutions named a Center of Excellence in Pain Education by the National Institutes of Health Pain Consortium—part of an effort to better educate a broad range of health professionals treating patients suffering from pain. The UAB program will develop and integrate pain-management curricula for the schools of Medicine and Nursing, the departments of Occupational and Physical Therapy, Samford University's schools of Nursing and Pharmacy, and the Auburn University School of Pharmacy. Pain management for vulnerable populations, including patients with multiple illnesses, dementia, HIV, and cancer, will be a particular focus.

Tour of Duty: A U.S. Air Force medical team responsible for treating injured members of U.S. Special Forces teams during missions around the world is gaining crucial skills and experience in UAB's Level I trauma center. Because most military hospitals don't have the volume or severity of cases seen by major trauma centers, the Special Ops surgical-critical care evacuation team is stationed at UAB for up to three years, working alongside medical faculty to treat injuries—from car wrecks, accidents, or crime—that mimic what they would see in combat. Team members also train outside the hospital, venturing into the forests and mountains surrounding Birmingham to practice setting up an operating room in any terrain.



LACK OF SLEEP LINKED TO STROKE SYMPTOM RISK

Participants in a recent UAB study who got less than six hours of sleep per night had a four-time greater risk of stroke symptoms than others sleeping seven to eight hours a night. Lead author Megan Ruiter, Ph.D., a postdoctoral fellow in the UAB Division of Preventive Medicine, says that the researchers looked at three years of self-reported sleep data from 5,666 people ages 45 and older. All participants had an optimal body mass index and a low risk for obstructive sleep apnea. “We adjusted for many possible factors that could explain this increase, including hypertension, high cholesterol, sleep-disordered breathing, and being overweight or obese,” Ruiter says. However, “we still found the association between sleeping less than six hours and reporting stroke symptoms, like sudden body weakness or numbness or deficits in vision. These participants may be late in the development of a stroke. It is possible they may have had a stroke, but it was not verified with a physician.”

The study also found a differential risk according to racial group. “We find that sleep duration might partially explain the relationship between ethnic differences in stroke symptoms,” Ruiter says. “African Americans had a greater prevalence of short sleep, and then were more likely to have stroke symptoms.”

Common CAUSE

UAB Comprehensive Centers Translate
Science Into Solutions

By Charles Buchanan

What separates UAB's comprehensive centers from specialty centers elsewhere? Four months.

At least that's what Harald Sontheimer, Ph.D., will tell you. Four months after his research team announced its discovery of a link between primary brain tumors and epileptic seizures—and a drug that seems to inhibit both—UAB patients are already benefiting from the breakthrough. A group is currently receiving the potential therapy as part of a clinical trial.

The quick time frame is the result of an unusual degree of collaboration between scientists and clinicians made possible by UAB's dozens of comprehensive centers. Specialists of every stripe share their knowledge and resources, along with a single-minded focus to fight disease. "The key word here isn't 'center,' but 'comprehensive,'" says Ray L. Watts, M.D., senior vice president for medicine and School of Medicine dean. "We break down barriers and bring people together to discuss what problems need to be solved and what solutions have the best chance of helping patients."



Bridges to Better Treatment

It's easy to envision the comprehensive centers as umbrellas, covering every specialist with an interest in a particular disease, but bridges are the better metaphor, Watts explains. Not only do the comprehensive centers connect different disciplines, but they also link the basic scientists in their labs with the clinicians—and the patients—in care settings, opening a clear pathway to translate new discoveries into new treatments.

Comprehensive centers have yielded decades of breakthroughs at UAB, and today they play a central role in AMC21, the School of Medicine/UAB Health System strategic plan to evolve into the preferred academic medical center for the 21st century. “By concentrating our efforts and investing our resources in comprehensive centers, we can make a stronger impact in translational medicine,” Watts says. Many existing comprehensive centers will be expanded, and two new ones, focusing on cardiovascular diseases and transplant medicine, have been established. Institutional investments for the centers, leveraged by philanthropy, are fueling a broad range of collaborative research projects, and faculty recruitments to fill gaps in expertise are also forging new links among centers.

Strength in Numbers

The renewed focus on comprehensive centers could also help UAB researchers win vital grants in the tightest funding environment in the history of the National Institutes of Health (NIH). “The days of the lone scientist are over,” Watts explains. “The NIH is encouraging



investigators to collaborate on innovative proposals. The competition is extremely tough, but our comprehensive centers have established a platform for team-based translational research. They are the key to securing multimillion-dollar grants that will fund new clinical trials,” he says, “and they will enable us to create the future of medicine.”



Concentrated Efforts:

COMPREHENSIVE CENTERS IN ACTION

Fast Track for a Glioma Breakthrough

UAB's comprehensive centers already are brightening the future of glioma treatment by giving the breakthrough from Sontheimer's team a life beyond the laboratory.

Last September, the researchers announced that they had identified the neurotransmitter glutamate as the link between malignant gliomas and the onset of epileptic seizures—often the first symptom of a brain tumor. While neurons normally use glutamate to communicate with each other, glioma cells “produce an enormous amount, 100-fold beyond normal,” says Sontheimer, a neurobiology professor and director of

the Civitan International Research Center (CIRC). “This leads to a state of hyper-excitability that overwhelms healthy neurons and leads to their death,” clearing space for the tumor to grow. Excess glutamate can also cause abnormal electrical activity in the brain, leading to epileptic seizures.

There was also a happy surprise: The researchers found that sulfasalazine, a drug used to treat Crohn's disease, seems to prevent gliomas from releasing large amounts of glutamate. As a result, nearby neurons stay alive, the tumor's growth slows, and seizures are inhibited. Sulfasalazine in its current form isn't a perfect glioma drug—it's designed to break apart in the intestines, so about 20 percent of it moves into the bloodstream where

“Our comprehensive centers have established a platform for team-based translational research. They are the key to securing grants that will fund new clinical trials.”



“The centers bring together people who have a common interest but not necessarily a common tool chest.”

it could travel to the brain. Still, Sontheimer knew the drug could be an immediate help to glioma patients.

Different Tool Chests

“Having an FDA-approved drug paved the way for a clinical trial in patients very quickly,” Sontheimer says. But his lab didn’t have all the resources it needed to conduct the trial—or the access to patients. “There’s no way you can do translation as a Ph.D. unless you’re surrounded by clinicians,” he explains. Fortunately, he was able to rely upon not one but three comprehensive centers—the Comprehensive Neuroscience Center (CNC), the Comprehensive Cancer Center (CCC), and the CIRC—for assistance.

Behavioral neurobiology director Adrienne Lahti, M.D., a CNC member with Sontheimer, came on board along with neuro-oncology director Burt Nabors, M.D., a CCC scientist. “The centers bring together people who have a common interest but not necessarily a common tool chest,” Sontheimer says. “Dr. Nabors sees patients who present with gliomas. Dr. Lahti is an expert in the use of magnetic resonance spectroscopy, which can identify changes in glutamate content in the brain with both spatial and temporal resolution.”

In January, just four months after the breakthrough’s announcement, the multidisciplinary team began enrolling the first patients into a clinical trial of sulfasalazine, with Nabors as principal investigator. All three centers contributed to a \$100,000 AMC21 pilot grant that set the clinical trial in motion, giving the researchers the opportunity to gather enough data to submit a joint proposal to the NIH for a larger clinical study on the treatment of tumor-related epilepsy by the end of the year.

Going Beyond the Limits

“This is an example where people from different departments, different backgrounds, and with different techniques come together,” Sontheimer says. “It’s fair to say that none of this would have happened if not for our comprehensive centers.”

Lori L. McMahon, Ph.D., CNC director and holder of the Jarman F. Lowder Endowed Professorship in Neuroscience, calls the Sontheimer-Lahti-Nabors project a “beautiful example of using an animal model of human disease, figuring out the molecular mechanism, and translating it to humans—and one that’s happening really fast.”

In neuroscience, “therapeutic tools for diseases such as Alzheimer’s and gliomas can be

limiting,” McMahon says. “Clinicians rely on basic scientists to understand disease mechanisms and identify new targets for therapeutic development. Translational research doesn’t happen everywhere, but at UAB we have strengths at the bench with experimental models and preclinical models, and we also have clinical expertise to take advantage of those findings. It’s a great cross-fertilization.”

No Immunity for Breast Cancer

The next potential breakthrough against cancer may owe its existence to a cup of coffee. In collaborative science, “the key is the exchange of ideas, techniques, data, and constructive commentary on that data as it’s generated,” says immunologist Robert P. Kimberly, M.D., the Howard L. Holley Research Chair in Rheumatology and School of Medicine senior associate dean for research. “Sometimes that means working in the same physical space, but more important is getting together to discuss ideas and review data, which is facilitated by open laboratories, meeting rooms, and places to gather for coffee or tea.”

Several years ago, one big topic of discussion in the Comprehensive Arthritis, Musculoskeletal, and Autoimmunity Center was the mechanism of apoptosis, or cell death—and how that could be applied to cancer cells. “Nature has given us a series of ‘death receptors’—cell surface molecules that can transmit a ‘death signal’ directing the cell to die,” Kimberly explains. “It seems

reasonable that the immune system would use this mechanism to kill abnormal cells. If we could develop a monoclonal antibody that recognizes and activates the death receptor, we could boost a natural mechanism.”

The TRA8 antibody was developed by UAB immunologist Tong Zhou, M.D., along with Kimberly and Kimi Ichikawa, Ph.D., from UAB pharmaceutical partner Daiichi Sankyo Inc. They introduced a stimulus that mimics the human death receptor into an animal model, then sifted through the resulting antibodies to identify the relevant one. Translational studies in petri dishes and animal models followed to determine if—and how well—TRA8 worked at causing cancer cell death. It was an exciting discovery, the scientists say, because at the time, few believed that an antibody could directly induce apoptosis.



Targeting the Death Receptor

UAB's Comprehensive Cancer Center, which conducted the first-ever trial of a genetically engineered monoclonal antibody in the 1980s and has continued to pioneer the field, was eager to bring the humanized form of TRA8, known as tigatuzumab, to patients. The antibody is a particularly promising cancer treatment because it binds to the death receptor on tumor cells only, triggering their

death while preserving the surrounding healthy cells. In translational studies, it had shown promise as a treatment for breast, colon, lung, pancreatic, brain, and prostate cancer.

“Translational therapeutics provides a way for UAB to make a difference,” says Edward E. Partridge, M.D., director of the Comprehensive Cancer Center and the Evalina B. Spencer Chair in Oncology. “We want patients to know that when they come here, they have the opportunity to benefit from the most cutting-edge therapeutics for their particular cancer.”

Turning Point

Andres Forero, M.D., a hematologist-oncologist and holder of the O'Neal-Sokol Breast Cancer Research Foundation of Alabama Endowed Professorship, led a team on a phase 1 study of tigatuzumab to determine the maximum safe dosage and any side effects. (They found minimal negative reactions or none at all.) Today, he, along with radiation oncologist Donald Buchsbaum, Ph.D., and others, is directing the first trial of tigatuzumab for patients with metastatic triple negative breast cancer. The national, phase 2 trial involves UAB and the 15 other members of the Translational Breast Cancer Research Consortium, a network of the country's leading breast cancer research centers; support for the tigatuzumab studies has come from the Breast Cancer Research Foundation of Alabama and a \$6.4-million Promise Grant from the Susan G. Komen for the Cure Foundation and the Triple Negative Breast Cancer Foundation.

In the trial, researchers are combining tigatuzumab with chemotherapy—a treatment that could be a turning point for patients with triple negative breast cancer, which accounts for about 25 percent of all breast cancers. This form of the disease “is highly aggressive and most often seen in young African-American and Hispanic women,” Forero explains. “Treatment options are limited because the tumor cells are negative for estrogen receptors, progesterone receptors, and amplification of the HER2 gene.

“Triple negative breast cancer has a very poor prognosis, but of all breast cancers, triple negative shows the greatest response to tigatuzumab,” Forero notes.

Proof of Progress

Though the trial is ongoing, Kimberly says the lessons of the collaborative approach to tigatuzumab are clear. “The ability to work in a flexible team, gathering expertise in the most fundamental science and carrying it through to clinical application, has been central to moving this program forward,” Kimberly says.

“It's a perfect example of UAB's strength,” Forero adds. “It's a major accomplishment and incredibly exciting.”

Taking a Diabetes Discovery to Heart

There's a reason the multidisciplinary model of research has worked so well for UAB's comprehensive centers: It mimics real life. Diabetes, for instance, doesn't care much for departmental boundaries. Its risk factors and complications touch nearly every specialty in the School of Medicine.

So when Anath Shalev, M.D., director of the UAB Comprehensive Diabetes Center and the Nancy R. and Eugene C. Gwaltney Family Endowed Chair in Juvenile Diabetes Research, and her team discovered that a common high-blood-pressure drug appears to reverse the diabetes-related death of pancreatic beta cells, it was a win for UAB cardiovascular researchers as well.

The TXNIP Link

For years, Shalev and colleagues have been studying methods of designing a drug to shut down the TXNIP protein. They had previously established that high blood sugar activates the TXNIP gene, and that excessive TXNIP signaling triggers the self-destruction of insulin-producing beta cells. They also knew that 67 percent of the nearly 26 million adult patients with diabetes suffer from high blood pressure, so they tested the drugs that treat the condition, including the calcium-channel blocker verapamil. And it worked. In cell studies, verapamil reduced TXNIP gene expression by half; in animal models, the drug maintained normal glucose level, with isolated islets showing an 80 percent reduction in TXNIP levels.

“Finding an oral medication that inhibits beta cell TXNIP expression is a major breakthrough, and now we have the first study showing that a drug already proven safe in years of clinical practice may halt the development of diabetes,” Shalev says.

But this breakthrough is just beginning. Cardiovascular researchers John C. Chatham, D.Phil., and Martin E. Young, Ph.D., have joined forces with Shalev to explore verapamil’s potential use in the treatment of heart disease. “TXNIP is found in a host of different tissues and organs, including the heart, where it exerts many different functions,” says Young, an associate professor in cardiovascular disease. “Due to its ability to enter the mitochondria, TXNIP holds the promise of potentially impacting metabolism, and therefore function, in the heart.”

“Patients with diabetes have a much higher risk for a range of different cardiovascular diseases, so we want to understand how TXNIP contributes to some of the adverse effects of diabetes on the heart,” says Chatham,

director of the Division of Molecular and Cellular Pathology and co-director of the new Comprehensive Cardiovascular Center. “Verapamil might be more challenging in the heart because it has a direct effect on cardiac function, but if we can identify some of its mechanisms for regulating TXNIP expression, then we could find new therapeutic targets.”

Double Disciplines

It’s a natural connection, the researchers say. Chatham and Young have provided laboratory equipment and technical expertise for Shalev’s studies, and she has done the same for their investigations. Shalev also shares a longstanding interest in the effects of diabetes on the heart, and Chatham and Young are members of the Comprehensive Diabetes Center.

Sharing knowledge and ideas about diabetes and cardiovascular disease is particularly important, considering how the two intertwine, Young adds. “Studying one of these in isolation can hinder identification of clinically relevant mechanisms,” Young says.

“Our understanding of the specific links between diabetes and cardiovascular disease is in its infancy.”

Chatham says that he, Young, and Shalev are in the early stages of their collaboration to assess the impact of TXNIP in the heart and that they meet regularly to discuss their intersecting interests, the resources they can share, and potential experiments. Ultimately, they will develop a research project they can submit to the NIH or another funding source. “Even though we’re all interested in the same thing, it takes a while to find the right angle that will take advantage of all of our respective knowledge,” Chatham says. “It’s always a stimulating exercise.”

“Each area of medicine is so highly specialized,” says Shalev, “but we don’t want to be bound by our own expertise.”

Additional reporting by Bob Shepard, Josh Till, and Greg Williams

Transforming Treatment

THE COMPREHENSIVE CARDIOVASCULAR CENTER

UAB is standing on the shoulders of giants to help repair the hearts of patients. Decades ago, legends including Tinsley Harrison, M.D., and John W. Kirklin, M.D., established programs that set standards for cardiovascular (CV) care. Today UAB’s new Comprehensive Cardiovascular Center plans to build upon their innovative legacy with bold approaches to CV research that could revolutionize treatment.

“It’s an exciting time in clinical cardiology and research,” says center director Sumanth D. Prabhu, M.D., the Mary Gertrude Waters Chair of Cardiovascular Medicine and chair of the Division of Cardiovascular Disease. “The field has focused on treating risk factors and improving mortality, but

the next step is harnessing biological therapies. We want to know if we could actually reverse heart disease—or recover the heart instead of managing disease through medication.”

The new center, co-directed by John C. Chatham, D.Phil., director of the Division of Molecular and Cellular Pathology; Louis J. Dell’Italia, M.D., the Elmer and Glenda Harris Endowed Chair in Cardiovascular Disease; and James K. Kirklin, M.D., holder of the John W. Kirklin Chair of Cardiovascular Surgery and director of the Division of Cardiothoracic Surgery, will provide the spark for new discoveries. Serving as a platform for enhancing CV research campuswide, it will draw together



basic scientists and clinicians to work on novel approaches and center-supported pilot studies; the results will help attract extramural funding for additional studies. Prabhu envisions cardiologists and CV surgeons working alongside UAB experts in stem cells, diabetes, and obesity, to name just a few.

“We will promote transformative and translational science,” he says. “For example, there’s growing evidence that we can use different types of stem cells for solid organ disease, including heart disease. We would



Focus on Innovation

THE COMPREHENSIVE TRANSPLANT INSTITUTE

UAB has one of the country's largest and busiest transplant programs, encompassing kidney, heart, liver, lung, and pancreas transplants. The task of the new Comprehensive Transplant Institute (CTI) is to help ensure that it remains one of the best.

"We want one organizational structure so that everyone involved in transplant care is working together," says Devin E. Eckhoff, M.D., director of the CTI and the Division of Transplantation and holder of the Arnold G. Diethelm Endowed Chair for Transplantation Surgery. Clinicians and researchers in a wide range of specialties, from surgery, nephrology, and hepatology to immunology, pathology, and infectious diseases, will "speak a common language" and take a big-picture approach that could help donors and recipients before, during, and long after the transplant procedure, he explains. For example, scientists and physicians could develop methods of identifying and preventing donor-derived infections—as well as more effective post-transplant immunosuppressive drugs and clinical approaches to improve continuity of care. A research acceleration fund, pilot grants, and other support will help projects like these get off the ground.

The CTI will encourage the development of new programs. "We

want to maximize every potential donor we get and transplant more individuals," Eckhoff says. Novel initiatives include incompatible transplantation (transplants between donors and recipients with different blood types), paired kidney donation (swaps), and transplants for HIV-positive patients. "With our reputation, history, and size, we should be on the cutting edge of offering new therapies so that patients don't have to travel out of state," says CTI co-director Robert S. Gaston, M.D., medical director of the UAB kidney transplantation program and holder of the Endowed Professorship in Transplant Nephrology.

Creation of the CTI should also enable UAB "to identify needs and pull resources together to help recruit people of value to the program," Gaston explains. New faculty will expand UAB's expertise in transplant immunology, transplant pathology, and outcomes research, which will have a direct impact on patient care.

The CTI, which will be phased in over a couple of years, has already hosted its first national symposium on transplant immunology and opened a new Kidney and Pancreas Transplant Clinic. Gaston and Eckhoff say they are excited by the possibilities. "The places that want to be leaders are transitioning to this model," says Gaston, who is immediate past president of the American Society of Transplantation. "We're building a structure that will keep UAB at the forefront of solid organ transplantation research and clinical care."

like to combine basic stem-cell biologists with CV scientists who can direct therapeutics. Our electrophysiology group and newly recruited interventional CV group also could work with researchers in vascular biology and bioengineering to develop new stent

technologies, or new techniques in cellular electrophysiology and resuscitation. This is how we can advance science."

Sophisticated research cores—housing powerful imaging technologies, biorepositories, and genomic tools, among other

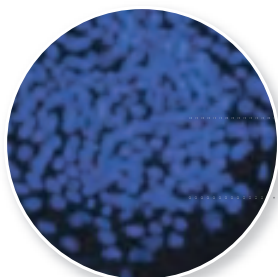
resources—will support all investigators. Prabhu says that most elements of the center will be active within the next year or two.

The center will share its discoveries through symposia that spotlight UAB research along with breakthroughs from other leading scientists. "Community physicians are welcome at these events," Prabhu notes. "We want to increase community understanding about UAB clinical trials and research opportunities."

The team leading the Comprehensive Cardiovascular Center believes it will make important strides against a disease that has become common, particularly in Alabama. "This is a high-impact investment," Prabhu says. "Unlike many other places, we are doing science alongside a strong clinical program. The potential for translating basic discoveries into clinical therapeutics is higher here. Our timelines are much faster."

Comprehensive Cardiovascular Center Focus Areas

- Cardiac reparative and regenerative medicine
- Cardiovascular risk factors and prevention
- Heart failure and transplant
- Heart rhythm management
- Valvular and congenital heart disease
- Vascular and ischemic heart disease



Growth Factor

Stem Cell Institute Adds Resources and Expands Research

By Matt Windsor

To transform human skin cells into stem cells, UAB researcher Tim Townes, Ph.D., adds four crucial genetic factors. To grow the fledgling UAB Stem Cell Institute into a regional powerhouse, he has added six promising young investigators from across the country, with more on the way.

Townes, the director of the Stem Cell Institute, chair of the UAB Department of Biochemistry and Molecular Genetics, and the James C. and Elizabeth T. Lee Chair of Biochemistry, says the new hires will expand the institute's research in many areas, branching out from its world-class program in sickle cell disease.

"All of them in one way or another have a cancer focus, because cancer stem cells really are a key area," Townes says. "These cells are resistant to chemotherapy, and they are usually the cells involved when cancers recur."

Correcting Mutations

The Stem Cell Institute was founded in 2009, and recruiting began in earnest in 2010, Townes explains. With the addition of a key piece of equipment, the Sanyo Cell Processing Work Station, in 2011, the institute is moving quickly toward the first human clinical trial of a potential curative therapy for sickle cell disease. The group currently is awaiting FDA approval.

That breakthrough is based on a 2007 paper published by Townes's research group, in which they detailed their success at curing sickle

cell in mouse models using induced pluripotent stem (iPS) cells.

The iPS cells were normal skin cells collected from the mice that, with the addition of four genes in the lab, were induced to revert to stem cells. At that point, the researchers were able to correct the mutation that causes sickle cell, transform the corrected cells into blood stem cells, and multiply the cells to the point that they could be transferred back into the animal. By using chemotherapy to destroy the native (uncorrected) blood stem cells in the body, the researchers allowed the new cells to gain a foothold. Over time, the corrected cells generated enough healthy red blood cells to effectively cure the animals.

Similar techniques could bring success in cancer and in other diseases, Townes says. "We realized if we can make red blood cells, then we can make white blood cells," he explains. That has opened the door to exploration of autoimmune conditions, including inflammatory bowel disease and juvenile arthritis, as well as the prospect of cardiac repair and regeneration for heart disease.

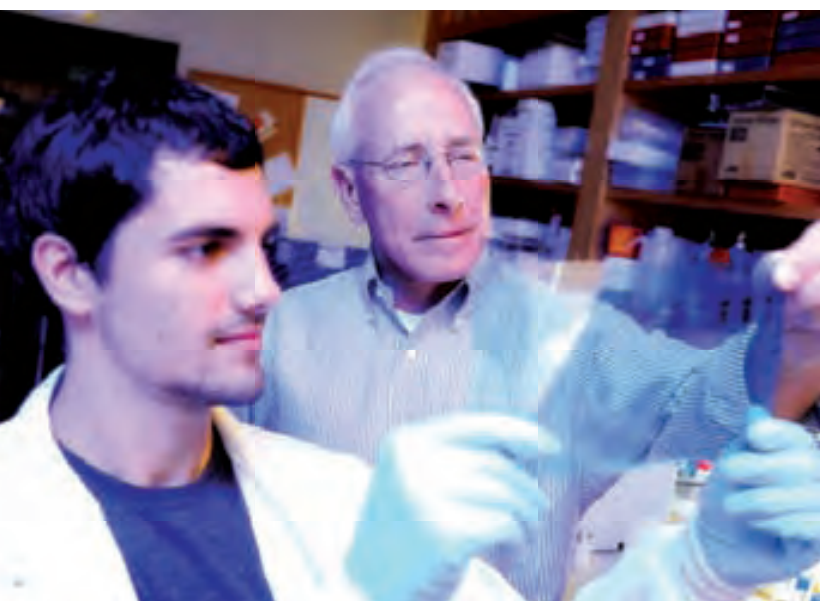
Share Point

With a growing number of investigators each pursuing a new niche in a rapidly expanding field, sharing insights is a priority, Townes says. "We meet every week, and the investigators take turns presenting what they have done in the past several weeks. Then we have journal clubs to cover the latest in research at other institutions."

The institute's labs are also designed with collaboration in mind, Townes says. "The rooms are large and long, without walls, so three independent investigators—each with their own postdocs and graduate students—are sharing common equipment and interacting all the time. That really stimulates collaborative work and projects."

Part of the institute's mission includes the responsibility to share its findings with the larger community, Townes adds. He and the other scientists regularly speak to civic groups and at schools and churches to explain the institute's ongoing work and the potential benefits of stem cell research in general. Townes explains that they are careful to talk about the different types of stem cells, including iPS cells, which are created from skin cell samples and are the primary focus of research at the institute, and the much more controversial embryonic stem cells, which require the destruction of embryos.

The institute also is training a new generation of stem cell researchers. In August, a class of graduate students inaugurates the new Stem Cell Biology research area within UAB Graduate Biomedical Sciences. "There is a lot of student interest," Townes says. "This is a booming field, with many exciting questions waiting to be answered."



Tim Townes (right) pioneered a potential stem-cell therapy for sickle cell disease.



Research has opened the door to exploration of cancer, autoimmune conditions, and cardiac repair and regeneration.

Above: Larry Lamb operates the Sanyo Cell Processing Work Station, containing all the equipment required to manufacture cells for cell therapy in a sterile environment. In circles: Human iPS cells

Cellular Switch

UAB Stem Cell Institute researchers have already cured sickle cell disease in mice using the process outlined below. A human trial is the next step, pending FDA approval. In the meantime, the institute's scientists are pursuing ways to adapt the technique for cancer, irritable bowel disease, and other conditions.

1 Researchers start with a sample of skin cells collected from a patient at UAB's outpatient dermatology clinic.

2 At the UAB Cell Therapy Lab, the cells are inserted into the Sanyo Cell Processing Work Station (CPWS), which is like a "clean room in a box," says Larry Lamb, Ph.D., lab director

and associate professor of medicine and pediatrics. The Cell Therapy Lab, which became fully operational in early 2012, gives UAB the only clean-room equipped lab able to do advanced processing between Texas and North Carolina, Lamb says.

Once the cells are inside the CPWS, a gloved researcher places the samples on a tissue culture dish and then isolates the fibroblasts, a common type of connective skin cell.

3 By adding four key genes to each fibroblast cell, the researcher reprograms it into an induced pluripotent stem (iPS) cell. In other words, the new genes remodel the chromosome that informs the skin cell that it is a skin cell, forcing it to revert to its previous state as a stem cell.

4 With the iPS cells prepared, the researcher corrects the sickle mutation using a technique called homologous recombination. (Correction can also occur before the fibroblast is reprogrammed.)

5 The researcher must now perform the delicate task of encouraging the corrected cells to differentiate into blood stem cells. Townes currently is researching methods of improving this time-consuming, inefficient process.

6 Once the research team produces a sufficient number of blood stem cells (in the millions), they can be infused into the donor patient using the same techniques as a bone marrow transplant. An initial, brief round of chemotherapy reduces the numbers of existing, defective blood stem cells in the patient's bone marrow.

7 The corrected cells begin producing healthy red blood cells, which outlive the defective sickled cells. Because the blood stem cells are self-renewing, the patient is effectively cured.

Leader for a New Age

Geriatrics Expert Named Medicine Chair

By Bob Shepard

C. Seth Landefeld, M.D., is interested in the gray areas of health care. An internationally known clinician and researcher, he specializes in geriatrics, epidemiology, and biostatistics—and how to transform and personalize health care to meet the needs of an aging population. Now he will help lead that transformation as chair of the UAB Department of Medicine.



Seth Landefeld

Landefeld was previously chief of the Division of Geriatrics and associate chair for strategic planning and implementation at the University of California at San Francisco Department of Medicine. There he directed the Program for the Aging Century and led the editorial team that produces the “Care of the Aging Patient” series for the *Journal of the American Medical Association*. As founder of UCSF’s geriatrics division, he helped establish a record of innovation in research, education, and patient care that earned both community support and national prominence.

In landmark studies of acutely ill hospitalized elders, Landefeld and his colleagues invented the Acute Care for Elders Unit, a novel method for improving patients’ functional outcomes. This model has been adapted at medical centers nationwide, including at UAB Highlands. In incremental studies of anticoagulant therapy, he developed the first valid, reliable measure of hemorrhagic complications; designed and validated risk assessment indices for anticoagulant-related bleeding; developed interventions to prevent major bleeding; and demonstrated their efficacy in clinical trials. In 2011, he received the Robert J. Glaser Award, the highest award of the Society of General Internal Medicine, for exceptional contributions to education and research.

“We are excited to bring a physician-scientist of the caliber of Seth Landefeld to UAB,” says Ray L. Watts, M.D., senior vice president and dean of the School of Medicine. “He has the vision and expertise to help lead UAB as we shape the future of medicine and prepare for challenges in the decades ahead.”

“The UAB Department of Medicine is a well-established national leader in patient care, research, and education,” Landefeld says. “I see the department as the go-to destination for faculty, learners, and staff with the ambition, ability, and drive to make UAB the most exciting academic medical center in the country.”

[Learn more](#) about Seth Landefeld in the next issue of *UAB Medicine*.

Picking Up the Pieces | Treating the Onset of Schizophrenia

By Bob Shepard

Early intervention can help save lives in trauma care. Now a new UAB clinic is applying that concept to schizophrenia in an effort to limit the severity and progression of the disorder. The First Episode Schizophrenia Clinic, which treats patients with a new diagnosis, is the only one of its kind in Alabama and among just a few in the country.

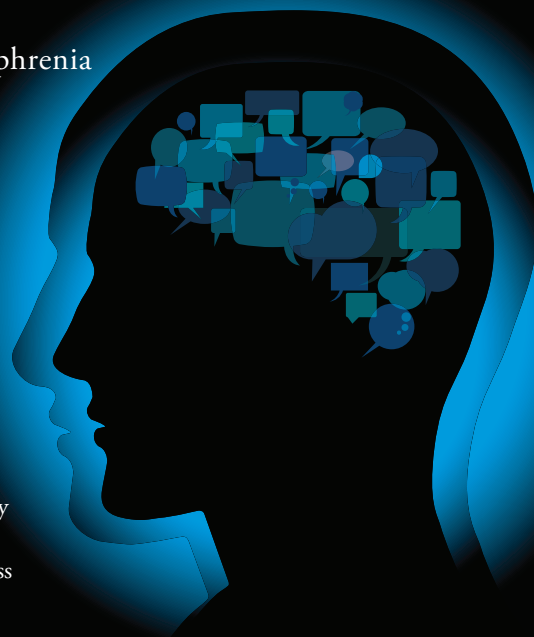
“There is growing evidence that schizophrenia can be managed better, and that associated complications can be lessened, if aggressive, comprehensive treatment is begun shortly after the first diagnosis is made,” says Adrienne Lahti, M.D., clinic director and professor of psychiatry and behavioral neurobiology.

Schizophrenia is often first observed in teenagers; early signs frequently include changes in school behavior, worsening grades, and odd behavior. Complications

such as obesity, smoking, and drug use are common. A diagnosis can be devastating for the whole family—and the First Episode Clinic is designed to address that, Lahti says.

“It’s very hard on parents,” she explains. “They have to come to grips with the fact that many of the dreams they had for their child no longer are viable options. They may not go to college, be able to hold a regular job, or marry and have a family. We want to establish a relationship with family that does not assess blame and works to maintain normalcy as long as possible. Studies have shown that patients do better the longer they can maintain normal function and remain involved in work or school.”

The clinic will monitor the use of medications and stress that family members must become patient advocates. “Research has



shown us that patients with schizophrenia often display symptoms long before they seek or get help,” Lahti says. “First Episode Clinics may be a means for reducing that delay, and helping patients—and families—learn to manage their disease.”

Taking Prevention to Heart

Arnett Leads American Heart Association

By Jo Lynn Orr

Donna Arnett, Ph.D., M.S.P.H., finds herself in a unique position. As chair of the Department of Epidemiology and a professor in public health at UAB, she works in the heart of a state facing some of the nation's highest rates of cardiovascular disease. Now, at the start of a one-year term as president of the American Heart Association (AHA), she says her Alabama experience will help her make an impact nationwide.

Dr. Arnett, what is the state of cardiovascular (CV) disease and stroke in America today? CV disease remains the number one killer, accounting for a third of deaths in America. Stroke, the number four cause of death, claims a life every 40 seconds in the United States. In terms of where we rank internationally, we're not at the bottom of the heap of industrialized nations, but we're not in the best shape either.

How can different disciplines at UAB work together to improve the cardiovascular health of Alabamians? UAB now has the Comprehensive Cardiovascular Center, which incorporates aspects of cardiovascular health from different schools across campus. I'm on the steering committee for that center, and we have a large number of studies for evaluating CV health and a long tradition of collaboration within the UAB community. For example, there is much crosstalk between the Division of Preventive Medicine and the School of Public Health on studies such as CARDIA (Coronary Artery Risk Development in Young Adults) and REGARDS (REasons for Geographic and Racial Differences in Stroke), the largest cohort study done to date that looks at stroke and stroke disparities.

What are your goals as AHA president? As an epidemiologist, I'm interested in prevention, locally in Alabama, where we rank very poorly in terms of CV health, as well as nationally and internationally. Recent studies show that in the United States, about 37 percent of people think they have ideal health, but when measured against the metrics, the AHA has established that less than



1 percent of us are actually healthy. So I want to concentrate on getting to ideal CV health—or at least making improvements toward ideal health. I will push this message with the “Life’s Simple Seven” factors established by the AHA: Get active, control cholesterol, eat better, manage blood pressure, lose weight, reduce blood sugar, and stop smoking.

Is the AHA targeting an age bracket with that prevention message? Some may laugh, but the target age is from one to two years. Atherosclerosis begins as a pediatric disease. We start seeing fatty streaks in children before their teens. The health of children has really declined in the past two decades, obesity levels are the highest they’ve ever been, physical activities are the lowest they’ve ever been, and diet quality has changed in the wrong direction. There are many contributing factors, but the cutting of physical education classes in schools doesn’t help. In addition, many children are on subsidized food intake for breakfast and lunch at school, and those foods are not necessarily the healthiest. For instance, pizza is still considered a vegetable.

How does it feel to be in the company of five other UAB faculty members—Tinsley Harrison, Walter Frommeyer Jr., Harriet Dustan, Thomas James, and Suzanne Oparil—who have held the AHA presidency? It’s an honor to serve in this position, particularly as the first epidemiologist and the second Ph.D. to hold the office, and to follow in the UAB tradition is such an honor for me personally. This distinction will help me move the message forward about health and prevention, particularly with health disparities, which have been a persistent problem and are growing worse. I’m hopeful that as AHA president, I can push forward the disparities issue and bring better awareness of health equity.



Veena Antony and her colleagues offer care and counseling to help adult CF patients lead normal lives.

Time on Their Side

Living Longer and Healthier with Cystic Fibrosis

By Gail Short

Cystic fibrosis (CF) was once exclusively a child's disease. Until the 1960s, most sufferers died before reaching grade school.

A deadly, autosomal, recessive disorder, CF causes thick, sticky mucus to clog the lungs and digestive system. Patients experience shortness of breath, wheezing, and dangerous lung infections, and their bodies have a harder time absorbing nutrients from food. But today they're living longer, helped by advances including new drugs and nebulizers, high-fat diets, and supplements to replace digestive enzymes.

"Life expectancy has grown exponentially," says Veena Antony, M.D., a professor in the UAB Division of Pulmonary, Allergy, and Critical Care Medicine. "Today the median is about 38 years. Some of my patients are in their 60s, and one is over 70." For patients who outgrow pediatric CF services, UAB's Adult Cystic Fibrosis Program helps them manage their own care.

Grown-Up Care

"Our goal is to help patients lead normal, adult lives," says Antony, the program's director. "Most of them do so despite having a disease that has so much disability attached to it."

Established in 2000, the program has an

11-member staff that provides comprehensive care to more than 160 patients.

When those patients visit UAB, they meet with a physician, respiratory therapist, nurse practitioner, dietician, and social worker on the same day for updates on lung function, body weight, and overall health. They also receive counseling to help them manage school, work, or major life changes that can impact their health, Antony says.

For instance, while some women with CF have lowered or decreased fertility, those who get pregnant require careful monitoring by the program's medical team to ensure that both the mothers and the babies they're carrying get enough nutrition. Lung infections are another risk, says Antony.

Many CF patients also survive long enough to develop diseases of aging, including diabetes and cancer, says Antony, forcing doctors to tailor treatments around CF. With diabetes, for example, patients must continue eating a high-calorie diet, unlike their non-CF counterparts. Most CF patients, however, respond well to insulin, she says.

Research Benefits

The program also gives patients a direct connection to the newest CF treatments, many developed and tested at UAB, through partnerships with researcher Steven

Rowe, M.D., and scientists at the UAB Gregory Fleming James Cystic Fibrosis Research Center, directed by Eric Sorscher, M.D. "Most of our patients are involved in some kind of clinical trial," Antony says.

Several UAB researchers are testing new drugs that counteract mutations in the cystic fibrosis transmembrane conductance regulator (CFTR) gene that causes CF. Rowe is investigating ivacaftor as a potential treatment for a rare form of CF caused by a G551D gene mutation. Earlier tests have shown that the drug improves lung function and weight gain in patients. Microbiologist David Bedwell, Ph.D., is testing ataluren, which binds to cell ribosomes to overcome mutations and restore some CFTR gene function.

These and other research studies available through the adult program give patients hope for longer, healthier lives, Antony says. "It's such a sea change," she says. "Patients smile and talk about hanging on until the next drug discovery for their gene mutations. It's exciting to be part of it."

Toward New Therapies

More CF Research Highlights

- UAB cell biologist James Collawn, Ph.D., is investigating whether correcting the CFTR protein's folding defect could become a new therapeutic approach.
- Zsuzsanna Bebok, M.D., also a cell biologist, is using the CFTR polytopic membrane glycoprotein to understand how cellular stress responses help regulate gene expression. The ultimate goal is to improve the processing and function of mutant genes like CFTR.
- Amit Gaggar, M.D., Ph.D., an assistant professor of medicine, will conduct a clinical trial to study the effectiveness of the antibiotic doxycycline in reducing inflammatory molecules in CF patients.

Something in the Air | Gauging Pollution's Impact on Health

By Tara Hulén

Forty years after the passage of federal clean-air laws and changes in Birmingham's industrial economy, the skies above the city are no longer full of black smoke.

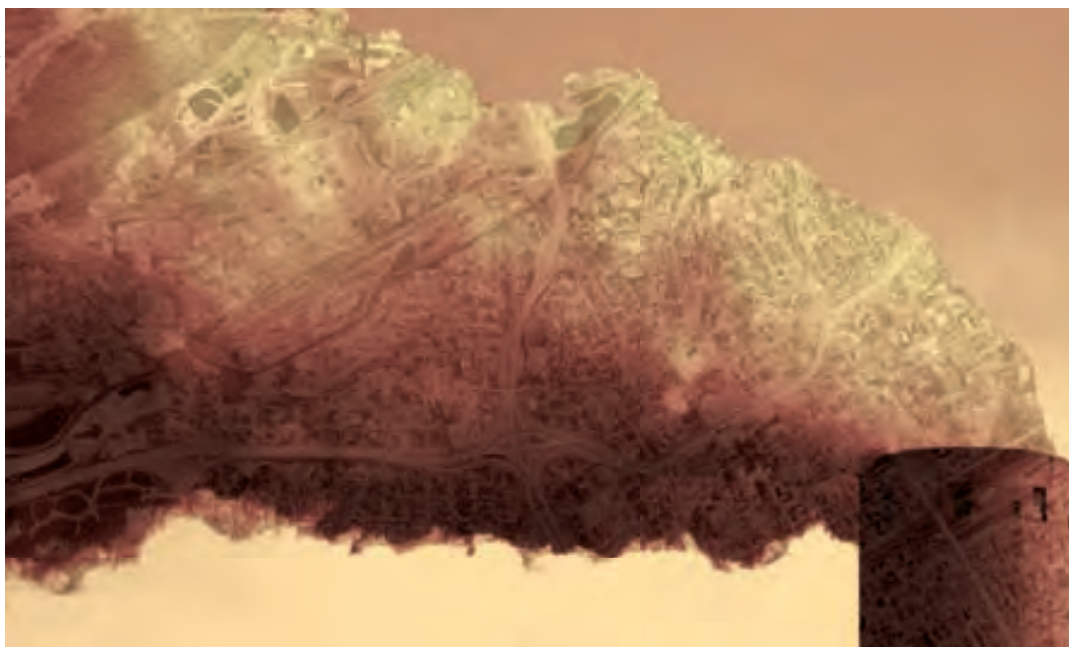
But the region still ranks as the 12th worst in the nation for year-round particle pollution, according to a new American Lung Association report. It's a problem that concerns both UAB clinicians and researchers.

"The environment affects our health in ways that we don't fully recognize and may not even know," says Victor Thannickal, M.D., director of the UAB Division of Pulmonary, Allergy, and Critical Care Medicine and the Ben Vaughan Branscomb Chair of Medicine in Respiratory Disease. "Its broad influence on health extends beyond the lung to cardiovascular health and even metabolic diseases such as diabetes."

Clean Air Initiative

The School of Medicine has joined with the UAB School of Public Health and other campus departments to launch the Birmingham Clean Air Initiative, which also includes the Jefferson County Public Health Department, the Southern Environmental Law Center, and the advocacy group GASP (Greater Birmingham Alliance to Stop Pollution). The united front aims to improve the region's air quality while ameliorating the health effects of environmental stressors through research, the assessment and reduction of exposures, and community education about air pollution's impact.

Lung disease has become a major public health crisis: Chronic obstructive pulmonary disease (COPD) is the nation's third most common cause of death. Lung diseases' systemic effects on other organs and diseases make them a logical focal point for research into environmental stressors, Thannickal says. "These complex diseases are usually related to environmental stressors, genetic susceptibility, and age, which produce a perfect storm. Chronic lung disease is becoming more of an epidemic because our air pollution is worse than decades ago, and because of our aging population."



As a leader in the research and treatment of asthma, COPD, and idiopathic/interstitial lung disease, UAB "should be a leader in solving chronic lung disease linked to environmental exposures," he says.

A Nose for Disease

One arm of the initiative, the Program for Environmental and Translational Medicine (P-ETM), will look for new methods of preventing, diagnosing, and treating diseases caused or accelerated by air pollution. P-ETM director Veena Antony, M.D., a professor of medicine and environmental health sciences, says a new specialty clinic at The Kirklin Clinic already is accepting referrals for patients with pulmonary, dermatological, neurological, or other medical conditions related to environmental exposures.

On the research side, investigators plan to develop an environmental "nose"—sort of a breathalyzer that can reveal recent and past exposures to health-threatening environmental pollutants. "It can tell you if there are ongoing problems in the lungs," Antony says, describ-

ing how the tool samples exhaled breath condensate and uses metabolomics—products of cellular processes—to find early biomarkers of lung disease and signs of inflammation. While lung disease usually is discovered after tissues are damaged, the "nose" could "define early disease before anatomical changes are indicated on a pulmonary function test."

Patients' results can help identify and compare environmental stressors by ZIP code, which will aid in discovering and targeting pollution sources. They also could help researchers tailor interventions to prevent or improve related health problems in those neighborhoods.

Along with cleaner air, the initiative's allied approach should lead to other long-lasting benefits, including new treatments for lung disease. The ideal outcome is to use metabolomics and stem cell biology to understand how the lung responds to environmental stressors, Thannickal says. "The holy grail is to be able to regenerate lung tissue even after damage has been done."

Breathing Uneasy | What's in Birmingham's Air?

Soot (particle pollution) • Smog (ozone pollution) • Carbon monoxide
Lead • Mercury • Arsenic • Benzene • Formaldehyde • Acid gases

Student Rounds

By Charles Buchanan

Giant Step

Surviving the Step 1 Exam

The National Board of Medical Examiners Step 1 exam may have changed in recent years, but it's still a high-stakes test that determines whether students advance to clinical clerkships and influences how residency programs evaluate them. Instead of multiple-choice basic-science questions, the Step 1 now "asks questions based on narratives of patient scenarios," explains Craig Hoesley, M.D., a UAB professor of medicine. The more complex questions "provide an improved assessment

of a student's understanding of how basic science relates to normal human physiology as well as the diseased state." Hoesley, who writes questions for the Step 3 exam, adds that students seem to have adapted to the new format. "The significance of student exam performance has improved," he says.

It has been a year since Birmingham native Shaundra Harris (below) took the Step 1 exam, but the third-year student at the School of Medicine's Tuscaloosa campus vividly recalls the experience. Here she offers insights for future test-takers:

Strategy Sessions: "I started intensive studying in March, and my main tools were *First Aid for Step 1* and USMLEWorld Qbank. I also used Kaplan Qbank, *Goljan Pathology*, and Goljan audio. My strategy was to read a section in *First Aid*, such as

cardiology, and then do a 20- to 40-question block on cardio. I would review every question and answer and make notes in *First Aid*."

Medical Practice: "The School of Medicine provided a three-week Integration module to help review and consolidate everything we had learned in the past two years. We also had a Step 1 practice exam to get a baseline score and discover our weaknesses. I opted into an additional program that gave me access to more practice tests, which were actually old Step 1 examinations, at discounted prices."

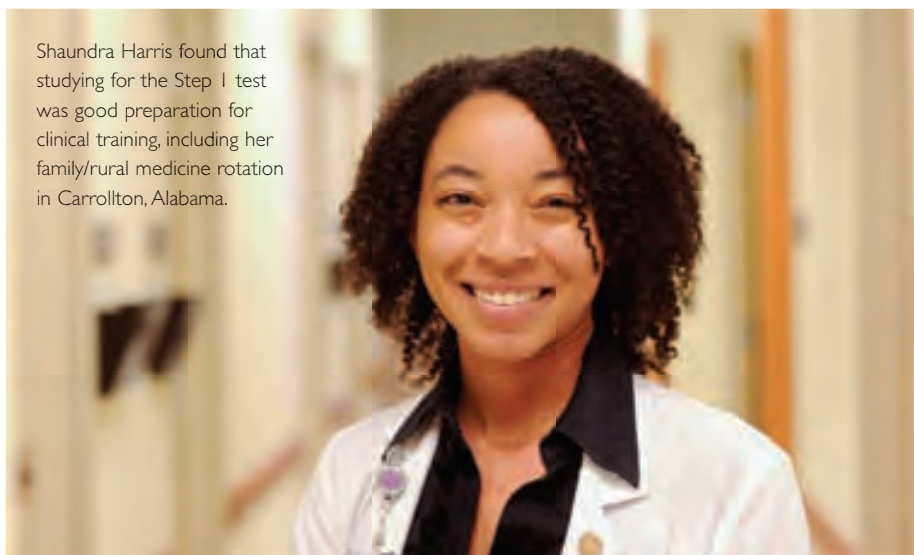
Test of Strength: "I felt nervous approaching exam day, but I was confident that I had done the most I could to prepare. Fortunately, the actual test was a lot like the questions I had worked on for weeks. The only surprise was the high number of anatomy questions—or perhaps I thought there were a lot because I didn't study anatomy very much!"

The Finish Line: "I took my test on the same day as our yearly formal—the Medicine Ball—so I celebrated there."

Lasting Impact: "Studying for the test was a great way to prepare for clinical rotations, and it really strengthened my critical thinking skills. Now that I am in the hospital, I apply these skills to patient care every day."

Good Advice: "Do as many practice questions as you can, and don't get discouraged by the number you get wrong!"

Shaundra Harris found that studying for the Step 1 test was good preparation for clinical training, including her family/rural medicine rotation in Carrollton, Alabama.



Extended Family

A third-year student in the School of Medicine's Rural Medicine Program is making a name for himself miles—and even oceans—away from Alabama. Tate Hinkle is serving as a 2012 regional coordinator for the American Academy of Family Physicians Family Medicine Interest Group (FMIG) Network, which supports medical-school organizations that promote family medicine as a career. He acts as a consultant and resource for FMIGs in Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont, as well as Guam, Puerto Rico, and the U.S. Virgin Islands. At UAB, Hinkle, from Lanett, Ala., has served as president of the School of Medicine's FMIG and student representative to the Alabama Academy of Family Physicians board of directors.

MIND GAMES

How do you help rebuild a country on less than an hour of sleep? Ask the team of six UAB medical, public health, and health professions students who won the Innovation Award in Emory University's International Global Health Case Competition in March. They were among teams from 23 universities challenged to advise a fictitious international aid organization on the best methods of assisting Sri Lanka, which has a history of civil war, political unrest, and health disparities. After a few days and one long night of work, the UAB students presented the judges with a surprising solution: Help Sri Lanka bid for the Commonwealth Games to unify the divided population and improve infrastructure nationwide. The team earned its spot in the international event by winning the UAB Global Health Case Competition, presented by the Sparkman Center for Global Health. First-year medical student Nathaniel Rogers (above, second from left) says both competitions "opened my eyes to disciplines outside the medical classroom and helped me realize that in order to solve global health problems, it is essential to approach them from all perspectives."



Master Class

Microbiology Ph.D. students Maureen Cox (below, at left) and Theresa Ramos (at right) were two of 53 students worldwide selected to attend the inaugural Winter School on Advanced Immunology on Japan's Awaji Island in January. UAB was the only school other than the host institutions—the Immunology Frontier Research Center at Osaka University and the Singapore Immunology Network—to have multiple students selected. Cox, from San Diego, investigates T-cell response to viral infection; Ramos is a South Carolina native researching the immune system's complement system and its response to malaria, particularly cerebral malaria. The trip was "a once-in-a-lifetime experience," Ramos says. "The lecturers and students there are considered some of the best in the world. To have that opportunity in a small setting, and to have discussions with them as we did, was so valuable." To be selected, the students endured a rigorous screening process, including a poster presentation and a talk on their research.

Portrait of the Artist

First-year student Austin Luker took the top student prize at the 2012 School of Medicine Art Show with "Self-Dissection" (below), a mixed media piece with graphite, tea stain, and collage elements. The juried event, featuring paintings, photography, drawings, sculpture, and other works created by students, residents, and faculty, was sponsored by the Alabama Museum of the Health Sciences and the Alabama Alpha Chapter of Alpha Omega Alpha. It opened with a silent auction benefiting VSA Alabama, an arts organization serving people with disabilities.



Laughing Matters

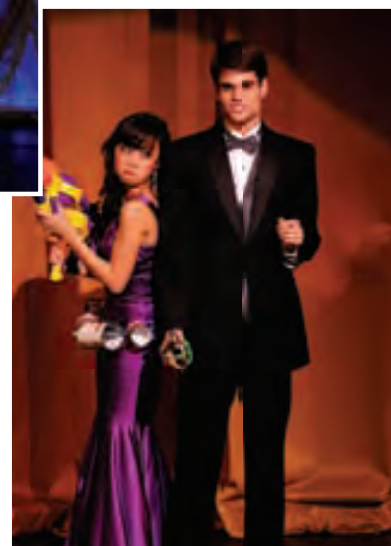
Show Supports Equal Access

By Charles Buchanan

THE TIME-HONORED TRADITION of Skit Night got a new name and a new mission on March 2, when UAB medical students presented The Best Medicine Show at the historic Alabama Theater. Building on the concept that laughter is the best medicine, the show is serving as the principal fund-raiser to help Equal Access Birmingham (EAB)—the UAB medical student group that provides care to underserved patients in the community—start a new clinic.

The event is “an outlet for medical students’ creative talent,” says sponsorship chair and second-year student Sam Ford. This year’s edition featured a mix of live musical and dance performances and short comic films. Mark Wilson, M.D., county health officer and CEO of the Jefferson County Department of Health; Cityville Block 121; Alabama Power; and the Medical Alumni Association provided support.

“With matching funds from Dean Ray Watts, we will be able to donate \$62,000 in proceeds to EAB,” Ford says. “EAB currently helps to staff several local clinics, but we hope to help them transition into an independent, student-run free clinic so that they will be better equipped to aid Birmingham’s underserved populations.”



Future Tense

Anticipation and Excitement Mix at Match Day 2012

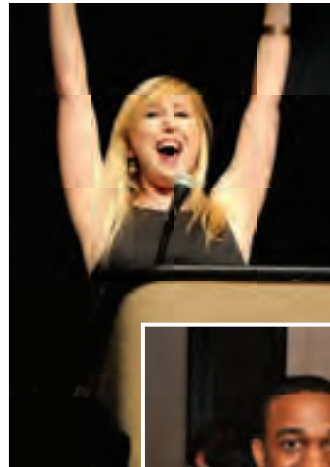
By Charles Buchanan and Bob Shepard



March 16 dawned with more than 38,000 applicants vying for fewer than 27,000 residency positions nationwide. Once the anxious wait ended and the envelopes were opened, the class of 2012 had much to celebrate, with 96 percent of the 176 students matching to a post-graduate position.



The Match brought good news for primary care and general surgery, two areas facing a shortage of physicians, particularly in the rural South. Forty-six percent of the UAB graduating class will train in a primary-care field, up from 43 percent last year. Ten percent will pursue residency training in general surgery, with 21 percent going into one of the other surgical subspecialty fields.



Eight percent of the students matched for positions in emergency medicine, 7 percent for anesthesiology, and 4 percent for obstetrics and gynecology.



While UAB's graduates will do residencies in 26 states, 42 percent of graduates in all specialties will remain in Alabama for training, and 78 percent will stay in the Southeast, topping last year's numbers of 41 percent and 74 percent, respectively.

Commencement 2012

The medical profession gained 171 new physicians on May 20 as the class of 2012 celebrated Commencement at Bartow Arena. Griffin P. Rodgers, M.D., M.B.A., director of the National Institute of Diabetes and Digestive and Kidney Diseases, gave the commencement address.

SCHOOLWIDE AWARDS

Hugh J. Dempsey Memorial Award for Highest Academic Achievement
Adam Craig Weber

Leonard Tow Humanism in Medicine Awards
Presented by the Arnold P. Gold Foundation to a student and faculty member

Heather M. Taylor, M.D.
Suzanne Michelle McCluskey

Medical Assurance Award for Excellence in Patient Communications
Robert Hayne Hollis IV
Julie Anne Turner

Medical Alumni Association Community/Leadership Award
Valerie Janet Gribben

William Boyd Medal for Excellence in Pathology
Forest Blake Huls

Glasgow-Rubin Citation for Academic Achievement
Presented by the American Medical Women's Association to women graduating in the top 10 percent of their class

Yevgeniya A. Byekova
Mary Elaine Killian
Rachel Ethridge Martin
Suzanne Michelle McCluskey
Desmin Milner
Jessica Record
Shilpa Gillella Reddy
Haller Jackson Smith
Teresa Annette Williams

BIRMINGHAM CAMPUS AWARDS

Dean's Award for Outstanding Performance in the Clinical Curriculum
Haller Jackson Smith

Achievement Awards
Recognizing superior achievement in the clinical curriculum

Baran Aksut
Yevgeniya A. Byekova
John David Cleveland
Mary Elaine Killian
Suzanne Michelle McCluskey
Andrew Michael McDonald
John Steven Parker Jr.
Karen Anne Parks
Tyler Lewis Poston
John Anthony Rodriguez-Feo III
Haller Jackson Smith
Adam Craig Weber

Battle S. Searcy Memorial Award in Psychiatry
Jaymee Smith Nelson

Bruce A. Harris Jr. Award in Obstetrics and Gynecology
Haller Jackson Smith

American Academy of Neurology Awards
Amy Ly

Samuel Clements Little Award in Neurology
John Steven Parker Jr.

Garber Galbraith Award for Excellence in Surgery
Joseph John Martinez

G. Gayle Stephens Award in Family Medicine
Julie Anne Turner

Paul A. Palmisano Excellence in Pediatrics Award
Tyler Tate

Tinsley R. Harrison Award in Internal Medicine
Suzanne Michelle McCluskey

Robert Goodloe McGahey Prize in Anesthesiology
Erica Monique Johnson

Wilfred F. Holdefer Memorial Award
Whitney Selisa McNeil

Robert J. Stanley Award in Radiology
Jessica Record

HUNTSVILLE CAMPUS AWARDS

Dean's Award for Academic Excellence
For excellence in clinical clerkships
Jess Harding Mullens

Exemplary Academic Performance
For second highest in the clinical clerkships
Brian William Hixon

Dean's Leadership Award
James Rex Norman

G. Gayle Stephens Award in Family Medicine
James Rex Norman

J. Ellis Sparks Award in Internal Medicine
Natalie Victoria Roebuck



John Di Placido Award in Obstetrics and Gynecology

Robin Joy Bishop

John R. Montgomery Award in Pediatrics

Swati Bansal

Charles Selah Award in Surgery

Jess Harding Mullens

Award in Psychiatry

Mathias Wallace Allen

James Rex Norman

Award in Neurology

Teresa Annette Williams

TUSCALOOSA CAMPUS AWARDS**Scholastic Achievement Award***For the top performance in the clinical years*

Tyler Jonathan Eads

Rachel Ethridge Martin

William R. Willard Dean's Award*For outstanding contributions to the goals and missions of the College of Community Health Sciences*

Alexis Tanishia Mason

James H. Akers Memorial Award*For the senior who best personifies both the art and the science of the practice of medicine as chosen by their peers*

Rachel Ethridge Martin

Robert F. Gloor Award in Community and Rural Medicine

Emily Helen Reams

Joshua Morgan Varner

**Family Medicine Award**

Rachel Ethridge Martin

William W. Winternitz Award in Internal Medicine

Rachel Ethridge Martin

Finney/Akers Memorial Award in Obstetrics and Gynecology

Sarah Elizabeth Hargrave

Pediatric Award

Ashley Nicole Brown

Peter Bryce Award in Psychiatry

Emily Helen Reams

William R. Shamblin**Surgery Award**

Tyler Jonathan Eads

Rachel Ethridge Martin

Neurology Award

Alexander Zane Feldman

Mary Kathryn Huddleston

Student Research Award

Alexis Tanishia Mason

**The top 10th percentile of the class****SUMMA CUM LAUDE**

John Anthony Rodriguez-Feo III

Haller Jackson Smith

Adam Craig Weber

MAGNA CUM LAUDE

Baran Aksut

Yevgeniya A. Byekova

John David Cleveland

Robert Hayne Hollins IV

Mary Elaine Killian

Suzanne Michelle McCluskey

Andrew Michael McDonald

CUM LAUDE

Tyler Jonathan Eads

Rachel Ethridge Martin

Desmin Milner

Tyler Lewis Poston

Jessica Record

Shilpa Gillella Reddy

Sirish Vullaganti

Teresa Annette Williams

Championing Health

Robinson Named Sports Medicine Chair

By Elizabeth Hartley

Even athletes in peak physical condition can get hurt. If they play in west Alabama, chances are that James Robinson, M.D., will care for them.

Robinson, recently named the inaugural Endowed Chair of Sports Medicine for Family Physicians in the College of Community Health Sciences, is a family and sports medicine physician, the head team physician for the University of Alabama, and the team physician for area high schools. He also is director of the college's Dr. Bill deShazo Sports Medicine Center and oversees the college's Sports Medicine Fellowship for Family Physicians.

The sports medicine center, fellowship, and newly endowed chair are all part of the college's Dr. Patrick Lee Trammell Sr. Excellence in Sports Medicine Program, which Robinson calls "an incredible clinical experience." The college is the Tuscaloosa branch campus of the School of Medicine.

The program is named in honor of Trammell, a University of Alabama quarterback and Heisman Trophy candidate who led the Crimson Tide to a national championship title in 1961. Trammell graduated from the School of Medicine, but as he prepared to start his residency in 1968, he was diagnosed with cancer and died that year at the age of 28.

Through the program, Robinson teaches and supervises sports medicine fellows, family medicine residents, and medical students; provides patient care and community outreach; and conducts research and other scholarly activities.

Getting Into the Game

Despite his love of sports medicine, Robinson, a New Orleans native, did not have medicine in mind when he started at Louisiana State University. In college, he worked as an operating room scrub technician at a local hospital where he learned to use EKG machines and perform several basic medical procedures, which sparked an interest in medicine. He entered the LSU School of Medicine and decided to study family medicine because he "could work in all aspects of medicine."

As a fourth-year medical student, Robinson took a sports medicine elective. He worked with the New Orleans Saints medical team and was sent to the NFL team's training camp in Vero Beach, Florida, to help supervise players' health. He cared for Saints players, including Hall of Fame running back Earl Campbell and former University of Alabama quarterbacks Kenny Stabler and Richard Todd.



James Robinson provides care for athletes on the field and in the clinic.

After graduation, Robinson was accepted into the college's Tuscaloosa Family Medicine Residency Program. The late William deShazo, M.D., one of the college's first faculty members and the athletic department's team physician, offered Robinson a sports medicine rotation. By the end of the three-year residency, Robinson knew sports medicine was his calling.

DeShazo had retired by the time Robinson completed a sports medicine fellowship at the Cleveland Clinic in Ohio. Robinson accepted the position of sports medicine physician for the athletic department, and he opened a private practice, West Alabama Family Practice and Sports Medicine, in Tuscaloosa.

National Recognition

Later, the college sought Robinson to develop the yearlong Sports Medicine Fellowship for Family Physicians. Fellows care for patients at the Dr. Bill deShazo Sports Medicine Center and spend time with faculty involved in the field of sports medicine, including physical therapists, dietitians, exercise physiologists, and orthopedic surgeons. Fellows also spend 10 to 15 hours providing care at university and area high-school sporting events.

Robinson believes the Dr. Patrick Lee Trammell Sr. Excellence in Sports Medicine Program will bring national recognition to the college and show that it is a leader in sports medicine. Robinson says his goal for the program is "to produce the best sports medicine physicians in the country."

Pipeline Projects

Programs Support Primary Care and Family Medicine

By Ralph C. Samlowski, M.D., Associate Professor of Family Medicine

Investments by the Huntsville Regional Medical Campus, together with funding from the Alabama Family Practice Rural Health Board, in pre-medical and medical student pipeline programs are paying off in benefits to primary care. This year the Huntsville Rural Pre-Medical Summer Internship Program (RPMSIP); the Rural Medicine Program (RMP), conducted in partnership with Auburn University's College of Science and Mathematics; and the Huntsville Family Medicine Interest Group (FMIG) successfully produced family medicine residents for the Huntsville Campus and for family medicine statewide and nationally.

A Good Match

In the National Residency Match Program, 10 of this year's 35 Huntsville Regional Medical Campus medical students matched into family medicine residencies. That number means that nearly 30 percent of the fourth-year medical students in Huntsville are entering family medicine residencies, compared to about 8 percent of medical school seniors nationally. The majority of the Huntsville graduates will begin their family medicine residencies in Alabama this summer.

Five students who participated in one or more of the pipeline programs—Matt Caldwell, Roan Gannon, Lynn Johnson Greene, Jeni O'Malley, and Jeremy Thompson (FMIG regional coordinator)—decided to continue training at the UAB Huntsville Family Medicine Residency Program. Two more pipeline program students, Helen Hammond and Casey Long, will enter the Montgomery Family Medicine Residency Program. Other pipeline program graduates, including Ty Ashley, Ginny Fuller, Casey Hicks, David Johnson, and James Norman (FMIG president) will enter family medicine residency programs in Texas, Kansas, South Carolina, and Indiana.

Inspiration and Preparation

The Pre-Medical Summer Internship is an intense eight-week program that provides selected college juniors from rural areas in Alabama with broad exposure to medicine and to rural practice. Its goal is to inspire students to pursue medical careers and to practice in underserved areas in the state. The Rural Medicine Program, created in 2006, partners with Auburn University to prepare students for medical school with the goal of increasing the number of primary



Ty Ashley (above) and James Norman (left), both 2012 pipeline program graduates, participated in FMIG service activities to support the Huntsville community.

care physicians that serve the state of Alabama and rural communities. The Family Medicine Interest Group presents third- and fourth-year medical students at the Huntsville campus with opportunities to serve in the community and to develop leadership skills.

The increased interest and positive Match results in both primary care and family medicine are the outcome of years of hard work. Huntsville students begin working with the FMIG two years before graduating from medical school, while RMP students enter their program as college undergraduates, five years before finishing their education. Students in the Pre-Medical Summer Internship Program, usually college juniors, begin at least six years before they receive their medical degrees. Their efforts will help communities throughout Alabama and the nation meet the growing need for primary and family care physicians.

Investing in Innovation

Lifting Limits

Celebrating the Power of Scholarships

By Lisa C. Bailey

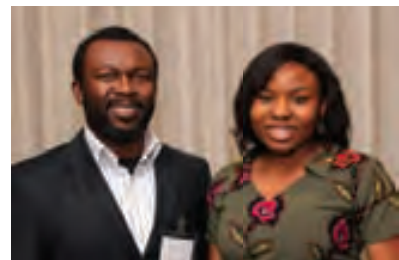
First-year student Darryl Outlaw says he discovered the “true power, potential, and purpose” of medicine by watching health-care teams help his mother and grandfather fight cancer. But receiving a scholarship set up by the late Paul Burleson, M.D., a School of Medicine alumnus and faculty member, and his late wife, Martha, gave him additional impetus to pursue a medical career.

The Burlesons have “truly made a tremendous impact on my life,” Outlaw told the audience at the school’s annual Scholarship Dinner, held January 19 at The Club. “It has removed stress and worry, allowing me to focus on becoming a better student and hopefully developing myself to become a better servant to my patients so that I can try to follow Dr. Burleson’s example.”

Outlaw was one of many scholarship recipients who enjoyed the opportunity to thank donors in person. Third-year student Edwin Mwakalindile described how scholarships help him work toward his goal of opening an urban primary-care practice inspired by his father, a physician’s assistant in a poverty-stricken city in Tanzania. First-year student Toral Patel spoke of her ambition to teach, research, and provide care overseas.

The school aims to increase scholarship support to attract top-caliber candidates and to help lessen the financial burden of medical education, which can limit what and where future physicians practice. “Scholarships are invaluable both to students and our communities,” says Ray L. Watts, M.D., senior vice president and dean. “An investment in our students today will pay dividends in the future, in the form of better, more accessible care for Alabamians.”

More information: **Mandi Alexander** • (205) 975-3529 • mandida@uab.edu



This year:

218 students received scholarship funds

\$2,943,656.56
was awarded

32% of students received scholarship support

Behind the Breakthroughs

How Endowed Positions Give UAB an Advantage

By Jo Lynn Orr

What is the true value of an endowed chair, professor, or scholar? It goes far beyond financial worth, says Robert P. Kimberly, M.D., senior associate dean for research and the Howard L. Holley Research Chair in Rheumatology at UAB.

“First, an endowed position is a direct expression and acknowledgement of the recipient’s accomplishments and importance to the university,” whether he or she is a new recruit or established faculty member, he says. “Second, the attached funds often are critical to building research programs.”

All types of endowed funds have become increasingly important now that extramural funds are tight. “These resources are essential when scientists who achieve National Institutes of Health scores in the top 10 percent of all applications still are not getting funded,” Kimberly says. An endowed chair requires \$1.5 million to establish, while an endowed professorship needs \$500,000; each produces about 5 percent of its corpus in spendable earnings for the faculty member holding the position.

Endowed positions also finance pilot studies and innovative approaches, such as new assays, that otherwise wouldn’t be possible, he adds. “In discovery science, these funds provide the basis for the next set of ideas and the next research direction. Without that flexibility, one can get very constrained.”

Research on the Edge

Frances Lund, Ph.D., and Troy Randall, Ph.D., agree. The renowned immunologists—and husband-and-wife research partners—were recently recruited from the University of Rochester in New York. At UAB, Lund is the Charles H. McCauley Chair of Microbiology, while Randall holds the J. Claude Bennett Endowed Professorship in Rheumatology and Immunology; both say their positions offer opportunities to explore the frontiers of their fields.

“These days, the projects getting approved through the NIH grant system tend to be safe ones with a very high probability of success based on what the reviewers think,” Lund explains. “Flexible funds available through an endowed position give us time to push research with higher risks but potentially bigger payoffs to a point where it would be competitive for NIH funding.”

For instance, Lund and Randall’s team are investigating how immune-system B cells regulate allergic responses. “We’ve found in our pilot projects that a drug already approved and on the market may be useful in treating cases of severe asthma, a growing disease that really needs better therapies,” she says. “It was an unexpected result, and until we had pushed it to the point where we could get it published in a high-profile journal, we wouldn’t have gotten grant funding for it.”



Troy Randall and Frances Lund use funds available through their endowed positions to pursue new discoveries in immunology. See a list of newly endowed chairs and professors on page 31.

Prestige and Progress

Randall’s grant-supported research includes everything from tumor immunity and autoimmunity to influenza. But he plans to use funds through his endowed position to pursue another path that could save lives. “Women with ovarian cancer that metastasizes to the omentum—the protective fold of the peritoneum connecting the stomach and the abdomen—can have a bad prognosis,” Randall says. “The omentum prevents the immune system from making a response that would help cancer treatments get rid of these tumors. We think that the omentum’s normal function is to keep things calm in the intestine by preventing the immune system from responding to agents we ingest via food and drink, which may have something to do with it not responding to tumor cells. If that’s the omentum’s purpose—which we don’t know—then we need to determine how to intervene with the tumors without creating problems in the gut.”

The endowed professorship also provides discretionary funds to pay for basic resources that are critical for research, Randall says. “You can’t buy a new computer through a grant—or pay for copies and other essentials. You also can’t pay tuition for your graduate students. Researchers have expenses that must be covered.”

Because endowed positions can be a key factor in scientific and clinical progress, they are a prestigious honor. “They provide a fantastic opportunity for donors to express their appreciation and facilitate work in areas of interest to them,” Kimberly says, “while also helping the university to be increasingly competitive in attracting first-rate faculty.”

More information: Virginia Gilbert Loftin • 205-975-5602 • vgloftin@uab.edu

A Different Kind of Start-Up | Featheringills Invest in New Cardiovascular Center

By Lisa C. Bailey

The **UAB Comprehensive Cardiovascular Center (CCVC)** is not even a year old, but it has already found enthusiastic supporters in William Featheringill and his wife, Carolyn. The couple has pledged a significant gift to the new center to support collaborative, cutting-edge research in basic, clinical, demographics, and transformational cardiovascular science. Their past support of UAB's cardiovascular program includes funding the Featheringill Endowed Chair in Cardiac Arrhythmia Research.

"UAB has been, is, and will continue to be a tremendously important institution in our community," says William Featheringill, a Birmingham investor, entrepreneur, and venture capitalist. "I also have come to know Dean Ray Watts and am extremely impressed with his vision and plans for centers of excellence, recruiting star faculty, and bringing in research funds."

Featheringill says that he told Watts and CCVC Director Sumanth D. Prabhu, M.D., that he sees his gift as an investment. "They both understand that we want to see results, and I feel that they will provide results and increase the importance of the overall cardiac mission of UAB," he explains. "UAB is already one of the best places in this country for heart care, and this center will make it even better."

The CCVC will help position UAB as a premier, internationally recognized institution for cardiovascular science and expand growth

in newer, high-impact areas of research and treatment such as regenerative cardiovascular medicine, novel device-based therapeutics, and biological therapy.

The center will focus on key areas ranging from disease prevention to heart transplants. It will aid in the recruitment of outstanding cardiovascular faculty; contribute expertise in cardiovascular science to ongoing and future UAB programs; enrich the educational, training, and mentoring environment in cardiovascular science; and foster the development of strategic alliances with other UAB schools and centers.

"I shudder to think where our community would be without UAB," Featheringill adds. "It deserves support from members of the community who can afford to do it, but for an investment to be successful, it has to achieve the results it was intended to accomplish. I am confident that the CCVC will make it work. I have high expectations."



William and
Carolyn
Featheringill

More information: **Virginia Gilbert Loftin** • 205-975-5602 • vgloftin@uab.edu

A Fresh Look | Volker Renovations Transform Learning Space

By Lisa C. Bailey



The desert is about to bloom. As part of a renovation project, Volker Hall's heavily traveled second-floor plaza, now mostly concrete, will get an extreme makeover, including seating and shrubbery. "This should convert the plaza from a harsh desert to a green space," says Pam Bounelis, Ph.D., the School of Medicine's assistant dean for biomedical research.

The plaza's inviting new look is the third phase of an initiative to renovate Volker Hall. Upgrades to scientific space have given the Research Tower "two floors for pharmacology and toxicology, one and a half floors for a joint program between the Department of Ophthalmology and the School of Optometry, and half a floor for cancer investigators," Bounelis says. In the Education Tower, classrooms and study spaces are being completely remodeled and others are being added or expanded. When finished, students will have wi-fi Internet access, wall space to display research posters, numerous outlets for computers, and modern furniture.

Bounelis says that enhancing the learning environment is a goal of the school's AMC21 education strategic plan. Three additional planned renovation phases will begin when funding allows.

More information: **Virginia Gilbert Loftin** • 205-975-5602 • vgloftin@uab.edu

Battles Against RA

Family Supports Innovative Autoimmunity Study

By Lisa C. Bailey

Mary and Bill Battle got a surprise when their 24-year-old daughter, Kayla Kitchens, was diagnosed with rheumatoid arthritis (RA) in 2008. “At the time, we thought that RA was a disease that afflicted primarily older people,” Mary Battle says. “We were shocked to find that it impacts people of virtually all ages, including children and young adults.” The discovery inspired the family to take action, ultimately helping UAB to launch a two-year pilot study focusing on the immune system’s response in RA.

Bill Battle called Tim Townes, Ph.D., chair of the Department of Biochemistry and Molecular Genetics, who had played football at the University of Tennessee when Battle coached there. “Tim told us that UAB had some of the country’s best rheumatologists and reached out to Dr. Robert Kimberly on our behalf,” says Bill Battle.

Robert Kimberly, M.D., a professor in the Department of Immunology and Rheumatology, took Kayla on as a patient. That was a “blessing,” says Mary Battle. “Dr. Kimberly has done a remarkable job with his advice, treatment, and education about the disease as it applies to Kayla’s situation. He always spends as much time as necessary to answer our questions and review and update her treatment plan. Last year, Dr. Kimberly informed us about major research efforts that will hopefully assist in better diagnosis, methodology, and treatment design for RA patients. We were excited to learn about this and other research efforts and committed to a two-year contribution to help fund this work. Our first year ended this spring, and we are impressed with the progress to date.”

The Battles’ gift supports a postdoctoral fellowship in Kimberly’s lab for Shahid Mukhtar, Ph.D., who is investigating the production of T regulatory cells designed to suppress autoimmune disorders. All current RA therapeutics attempt to interrupt the active process of inflammation and tissue injury. Until now, there has been little investigation of—and no therapeutic targeting of—natural processes designed to turn things off. The UAB study will expand knowledge about this key aspect of the disease and ultimately lead to better treatment options.

“The technological advances of recent years are creating an environment where research and drug development can happen more rapidly than in the past,” says Bill Battle. Noting the challenge of pursuing research in a time when securing funding is difficult, he adds, “we are committed to making sure that RA research will not be slowed due to lack of appropriate funding.” The Battles also are funding research in the UAB Stem Cell Institute, which Townes directs, that will hopefully provide a foundation for the development of pluripotent stem cell-based cell therapy for the treatment of RA.

“Kayla decided that RA will not define her as an individual,” Mary Battle says. “She is focusing her goals on finding a solution to the many problems that RA can create. She has become very active in fundraising and educational efforts, and her enthusiasm is contagious, especially to Bill and me.”

The Battles strongly believe that Kayla and other young people will benefit from UAB’s research, and they hope to see patient-specific therapies and ultimately an RA cure in the coming decades. “We are proud to be associated with UAB and two of its cutting-edge researchers in Dr. Kimberly and Dr. Townes,” says Mary Battle. “The state of Alabama should be very proud of the work being done at UAB, and we’d like to help spread that word.”



(Left to right) Mary and Bill Battle joined daughter Kayla Kitchens’s fight against RA by supporting UAB research.

Development Digest

- Devin E. Eckhoff, M.D., director of the Division of Transplantation, has been appointed to the Arnold G. Diethelm Endowed Chair of Transplantation Surgery.
- Boni E. Elewski, M.D., professor of dermatology, now holds the new James E. Elder, M.D., Endowed Professorship for Graduate Education.
- Andres Forero, M.D., Comprehensive Cancer Center director of clinical protocols, is the inaugural holder of the O’Neal-Sokol Breast Cancer Research Foundation of Alabama Endowed Professorship.
- Christopher A. Girkin, M.D., the new chair of the Department of Ophthalmology, has been named to the EyeSight Foundation of Alabama Endowed Chair of Ophthalmology.
- Martin J. Heslin, M.D., professor of surgery, has been appointed to the newly established James P. Hayes, Jr., Endowed Professorship in Gastrointestinal Oncology.
- Massoud A. Leesar, M.D., professor of cardiovascular disease, is the inaugural holder of the Baker-Dean Endowed Professorship in Interventional Cardiology.
- Frances E. Lund, Ph.D., the new chair of the Department of Microbiology, has been named to the Charles H. McCauley Chair in Microbiology.
- Lori L. McMahon, Ph.D., director of the UAB Comprehensive Neuroscience Center, has been appointed to the new Jarman F. Lowder Endowed Professorship in Neuroscience.
- Peter G. Pappas, M.D., who helped establish a clinic for transplant patients and the Tinsley Harrison General Internal Medicine Clinical Service, is the inaugural holder of the William E. Dismukes Endowed Professorship in Infectious Diseases.
- Glenn E. Peters, M.D., director of the Division of Otolaryngology/Head and Neck Surgery for 20 years and vice chairman of the Department of Surgery, has been appointed to the Julius N. Hicks Chair of Otolaryngology/Head and Neck Surgery.
- Selvarangan Ponnazhagan, Ph.D., professor of molecular and cellular biology, holds the newly established Endowed Professorship in Experimental Cancer Therapeutics.
- Troy D. Randall, Ph.D., a newly recruited professor of clinical immunology, is the inaugural holder of the J. Claude Bennett Endowed Professorship in Rheumatology and Immunology.
- Eben Rosenthal, M.D., who helped develop the UAB Head and Neck Cancer Research Program, has been named to the John S. Odess Professor and Division Director of Otolaryngology/Head and Neck Surgery Endowed Chair.
- Ralph D. Sanderson, Ph.D., professor of molecular and cellular pathology, has been appointed to the new Endowed Professorship in Cancer Pathobiology.
- Richard Shelton, M.D., professor and vice chair for research in the Department of Psychiatry, now holds the Charles Byron Ireland Chair of Psychiatric Research.

More information: David Allen • 205-975-5661 • diallen@uab.edu

Connecting Alumni

A Giving Nature

Terry's Tradition of Helping Patients, Colleagues, and Students

By Lisa C. Bailey

Aubrey E. Terry, M.D., was born in 1927 near Leighton, Alabama, in Colbert County, just before the Great Depression. It was an era that “helped produce people who often thought of other people,” he says. “I have a lot of respect for my parents and their generation who lived through those times.” Their example has motivated him to share his time, talents, and generosity with others throughout his life.

One of his most important gifts will benefit future generations of medical students. Several years ago, Terry and his wife, Hettie Butler Terry, a nationally certified teacher, set up a charitable remainder trust, naming the Medical Alumni Association (MAA) as a beneficiary for the establishment of the Aubrey E. Terry, M.D., Endowed Scholarship Fund. The fund will eventually provide a scholarship for a medical student after both Dr. and Mrs. Terry have passed away.

“A scholarship can lead to the betterment of the recipient,” Aubrey Terry says. “The idea of offering this kind of financial help to someone who needs it is refreshing. It is helpful for benefiting the recipient and the giver.”

School Ties

Terry, who graduated from the Medical College of Alabama in 1955, feels a close affinity with the school, its students, and alumni. He is a former president and a longtime member of the MAA. He also has been a contributing participant of the Caduceus Club and a member of the Board of Directors from 1978 to 1983. Terry also served as clinical assistant professor in the Department of Community Medicine at the University of Alabama's College of Community Health Sciences.

Following an internship at Lloyd Noland Hospital in Fairfield, Alabama, Terry completed a pediatric residency at Johns

Hopkins Hospital in Baltimore, Maryland, but he

returned to Alabama because of a dire need for primary care physicians. He spent his medical career caring for patients in Franklin and surrounding counties. Terry held most of the officer positions in the Russellville hospital, and during 1956 and 1999, he served as president of the Franklin County Medical Society. He also is a fellow of the American Academy of Pediatrics and a member of the American Medical Association and Southern Medical Association.

Statewide Impact

In 1974, Terry was the first physician, as can be best ascertained, from a large area in northwest Alabama elected to the Board of Censors of the Medical Association of the State of Alabama (MASA), where he served 10 years working with associations, medical examiners, the State Committee of Public Health, and other organizations and businesses. Terry also influenced health throughout the state as a charter board member of the Alabama Quality Assurance Foundation and the Mutual Assurance Insurance Society, and as a Comprehensive Health Planning Council member. He is a retired life counselor from state District IV.

For contributions to his city, state, and nation, Terry received the 1969 A.H. Robbins Physician Recognition Award for Outstanding Community Service and the 2004 Ira Myers Service Award from MASA. The MAA honored him with the 1997 Garber Galbraith Medical-Political Service Award and the 1999 Distinguished Alumnus Award. Upon his retirement, he was given a recognition by the Franklin County Medical Society and the Franklin County Chamber of Commerce inducted him into the Franklin County Chamber of Commerce Hall of Fame.



Hettie Butler Terry and
Aubrey E. Terry



(Left to right) Ernest, Ian, and Allen Campbell at the
2012 Commencement ceremony

Line of Duty

Path of Honor Unites Students, Alumni, and Families

By Caperton Gillett

When Ian Campbell walked into Bartow Arena on May 20 to receive his medical diploma, he wasn't alone. His father, Allen Campbell, M.D., and grandfather, Ernest Campbell Jr., M.D., were standing with him. They were among more than 80 School of

Medicine alumni and faculty forming the Path of Honor, a new tradition begun this year by the Medical Alumni Association. Alumni, all in caps and gowns and representing different classes and decades, lined the entrance to the arena to celebrate and encourage the new generation of physicians as they took the next step in their careers.

Ernest and Allen Campbell, who graduated from the School of Medicine in 1955 and 1983, respectively, say they were proud to take part in the Path of Honor for Ian. “It’s a source

A Food Fight Against Cancer

LUIS PINEDA | Alumni Profile

By Susannah Felts

Luis Pineda, M.D., wears two white coats: physician and chef. As an oncologist and hematologist for more than two decades, Pineda saw many cancer patients lose interest in food, refusing hospital trays and meal replacement shakes. He also knew why: Many people receiving cancer treatment suffer appetite loss, which can lead to poor nutrition and poor outcomes. “They end up with a tube,” he says.

Pineda, a lifelong food lover who completed a UAB fellowship in 2000, wanted his patients to enjoy the pleasures of eating, especially at a time when food could be a powerful part of their recovery. So he enrolled in Birmingham’s Culinary school, attending every weekend for two years. Then he created *Cooking with Cancer*, a cookbook, Web site, and DVD packed with recipes designed to appeal to cancer patients while fulfilling their special nutritional needs. The flavors may seem exotic, but Pineda notes that the dishes are affordable and simple to prepare, with easily obtainable ingredients.

Cool Comfort

“I’m using ingredients that may be part of a normal diet, but using them in an expression that translates to a better quality of life,” Pineda says. As an example, he explains that chemotherapy and radiation often wreak havoc on taste, smell, and digestion, and many patients have difficulty in

consuming meats and hot or crunchy foods. Both treatments damage salivary glands and taste receptors in the mouth and nose, while the full spectrum of gastrointestinal problems, as well as mouth inflammation, ulcers, and dryness are common and debilitating side effects. For those patients, a plantain ice cream provides a sweet, comforting treat. The ice cream contains very finely ground charcoal, which is often prescribed in pill or liquid form to absorb stomach acid. Together with the fiber-rich plantains, it can help regulate bowel function, while the dessert’s cool, creamy texture appeals to patients with mouth inflammation.

Ice creams, cold soups, and other cool, smooth, easy-to-swallow concoctions can be a boon to cancer patients, Pineda says. “The milk contains a lot of protein and calories, which the patient uses as nutritional support,” he explains. But spicy foods also play a role. The capsaicin in hot peppers—used in Pineda’s jalapeño soup, among other dishes—can help combat nausea and vomiting associated with chemotherapy. Spicy foods in general, or those with strong flavor contrasts, such as a mango-cilantro sorbet, can refresh, or repolarize radiation-damaged taste receptors.

Kitchen Creativity

Pineda notes that his recipes’ effectiveness isn’t backed by statistical proof. But



Luis Pineda conducts cooking workshops for UAB Comprehensive Cancer Center patients and families.

his patients report positive results. He also encourages patients and their families to tweak his recipes and submit their own at cookingwithcancer.org.

Meanwhile, Pineda’s own kitchen remains “an experiment in the making”—a laboratory full of equipment like a vacuum machine and an ultrasonic blender that enable him to take a creative approach to food. Lately, he’s been preparing meat in a multistep process, slow-cooking it to melt away the collagen. “When you bite into it, it’s almost like a gelatin,” he says. “The meat has precisely the same flavor, but chewing is not critical.”

Pineda offers the *Cooking with Cancer* e-book for free online. “I’m hoping that one day the American Cancer Society will say that everyone diagnosed with cancer will get a copy,” he says.

of pride for our family that we have three generations now,” says Allen, adding that as an alumnus and physician, he is able to truly appreciate his son’s accomplishments and the importance of graduation day. “It’s a great thing that we get to participate.”

Ian wasn’t sure that he wanted to follow in his family’s footsteps until midway through his undergraduate career. The science underlying medicine, as well as the chance to change people’s lives, attracted him, he says, but also, “I’ve always had a sense of

reverence for history and tradition. That influenced my decision to become a doctor and carry on the family legacy.”

For Allen, the Path of Honor offered an opportunity to stand with the person who inspired his own career choice. “I had a great role model in my father—as a physician and as a man,” he says. “As a boy, I modeled myself after him. I’d like to think that my son will feel that way about me.”

He shouldn’t worry, Ian says. “My father is a hard worker, and I’ve always admired that

in him,” he explains. “I think it rubbed off on me in a positive way.”

Ian appreciates his family’s show of support—throughout medical school, commencement, and beyond. “What’s neat about being the third generation is that I can look to my dad and grandfather for counsel about the decisions I should make and how I should deal with things,” he says. “I’m excited about the future and forging my own path.”

Fresh Approach |

MAA Forms Young Alumni Council

By Charles Buchanan

School of Medicine graduates are receiving an early opportunity to help shape the school's future through the new Young Alumni Council. Created by the Medical Alumni Association (MAA), the council will serve as a forum where new physicians can share their feedback and insights.

"It's important for recent graduates to be involved in MAA efforts to strengthen the school," says MAA President Gerhard A.W. Boehm. "They have a unique point of view when it comes to identifying areas within medical education that could benefit from alumni support."

Alumni will see some advantages as well, Boehm notes. "The council will help

us learn how the MAA and the School of Medicine can lend a hand to graduates as they progress through the busy early years of their careers."

Alumni under the age of 45 who are interested in joining the council should contact MAA Executive Director Meredith Burns at meredith@uab.edu or (205) 934-4463. Alumni are welcome to suggest names of other graduates as well.

"Our younger graduates embody the future of our profession, and they will play a key role in ensuring that the School of Medicine maintains its excellence," Boehm says. "We look forward to hearing what they have to say."

SAVE the Date

40th Annual Medical Alumni Weekend

February 22-23, 2013

Birmingham Marriott

For details, contact Meredith Burns at (205) 934-4463 or meredith@uab.edu.

On the Plains

Alumni in the Auburn-Opelika area attended an April reception for senior vice president and dean Ray L. Watts, M.D., who shared an update on the School of Medicine's progress toward its strategic goals and their statewide impact. At the event, hosted by R. Bob Mullins Jr., M.D., at the Marriott at Grand National, Watts also highlighted the importance of alumni support for student scholarships, emphasizing the role they play in the education of future physicians.



High Stakes in Lilongwe

ALAN SCHOOLEY | *Alumni Profile*

By Joe Rada

Once unsure where to find Malawi on a map, Alan Schooley, M.D., now lives there, making life better for children. The pediatrician, a 1997 School of Medicine graduate, practices at Partners in Hope Medical Clinic in southeast Africa, treating HIV/AIDS patients in a landlocked country slightly smaller than Mississippi.

How did a former chair of pediatrics in New Mexico's Navajo Nation land in an even more remote and impoverished place? "I'd taken mission trips to Peru and Ecuador, providing pediatric care, and was looking for a hospital in Central America where I could volunteer a few weeks each year," Schooley says. "I contacted Presbyterian hospitals there and learned that they really needed me in Malawi. I wasn't entirely sure where that was."

Changed Views

A month at Nkhoma Hospital in Malawi opened his eyes. "That trip changed my view of poverty and disease," Schooley says. "The medical needs are immense—lack of staff, lack of equipment, lack of drugs and IV fluids, overwhelming numbers of patients. I watched more children die from malaria, sepsis, and respiratory infections in one month than I had in my whole career. Electrical power goes out, and children die because the oxygen concentrators aren't running. Roads become impassible during the rainy season, and people die because they can't access a hospital."

Schooley cofounded the nonprofit Malawi Children's Fund to raise money for education and medical supplies. The fund has sent 40 students to school who otherwise would be working on subsistence farms, provided scholarships to four nursing students, paid for training public health officers, improved drinking water, and bought more than \$12,000 in medical supplies and lab equipment.

"Education is key to raising people out of poverty," Schooley says. "Things will improve when children go to school and become engineers, architects, teachers, and health workers—when there's an educated



Top: Alan Schooley (second from right in back) and American medical school residents at Partners in Hope.

Middle: Schooley with a local student receiving funds for transportation to school from the Malawi Children's Fund.

Bottom: Schooley visits with Dr. Susie Kim, director of education for Daeyung Nursing College. The Malawi Children's Fund provides a scholarship for a nursing student.

Photos courtesy of Neal Schooley.

population that can build a better country."

Schooley's own education at UAB, where he got involved in AIDS education and Birmingham Health Care for the Homeless, helped define his goals. "A rural medicine rotation in Greene County showed me how challenges are not divided equally," he says, "a concept further refined by working in Malawi."

A Smile and a Thumbs-Up

Missions in 2009 and 2010 convinced him to relocate to Malawi permanently in 2011, joined by his daughter, Lauren; son, Mark; and wife, Kimberly, a lawyer who teaches at the school their children attend in Lilongwe, Malawi's capital. They're getting accustomed to the sprawling city with oxen and chickens in the streets, frequent fuel shortages and power outages, occasional political upheavals, a sporadic water supply, and a constant search for groceries.

Schooley says he willingly chooses such conditions in part because of Lauren and Mark, who have experienced the rewards of distributing much-needed supplies bought with money they helped raise. Another reason involves a Malawi case study.

"I admitted a two-month-old I never thought would make it through the night," Schooley says. "I went home only when I felt I had done all I could. The next morning the child's mother—she didn't



speak English, and I don't speak much Chichewa—gave me the biggest smile and a thumbs-up sign. Her daughter had lived. We all need to help others, in our own community or someone else's. Malawi is where I fit. The stakes are high, and the potential for improving lives is great. The difference between life and death is often very simple: power staying on, enough IV catheters, not running out of ceftriaxone. If I train a clinician to care for an HIV patient, diagnose tuberculosis, or keep a CD4 machine running, I've done something worthwhile. That makes up for the stress and frustration of working in such a poor country."

Learn more about Schooley's work at
www.malawichildrensfund.org.

Winds of Change

Contributing to Cleaner Air

By Tim L. Pennycuff • *Images courtesy of UAB Archives*

In the 1960s and 1970s, various efforts were launched in Birmingham, mirroring initiatives across the nation, to clean the polluted air hanging over the metropolitan area as a result of the region's industrial boom.

In 1962, the Medical Center loaned a small piece of land—on the corner of 8th Avenue South (University Boulevard) and 19th Street—to the United States Public Health Service for an air pollution sampling shelter. Three years later, Birmingham participated in its first National Cleaner Air Week, holding events, including lectures by several faculty members at the Medical Center auditorium.

The Medical Center also began looking at its own pollution problems. In an August 1965 memo to the deans of the medical and dental schools, John B. Dunbar, D.M.D., Dr.P.H., complained about pollution from the University Hospital smokestack, noting its ironic location in the “state’s prime symbol of health.” Even hospital administrator Matthew F. McNulty bemoaned the hospital’s contribution to the problem, hoping that funding could be obtained to remove “the most ominous-looking and best-known plumes of black smoke in the city.” Patients inside the hospital were not immune from bad air; photographs from the 1950s—when the building was not fully air-conditioned—show open windows in patient rooms.

Faculty members were instrumental in the work of GASP (the Greater Birmingham Alliance to Stop Pollution), a grassroots organization launched in the 1960s, including Ben V. Branscomb, M.D.; John R. Durant, M.D.; James J. Hicks, M.D.; Paul A. Palmisano, M.D.; and Peter B. Peacock, M.B., Ch.B. UAB’s first president, Joseph F. Volker, D.D.S., Ph.D., served on the organization’s advisory board along with Durant, Hicks, and Reeves and with Abraham H. Russakoff, M.D., a clinical professor of medicine who chaired the Jefferson County Medical Society’s Air Pollution Committee.

Marshall L. Brewer, M.D., a hospital resident in 1970, served as GASP president, and its membership that summer included more than six dozen UAB students. GASP even had office space and a mailing address on campus.

The nationwide efforts of political, health, and grassroots organizations such as GASP led Congress to pass amendments to the existing Clean Air Act in 1970. These provisions provided, among other things, federal regulation and enforcement of state and local air quality. To comply with the new laws and to avoid federal intervention, the Alabama Legislature passed the Air Pollution Control Law. As the regulations were implemented, cleaner air began to replace smoky skies over Birmingham and Alabama, enabling UAB patients and visitors to breathe easier.



Above: Aerial view of the Medical Center, looking northeast circa 1965, showing the proximity of the city's belching smokestacks to the hospital complex.



Above: Ben V. Branscomb, head of the Division of Pulmonary Diseases from 1955 until 1970, conducting research, circa 1970.



Above left: Peter B. Peacock, chair of the medical school's Department of Public Health and Epidemiology from 1966 until 1973, circa 1966.



Left: Joanna Brantley as Miss Clean Air Week, 1965. Brantley was a junior in the University Hospital School of Nursing.



Left and above: *The Virgin and Child with Canon van der Paele*, 1434-36

Below: Medical students observe paintings at the Birmingham Museum of Art.

Pictures of Health

By Charles Buchanan

WHAT'S WRONG WITH THIS PICTURE? Can you spot the medical abnormality in this painting by Flemish artist Jan van Eyck? (Hint: Look at the close-up of the kneeling man on the right.)

UAB medical students are using fine art to sharpen their clinical observation skills in a new course created by Stephen Russell, M.D., assistant professor of internal medicine and pediatrics. "There are dozens of examples, from Roman times to the Renaissance, in which a painter's astute observations captured physical exam abnormalities—sometimes centuries before they were described by physicians," he says. "That led to the question, posed by physicians before me, of whether we could improve observation skills by observing the world like artists." Taking inspiration from a similar



class at Yale University, Russell collaborates with the Birmingham Museum of Art on the weeklong course, which challenges students to look at artworks closely and describe what they discover. Along the way, they learn that spending time asking questions; taking a creative, flexible approach to interpretation; and challenging their own assumptions can help them avoid jumping to conclusions when diagnosing their patients, he says.

Find the answer to the painting's medical mystery at Medicine.uab.edu/magazine.



School of Medicine
FOT 1230 • 510 20th Street South
1720 2ND AVE S
BIRMINGHAM AL 35294-3412

Non-Profit Org.
U.S. Postage
PAID
Permit No. 1256
Birmingham, AL

ADDRESS SERVICE REQUESTED

CONTINUING MEDICAL EDUCATION

Learn about these and many other online courses and research opportunities available through the Division of Continuing Medical Education at www.cme.uab.edu, or call (205) 934-2687 or (800) UAB-MIST.

Interprofessional Management for a Person with Progressive Parkinson Disease; 1 AMA PRA Category 1 credit.

“Should I Check My Sugar, Doc?”: What Will Your Answer Be?; 1 AMA PRA Category 1 credit.

Use of Automatic Defibrillators in a Geriatric Community: Increasing the Availability of AEDs; 1 AMA PRA Category 1 credit.

Advance Directives; 1 AMA PRA Category 1 credit.

UPCOMING UAB SYMPOSIA

October:

Immunogenetics (presented by Nature and HudsonAlpha and sponsored by UAB)

1st Annual Symposium of the UAB Comprehensive Cardiovascular Center: Focus on Heart Failure

Microbiome and Cancer

Biomedical Sciences Postdoctoral Recruitment Conference

E-mail amc2|som@uab.edu for symposia details.