

UGA

THE UNIVERSITY OF GEORGIA
COLLEGE OF PHARMACY MAGAZINE

RX

S P R I N G 2 0 1 5

**Keeping It
Simple**

**Aiding Stroke
Recovery**

**Better
Chemo for
Pancreatic
Cancer**





Dear Friends,

The College is continuing to evolve as a complex organization. In addition to our PharmD program and our Residency programs, we have our PhD and Masters in the Pharmaceutical, Administrative and Clinical Sciences, Certificate and Masters in Regulatory Sciences (on-line), and a BS program in Pharmaceutical Sciences. The PharmD program is a 2+2 program and now includes three extended campuses (Augusta, Albany and Savannah) in addition to our Athens campus. We also operate the Regulatory Sciences Program out of the Gwinnett campus.

An increasing number of our PharmD students now spend their third and fourth years away from the Athens campus. Although this allows us to offer our students better training, better mentoring programs and more options for career planning, it also comes with significant challenges.

Smaller programs, more geographically compact programs and less diverse programs generally allow for a more family-oriented atmosphere where the students know each other; the students see and know their faculty and the faculty, staff and administration all know each other. It is easy to chat and plan things together and develop new opportunities and ideas.

In a complex organization with a number of geographically separated entities, the challenge is to maintain a shared identity and shared program goals. How can this occur when we live and work hours away from each other? The personal interaction and contact is critical for a harmonious operation that we cannot afford to lose and the College is increasingly spending time on overcoming. To meet these challenges the College, for example, is increasingly investing in videoconferencing systems that allow for virtual face-to-face meetings among faculty, committees and students. Our classes are also increasingly carried out via videoconferencing that allows for live questions and answers among the various campuses. And, this summer we have started renovations and investments in systems that will include the possibility of carrying out group projects between campuses where up to a dozen students can work on class projects, electives or student organization issues using video systems that mimic "round" table meetings allowing for close interaction and sharing of information, regardless of where the participants are located.

To further engage in collaborations and interactions we are also seeing increasing travel and meeting budgets that allow for at least some physical presence and not just virtual presence in order to augment the ability to interact and get to know each other.

So is the result we obtain worth the cost? Yes indeed! This allows us to offer better education and experiences for our students, whether through "personalized" training and mentoring programs such as the "Academic home" program in Augusta, where faculty interact both professionally and "socially" with our students without losing contact with our fellow faculty and staff members. It also provides us with the opportunity to offer our students a wider array of professional training and more opportunities for interprofessional training that is critical for improving our healthcare systems and the health of our citizens. The ability to watch our students grow under the system also leads to a personal feeling of success and satisfaction for our faculty.

But in the end you will be the judge of whether our investments in these programs are a good return on our investment by answering the critical question: are our graduates better prepared for the future?

And if you agree that they are, what can we offer you to not be outdone by these new pharmacists? 📧

Svein Øie, Dean

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Reed Liggin: Keeping it simple

By Sheila Roberson

A photograph of Reed Liggin, a man with short brown hair and a beard, wearing a blue and red plaid shirt and light-colored pants. He is standing on a modern staircase with a metal railing and glass panels. The background shows a bright, modern office space with desks, computers, and other people working. The lighting is warm and comes from overhead fixtures.

For the last five years **Reed Liggin ('94)** has worked 80-hour weeks setting up an entrepreneurial venture that stands to change and improve the transfer of healthcare information technology (HIT) for small community hospitals, rural hospitals and critical access hospitals. Along with two partners, Edward Nall and Michael McKenzie, Liggin started the company, RazorInsights, in a makeshift setting in his basement in Canton in 2010; he is now set up on the ninth floor of a newly renovated, modern industrial office space in the old Sears building on Ponce de Leon Avenue in Atlanta, as the newest subsidiary of athenahealth.

Liggin's labors recently earned the company the #15 spot on the University of Georgia's 2015 Bulldog 100 list as one of the 100 fastest-growing businesses owned or operated by UGA alumni in a single year. The founders also realized the multi-million dollar sale of RazorInsights to athenahealth in January. Athenahealth, noted Liggin, provides cloud-based billing and electronic health records software services for nearly 60,000 office-based medical professionals.

"If we had not sold the company in January I'm sure we would've been on the Bulldog 100 list for 2016 also," he said. "That recognition has been quite an honor for us, as it ranks businesses based on their compounded annual growth rate over the last three years and only considers companies with verifiable revenues of \$100,000 or more for the calendar year 2012."

"It has been a very good year," said Liggin, president of RazorInsights, which he describes as "a truly integrated non-modular electronic health record (EHR) system that allows information to flow into a central database for sharing with other care areas, such as long-term, home health or clinics associated with a hospital. It provides all authorized clinicians with a longitudinal view of patient information, past and present, from all care areas."

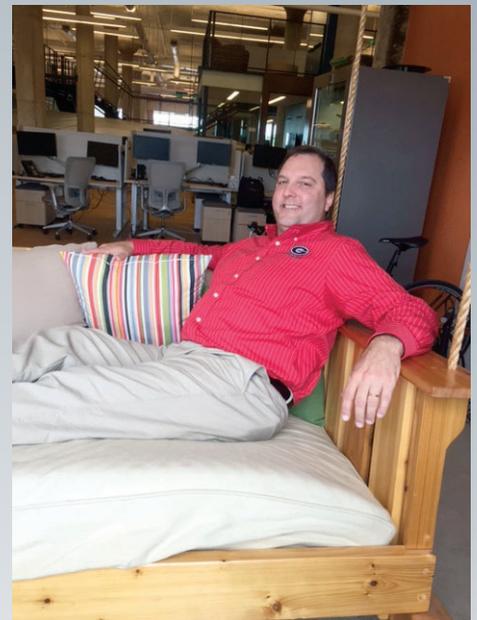
The company's name and business model are based on the principle of Occam's Razor, which states that when there are two competing theories that predict the same results, the simpler one is better. William of Ockham (or Occam), Liggin noted, was a 14th century Franciscan friar who developed the problem-solving principle. The mission at RazorInsights was to make the system easy to use and as simple as possible for users who, in many cases, were adopting technology for the first time.

Liggin's career in pharmacy actually began with a degree in biology and few job prospects. His sister Dina had graduated from the pharmacy school in 1991 and Liggin was impressed with her degree and its potential. He enrolled at the College, graduated and worked for a time as a pharmacy manager at Publix pharmacy before moving to a company that focused on the sale of electronic prescribing systems. There he trained new pharmacists on the computer software systems and ran software sales for doctor's offices in the eastern United States.

"By then I was hooked on electronics and focused on the sale of computerized systems in healthcare," he said, explaining that doctor's offices would send prescriptions electronically through their computers to a national prescription network that would direct the prescription to the specific pharmacy to be filled and picked up by the patient, thus eliminating the need for paper prescriptions.

Eventually Liggin moved to McKesson as director of e-prescribing. There he sold inpatient pharmacy software systems to hospitals to run such pharmacy operations as ordering and dispensing. Getting an MBA while he worked at McKesson increased his desire to do entrepreneurial work. After seven years there, he, along with Nall and McKenzie, also McKesson employees, set off on their own to develop an electronic medical records software system, under the name of RazorInsights, for small 25-100-bed community hospitals and eventually for rural hospitals and critical access hospitals.

"Doctors' offices and large hospitals already used e-technology, but smaller units had been left out, and that was to our advantage. We zeroed in on this underserved niche market," he said, explaining that some hospitals had never used electronic medical record keeping and others had older data collection systems that were too expensive to upgrade. "We saw a unique opportunity, due to the lack of competition, to develop e-systems for the smaller hospital units that make up two thirds of the U.S. hospital market. By teaming up with athenahealth, we can now accelerate our common vision



Reed Liggin lounges in the new office space looking out the window at the Atlanta skyline.

"We saw a unique opportunity, due to the lack of competition, to develop e-systems for the smaller hospital units that make up two thirds of the U.S. hospital market."

to help health care provider organizations of all sizes remain independent and thrive despite market challenges by focusing on being as efficient as possible within an environment of increasing regulatory demands and workflow processes.”

“That’s where the simplicity of RazorInsights came in as we capitalized on what was already available to us. We gathered expertise and contracted for software development with programmers in India,” he said. “We used cloud-based technology to simplify and store medical data, allow for instant retrieval, and eliminate the need for the sophisticated and expensive equipment used in large healthcare systems.”

RazorInsights again took advantage of the Occam’s principle when it helped its clients apply for and receive federal stimulus money under the American Recovery and Reinvestment Act of 2009. Eventually the funds would support the installation of electronic medical records (EMR) systems at each of RazorInsights’ 25 small hospital clients. The EMR systems also expanded to include such areas as pharmacy, labs, radiology, emergency services, and the business office. By the time RazorInsights was sold, it had received an average of \$2.5M in stimulus funding for each hospital.

“Athenahealth is a \$5 billion publicly traded company that is considered a leading provider of electronic medical records for physicians, but not with hospitals. With the acquisition of RazorInsights it now has both markets and a four-year head start on any other company wanting to enter the small hospital arena,” said Liggin, adding that developing EMR systems for medium-sized hospitals is the next big phase.

With the additional resources provided through athenahealth, RazorInsights can build more depth into the software programs to cover disease states and to operate in more facilities, such as nursing homes and home health services. The advantage of building up EMR, he said, is being able to expand knowledge of hospitals and other healthcare businesses to keep up with the trends.

“Just during my career we’ve gone from all paper records to having mostly electronic records in physicians’ offices and hospitals to achieving growth in other health care facilities. As we continue through health care we will see the need for alternative treatments and interoperability

wherein all doctors will get all records just as pharmacies do now,” he said, noting that pharmacies are the most progressive facilities in guiding records through claims networks to insurance companies for reimbursement.

“I’ve never been afraid to learn or embrace new things,” he said, who entered pharmacy to help people and do something good. He tries to hire competent people and lead by motivation, not intimidation, using “The 21 Irrefutable Laws of Leadership” by John Maxwell as his guide for learning good leadership skills.

Liggin now carries the title of vice president for client development and clinicals enterprise for athenahealth, a company that now sees itself as the backbone of the healthcare internet. As for his hard-earned gains, Liggin said he might buy a new pickup truck and install a salt water pool in his backyard for his wife. 🐶

Bulldog 100 Alumni, Ranking, Year of Award

PharmD on Demand	Michael Azzolin '02	12	2014
RazorInsights	Reed Liggin '94	15	2015
Laser Pharmaceuticals, LLC	Stewart Bloodworth '94	21	2012
PharmD on Demand	Michael Azzolin	23	2015
Universal Servo Group, LLC	Stewart Bloodworth '94	27	2013
Myrick Marine Contracting Corp.	Bob Myrick '70	31	2012
Gayco Healthcare	Bent Gay '88	35	2012
Gayco Healthcare	Bent Gay '88	39	2011
Myrick Marine Contracting Corp.	Bob Myrick '70	41	2011
Universal Servo Group, LLC	Stewart Bloodworth '94	41	2014
Universal Servo Group, LLC	Stewart Bloodworth '94	41	2015
Dacula Pharmacy	Billy Stone '84	58	2012
Allcare Pharmacy	Trent Akins '86	64	2011
Jones Pharmacy	Ralph Balchin '68	66	2011
Tim's Pharmacy	Kim Kaminski '00	71	2014
Tim's Pharmacy	Tim Kaminski '89	71	2014
Family Eye Care	Byron Brooks '03	72	2012
Dacula Pharmacy	Billy Stone '84	73	2011
Jones Pharmacy	Ralph Balchin '68	74	2010
Fulghum Drugs, Inc.	Ray Dixon '03	75	2010
Barney's Pharmacy, Inc.	Barry Bryant '81	77	2011
Strickland's Pharmacy	Dennis Strickland '88	79	2011
Surrey Center Pharmacy, Inc.	Earl Wright '70	81	2011
U-Save-It Pharmacy, Inc.	Fred Sharpe '74	82	2012
St. Simons Drug Company	Tommy Bryan '80	82	2010
Gayco Healthcare	Bent Gay '88	84	2010
St. Simons Drug Company	Tommy Bryan '80	84	2012
Fulghum Drugs, Inc.	Ray Dixon '03	86	2011
Jones Pharmacy	Ralph Balchin '68	88	2012
Strickland's Pharmacy	Dennis Strickland '88	90	2012
Laser Pharmaceuticals, LLC	Stewart Bloodworth '94	99	2013

Adviye Ergul and Susan Fagan



Photo by Phil Jones

Treating the uninjured side of the brain appears to aid stroke recovery

By Toni Baker, Communications Director, Medical College of Georgia

To maximize stroke recovery, researchers may want to focus more on ways to support the side of the brain where the injury didn't occur, scientists report.

"Most studies focus on the stroke area and ways to limit damage in that area," said Adviy Ergul, vascular physiologist at the Medical College of Georgia at Georgia Regents University. However, Ergul and collaborator Susan C. Fagan, stroke pharmacist at MCG and the University of Georgia, are among a growing number of scientists finding that while the opposite side of the brain may not have directly experienced a stroke, its ability to aid the injured side is affected.

That aid includes endothelial cells that line blood vessels on both sides of the brain releasing growth factors – primarily brain-derived neurotrophic factor and vascular endothelial growth factor – which protect neurons, help ailing ones recover, and prompt the growth of new blood vessels to the stroke site, which is screaming for blood and oxygen. All this activity also attracts endogenous stem cells so, even if the new blood vessels never actually carry blood, they help create what scientists are calling a "regenerative niche" that can minimize stroke damage.

The uninjured side benefits as well with a boost of growth factors and maybe even more blood vessels, possibly readying itself to take on more responsibility. "It's still unclear what that hemisphere is really doing," Fagan said. "Some people think it's just suppressing abnormal neurons firing in the damaged area. We think it's more active recovery."

The emerging topic was the focus of a February session of the American Heart Association International Stroke Conference in Nashville. Fagan, assistant dean for the UGA College of Pharmacy campus at GRU and director of MCG's Center for Pharmacy and Experimental Therapeutics, moderated the session and Ergul presented on vascular changes. The scientists, who asked the AHA to include a session this year focusing on the uninjured side of the brain, were the first to report vascular changes in the opposite hemisphere following a stroke.

"We know that blood vessels react a lot to the injury in distant parts of the brain," Ergul said. "Within a few days of a stroke, the non-damaged side becomes more active and starts taking up, we think, some of the functions of the damaged side," Fagan said. "If you do functional MRIs in humans, you can see other hemispheres starting

to light up more in the recovery phase within a few days of stroke."

Patients with diseases such as hypertension and diabetes are at particular risk for stroke and poor stroke recovery because their vascular system already has lost some of its innate ability to protect itself. In the unique domain of the brain, that includes maintaining super-tight control over blood flow. "Blood vessels contract to regulate the flow," Ergul said. "What we are seeing in diabetes and hypertension is, for a while, they try to compensate, but they lose the ability to sense the pressure and regulate blood flow."

Without that ability, blood vessels will continue to dilate, increasing leakiness and bleeding into the brain. Additionally, tiny vessels upstream sense what's happening and contract, further reducing blood and oxygen supplies to the already fragile stroke area. "That is why it is so important to regulate the function and also the new blood vessel formation to generate this nutritive environment," Ergul said.

Also at the meeting, recent GRU graduate Maha Coucha presented one of their early pieces of evidence that the uninjured side is a player. They've found that increasing expression of a powerful antioxidant, the enzyme superoxide dismutase, in the uninjured side of a rat stroke model enables blood vessels on the injured side to better control blood flow. Superoxide dismutase is a naturally occurring antioxidant that can neutralize reactive oxygen species, which are produced in abundance before and after stroke, and can directly kill cells and/or cause them to commit suicide.

"We know that any improvement is due to manipulation to the other side and, when we do that, the stroke injury is limited, and the outcome is better," Ergul said.

The team is also pursuing studies of an experimental drug that appears to upregulate the protective mechanisms of the opposite side, including helping restore control of blood flow, increasing production of neurotrophic factors, and creating new blood vessels, by manipulating the angiotensin receptor system.

Blood vessels in both sides of the brain definitely communicate and are literally connected, starting out at the Circle of Willis at the base of the brain, then feeding up into the right and left sides of the brain. Fagan and Ergul note that the remote impact they are seeing in stroke likely also is a factor in traumatic brain injuries, brain hemorrhage, and even brain tumors. 🧠

Scientists Look for Better Chemotherapy Management for Pancreatic Cancer

By Sheila Roberson



Graduate students Wai Hung and Hardik Modi work in the lab with Rajgopal Govindarajan, standing.

Pancreatic cancer is currently the fourth leading cause of cancer death in the United States and is anticipated to become the second by 2020, according to the American Cancer Society. In 2014 it is estimated that more than 46,400 people will be diagnosed with pancreatic cancer and about 85 percent will die within one year of diagnosis. The disease has a five-year relative survival rate of just 6 percent. Moreover the highly aggressive malignancy is resistant to most chemotherapeutic agents.

Rajgopal Govindarajan, an associate professor at the College of Pharmacy, hopes to improve pancreatic cancer chemotherapy with a \$309,521 RO1 research grant he recently received from the National Institutes of Health. The study will evaluate the therapeutic potential of epigenetic reprogramming of cancer cells for improved effectiveness of current chemotherapeutic drugs in pancreatic cancer. The funding is projected for five years for a total grant of \$1,554,521.

The poor prognosis of pancreatic cancer, said Govindarajan, can be largely attributed to the innate drug resistance of the cancer cells, the spread of the cancer to distant sites of the body at the time of diagnosis, and a special cell population within the tumor that continually drives drug resistance and cell renewal. Large scale cancer DNA sequencing studies identify that these events occur not only as a result of changes in DNA sequence per se but other chemical modifications in the cancer cell DNA or DNA packaging elements called histones, together referred as epigenetic changes, he added.

A long-standing interest of Govindarajan's lab is to understand the cellular transport pathways of nucleosides, the building units of DNA, and how this transport mechanism can be better exploited for uptake of anticancer nucleoside analog drugs.

"Nucleoside analogs, such as gemcitabine, are the most commonly used drugs to treat pancreatic cancer and work by entering into the DNA of cancer cells and stopping replication. Many pancreatic tumor cells, however, are resistant to nucleoside analogs, which makes the disease very difficult to treat," said Govindarajan, whose focus has recently turned to the regulatory activity of tiny RNA molecules, known as micro RNAs or miRs, as a means of reverting drug resistance and increasing tumor response to chemotherapy.

"We hypothesize that certain miRNAs have been silenced due to epigenetic activity in pancreatic cancer," said Govindarajan, noting that the miRNA alterations in contributing to cancer chemoresistance are profound in pancreatic cancer cells.

The strategy, he said, is to use epigenetic reversal agents along with conventional chemotherapy agents to improve treatment criteria. In a previous NIH-funded project, his group demonstrated the potential of synthetic histone methylation inhibitors in attenuating the determinants of nucleoside analog chemoresistance, reducing pancreatic cancer cell growth and improving chemotherapeutic response to nucleoside analogs.

"Our approach is innovative since we are utilizing new epigenetic avenues to target the crucial determinants of cancer chemoresistance in order to devise an improved and targeted approach for treating aggressive pancreatic cancer."

"These data support the use of epigenetic reversal agents as a promising group of 'priming' (or presensitization) agents in pancreatic cancer," he said. "However, accompanying evidence also identifies challenges in transitioning such broad pharmacological agents to clinics because of their global effects on normal cellular epigenetic processes and related 'off-target' toxicities."

"The new grant will specifically study mechanisms of action of synthetic epigenetic reversal agents that tease out the beneficial effects from the adverse effects. The overarching goal is to develop better understanding for desirably altering chemosensitization outcomes in pancreatic cancer with minimal or no adverse effect," he said. "We have found epigenetic renewal agents to reprogram the cancer cell miRNA pool and open up new venue of research."

So far Govindarajan has looked at close to 2,000 miRs to identify critical miRNA candidates that were predicted to directly target key determinants of tumor progression and drug resistance. Specific miR candidates, he noted, particularly show the potential to inhibit cancer cell growth, metastasis and chemoresistance when combined with synthetic epigenetic agents and these combinations will be tested in a mouse pancreatic tumor model, he added.

Another important part of his research involves collaboration with Dr. Shanta Dhar in UGA's chemistry department to find ways to deliver miRNA into tumor cells.

"The challenge of the delivery of miRs to the tumor site will be addressed using novel miR-gold nanoparticle formulations as delivery agents," he said. "We hope to find this technique as an alternative and improved miRNA targeting strategy to overcome existing drug delivery challenges and better handle the most aggressive human pancreatic cancers."

"Our approach is innovative since we are utilizing new epigenetic avenues to target the crucial determinants of cancer chemoresistance in order to devise an improved and targeted approach for treating aggressive pancreatic cancer," he added. "The importance of this novel approach is that it may advance the knowledge and principles for the successful development of future epigenetic-chemotherapeutic combination therapies for pancreatic cancer." 

Bourg Named 2015 Teacher of the Year

Catherine Bourg, a clinical assistant professor at the College of Pharmacy, had never planned on a career as a pharmacy educator when she was a student. So she was quite surprised, and honored, when she was recently named Teacher of the Year for 2015.

"After finishing pharmacy school, I completed a one-year postgraduate (PGY-1) hospital residency at the University of West Virginia Hospitals in Morgantown, West Virginia, and then a PGY-2 ambulatory care residency with the UGA College of Pharmacy and the VA clinic in Athens," she said, adding that she had specifically looked for a two-year residency program that included an academic component. "By then I was certain that I wanted a career in academia with a clinical focus that would provide longitudinal care with patients."

As a second-year resident she established pharmacotherapy services at Mercy Health Center in Athens to help indigent and uninsured patients manage chronic conditions in collaboration with clinic providers. There she was able to combine clinical care with student and resident experiential instruction. She joined the College faculty in August 2011.

"I had always wanted to help people and I viewed pharmacists as being very accessible in the healthcare profession in their ability to interact with patients," she said. "Practicing at Mercy has been very rewarding because I enjoy helping students understand how knowledge acquired in the classroom can be applied to actual patients."

More recently she has become more interested in innovations in the classroom that incorporate new teaching techniques and new technology. She coordinates a course in disease state management that has traditionally been lecture based. Her approach now is to form student teams that analyze cases together to reach conclusions for patient care.

"We are also developing cases that use videos to simulate the interaction between pharmacists, patients, and other healthcare professionals in various disease state scenarios," she said, adding that she has been surveying students to assess whether case-based teaching and video scenarios have positive effects on student learning. Bourg feels her innovations strengthen her role as a mentor and as a teacher in the classroom and in the clinic.



Her teaching philosophy focuses on leading by example, challenging students to make a commitment to life-long learning, and development of interprofessional collaborations. "I enjoy seeing the learner progress and being able to facilitate independent learning. It's rewarding seeing a student or resident feel confident in what they know and to be able to take care of patients," she added.

Her award includes an engraved memento, a \$1000 cash gift, a \$1000 salary increase, pending approval by the UGA Provost, and funds to attend the annual meeting of the American Association of Colleges of Pharmacy in Washington, DC. 📺

In the Top 25

Bradley Phillips, Milliken-Reeves Professor of Pharmacy, was named in the Top 25 pharmacy professors in the country by the Medical Technology Schools publication. His current research focuses on cardiovascular treatments for patients with sleep apnea. He has published several papers on his findings, in journals like the American Journal of Hypertension and Pharmacotherapy. Phillips also is serving as the Treasurer of the American College of Clinical Pharmacy (ACCP).



Employees Honored for Service

Cindy Davenport was named Employee of the Year 2014 at a recent reception at the College of Pharmacy. She was also recognized for five years of service, as an administrative associate I for the Regulatory Affairs and Clinical Trials program at the Gwinnett campus.

Davenport provides support for the administration and maintenance of the UGA BioPharma Regulatory Affairs Graduate Education Programs. She also maintains and updates all computerized files for the department, equipment inventory and library databases. She is the procurement cardholder for Regulatory Affairs for purchasing office supplies for the department, conference registrations, periodical renewals, teleconference costs, processing orders and travel documents.

Her letter of recommendation cited her attention to details, inviting attitude, accuracy and efficiency, atmosphere of respect and good judgment.

Others honored for service to the College were: Five years – **Leah Costyn**, research professional I; **Janet Fowler**, administrative associate II; **Susan Herda**, admissions counselor I; and **Wei Jia**, research professional II; 10 years – **Renee Dobbs**, student affairs professional; and **Linda Duncan**, lab tech II.



Ngo Receives NSF Fellowship; Other Students Recognized for Research



Liza Ngo, a second-year graduate student at the College of Pharmacy, has been awarded the prestigious National Science Foundation Scholarship Graduate Research Fellowship (GRF) for 2015.

Her selection was based on her demonstrated potential to contribute to strengthening the vitality of the United States science and engineering enterprise. NSF Graduate Fellowships are among the most competitive graduate research fellowships, and are often awarded to individuals who go

on to become life-long leaders that contribute significantly to both scientific innovation and teaching.

NSF awarded the GRF to 2,000 individuals from among 16,500 applicants in 2015. Among the 2,000 awardees, 1,053 are women, 494 are from underrepresented minority groups, 43 are persons with disabilities, and 31 are veterans.

The stipend for 2015-16 is \$34,000 per twelve-month fellowship year, and another \$12,000 to cover educational expenses. The GRFP Fellowship period is five years; financial support is provided for a maximum of three years.

Ngo is enrolled in the graduate program in the Department of Pharmaceutical and Biomedical Sciences (PBS) under Associate Professor George Zheng. Her work involves developing novel chemical assays to detect the activity of the post-translational modification enzymes, histone acetyltransferases (HATs). When these enzymes are deregulated, or overexpressed, they can promote cancers, cardiovascular diseases and neurological disorders. Ngo's goal is to develop and apply new assay strategies to screen large

compound libraries to discover potential therapeutic leads that target HATs.

The NSF Graduate Research Fellowship Program supports students in technology, engineering and mathematics who are pursuing research-based graduate degrees at accredited U.S. institutions. The prize is highly coveted by graduate students because it gives students the flexibility to focus solely on research, while many of their fellow students are trying to balance teaching loads with research responsibilities.

Other student awardees in PBS include: Undergraduate **Vedika Rajasekaran**, working in Assistant Professor Aaron Beedle's lab, has received a prestigious 2015 Summer Internship in Biomedical Research award from the National Institutes of Health. She will work in an NIH intramural laboratory in Washington, DC, for the summer.

Rayasekaran is a cell biology major whose research has focused on creating clonal and primary muscle cell cultures for the study of muscular dystrophy.

Rajasekaran and Noreen Syed were each winners of the 2015 CURO Research Assistantship Award. Syed is a biochemistry and molecular biology major who works on cloning special DNAs to enable genome editing of muscle cells in culture in Beedle's lab.

CURO offers undergraduates the opportunity to engage in faculty-mentored research regardless of discipline, major or GPA – even students in their first year.

Taking honors at the annual PBS Graduate Research Day were: **Diana Nguyen** who received the Outstanding Research Presentation award; **Kristen Peissig** who received the John E. Nine Scholarship for Excellence; **Eled Gebrehwot** and **James Sutton**, who each received the Richard Bryan Scholarship for high academic achievement and excellence in research.

Laura Hanold won the 2015 Joseph P. LaRocca award for significant contributions to graduate research by designing chemically stabilized beta-turn mimics for EGFR inhibition.

Chu Lecture

The 2015 annual Chu Lectureship at the College of Pharmacy featured Dr. Mark Sliwkowski, distinguished staff scientist in Molecular Oncology at Genentech, addressing "Successes and challenges in targeting activated HER2 in solid tumors."

The event was hosted by the College's Department of Pharmaceutical and Biomedical Sciences.

The Chu Lectureship was established to bring internationally recognized leaders in drug discovery to the University and to honor the outstanding accomplishments and contributions of Distinguished Research Professor Emeritus David C. K. Chu in the College's Department of Pharmaceutical and Biomedical Sciences (PBS).



David Chu, distinguished research professor emeritus; Mark Sliwkowski, distinguished staff scientist, Genentech; Dexi Liu, head, Pharmaceutical and Biomedical Sciences; and Michael Bartlett, interim assistant dean, Nontraditional Education and Outreach

39th GMP Conference

Some 254 scientists attended the 39th meeting of the Good Manufacturing Practices Conference at UGA this spring with the goal of establishing an annual dialogue with the pharmaceutical industry on important drug compliance and quality topics. The conference has grown into the best and most widely recognized international GMP conference and offers attendees the unique opportunity to interact with FDA regulators and global industry experts.

Included were sessions on data integrity, enhancing product quality, RA/QA Records Risk Management, GMP enforcement trends and foreign inspection results.

CDD Seminar

"Prediction and Prodrome: Ethics of Medicine as a Risk Management System" was the topic of a bioethics seminar presented by Paul R. Wolpe, right, Asa Griggs Candler Professor of Bioethics and Director of the Center for Bioethics at Emory University. Vasu Nair, left, is director of the UGA Center for Drug Discovery, which co-sponsored the event, along with UGA's Office of the Vice President for Research, Faculty of Infectious Diseases, Biomedical and Health Sciences Institute, Center for Tropical and Emerging Global Disease and the Institute of Bioinformatics.



Vasu Nair and Paul Wolpe

Office of Continuing Education Has Partnered with SERC for 46 Years

This spring the College of Pharmacy Office of Postgraduate Continuing Education and Outreach co-sponsored the 46th Southeastern Residency Conference (SERC) in Athens. Some 527 pharmacists, including 334 pharmacy practice residents, attended the annual event from seven southern states.

"This is the largest residency conference in the U.S. and the first one established," said Trina von Waldner, head of the College's continuing education program. "SERC's mission is to provide a venue for residents to present their research; providing continuing pharmacy education to residents, preceptors and program coordinators is an added benefit."

The event is designed to showcase professional presentations and give attendees the opportunity to exchange information and ideas with fellow residents and preceptors. Emphasis is placed on cutting-edge developments within the field of pharmacy practice. Additionally, the conference helps the residency programs meet ASHP accreditation standards for pharmacy residencies.

The Office of Postgraduate Continuing Education and Outreach has been recognized as a leader in continuing professional development by inspiring lifelong learning, cultivating service to the profession, and delivering exceptional pharmacy education, added von Waldner.

Our Amazing Students



Lead Dawg Students Named

Four College of Pharmacy students have been selected to represent their classmates as Lead Dawgs for 2015, based on their leadership capabilities as viewed by fellow students, faculty, and/or staff. They are, from left, Huong Pham, Class of 2016; Deven Jackson, Class of 2017; Jessie Kupstas, Class of 2016; and Marin Abousaud, Class of 2018.

SNPhA prepares personal care kits for domestic violence victims

Domestic violence is a public health issue that healthcare providers can play a huge role in preventing through education, awareness and treatment. In partnership with Project Safe, a domestic violence shelter for women and children, the Student National Pharmaceutical Association collected more than 200 items from student pharmacists and UGA faculty and staff members in order to provide more than 20 "to go" bags as well as other items useful in the shelter. The "to go" bags included personal care items that are essential for preventing infections and diseases.

SNPhA members decided to take on this challenge due to the prevalence of domestic violence and its impact on public health. Victims of domestic violence who are able to escape and find shelter worry about their safety first and health later.



Named Among 15 from 2015

Kristin Bradley ('15) was featured with other UGA students on the UGA Commencement webpage for the 15 from 2015 campaign, explaining how her hands-on learning experiences as a pharmacy student impacted her UGA academic experiences and her life. She had worked at an Indian Health Service site in Sitka, Alaska, and at the Mercy Health Center in Athens.

College of Pharmacy Holds Pinning Ceremony for Class of 2016

Parents, friends, faculty and staff of the University of Georgia College of Pharmacy recently attended the annual pinning ceremony for the 140 members of the Class of 2016. The ceremony, which was sponsored by Rite Aid, marked the students' transition from classroom instruction to the clinical training that occurs during the fourth year of the pharmacy curriculum. Each class member received a pin to commemorate the event.



Chace Vaughn

Pharmacy alumnus **David Pope ('04)**, co-founder of Creative Pharmacist, was the keynote speaker. Class president Bliss McMichael was master of ceremonies, with co-vice president Dana Brock presenting the invocation and Kacee Barnett, class secretary/treasurer, introducing the speaker.

Co-vice president Payal Kakadiya presented the I.Z. Harris award to Chace Vaughn, as an outstanding member of the class.



Class of 2016 officers Bliss McMichael, Kacee Barnett, Payal Kakadiya and Dana Brock



Thomas Adam Brown



Leah A. Stowers



Patrick J.Y. Tu

Awards Banquet Honors Excellence

The 2015 graduation weekend's festivities began with the 67th annual Senior Awards banquet on Friday, May 1, where 13 exemplary students received 12 separate awards for special achievement, academic excellence and professionalism. **Raphaelle Rose Lombardo** of Statham was Master of Ceremonies.

Earning top awards were: **Thomas Adam Brown** of Woodstock – the Robert C. Wilson Award for professional integrity, personality, positive attitude and intelligence; **Leah A. Stowers** of Dawsonville – the Kenneth L. Waters Award, which recognizes academic excellence, leadership qualities, professional attitude and service; and **Patrick J.Y. Tu** of Alpharetta – the Durward N. Entreklin Pharmacy Student Leadership Award.

Kathryn Tyler Maples of Marietta received the Lilly Achievement Award for ethics, scholarship and leadership. **Patrick Terry Brandin** of Rome, **Thomas Adam Brown** of Woodstock and **Raybun Carol Spelts** of Leesburg were recipients of the Merck Award for academic excellence.

The APhA-ASP Senior Recognition Certificate went to **Leah A. Stowers** of Dawsonville, recognizing professionalism, excellence in patient care, exceptional service and commitment to the profession.

The Facts and Comparisons Award of Excellence in Clinical Communications went to **Chioma E. Enyinnah** of Atlanta for high academic achievement and outstanding clinical communication skills.

The McKesson Award, based on exemplary performance during clinical rotation, was presented to **John Michael Hughes** of Summerville.

The Mylan Pharmaceuticals Inc. Excellence in Pharmacy Award for high academic achievement and professional motivation and proficiency in drug information services was awarded to **Megan E. Phillips** of Colquitt.

The Pharmdawg Award for service to the profession, college and community was presented to **Kristin Deland Bradley** of Savannah and **Kyley Kani Makanani** of Conyers.

Ian Dunne of Athens received the Redfearn Award for professionalism and community service.

Page Skinner Thomas of Athens received the TEVA Pharmaceuticals USA Outstanding Student Award for excellence in pharmacy study.



Alumni Council President, **Jim Holley** ('95, '96), and 2015 Distinguished Alumnus **Fred Sharpe** ('74), owner of U-Save-It Drugs in Albany, wait for graduation procession.

Class of 2015 graduation

The College of Pharmacy graduated 137 Doctor of Pharmacy students in ceremonies on May 2. Of those students, 69 graduated with honors: 18 summa cum laude, 30 magna cum laude and 25 cum laude.

Twenty-seven graduates were selected to attend postgraduate residency programs, 14 in Georgia and the remaining 13 in other states.



Associate Dean for Academic Affairs **George Francisco** (right) receives the dedication of the Georgia Pharmacist magazine from co-editor **Joe Smith**.

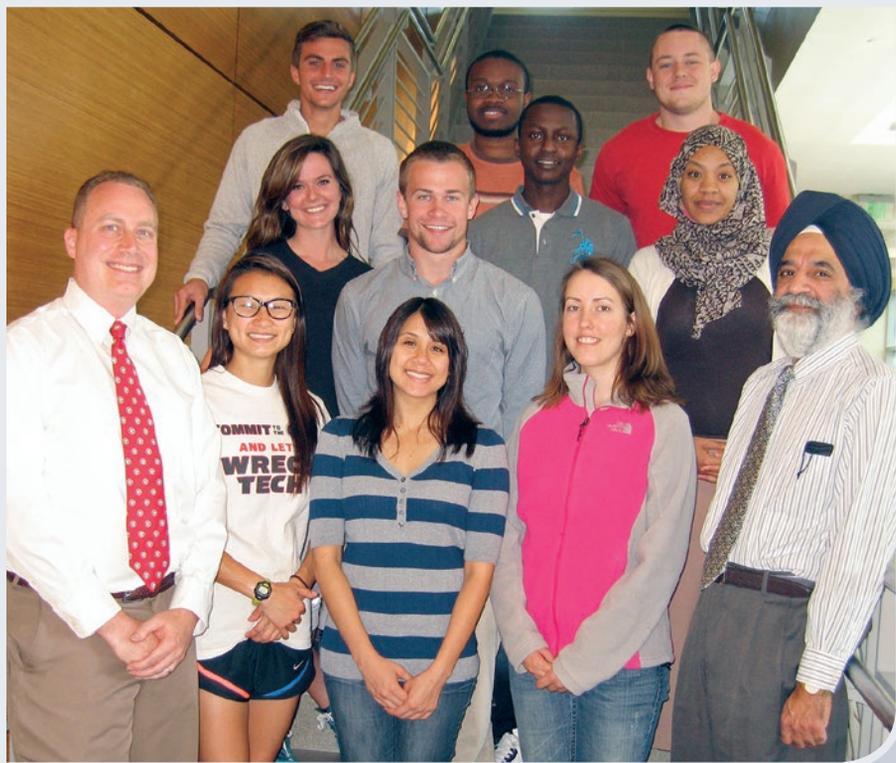
First Bachelor of Science in Pharmaceutical Sciences Students Graduate

The inaugural class of B.S. in Pharmaceutical Sciences students began in Fall 2013 as an interdisciplinary program representing all facets of the drug discovery and drug development processes. The program's first students graduated in May.

The B.S. program is a gateway for professional schools, such as medical, pharmacy, dental, nursing, veterinary medicine, in addition to graduate studies on the masters and Ph.D. levels in regulatory and clinical programs.

Career opportunities are available in the areas of pharmaceutical, biopharmaceutical, medical device, nutraceuticals, government, and research.

Members of the 2015 graduating class are: Agyemang Boakye, Adam Foskey, Eled Gebrehiwot, Taylor Greenfield, Michael Mills, Diana Nguyen, Kristen Peissig, Sara Pennington, David Schubach and James Sutton. Michael Bartlett (left in photo), is director of the BS program, and Gurvinder Singh Rekhi (right) is B.S. program faculty coordinator.



DISTINGUISHED ALUMNUS AWARD

The College of Pharmacy Alumni Association is seeking nominations for the 2015 Distinguished Alumnus Award. Nominees should:

1. Be distinguished in his/her business, profession, or life work,
2. Be of such integrity, stature, demonstrated ability, or renown that the faculty, staff, students, and alumni of the College will take pride in, and be inspired by, his/her recognition,
3. Have demonstrated a continuing interest in the College;
4. Be a person who recognizes and reflects the importance of his/her education at the College of Pharmacy, who demonstrates pride in his/her alma mater, and whose interest and loyalty are evident, and
5. Be a person who manifests an attitude of respect and compassion for mankind.

Nomination Form

Name of Nominee: _____ Graduation Date: _____

Address: _____

City, State, Zip: _____

Name and Address of organization or person making nomination:

A resume or a letter of nomination stating the outstanding qualities of the nominee should be submitted along with this form. **All nominations are due September 1, 2015.** Mail the nomination form to: College of Pharmacy Alumni Association, c/o Kim Hamby, Director, Alumni Affairs, College of Pharmacy, The University of Georgia, Athens, GA 30602-2351 or FAX to (706) 542-5269.

Preceptors of the Year 2015



Three preceptors were honored at the annual Awards banquet. Named Preceptors of the Year for 2015 were **Patricia Knowles ('84)** of Georgia Regents Medical Center, Augusta; Amanda M. Miller of Rockdale Medical Center, Conyers; and Karyn Taylor, Memorial Health University Medical Center, Savannah.

Northwest Georgia Student Scholarship



Randy Ellison, center, with grandsons Ellison and Connor

Randy Ellison ('71) has a vision for pharmacy that stands the test of time. From his very first gift in 1980 to his most recent creation of the **Northwest Georgia Student Scholarship**, Randy has not wavered in his support of the University of Georgia College of Pharmacy. Dana E. Strickland, executive director of External Affairs, commented, "It is a wonderful pleasure to have Randy as a professional and personal friend of the College for over 35 years. He never hesitates an opportunity to invest in students, research, pharmacy practice, and his alma mater."

Randy currently has three endowments at the college: the **Randy Ellison Cancer Research Fund**, **Randy Ellison Community Pharmacy Fund**, and the newest, **Randy Ellison Northwest Georgia Scholarship**. Through his giving, Randy impacts research, education, and community relationships. When asked about his motivation for giving, Randy commented, "Pharmacy needs help from others to remain the quality profession we currently know it to be. The future direction of pharmacy is incumbent upon alumni to support it."

More specifically to his current student scholarship, Randy says he hopes to be able to support quality individuals who may not otherwise have been able to join the Pharmacy family. Randy received a partial scholarship that supplemented his income from working almost full time while in Pharmacy school. So, he certainly knows the difference that support from others can make. Furthermore, with preference being given to students in northwest Georgia, he is able to create a pharmacy legacy in an area he calls home.

After owning a couple of pharmacies most of his career, Randy is now enjoying semi-retirement by playing tennis and traveling, when possible. He has two grandsons, Ellison Beard, 17, and Connor Beard, 19, who have become a part of his family legacy at the University of Georgia. Ellison is a sophomore studying computer science, and Connor will begin his freshman year in the fall.

The University of Georgia thanks Randy Ellison for his support of pharmacy. Through his tri-area giving, Randy completely interweaves into the fabric that is the College of Pharmacy.

Micrometrics Gift-in-Kind

Dr. Michael Bartlett, professor and director of the B.S. in Pharmaceutical Sciences program, has received a very generous gift-in-kind from Micrometrics Instrument Corporation. These instruments were gifted in support of research endeavors at the University of Georgia College of Pharmacy and the enhancement of students' experiences with the characterization of drug substances and drug delivery systems.

William E. (Bill) Wade Scholarship Endowment

Del, Clarke, and Theresa Wade have invested into the College of Pharmacy through the **William E. (Bill) Wade Scholarship**. This endowment memorializes the impactful life and career of Bill Wade, a son and husband respectively. It is their vision that this scholarship would support students who share Bill's interest in Community and Academic Pharmacy. The selected individual should also exemplify excellent moral character, integrity, and be spiritually minded, traits by which Bill was well known.



Dr. Bill Wade ('75, '85) was a beloved member of the College of Pharmacy faculty for more than 35 years. In 2008 he was named the first Kroger Endowed Professor. Dana E. Strickland commented, "It made life better to have Bill as a dear friend, a professor, and a colleague. He gave so much support to the College and external affairs. He was an outstanding person of integrity and character. All who knew Bill loved him."

Prior to joining the College of Pharmacy faculty, Bill was a local community pharmacist. Those who crossed paths with Wade in the pharmacy shared heartfelt sentiments for him as well. After joining the College of Pharmacy family, his patients would often share with Theresa how much they missed seeing his kind face in the pharmacy.

All who have been impacted by the life of Bill Wade are encouraged to consider making an investment into his legacy at the College of Pharmacy by visiting our donation page online or contacting External Affairs directly at 706-542-5293.

Evans Family Endowed Student Scholarship

Kevin C. Evans has established the **Evans Family Endowed Student Scholarship** together with his wife, Candice, and daughter, Lindsay. Lindsay is a first-year student at the College of Pharmacy. It is their vision to support students, like Lindsay, who are from Rome and counties in Northwest Georgia. The University of Georgia College of Pharmacy is grateful for their support of future pharmacy professionals.

A Word From Jim Holley ('95, '96)

Alumni Association President



Over the last three years I have transitioned from a hospital pharmacy administrative role to a pharmacy informatics role. I picked an “exciting” time to move over to the technology side of pharmacy. The Meaningful Use portion of Obamacare created a lot of change over a relatively short period of time in the pharmacy informatics world. Hospitals have been in a race to meet the goals the Center for Medicare and Medicaid Services (CMS) has created for the electronic health records (EHR) in order to receive the incentives of the program. A few of the areas that affect pharmacists that I have worked on are Computerized Prescriber Order Entry (CPOE), Admission Medication Reconciliation (AMR) and Barcode Medication Administration (BMA). During my time of working to reach these goals, I have found the healthcare system to be complicated. Trying to get a manual system that was created and evolved over many decades into a nice neat box that can be coded and sent through computer systems can be difficult. Doing this over dozens of hospitals who have developed unique workflows can seem impossible at times.

I do see the benefits of having an EHR and the safety and clinical improvements that can be realized. Besides the obvious benefits of reducing handwriting issues and scanning to check for the correct medication, the EHR will enable us to do things that paper could not. Having this electronic information will allow us to collect and collate data on the patient, provider, facility, company, regional, and national scale. From the patient scale we will now have the data that can be put together to provide automated decision support (ADS). ADS is a requirement for meaningful use for providers; it is also a tool pharmacies can use to help with their Antimicrobial Stewardship Programs, IV to PO programs, and other clinical programs to help prioritize the pharmacist workflow. From a more global scale, this data can be used to identify sites that are quality and efficiency leaders. We can determine what they are doing differently and emulate their approach and drive cost effective healthcare.

Many of these changes were coming but it was going to take a lot longer to implement. One change that I don't think would have taken place for years or decades is the interoperability between systems. How do I get my hospital's proprietary system to talk the same language as the physician's system? The National Institutes of Health has been working to create codes that each proprietary system can send and receive so that they can pull in correct and complete health care information. Pharmacists and other healthcare professionals having access to current and complete information will help to make better safer decisions. I hope the days of the admission medication reconciliation with the “little blue pill for blood pressure” are going away for good.

Sincerely,
Jim Holley
Pharmacy Informatics Systems Consultant for HealthcareIS
Monroe

Kim Hamby, Alumni Affairs Director • kihamby@uga.edu • 706-542-4536

Golf Classic Celebrates 23rd Year

Some 81 golfers participated in this year's Albert W. Jowdy Memorial Golf Classic at the Athens Country Club with an estimated \$3,374 available for student scholarships.

Hole sponsorships were provided as follows: Walmart, \$1,000; Bloodworth Wholesale, golf balls; Ouida & Terrell Wiggins, \$500; Bruce & Mary Broadrick, \$250; Lake Country Pharmacy & Compounding Center, \$250; Clay & Andrea Lewis, \$250; Russ Rainwater, \$250; and Flynn & Bonnie Warren, \$250. Beverages were provided by Terrell Wiggins and Walmart.

First place winners of the First Flight were Ken Gaskins, Mark Gaskins, Matthew Gaskins, Johnny Williams; second place winners were Ken DeLay, David McCuen, Dana Strickland, Tripp West.

First place winners in the Second Flight were Matthew Clifton, Patrick Ellis, David Moore, Chris Newman; second place winners in that flight were Jake Davis, Dustin Orvin, Leonard Templeton, Alan Wolfgang.

First place winners in the Third Flight were Amy Bruce, Clay Lewis, Don Lewis, Tom Olberding; second place winners were Michael Dent, Eric Durham, Mike Smith, Carey Vaughn. Pro Shop gift certificates in the amounts of \$50 and \$35 were given to first and second place winners, respectively.

Closest to the pin winners were Alan Wolfgang, Josh Lubel, York Delloyd, John Pittard. Martie Purser made the longest drive and Johnny Williams won the putting contest.



Hairy Dawg greets golfers at tournament.

LET US HEAR FROM YOU!

Please take a minute to fill out this questionnaire and **mail it to the Editor, College of Pharmacy, The University of Georgia, Athens, GA 30602, or FAX it to Sheila Roberson at 706-542-5269 or email it as an attachment to roberson@rx.uga.edu**. Many of our alumni have inquired about former classmates, so we are trying to keep current information available.

NAME _____ DEGREE and YEAR _____

ADDRESS _____ CITY, STATE, ZIP _____

HOME PHONE _____ E-MAIL _____

BUSINESS PHONE _____ FAX _____

PROFESSIONAL INFORMATION (Employer Name and Address, Job Title, Duties...)

AWARDS AND HONORS _____

FAMILY INFORMATION (Spouse's Name. Is Spouse a UGA Grad? Is Spouse also a Pharmacist? Any Children?) _____

INTERESTS AND HOBBIES _____



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Pharmacy Alumni Society
Athens, Georgia 30602-2351

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ANNOUNCEMENTS

PRINT/ONLINE

Beginning with the Fall 2014 issue of UGARx, we began printing and mailing the magazine only to those alumni donors and friends who have contributed more than \$500 annually to the College of Pharmacy.

All issues of UGARx will continue to be posted on our website (www.rx.uga.edu) for alumni to download and print. We will send emails and online notices to everyone about the quarterly postings of UGARx.

If any alumni would prefer to continue receiving a printed copy, please contact Sheila Roberson, director of publications, at 706-542-5303 or roberson@rx.uga.edu.

Upcoming Programs and Events

Continuing Education LIVE FALL PROGRAMS

Patient Safety
August 20
College of Pharmacy

STaR Conference
September 24-25
Georgia Hotel & Conference Center

Howard C. Ansel Symposium
October 23-24
College of Pharmacy

**Medical Device
Regulations Conference**
November 3-4
Georgia Hotel & Conference Center

For more information contact the Office of Continuing Education and Outreach by email at pharmce@uga.edu or by phone at 706-542-6232.

ALUMNI EVENTS and STUDENT PROGRAMS

White Coat Ceremony
August 15, 10:30 a.m. – noon
Performing Arts Center, Hodgson Hall

Visitor's Day
September 12
8:30 a.m. – noon
Pharmacy South Room 101

Scholarship Ceremony
October 1, 3:30 p.m. – 5:30 p.m.

Career Fair
October 1, noon – 2:30 p.m.
Tate Student Center
October 2
Interviews, Clarke Howell Hall

Homecoming Tailgate
October 17
Football Game against
University of Missouri
Tailgate

Contact Kim Hamby, director of alumni affairs, at 706-542-4536 for information on alumni events, or look on the college website at www.rx.uga.edu.



For up-to-the-minute news, log on to Facebook at
The University of Georgia College of Pharmacy

For the latest information on College events
and activities, check out our website at:

www.rx.uga.edu