THE POST 10•09

UF UNIVERSITY of FLORIDA

Page 12

Team HSC

The new ways UF experts are working together

Electronic medical records 5

Celebrating pharmacists 11

Science of **feelings** 23

CONTENTS

On the Cover

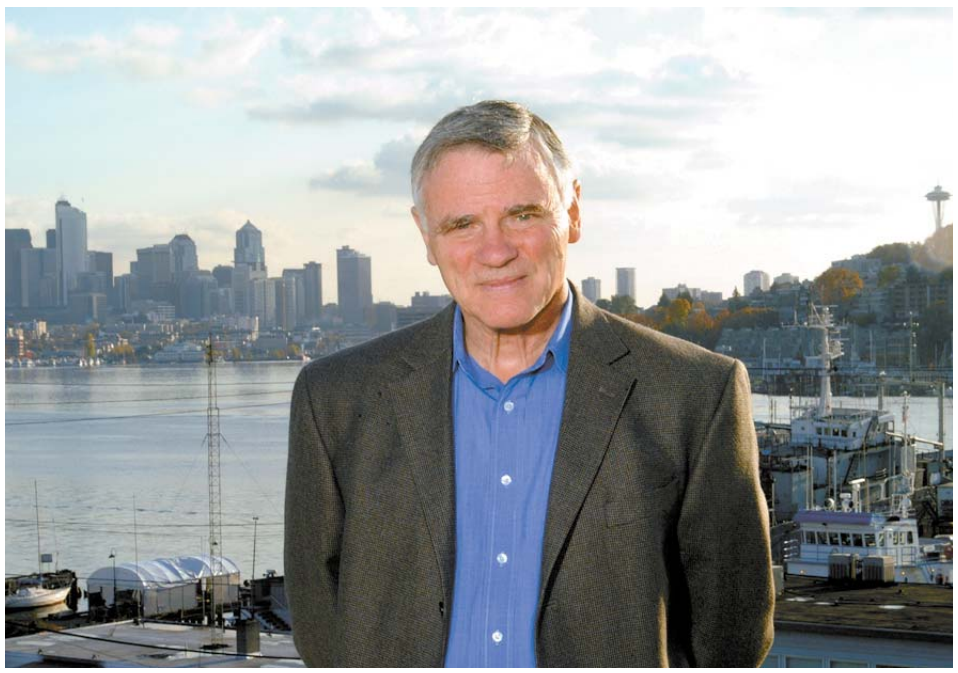
Teamwork is key to new discoveries in science and advances in health care. This month, The POST brings you a few stories about how the art of teamwork is flourishing at UF.

Table of Contents

3 **POST-it**
4 **Administration:** Shands Cancer Hospital
5 **Patient Care:** Electronic medical records
6 **Extraordinary Person:** Cuc Tran
8 **Education:** FDA scholarship
9 **Education:** Advocates for kids
11 **5 Questions:** American Pharmacy Month
12 **Cover Story:** Team HSC
16 **Research:** Science of snakebites
18 **Research:** Benefits of tai chi
20 **Jacksonville:** Phyllis Hendry
22 **Distinctions**
23 **Profile: Peter Lang**

UP FRONT

A vision of medicine's future



Imagine nano-size devices that measure thousands of blood elements, and DNA sequencers that rapidly and cheaply decode personal genomes. Throw in advanced computers to sort through these huge amounts of data, now stored in our medical histories. It is just a matter of time, according to Leroy Hood, Ph.D., who invented the sequencing technology that decoded the human genome in 2001. He will talk more about medicine's future at 5 p.m. Oct. 28 at the HPNP Complex auditorium for Florida Genetics 2009, the annual symposium of the UF Genetics Institute. All are invited to attend Hood's presentation. Hood thinks medicine will become far more nimble and proactive in the next 20 years, freeing health-care professionals from simply reacting when people get sick. "The average doctor's office visit today might involve bloodwork and a few measurements, such as blood pressure and temperature," Hood said recently in Newsweek. "In the near future physicians will collect billions of bytes of information about each individual — genes, blood proteins, cells and historical data. They will use this data to assess whether your cell's biological information-handling circuits have become perturbed by disease, whether from defective genes, exposure to bad things in the environment, or both." P

Post it

PHOTO BY SARAH KIEWEL

FREE VEHICLE CHECKS FOR OLDER DRIVERS

The PHHP department of occupational therapy will offer CarFit, a free national program that gives older adults the opportunity to check how their personal vehicles "fit" them. CarFit will be held from 9 a.m. to 3 p.m. Nov. 13 in the parking lot at Carrabba's Italian Grill, 3021 SW 34th St., Gainesville. Trained occupational therapy students will lead mature drivers through a 12-point checklist with their vehicles, recommend personal vehicle adjustments and adaptations, and offer community resources and activities that could make personal vehicles "fit" better or enhance drivers' safety. For more information, or to schedule a vehicle check, call Desiree Lanford at 273-6024.

SUPERIOR 2010 ACCOMPLISHMENT AWARDS

GIVE 'EM THEIR PROPS

Give a fellow UF employee the recognition they deserve by nominating them for a Superior Accomplishment Award. Nominations are open now through Oct. 30. Nominate an employee who has contributed outstanding and meritorious service in his or her field or has made exceptional contributions to UF's efficiency, economy or quality of life. Each division-level winner will receive a cash award of $200 and university-level winners will be eligible for cash awards of $1,000 or $2,000. For a nomination form or for more information, visit www.hr.ufl.edu/awards/saa or call 352-392-4777.

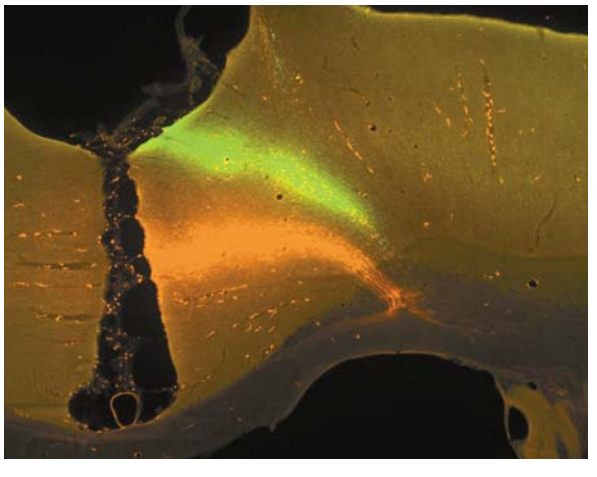
COPY THIS

Now there's another way your Gator 1 card will come in handy. The UF Libraries have discontinued use of copy cards for printing and copying. Instead, your Gator 1 card will now be used for this service. To transfer your balance from your copy card to the Gator 1 card, visit Room C1-25 in the HSC Library from 9 a.m. to 3 p.m. through Oct. 30. You should bring your copy cards and Gator 1 card. The transfer may take up to five days to go through. Until then, you can use a credit card to add a balance to your Gator 1 account at www.gator1.ufl.edu. For more information, visit www.uflib.ufl.edu/printing.

TOBACCO-FREE TOGETHER

TABOO TOBACCO

As *The POST* reported last month, tobacco use will no longer be permitted anywhere on the HSC campus or at Shands HealthCare facilities beginning Nov. 1. This includes outside of HSC and Shands buildings (indoor use is already prohibited), in parking lots and in cars while still on campus. For more information or for self-help resources, visit www.tobaccofree.health.ufl.edu.



SCIENCE = ART

Ever marveled at the beauty of a blueberry pollen tetrad under a microscope? OK, maybe you haven't, but chances are if you're a scientist you've found beauty in places people may not always see. Now, UF's Marston Science Library is giving you your chance to show others the art of science through the second annual Elegance of Science contest. Faculty, staff and students are invited to enter 2-D artwork and images produced during research or that "incorporate tools and concepts from science." Prizes range from $50 to $200. Entries must be received by Dec. 21. Awards will be presented in the spring. For more information, visit www.uflib.ufl.edu/msl/art.

PHOTO BY ANDRE BOZEART

Artists in residence

Employee artwork on display at the Shands Cancer Hospital

By Allison Wilson

When Shands Arts in Medicine Director Tina Mullen went searching for artwork to display in the Shands Cancer Hospital at UF, she realized she wouldn't have to look far.

"I decided to ask employees to contribute their creative selves to the decorating of this new building," Mullen said. "The idea was, 'Let's communicate to patients that their health-care providers at all levels are more than just health-care providers. Let's decorate the new building with their artwork.'"

Mullen issued a 30-day "call to employee artists" to submit their best nature photography to be considered for display in the hospital. After poring over more than 1,000 submissions, she and her team chose 68 artists and 300 photos that will decorate patient rooms, waiting rooms, corridors, exam rooms, consult rooms and the cafeteria. The work came from Shands employees and UF Health Science Center faculty and staff.

"Everyone submitted such wonderful work," Mullen said. "It was special to realize that our employees and medical staff would take this kind of time to submit something, and we wanted to be respectful of all those submissions. We went through each one diligently, and really what eliminated 90 percent of the photos was simply a matter of the file size not being large enough. The work was professional quality." P

Sneak preview

October offers chances to get inside look at the Shands Cancer Hospital

Throughout October, Shands HealthCare, UF Physicians and UF Health Science Center employees are invited to attend open houses and special events on the new Shands at UF South Campus, where the Shands Cancer Hospital at UF and the Shands Critical Care Center at UF are located. The following is a list of several events leading up to the hospital's Nov. 1 opening.

Oct. 19: All-Employee Open House

When: 7 a.m-9 a.m., 11 a.m.-1 p.m., 4 p.m.-6 p.m.
Where: Shands Cancer Hospital Lobby
Details: This event is for all Shands HealthCare, UF Physicians, HSC employees, medical staff, students and volunteers. Activities include building tours, prize drawings and music. Light refreshments will be served.

Oct. 24: Public Open House

When: 9 a.m.-noon
Where: Shands Cancer Hospital Lobby
Details: This will be the largest event for the grand opening of the new hospital and the only event that is open to the entire community.

Oct. 25: Candlelight Celebration Program

When: 6:30 p.m.
Where: Shands at UF South Campus
Details: Employees, medical staff, students and volunteers are invited to the Shands at UF South Campus. Join state, community, Oak Hammock and Garden of Hope donors for a short program and candlelight celebration to mark the opening of the new medical center. Please see Shands News and Shandsgiving.org for more details leading up to the event. P

Meet the College of Pharmacy

Figuring out how to get accepted into pharmacy school may be stressful, but the College of Pharmacy is easing the stress by hosting its annual open house to help inform interested students. The event begins at 1 p.m. Nov. 1 in the HPNP Complex auditorium, Room 1404. Speakers will present information and answer questions until 4:45 p.m. Other topics of interest will include application procedures, pre-pharmacy coursework, distance education sites, financial aid, college and Health Science Center facilities, career opportunities, student life and doctor of pharmacy curriculum. For more information, call the UF College of Pharmacy Office for Student Affairs at 352-273-6219. P

PHOTO BY SARAH KIEWEL

It's electric

College of Medicine clinics making switch to electronic medical records

By Laura Mize

The switch to electronic medical records at the clinics run by UF's College of Medicine began at what some might consider an unlikely location: Family Medicine at Old Town, a small clinic tucked behind a Hardee's restaurant off U.S. Highway 19 about an hour outside of Gainesville.

The move puts the clinic ahead of many medical facilities in the nation, said Marvin Dewar, M.D., J.D., chief medical officer and interim senior associate dean of UF Physicians.

"I do think we're a little ahead of the curve," Dewar said.

Staff at the clinic began using Epic, an electronic medical records system, in August. Shani King, C.M.A., a medical assistant at the clinic who's been trained as an Epic "super user" to help her colleagues with their problems with the program, said the transition has had its share of missteps, but she's optimistic about the end result.

Switching to the new system means clinic staff members have to enter information from old paper records into the electronic system, a time-consuming task. Despite some glitches that are still being worked out and the work of entering information from old files, King said she believes using the new system will benefit patients.

"Everything will be documented," she said. "Nothing will get thrown away on a piece of paper by accident or anything like that. I'm not saying there won't be holes that … things will fall through, but I think, in the long run, I think it's going to be better."

Dewar agreed, saying the new system should mean "safer care, higher-quality care, more efficient care."

"We've got sites (from) Vero Beach to Lake City and … in many different specialties," he said. "So without a single unifying record, it's easy to understand how communications sometimes isn't what it needs to be."

Dewar said the initial cost to install the system will be $8 million, but he anticipates the college will get much of that money back in stimulus payments the federal government has promised to begin making in 2011 to organizations using electronic medical records.

Clinics run by the college and Shands should all be using Epic by early 2011, Dewar said.

In addition to Family Medicine at Old Town, Family Medicine at Fourth Avenue and Family Medicine at Haile Plantation have begun using Epic. Family Medicine at Hampton Oaks is scheduled to begin using the program in late October.

"(It's) an exciting time," Dewar said of the switch to electronic medical records. "The EMR rollout comes after several years of planning and preparation."

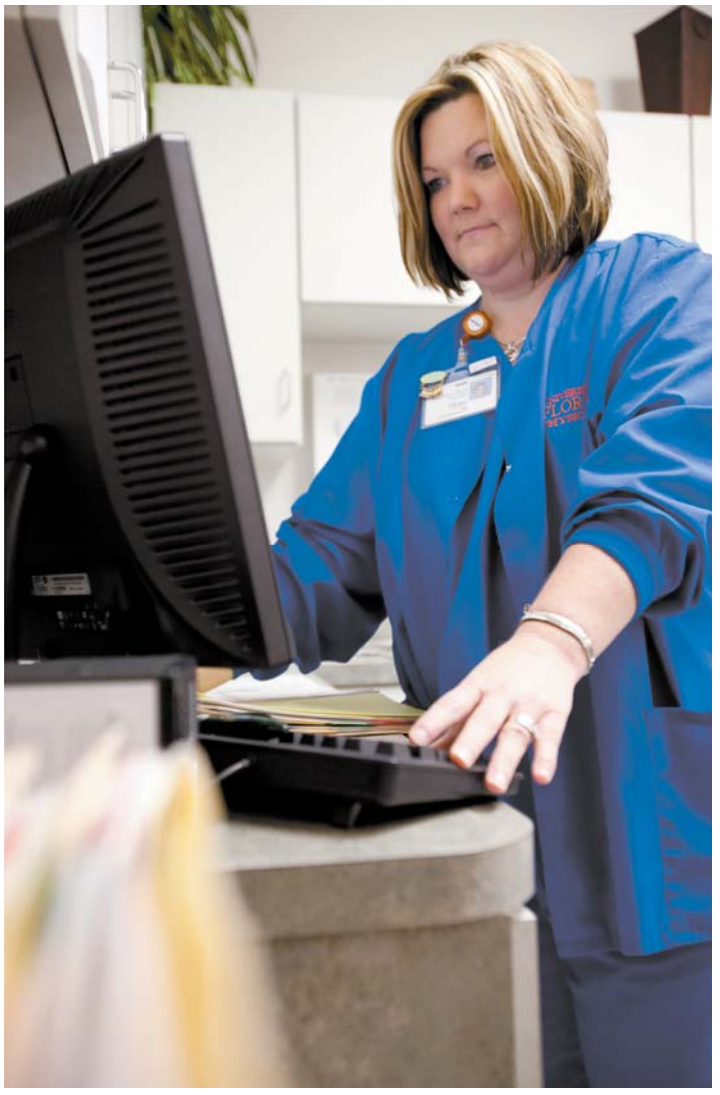


PHOTO BY SARAH KIEWEL

Shani King is a medical assistant at a clinic run by the College of Medicine in Old Town, Fla. The clinic, which began using electronic medical records in August, was the first clinic run by the college to make the switch.

EMR across the HSC and Shands:

Shands HealthCare: Is working on a contract with Epic for its facilities. Widespread use of electronic medical records will begin in 2011.

College of Veterinary Medicine: Began using Idexx Cornerstone in November 2007.

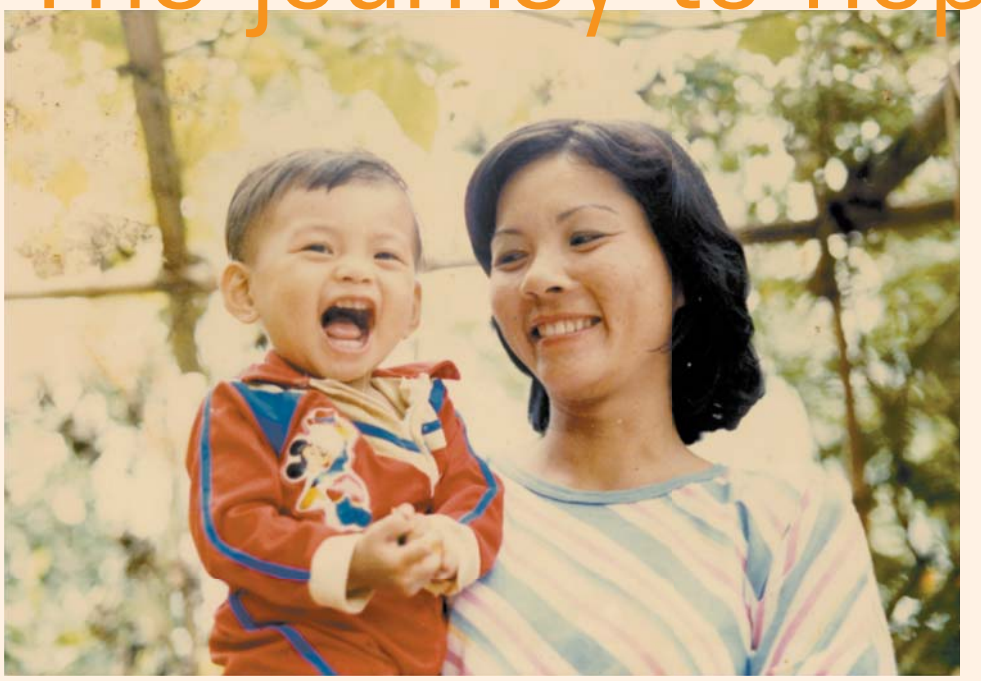
College of Public Health and Health Professions: Clinics in the college's department of clinical and health psychology are moving toward using the Epic system chosen by the College of Medicine. Clinics run by the college's department of communicative disorders transitioned to a system called SmartChart in mid-August.

College of Dentistry: Does not use electronic medical records but plans to begin using them in the future.

College of Nursing: Is negotiating the purchase of a new electronic medical record system to be implemented at Archer Family Health Care in early 2010. It will replace the existing electronic medical records system.

College of Pharmacy: Does not manage any medical records, but faculty and staff do use electronic medical records in clinical settings. Students are trained to use electronic medical records.

The journey to hope PHHP grad, Vietnamese refugee



By April Frawley Birdwell

The fishing boat was small, just big enough for the fishermen and the 86 people packed into the hull, each person lying flat and still to avoid being seen. If the Vietnamese authorities caught them, they could be sent to prison — or possibly killed.

Cuc Tran, then 3, huddled on top of her mother's chest. It was 1988, about 13 years after the fall of Saigon, and Tran's mother had decided to flee with her tiny daughter. It wasn't the first time she had tried to escape. Her family thought her choice was foolish, but attempt after attempt, the schoolteacher and her daughter kept trying in hopes of finding a better life.

"The communist government oppressed us under their rule," said Tran, now a project manager for the UF Emerging Pathogens Institute. "They tried to control everything — our way of life, our economic situation and our point of view. Having a 50-50 chance at opportunity is much better odds than no chance at all, and my mother felt that taking the risk was the only option when faced with the prospect of slowly wasting away under oppression."

They almost didn't make it. Miles from shore in the middle of the ocean, the boat broke down during a typhoon, leaving the 86 people who were packed in the vessel like sardines to survive with no water and only powdered porridge to eat.

"We were close to dying when the fishermen from Malaysia saved us," Tran said.

Tran's memories of this time in her life are vague — snippets from her year in a refugee camp in the Philippines, the class she took to learn English, the shock of moving to the United States in 1990 — but these memories, however fuzzy, have shaped who she is.

She wants to help people the way she has been helped throughout her own life. It's one of the reasons she chose to pursue public health after earning her undergraduate degree in food science and human nutrition from UF.

Now 25, Tran graduated with a master's in public health from the College of Public Health and Health Professions in August and is working for the Emerging Pathogens Institute, helping lead a project to immunize all of Alachua County's schoolchildren for the flu. Composed of students and faculty from the EPI and the colleges of Medicine, Nursing, Pharmacy and PHHP, the group hopes to immunize 70 percent of local children. After spending the past two months educating parents and children about FluMist, an inhaled form of the vaccine, the group is just beginning to administer the immunizations this month.

"No other group has been able to immunize 70 percent. We're hoping to be the first in the nation," Tran said.

Tran got her start in public health after she joined the Gator Launch program while a UF undergrad. The career development program paired her with a mentor at the Alachua County Health Department, George Gibbs, a regional project manager for the Centers for Disease Control and Prevention who is based at the health department. Gibbs remembers how Tran jumped in and was an immediate help to his office, which oversees STD outreach efforts for 16 counties in North Florida. For her work there, she received the Gator Launch award for outstanding mentee, Gibbs said.

"I have met many students and Cuc is in my top 5 percent of all the students I have ever mentored," said Gibbs. "Cuc is very mature, self-motivated. We were very impressed with her.

"I have seen her grow and develop from a student to an M.P.H. We're lucky to have someone like Cuc in public health now."

Tran began working on the flu project about a year ago while analyzing data for UF researchers Parker Small, M.D., and J. Glenn Morris, M.D, M.P.H., director of the Emerging Pathogens Institute. Since then, she's been involved in almost every phase of the project and has spent the past couple months going into schools and helping educate students and parents about the immunization.

Studying the flu

The UF Student Health Care Center, the Emerging Pathogens Institute and the College of Public Health and Health Professions have teamed up to study the impact of the influenza virus on UF's campus. The study, a random survey of the student body performed weekly, will continue for the next 40 weeks.

"I think we are really trying to understand what role does a large institution like UF play in a community outbreak," said Phillip Barkley, M.D., director of the Student Health Care Center. "This could potentially provide solid data on the epidemiology of influenza on a college campus."

Understanding flu trends at UF could help leaders make important decisions about policy and how to respond to future flu outbreaks, Barkley said. *— April Frawley Birdwell*

finds solace helping others

During a visit to a middle school, she spent some time talking with a female student, not about the flu, but about her life. Typical stuff like college plans, hopes and dreams.

"I saw myself in her when I was younger," Tran said. "She needed someone to encourage her and let her know that she can make a difference and achieve all her goals if she set her mind to it."

The conversation reminded Tran of her fourth-grade teacher, Mrs. English. After immigrating to the United States at 5, Tran didn't fare so well in her new school. She had to take a test before she started school on color knowledge. She knew every color except one: gray. She didn't know the word for it.

"They gave me a bad score and I was so upset," Tran remembered.

But everything changed in fourth grade. Mrs. English took the time to explain why Tran missed certain answers and recognized that she no longer needed to take the English class for non-native speakers

"She was a big influence in my life," Tran said. "She was one of the first people to say 'You're really bright' and to help me. If my teacher didn't do that for me, my life would have turned out really differently."

It's not much of a surprise then that Tran's goals center so much on helping other people. After she pursues her doctorate, she hopes to become a professor, providing opportunities to empower people who want to change their lives and communities through public health.

"People often don't realize how big an effect their small acts of kindness can have on a person," Tran said. "My life is proof that little changes people make do help. Because of those little changes, I'm now making a big change through the flu program." P

PHOTO BY SARAH KIEWEL

Recent College of Public Health and Health Professions graduate Cuc Tran is part of a team at UF working to immunize local school children for the flu this fall. Tran, who now works for the Emerging Pathogens Institute came to the United States when she was 5, a little more than a year after she and her mother (opposite page) escaped from Vietnam.

Blue Room
undergoes renovations

PHOTO BY PRISCILLA SANTOS

By Kim Libby

HSC students may find themselves studying with a whole new sense of focus in the 24-hour study hall.

After summer renovations, the center's 3,100-square-foot "Blue Room" reopened for student use Sept. 28. Located on the second floor of the Communicore Building, it now features new carpet, ceilings, furniture, doors and freshly painted blue on the walls to keep true to its name.

According to Marie Brown, a project manager and interior designer for UF's Facilities, Planning and Construction Office, the changes were necessary to rid the room of its old, shabby vibe.

"Whenever someone didn't know what to do with a chair, they just stuck it in there," she said. "The furniture was very random and the lighting was bad, which made people start to complain."

The changes were managed by a planning advisory committee that consisted of Brown, Dennis Hines from the Office of the Senior Vice President of Health Affairs and Laverne Burch from the HSC Library. Students were also on the committee, including then fourth-year medical student and current resident Omayra L. Marrero and Kathy Janion, a College of Dentistry student.

Old study carrels were replaced by new ones in addition to long, wooden tables. The committee picked out a color scheme, lighting, type of carpet and wood. They wanted the setting to ensure a quiet space, particularly for studying for board exams, instead of a lounge environment.

Lauren Rittenbaugh, a second-year pharmacy student, said she had only been in the Blue Room once or twice before the renovations because she did not like the tiny carrels and old, tile floors. She said she now enjoys the new, bright lighting and comes to the room often to get her work done.

The construction work was completed by the HSC Construction Auxiliary, headed by Danny Moore, and continues to be administrated through the HSC Library. P

An **FDA-APPROVED** program

UF teams with FDA to train clinicians in pharmaceutical outcomes and policy sciences

PHOTO BY JOHN PASTOR

By Kimberly Buchholz

This fall, the UF College of Pharmacy enlisted a few good men and women into graduate studies in drug evaluation, policy and safety issues through a new scholarship opportunity.

The Food and Drug Administration's Center for Drug Evaluation and Research, working with the U.S. Public Health Service Commissioned Corps, had been seeking an educational partner that could help attract scientists and health professionals to fill a growing industry need. Capt. Greg Wood, director of the CDER Academic Collaboration Program, came to UF last year with a new partnership in mind.

"This partnership is the first of its kind for our agency," Wood said.

The scholarship program provides tuition, salary and housing, and guarantees a job with CDER upon graduation.

Working collaboratively with industry, academia and other partners is an important agency goal, Wood said. Improving the drug development and review process is vital to improving public health for the nation.

In addition to meeting UF graduate admission requirements, students must be commissioned as officers in the U.S. Public Health Service Commissioned Corps. For class and program events, they wear the same service khaki uniform as the U.S. Navy, with a special Commissioned Corps insignia. They must also be full-time students and agree to work for CDER for two years in return for each year of paid tuition.

The federal agency's public health directive and mission are to approve safe and effective drugs and to provide consumers and healthcare practitioners with accurate drug information. This requires a greater demand for scientists and health professionals trained in regulatory and safety sciences, said Russ Abbott, director of the CDER Office of Management.

"Working closely with a graduate health science educational program like the one at UF is a good way for the agency to achieve its goals," Abbott said.

Danielle Smith, who graduated with a doctor of pharmacy degree from Florida A&M University in spring, learned she was one of five students accepted into the new program at UF.

"It will allow me to further my education and will guarantee a job with the organization that I want to work with upon graduation," said Smith. "It's a win-win situation."

In July, Smith and her classmates — all commissioned officers in the U.S. Public Health Service — participated in a one-week FDA orientation in Silver Spring, Md., before attending two weeks of officer basic course training in Lansdowne, Va.

Jonas Santiago, a student from the Washington, D.C., area, learned of the program while working for the FDA during a student rotation to complete his doctor of pharmacy degree at Howard University.

"The program specializations in pharmacoepidemiology, patient safety and risk evaluation directly correlate to certain offices and divisions within CDER. The advanced training and completion of this program will help make me an important asset for the center," Santiago said.

Starting in fall 2010, up to 20 new students will be admitted to the program. Almut Winterstein, Ph.D., director of the UF FDA/CDER Scholarship Program, is encouraging qualified students to visit the college's Web site, www.cop.ufl.edu, for application information under the department of pharmaceutical outcomes and policy.

Winterstein, an associate professor in pharmaceutical outcomes and policy at UF, added the college was honored the FDA selected it as an educational partner. In addition to its existing curriculum, the college will tailor class projects to FDA research needs to ensure that students have the best preparation possible for a career with CDER and beyond, Winterstein said.

"I believe that the expertise in our department and the portfolio of our specializations fits well with the FDA need for clinical research capacity," Winterstein said.

A voice for kids

UF pediatric residents focus on advocacy

By April Frawley Birdwell

When a baby is born, new parents are bound to agonize over every question: How often should the baby dirty its diaper? What happens if the baby bleeds when the umbilical cord falls off? What is considered a fever in a baby? The list could go on.

But while these common questions are important, they're not necessarily concerns that justify rushing a baby to the emergency room. To help answer common questions parents have, a group of UF pediatric residents put together a small brochure, which was passed out at UF pediatrics clinics. Last year, then third-year pediatrics resident Sara Slovin, M.D., took parent education a step further, teaming up with a community group for new moms to offer the class "Babies Don't Come With Instructions." Basically, Newborn 101.

"It was to improve parents' knowledge base about normal newborn care and improve their comfort level," said Slovin, who finished her residency in July and is now a fellow at the Johns Hopkins University School of Medicine.

For pediatric residents, teaching parents is just one facet of an important role they are learning to play as pediatricians — patient advocate. While most doctors and specialists are advocates for their patients, the role of advocacy in pediatrics is even more pronounced, says Michele Lossius, M.D., a UF assistant professor of pediatrics. Why? Children are too young to vote for policies that affect them and cannot advocate for themselves.

"As pediatricians, we are constantly doing advocacy," Lossius said. "You're affecting each child who comes in your office, but you're also trying to create local awareness and health change."

To better prepare residents to advocate for patients, UF pediatric residents in Gainesville spend one month during their second year in an advocacy rotation. During this time, the residents work on projects they are passionate about — for Slovin it was the newborn class — as well as visit legislators in Tallahassee and learn about local issues that affect their patients. Each year, at least two residents also get the opportunity to attend a legislative day in Washington, D.C., sponsored by the American Academy of Pediatrics. Jacksonville pediatric residents are also extensively involved in advocacy work.

"Because kids don't vote, politicians who decide where the money goes don't always worry about them," said Jay Roberson, M.D., a third-year resident who attended the AAP Legislative Conference in April with fellow resident Karen Bodnar, M.D. "They should. (Children) are the future of the country and world but they get thrown on the backburner by a lot of larger groups, even by some hospitals and health-care systems because they are not necessarily a profitable sector as far as inpatient medicine goes."

In recent years, pediatric residents have worked with the Florida chapter of the AAP to advocate for more stringent safety belt laws, have helped organize UF's first Sports Medicine Jamboree to educate young athletes and have stood outside in the rain to protest the possible veto of extending funding for the state's Children's Health Insurance Plan. And this is just a taste of their involvement.

Last year, Lossius, who oversees the advocacy rotation and is a graduate of UF's pediatric residency, added a new component to the program to beef up the advocacy residents do during their time here. Instead of only working on a project during their monthlong rotation, residents now start a long-term project in their first year.

But it doesn't always take a giant project for residents to make a difference. Writing letters to the editor and taking the time to call a congressman to voice an opinion on a health-care bill that affects children can effect change, too.

"It can be little tiny things, like fliers to parents or calling to give an opinion on legislation," Roberson said. "It takes minutes and ultimately makes a huge difference."

Although she's no longer a UF resident, Slovin still thinks about "Babies Don't Come with Instructions." The newborn class has since transitioned into the hospital, which Slovin says is a better location for moms.

"A lot of residents may not realize the impact they can have on their community," said Slovin, who plans to stay in community pediatrics and continue her advocacy work. "This advocacy rotation gives residents the opportunity to develop skills and tools to take with them when they practice so they can advocate for their own patients and teach parents how to advocate for their children."

PHOTO BY APRIL FRAWLEY BIRDWELL

UF pediatrics residents spend a month in an advocacy rotation, overseen by Dr. Michele Lossius (center). Two residents each year also get the chance to attend a national AAP legislative conference, a major advocacy event. Residents Dr. Jay Roberson (right) and Dr. Karen Bodnar (left) attended this year.

Long live the mouse

Drug extends life of older mice, has potential for application in humans

By Czerne M. Reid

Extending the lifespan of humans is a goal that has attracted many researchers worldwide. A UF group — including assistant professor Christy Carter, Ph.D., and Marco Pahor, M.D., director of the Institute on Aging — is taking part in a National Institutes of Health program to test a variety of drugs to see if they can lengthen life in mice.

Called the National Institute on Aging Interventions Testing Program, the initiative recently met with success: a cancer drug was found to extend the life of older adult mice.

As reported in the journal *Nature*, middle-aged mice fed the drug, called rapamycin, lived up to 14 percent longer than mice that were untreated or given different drugs.

The findings show that drugs can potentially increase lifespan even if given late in life. That work, led by researchers at The Jackson Laboratory in Maine, and similar efforts could eventually lead to life-extending drug therapies for humans.

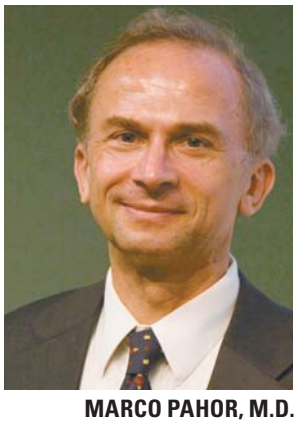
The biochemical pathway on which rapamycin acts is present in flies, worms, mice and humans. While the drug was previously shown to extend life in flies and worms, this is the first time it has been shown to have a life-lengthening effect in mammals.

"That is important for translational research, because this is the next step of the evolutionary chain, so to speak," Carter said. "So if we can manipulate the pathway in humans the same way as in mice, it may have the same effect on us."

Other dietary and pharmacological interventions aimed at increasing longevity in mammals have had negative results, or results that were difficult to reproduce.

But the current study used large numbers of animals — more than 1,900, at three different study locations.

CHRISTY CARTER, PH.D.



MARCO PAHOR, M.D.

"It's very convincing," said Andrzej Bartke, Ph.D., a Southern Illinois University College of Medicine professor of physiology and internal medicine who, in mouse studies, first demonstrated that the mutation of a single gene can extend life in a mammal.

UF's contribution to the NIH testing program is suggesting the investigation of enalapril, a blood pressure medicine shown in human studies to improve physical function in older adults independently of its blood pressure-controlling effects. enalapril reduces inflammation and oxidative stress, two processes that are associated with aging and possibly contribute to the development of many diseases and the shortening of the lifespan.

But mice treated with that compound did not outlive untreated ones.

"While we were a bit disappointed that it didn't have an effect on longevity, we're still working to see what other effects it can have," Carter said.

enalapril has already been shown to decrease body weight, so the researchers plan to investigate the changes in the body over time in mice treated with it.

The compound that did extend life — rapamycin — was fed to 600-day-old mice — an age that corresponds to 60 years in humans. The researchers found that not only was the median age of mice extended, but also the greatest age reached before dying was extended as well. Normally, the type of mice used would live about 32 months.

Extending the median age of death suggests there were improvements in the rates of disease occurrence. But extending the highest age reached before death suggests that longevity wasn't just a result of curing disease but of altering the aging process itself. That was borne out by the fact that when treated mice eventually died, their cause of death was similar to that of untreated mice.

"They're intervening late in life with these animals, so that's exciting — it's not like you have to have lifelong intervention with these compounds," Carter said. That's important since the pathways involved affect normal development processes such as cell growth, which might be inhibited if the drugs are given throughout life.

"The fact that you can do something in middle age and still get benefit is very impressive and has a lot of practical implications," said Bartke, who studies the genetics and endocrinology of aging. Bartke also had in his laboratory the longest-lived mouse, which lived for almost five years — twice as long as genetically normal mice.

Carter says people should not just look to drugs but to proper diet and exercise to improve their health. Increasing lifespan is not the only goal, she said. It is also important to improve "healthspan" — the length of time people remain in good health as they age.

"Who wants to live longer if you're going to be diseased and dysfunctional for a longer period of life?" she said.

A pharmacist's life

PHOTO BY SARAH KIEWEL

Tom Munyer, a clinical associate professor in the UF College of Pharmacy, accompanied pharmacy students Sebrina Chan, Megan Kloet and Crystal Mason to meet Mayor Pegeen Hanrahan at Gainesville City Hall.

By Monica Vigo

Celebrated in October, American Pharmacists Month highlights pharmacists in all practice settings for their contributions to health care and commitment to patient care. As part of the celebration, the American Pharmacists Association-Academy of Student Pharmacists at UF invited Gainesville Mayor Pegeen Hanrahan to the college Oct. 9 to issue a proclamation and share a few personal words about the impact of pharmacy on her family and the Gainesville community. In this month's 5 Questions, Tom Munyer, M.S., the APhA-ASP student adviser and a clinical associate professor in the UF College of Pharmacy, gives us the inside scoop on what it means to be a pharmacist.

Why is there a month proclaimed for pharmacists?

The American Pharmacists Association's 2009 message "Know Your MEDICINE, Know Your PHARMACIST" for American Pharmacists Month recognizes the vital contributions made by pharmacists to health care in America and enhances the image of pharmacists as medication experts — not just dispensers of medication. Pharmacy month also aims to educate policy makers and the public about the key role played by pharmacists in reducing overall health-care costs by improved medication use and advanced patient care

Beyond filling prescriptions, what exactly is the pharmacist's role?

Many people believe all pharmacists do is count and distribute pills. A few of our students even start out with that misconception. UF pharmacy students quickly learn that their role is to help the patient/customer understand medications, how to take them and what the patient can do if they develop concerns. Physicians determine what's wrong with the patient and prescribe a treatment. Pharmacists help the patient in their prescribed drug therapies. Pharmacy students spend four years learning drug therapy in human systems. They learn the difference between symptoms related to the drugs patients are taking and symptoms related to a disease. Medical students do not have enough time in their curriculum to focus solely on drug training, which is why in professional practice doctors and pharmacists create a perfect team.

How has the pharmacist's job changed in recent years?

The pharmacist's most important function is to promote safe and effective use of medications. Trained side-by-side with physicians for the past 25 years, pharmacy students today are finding that new opportunities are opening up for pharmacists. For example, medication therapy management, or MTM, is a new key phrase used in health care. The pharmacist promotes safe and effective use of drugs prescribed, helping the patient to achieve the best therapeutic outcomes. I see the medical team relying on the pharmacists more and more. Not just in short-term health care, but also in hospital clinics where patients are being followed on a long-term process. We're also seeing it on a consultant basis by community physician groups. I think that role is going to continue to expand because of the proven health benefits and cost-effectiveness of pharmacists.

Can pharmacists give flu shots?

Yes. Pharmacists are the most accessible health-care clinicians. In one year, a patient may only visit their doctor or clinic two or three times, but they will visit the pharmacy many times for prescription fills and over-the-counter remedies. Pharmacists are trained extensively on medications — more than any other health-care practitioner. Pharmacists who administer immunizations have to receive special additional training certification specific to immunizations and all the possible surrounding emergency procedures.

How are student-pharmacists trained for their profession?

Pharmacy students start out taking basic science and chemistry classes. Beginning in their third year, they have gained the knowledge and qualifications to participate in patient care in-class activities that address health concerns like diabetes, high blood pressure, vaccination and acid reflux. The focus their senior year is patient-centered and therapeutic. This is when they go on pharmacy practice rotations where they work alongside doctors and nurses on rounds. Their professors help them understand the health-care system, including the strengths and concerns that exist within the system. Students also take courses that expand their horizons within the profession and learn about research that investigates the benefits and cost-effectiveness of pharmacist interventions. P

TEAM HSC

How experts and educators are finding new ways to work together that are helping students and patients

Collaboration is not easy. It's true. Working with a team of people who all have their own ideas and visions will always be harder than just doing it yourself. But think about it this way: Who wants to watch the triangle player without the rest of the band? In health care, when experts come together, new discoveries are made, patients are saved and students learn. That's why this month, ***The POST*** is highlighting just a few of the new ways HSC leaders are working with their colleagues in patient care and education. There are possibly hundreds of collaborations across campus, but here we bring you the stories of a novel liver cancer clinic in the College of Medicine, a new class and focus on collaboration in the College of Public Health and Health Professions and a new format in College of Dentistry clinics that has increased patient visits by 25 percent.

Each week a diverse group of doctors meets to discuss cases brought to a novel UF clinic that helps cancer patients with underlying liver disease.

PHOTO BY SARAH KIEWEL

The battle in the conference room

By Czerne M. Reid

At 54, Bob House is rediscovering the world through the eyes of his 17-month old grandson, Calvin. He delights in the first sighting of a chipmunk or snake and revels in the shrieks of laughter of a toddler being chased around the house.

"It's just such a beautiful thing and it gives me reason to live," House said.

But he might not be alive to share these moments with his grandson if not for a special team of UF doctors that has tried a variety of treatments to help keep him alive, he says.

"Every day that they give me, every new thing that we try, it encourages my spirit," he said.

House contracted hepatitis B in the 1970s while serving in the U.S. Air Force in Southeast Asia. Decades later, the infection led to cirrhosis of the liver. Then in 2007 he was diagnosed with a very large liver tumor.

He found his way to the UF hepatology liver cancer clinic to see Ron Cabrera, M.D., M.S., after a doctor in his hometown of Tampa told him he'd run out of options and should enter end-of-life hospice care.

UF has programs that offer hope to patients who have hard-to-treat liver disease and cancer and feel that they have nowhere else to turn. Doctors are able to offer many potential treatment alternatives, including liver resection and transplantation. In addition, various experimental therapies are made available through clinical trials to patients with otherwise limited treatment options.

"I was just absolutely blown away, because I had no idea there were other therapies, or that I would be eligible for a transplant," House said.

The liver clinic Cabrera helps run is a unique one where hepatologists play a key role in the simultaneous management of the cancer and the severely diseased liver from cirrhosis. Tackling cancer in patients who also have underlying liver disease requires skillful and sensitive handling, as some treatments could worsen their underlying cirrhosis. Other centers around the country have looked to UF as a model to start this type of clinic, and the division of gastroenterology and hepatology has entered a partnership with Bayer Pharmaceuticals to create continuing medical education training modules to teach other institutions about the approach.

The clinic serves as a hub for translational research, where, for example, patients donate blood to be used for research aimed at developing new cancer markers and therapies that use a patient's own immune system. Some of the work includes a collaboration with the H. Lee Moffitt Cancer Center and Research Institute.

Cabrera took House's case to a discussion group called the hepatobiliary conference, another novel UF program that provides a one-stop shop where a panel of experts from a range of medical specialties meets to discuss complex cases and come up with a treatment plan. That streamlines the process both for patients and physicians and gets people into care fast, saving them time, money and emotional trauma.

To enhance the chances of a good outcome, people who have a potential liver cancer need to get evaluated and treated quickly. But generally, patients might see a gastroenterologist in their community before being referred to a radiologist, then an oncologist and then a surgeon before a treatment plan is decided.

"That whole process just took three or four months, and you may have missed a critical opportunity to offer potentially curative therapy," said Dave Nelson, M.D., director of liver transplantation and hepatology.

One visit is all it takes at UF.

Every Monday at 7:15 a.m., the physicians —hepatologists, hepatobiliary surgeons, gastroenterologists, oncologists, interventional and diagnostic radiologists, transplant surgeons and pathologists — gather to discuss eight to 16 cases. Patients are referred to UF from around Florida and other Southeastern states.

The week before, Colleen Booker, R.N., coordinates with

PHOTO BY SARAH KIEWEL

physicians to gather patients' names and medical histories. Lab test results for liver function, tumor markers, past and current radiological studies and biopsy results are compiled, along with a full patient physical history.

Diagnostic radiologist Patricia Abbitt, M.D., organizes images from an alphabet soup of scans — MRI, CT, PET, HIDA, US and others — and projects them onto a large screen at the front of the room as each patient is being discussed.

"Imaging has become such a huge part of taking care of people, and sometimes interpretations are adjusted a little when we have the pictures right there so people can see how extensive the disease is or how small," Abbitt said.

Each expert comes to the discussion with his or her own approach, knowledge of the scientific literature in a given field, and biases about what is the best approach to a problem.

"That's where the art of medicine comes in — a lot of this is also finesse," said Robin Kim, M.D., director of UF's Center for Hepatobiliary Surgical Diseases, who leads the discussion groups. "We're getting everyone involved and getting their input on what they have to offer. That can give patients the best customized approach."

And more options.

Doctors consider patients not just for routine procedures, but for ones that are rarely done, and clinical trials for people who do not have standard options.

"The nice part too is that when I'm through and I can't do any more and my treatments failed, I can always re-channel the patients and say 'Does anybody have any suggestions?'" said James Caridi, M.D., chief of the division of interventional radiology.

Each discussion leads to a plan of action.

Patients are directed to appropriate divisions for further testing, liver transplants, liver resections that involve removing all or part of a liver lobe, or other treatment such as chemotherapy, embolization and/or antiviral therapy.

Nurse practitioners and physician assistants — so-called mid-levels — play a key role in educating and communicating with patients and their families about those treatment plans and ensuring that they are carried out.

House's plan called for antiviral medication to suppress the hepatitis B, a pill for systemic treatment for the cancer and embolizations — radiation to burn away portions of the liver tumor until it was small enough for House to be eligible for a transplant.

When he got word he was relieved.

"There was a light that I could see and possibly stay vertical a little bit longer," he said. "Everybody knows that this disease is terminal, but if you don't have to leave right away that's a good thing."

He was monitored closely and tested frequently to ensure that the embolizations didn't cause worsening of his cirrhosis and a flare-up of his hepatitis B.

After more than a dozen embolizations the tumor began to decrease in size, but unfortunately, new ones developed, making him ineligible for a transplant. When the side effects of the initial systemic treatment proved too severe, Cabrera switched him to another experimental drug.

"I appreciate the workarounds they try to do, and the different ways that they try to attack these tumors," House said. "They never give up, and they say that as long as I'm willing to keep trying different things they're willing to keep trying too."

He won't stop trying, because every new effort means one more moment to share with Calvin.

The college that collaborates together . . .

By April Frawley Birdwell

On a random Friday in early October, faculty members from the College of Public Health and Health Professions snacked and mingled in a reception area in the HPNP Complex. The purpose of the seemingly casual meeting? To meet new faculty whose department in the College of Liberal Arts and Sciences recently merged with PHHP.

But the meeting also had a larger goal: It was the first of what will be many socials the college will hold in coming months to get faculty members talking to each other, a step leaders hope will lead to new partnerships and collaborations.

The socials are actually just one example of how PHHP leaders are working to encourage more collaboration across the college. In February, the college established a Collaboration Committee, which is working on numerous projects to get more people in the health professions and public health working together, said Sherrilene Classen, Ph.D., M.P.H., O.T.R./L., who chairs the committee.

"We want to make sure we provide opportunities for collaboration within our college, as well as across different colleges in the university, and eventually with other universities around the country and around the world," Classen said. "Through collaboration we don't have to reinvent the wheel. We can tap into partnerships and share expertise so all who are involved benefit."

Dr. Ron Watson works with fourth-year dental student Tedra Thomas in one of UF's five student dental clinics. Last year, the college changed the structure of its dental clinics, a change that has resulted in a 25 percent increase in patient visits. (Opposite page) Dr. Ron Cabrera (front) helps run a novel clinic at UF where hepatologists play a key role in managing cancer and underlying liver disease.

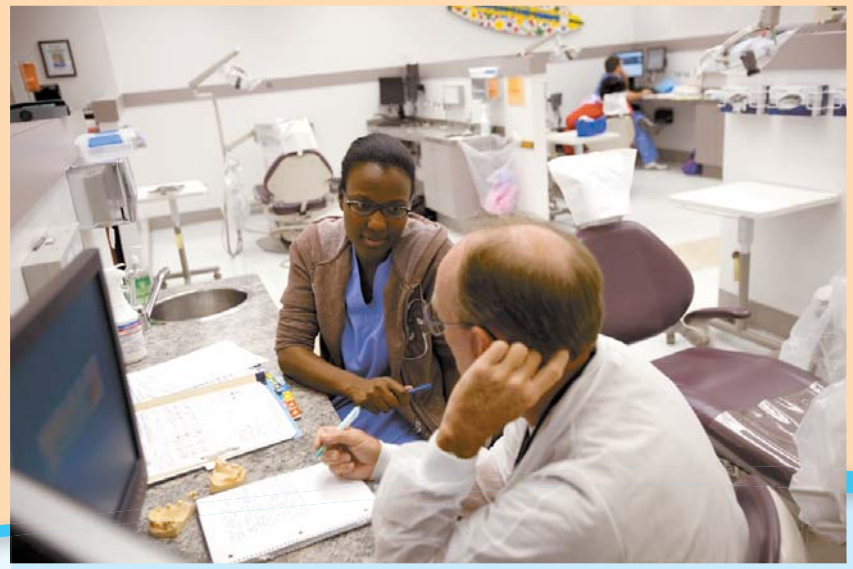


PHOTO BY PRISCILLA SANTOS

The committee also helped organize a new class in the college to help bring students studying health professions and those studying public health more on the same page. Several College of Public Health and Health Professions faculty members teamed up during the past year to develop the new course, which is led by Mary Peoples-Sheps, Ph.D. The class, now a requirement for almost all new PHHP students, gives students a foundation in public health and shows them how that discipline applies to other health fields in the college and across the Health Science Center.

"It gives students the bigger picture," said Susan White, M.Ed., a curriculum developer for the college who worked with faculty to develop the course. "There are five modules and each has two to four lectures by a public health professor and two lectures by a health professions professor, who take the public health information and apply it to how it affects patients."

It's also the first class to bring together professors from every discipline in the college, and it probably won't be the last. Because the practice of health care brings together specialists from various fields and is becoming increasingly more integrated, the education and training of health-care providers is only going to become more integrated, too, said Ronald Rozensky, Ph.D., a professor of clinical and health psychology who teaches two of the lectures in the class.

"The future of health care is going to be integrated care from the bedside and research lab to the clinic and the community," Rozensky said. "Every one of us practices side by side with other professionals. This course is just a natural step in the evolution of health care and our college."

In her portion of the class — the introductory lecture — Classen explains how findings from a public health study, in which a vehicle crash database was analyzed, may help therapists and health providers advise seniors when they come into the clinic. For example, one of her studies showed that older drivers are more likely to be involved in crashes at intersections and when making left-hand turns. Teaching older drivers how to better plan their driving routes could help them avoid situations more likely to trigger wrecks.

"Public health is one of those underrated, yet very important services," Classen said. "You walk outside and breathe the air, and you expect to breathe good quality air. You don't know if you do. But it's because of public health approaches that you probably are breathing air of an acceptable standard. So, public health is a behind-the-scenes discipline, taking care of people when they do not even realize it."

Time for change

By April Frawley Birdwell

Year after year, UF College of Dentistry administrators heard the same complaint from students: The structure of the student dental clinics was causing gridlock. Students couldn't always get chairs where they could see their patients, and as a result, patients couldn't always get in for treatment.

Of course, the solution turned out to be so simple Ron Watson, D.M.D., almost dismissed it when he first thought of it one night in his kitchen.

Unlike a private dental office where patients are treated for multiple problems in one place, UF's student dental clinics were organized by specialty. Each dental specialty had its own clinics, held on certain days throughout the week, and it was up to students to schedule their patients on the right day and time and try to get space in the clinic.

"It was stressful for students because they needed to see so many patients to get enough experiences," said Watson, an associate professor of operative dentistry and one of 10 team leaders of the student dental clinics. "It was hard for patients because they didn't always know how many chairs we were going to have available."

Watson's solution? Get rid of the specialty-centered structure and turn all five clinics into general dentistry clinics, with specialists coming in to see the patients. Instead of patients shuffling from clinic to clinic, they would always go to the same place. The revised structure would also free up more spots for dental students to work. Treatment coordinators were also hired to set up patient appointments instead of students making the schedules themselves.

After a few years of negotiating and fine-tuning the idea, last year the College of Dentistry made the change. Since then, the clinics have seen a 25 percent increase in patient visits and last year's crop of graduates raved about the change during exit interviews, said Boyd Robinson, D.D.S, associate dean for clinical affairs.

"Now there is virtually no problem ever getting a chair and this is something we battled for 20 years," Watson said. "It's so crazy how simple it is."

Another perk has emerged, too. With specialists rotating in and out of the clinics at the same time, they're communicating more on patient cases, giving students a more complete look at dental care than they saw before when specialists were segregated in their own clinics, Robinson said.

"My biggest goal was putting everybody in the same clinic thinking about the education of the student," Robinson said. "During this conversation you are bettering the student's educational process so you are getting a better product at the end of their clinical years.

"All the faculty have come together and started talking a lot more than they ever have. I don't think we will ever go back. It makes too much sense the way we are doing business now."

PHOTO BY SARAH KIEWEL

Darryl Heard, an associate professor in the UF College of Veterinary Medicine, and Ryan McCleary, a Ph.D. candidate in biology, have collaborated to develop a safe, reliable and humane technique for collecting venom from cottonmouths — an essential part of the process of making antidotes for snake`bite victims. (Opposite page) Larry Seymour is shown with his two basset hounds, Margarita, in front, and her companion, Mariah, at home in Gainesville.

What's in a snakebite?

Study of isolated snakes could shed light on venom composition

By Sarah Carey

While studying a way to more safely and effectively collect snake venom, UF researchers have noticed the venom delivered by an isolated population of Florida cottonmouth snakes may be changing in response to their diet.

Scientists used a portable nerve stimulator to extract venom from anesthetized cottonmouths, producing more consistent extraction results and greater amounts of venom, according to findings published in August in the journal *Toxicon*. The study of venoms is important for many reasons, scientists say.

"The human and animal health benefits include understanding the components of venom that cause injury and developing better antivenin," said Darryl Heard, B.V.M.S., Ph.D., an associate professor in the UF College of Veterinary Medicine's department of small animal clinical sciences. "In addition, the venom components have the potential to be used for diagnostic tests and the development of new medical compounds."

But in addition to showing the extraction method is safer, more effective and less stressful to both snake and handler than the traditional "milking" technique, Heard and Ryan McCleary, a Ph.D. candidate in UF's College of Liberal Arts and Sciences, discovered the venom from these particular snakes differs from that of mainland snakes, likely because of their unique diet of dead fish dropped by seabirds.

PHOTO BY SARAH KIEWEL

Heard and McCleary collaborated to develop a safe, reliable and humane technique for collecting venom from cottonmouths as part of a larger study on a specific population of snakes that reside on Seahorse Key, an isolated island near Cedar Key on the Florida's Gulf Coast.

The venom collection study included data from 49 snakes on Seahorse Key.

"Snakes on this island are noted for their large size," said Heard, a zoological medicine veterinarian with additional expertise in anesthesia. He added that Harvey Lillywhite, Ph.D., a professor of biology at UF and McCleary's predoctoral adviser, has confirmed that cottonmouths on Seahorse Key eat primarily dead fish dropped by birds in a large seabird rookery.

Lillywhite also directs UF's Seahorse Key Marine Laboratory, located in the Cedar Keys National Wildlife Refuge. McCleary hopes to build on earlier studies about the snakes' ecology and to explore whether evolutionary changes may have affected the composition of the snakes' venom.

"My interest is in the evolutionary aspect," McCleary said. "If these snakes already have an abundant source of dead prey, why do they need venom?"

Preliminary findings show some differences in venom components, he added.

Traditionally, venom has been collected from venomous snakes by manually restraining the animal behind the head and having it bite a rubber membrane connected to a collecting chamber.

"This requires the capture of an awake snake, which increases the risk of human envenomation and is also stressful to the snake," Heard said, adding that manual collection of venom also does not guarantee that all of the venom is collected.

The nerve stimulator is used in human anesthesia to measure the effect of muscle relaxants.

"It delivers a series of electric stimuli, of very low voltage and amperage, and causes no pain or tissue injury," Heard said. "The electrodes are placed behind the eye, across the area of the venom gland. The nerve stimulator sends a current across the gland, causing reflex contraction and expulsion of the venom."

The technique allows collection from snakes that might not otherwise give up their venom, which is an essential in the process of creating antivenins for victims of snakebite, Heard said.

"The stimulator is battery-powered and relatively inexpensive," he said. "In addition, the anesthetic we used, known as propofol, can easily be transported."

Propofol, which has been prominent in news headlines recently as being linked to the death of singer Michael Jackson, is a short-acting anesthetic administered by intravenous injection. The drug is commonly used to anesthetize animals in veterinary clinical practice, but it is not believed to have been used to anesthetize snakes for venom collection.

The snakebite warrior

By Sarah Carey

When Margarita, a 10-year-old basset hound, was bitten by a cottonmouth snake recently, her quick-thinking owner rushed the dog to the UF Veterinary Medical Center for treatment.

In doing so, Sandra Fields Seymour, Ph.D., A.R.N.P., a recently retired associate professor in UF's College of Nursing, and her husband, Larry, followed a cardinal rule in preventing death or lasting tissue damage from snakebite in an animal: They sought immediate evaluation by a veterinarian.

Margarita, whose owners have nicknamed her "Snakebite Warrior," survived her bites and today appears no worse for the wear.

Margarita arrived at the UF VMC on July 3 with two strike wounds. Soon, her signs of swelling, or envenomation, had increased. Veterinarians quickly decided to administer antivenin — six vials, in fact.

The side effects of snakebite can vary greatly. Bites from rattlesnakes, cottonmouths and copperheads can result in severe tissue swelling, blood-clotting abnormalities, heart arrhythmias, organ damage and tissue death around the bite.

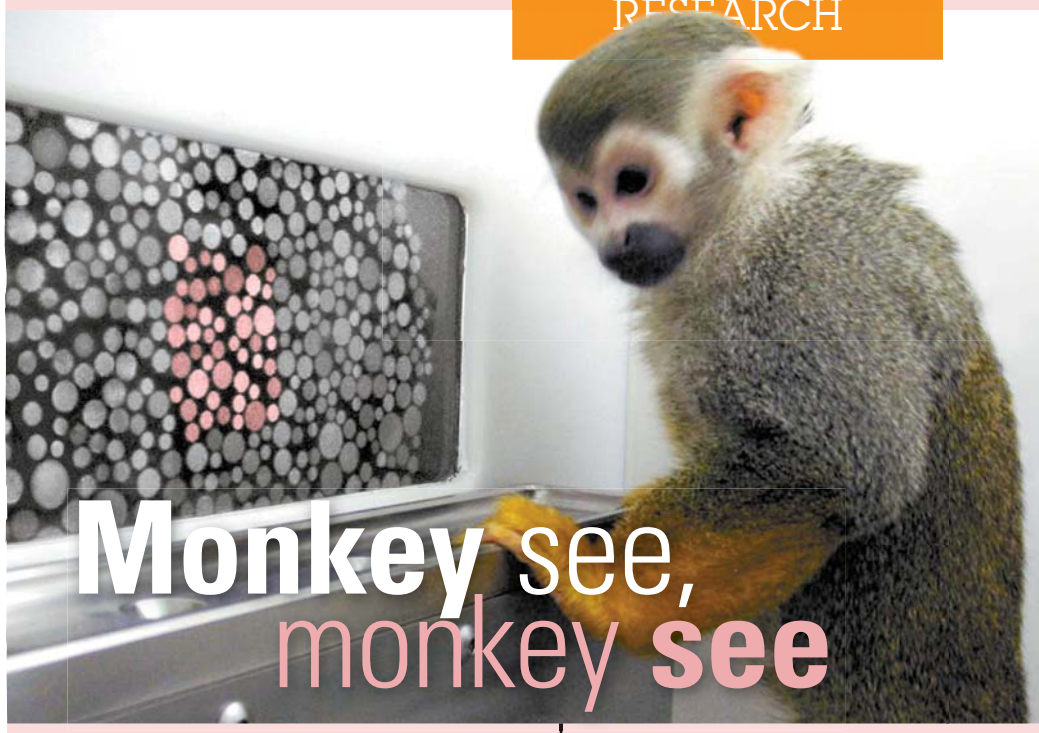
Although antivenin can be lifesaving, how much to give is a judgment call,

as the amount of venom in a snake's bite is unknown. In general, however, the more antivenin received quickly, the better, veterinarians say.

"Unfortunately, antivenin is quite expensive and can be cost-prohibitive for some owners to administer several vials," said Kate Ogawa, D.V.M., an intern in small animal medicine and surgery who treated Margarita. "Additionally, antivenin for veterinary medicine is currently not being manufactured in this country."

Thanks to the efforts of UF snake envenomation expert Michael Schaer, D.V.M., UF was able to procure an antivenin product from Mexico. Although the antivenin was manufactured for people, UF obtained permission for animal use from the Food and Drug Administration. Reactions to antivenin are possible also, which is another reason why victims of snakebite need to be monitored carefully for several days.

"I would urge people to protect themselves as much as possible from venomous snakes, and as such I cannot recommend killing the snake for identification," Ogawa said. "The antivenin contains antibodies against the venom of most snakes, so knowing exactly what snake it was is not nearly as important as getting treatment as soon as possible."



Monkey see, monkey see

UF, UW researchers cure color blindness in two monkeys

Two squirrel monkeys housed at the University of Washington were recently cured of color blindness using a gene therapy technique developed at UF.

By John Pastor

Researchers from the University of Washington and UF used gene therapy to cure two squirrel monkeys of color blindness — the most common genetic disorder in people.

Writing online in the journal *Nature*, scientists cast a rosy light on the potential for gene therapy to treat adult vision disorders involving cone cells — the most important cells for vision in people.

"We've added red sensitivity to cone cells in animals that are born with a condition that is exactly like human color blindness," said William W. Hauswirth, Ph.D., a professor of ophthalmic molecular genetics at the UF College of Medicine and a member of the UF Genetics Institute and the Powell Gene Therapy Center.

"Although color blindness is only moderately life-altering, we've shown we can cure a cone disease in a primate, and that it can be done very safely. That's extremely encouraging for the development of therapies for human cone diseases that really are blinding."

Millions of people around the world are colorblind, including about 3.5 million people in the United States. The problem mostly affects men, leaving about 8 percent of Caucasian men in the United States incapable of discerning red and green hues that are important for everyday things such as recognizing traffic lights.

The discovery comes about 10 years after Jay Neitz, Ph.D., and his wife Maureen Neitz, Ph.D., both professors of ophthalmology at the University of Washington, began training two squirrel monkeys named Dalton and Sam. Working with the makers of a vision-testing technique, the Neitzes devised a way to test what colors the monkeys were seeing.

Likewise, Hauswirth and UF colleagues spent decades developing a gene-transfer technique using a harmless adeno-associated virus to deliver corrective genes to produce a desired protein.

In this case, researchers wanted to produce a substance called long-wavelength opsin in the retinas of the monkeys. This particular form of opsin is a colorless protein that works in the retina to make pigments that are sensitive to red and green.

About five weeks after the treatment, the monkeys began to acquire color vision, almost as if it occurred overnight.

"Nothing happened for the first 20 weeks," Neitz said. "But we knew right away when it began to work. It was if they woke up and saw these new colors. The treated animals unquestionably responded to colors that had been invisible to them."

The benefits of tai chi

Ancient Chinese martial art could help people with diabetes

PHOTO BY SARAH KIEWEL

College of Nursing professor Beverly Roberts (far right) and Rhayun Song (far left) of Chungham National University discovered tai chi can help lower blood glucose levels during a study of Korean women. During her year as a UF visiting professor in 2008, Song led an informal group that practiced tai chi outside the HPNP Complex.

By Tracy Brown Wright

A regular tai chi exercise program can help people better control their diabetes and lower glucose levels, according to a UF study.

In a study of adults diagnosed with type 2 diabetes, those who participated in a supervised tai chi exercise program two days a week with three days of home practice for six months significantly lowered their fasting blood glucose levels, improved their management of the disease, and enhanced their overall quality of life, including mental health, vitality and energy.

"Tai chi really has similar effects as other aerobic exercises on diabetic control. The difference is tai chi is a low-impact exercise, which means that it's less stressful on the bones, joints and muscles than more strenuous exercise," said Beverly Roberts, Ph.D., R.N., the Annabel Davis Jenks endowed professor at the UF College of Nursing.

Roberts, with Rhayun Song, Ph.D., R.N., of Chungham National University, studied tai chi's effect on older Korean residents. The research was featured in the June issue of *The Journal of Alternative and Complementary Medicine*.

About 23.6 million children and adults in the United States, or 7.8 percent of the population, have diabetes. It occurs when the body does not produce or properly use insulin, a hormone that is needed to convert sugar, starches and other food into energy needed for daily life.

Risk factors include obesity, sedentary lifestyle, unhealthy eating habits, high blood pressure and cholesterol, a history of gestational diabetes and increased age. Many of these risk factors can be reduced through exercise.

"People assume that for exercise to be beneficial you have to be huffing and puffing, sweating and red-faced afterward," Roberts said. "This may turn people off, particularly older adults. However, we have found that activities like tai chi can be just as beneficial in improving health."

Tai chi is an ancient Chinese martial art that combines deep breathing and relaxation with slow, gentle circular movements. This low-impact exercise uses shifts in body position and stepping in coordination with arm movements.

Sixty-two participants, mostly Korean women, took part in the study. Half the group participated in at least 80 percent of two supervised sessions one hour per week, with three days of home practice for six months, and the other half served as a control group. Those who completed the sessions had significantly improved glucose control and reported higher levels of vitality and energy.

"Those who participated in the tai chi sessions actually had lower blood glucose at three and six months," Roberts said. "Those individuals also had lower hemoglobin A1c, which means they had better diabetic control."

In addition to improved blood glucose levels, participants also reported significantly improved mental health. This was very encouraging especially because people with less depression are typically more active and independent, Roberts said.

Tai chi has also been used for people with arthritis and disabilities to increase balance, muscle strength and mobility and to reduce the risk of falls. It is worth investigating its effects in other conditions, especially in older people, Roberts said.

"Tai chi provides a great alternative for people who may want the benefits of exercise on diabetic control but may be physically unable to complete strenuous activities due to age, condition or injury," Roberts said. "Future studies could examine if tai chi could similarly benefit conditions such as osteoporosis or heart disease."

Because tai chi is an exercise that involves so many parts of the body and also helps to relax the mind, it is more likely participants will adhere to the exercise, said Paul Lam, M.B.B.S., a lecturer with the University of South Wales School of Public Health and Community Medicine and a practicing family physician in Sydney, Australia.

"This study shows that tai chi can have a significant effect on the management and treatment of diabetes — a significant and growing health challenge for all Western countries," Lam said. P

UF scientists Marco Salemi (center), Rebecca Gray and Andrew Tatem led an international team of researchers exploring genetic and geographic factors to explain how HIV spread across the continent.

Mapping **AIDS**

Scientists join forces to explain HIV spread in central and east Africa

By John Pastor

Scientists studying biology and geography may seem worlds apart, but together they have answered a question that has defied explanation about the spread of the HIV-1 epidemic in Africa.

Writing in the September issue of *AIDS*, a research team led by UF scientists explained why two subtypes of HIV-1 — the virus that causes acquired immunodeficiency syndrome, or AIDS — held steady at relatively low levels for more than 50 years in west central Africa before erupting as an epidemic in east Africa in the 1970s.

Essentially, the explanation for the HIV explosion — obscured until now — involves the relative ease with which people can travel from city to city in east Africa as opposed to the difficulties faced by people living in the population centers of the Democratic Republic of Congo, the point where HIV emerged from west central Africa in its spread to the east.

Later, as the epidemic raged in the east, cities in the Democratic Republic of Congo — a vast country almost as big as all of Western Europe — remained disconnected and isolated, explaining why the virus affected only about 5 percent of the country's population, a level that has not changed much since the 1950s.

"We live in a world that is more interconnected every day, and we have all seen how pathogens such as HIV or the swine flu virus can arise in a remote area of the planet and quickly become a global threat," said Marco Salemi, Ph.D., an assistant professor of pathology, immunology and laboratory medicine at the UF College of Medicine and senior author of the study. "Understanding the factors that can lead to a full-scale pandemic is essential to protect our species from emerging dangers."

Investigators used databases, including GenBank from the National Center for Biotechnology Information, as well as actual DNA samples, including samples recently collected in Uganda — the vicinity where HIV entered east Africa — to follow the virus' molecular footprints since its emergence in the 1920s.

"HIV mutates rapidly," said Rebecca Gray, Ph.D., a postdoctoral associate in the department of pathology, immunology and laboratory medicine. "This is a successful strategy for the virus, because it evolves quickly and develops drug resistance. But we can use these changes in the genome to follow it over time and develop a history of its progress."

Researchers wanted to know why the virus smoldered during the 1950s and 1960s, before spreading like wildfire through east Africa in the 1970s.

A fateful piece of the puzzle came in the form of geographic information system data, which uses satellite imagery and painstakingly takes into account the availability and navigability of roads between population centers, transportation modes, elevation, climate, terrain and other factors that influence travel.

"We were able to use geographic data to interpret the genetic data," said Andrew J. Tatem, Ph.D., an assistant professor of geography in the College of Liberal Arts and Sciences and a member of UF's Emerging Pathogens Institute. "Genetic data showed once HIV moved out of the Democratic Republic of Congo, it expanded fast and moved rapidly across Uganda, Kenya and Tanzania, all while staying at low levels in the DRC. What was happening was the virus was circulating at stable levels in the urban centers of the DRC, but these centers were isolated. Once it hit east Africa, connectivity between population centers combined with better quality transportation networks, and higher rates of human movement caused HIV to spread exponentially."

HIV was prevalent in about 15 percent of the population in Kenya in 1997, although it has since dropped to about 7 percent, according to the Kaiser Family Foundation. As of 2007, an estimated 22 million people were living with HIV/AIDS in sub-Saharan Africa. About 1.1 million Americans have HIV or AIDS, and an estimated 5.1 million people in India are HIV-positive. In Eastern Europe, HIV infections more than doubled from 420,000 in 1998 to 1 million in 2001.

"If we can predict the specific routes of an epidemic, we can find the geographic regions more at risk and target these areas with medical intervention and strategies for prevention," Salemi said. "In terms of health-care applications, coupling genetic analysis with geographic information systems can give us a powerful tool to understand the spread of pathogens and contain emerging epidemics." P

The multitasker

Inside the life of a pediatric emergency medicine physician

PHYLLIS HENDRY, M.D.

By Betty Poole

Phyllis Hendry, M.D., keeps a framed photo of a young leukemia survivor in her office. She has other homey knickknacks there, like her comical plaques and family photos. But the photos of her patients represent what means most to her as a pediatric emergency physician — saving children's lives and making families happy.

"The most challenging is how to balance being a good clinician and administrator, learning the field of research, taking care of the house and children and paying the bills," said Hendry, who has worked at the UF College of Medicine-Jacksonville for 20 years. "The work is never really done."

Fresh off her term as president of the UF COM-Jacksonville Faculty Council, Hendry's life lately has been a lesson in balance. She hasn't seen a typical day in two decades, wedging council committee meetings into her already bulging schedule. She works an average of two to three evening shifts a week in the pediatric emergency department at Shands Jacksonville, serves as assistant chair of research and is passionate about teaching pediatric emergency medicine to residents. She also has helped develop numerous national pediatric resuscitation courses and has served as medical director of the state health department's Emergency Medical Services for Children Program.

But fitting the council in her life was definitely worth it, she says. After 20 years, her perception of the college is, in many ways, brand new because of the time she spent on the council.

"I came away so impressed with the quality of people who run this campus," she said. "It made me want to be involved with UF leadership and represent the needs of our faculty. We have a lot of great programs, physicians and diversity."

David Vukich, M.D., chair of the department of emergency medicine, explains Hendry's ability to deftly juggle multiple tasks, leadership roles and projects like this: "Phyllis has the ability to focus like few others; it's not finished until it's right," said David Vukich, M.D., chair of the department of emergency medicine. "She accomplishes huge amounts of work and is tireless."

Vukich and Hendry have worked together since the late 1980s, when she was a fellow in pediatric emergency medicine.

"We connected because she was extremely helpful to me as the department leader," he said. "Her skills were obvious from even this early stage of her career. Fortunately for us, she never left, joining the faculty in 1991. I wanted her on my staff for several reasons: she is thoughtful, kind, intense, dedicated, fast, serious, painfully thorough and accurate. I cannot think of better attributes for an academic emergency physician."

Pursuing degrees in microbiology and food science and technology at a time when most girls from her Minden, La., hometown shied away from studying science, Hendry received a doctor of medicine degree from Louisiana State University School of Medicine in Shreveport. She chose UF COM-Jacksonville because of its impressive pediatric emergency medicine fellowship program, the people she met here and the opportunity to live at the beach for the first time.

As a fellow, Hendry parked in a dirt field, had no duty hours or meal card, and tossed an old mattress into her makeshift office in the pediatric ER to nap when she could. Back then, pediatric AIDS was just coming to the forefront and sudden infant death syndrome, septic shock and haemophilus influenza still killed many children.

"Pediatrics has changed so much because of preventative medicine," Hendry said. "We did not have the training we have now."

Since her days as a fellow, Hendry has held numerous leadership roles and even helped work on a major emergency medicine textbook, serving as the section editor on pediatric emergency medicine.

At one point, Hendry took a diversion into children's hospice care for a year, fulfilling a career-long dream to work with chronically ill and dying children and their families. She served as medical director of Community PedsCare.

"Phyllis had a particular ability for this but in the end she knew she needed to return to the emergency department," Vukich said.

She begins her third decade in emergency medicine particularly excited about her new research opportunities. At her 20-year milestone, Hendry briefly considered moving closer to Louisiana.

"But this is home," she said.

In case of disaster

Jax campus named site for disaster training course

By Betty Poole

Shands Jacksonville was named a National Disaster Life Support Course Regional Training Center in August. This designation allows Shands Jacksonville and the faculty of the UF College Of Medicine-Jacksonville to offer the Disaster Life Support course to both the campus and the community.

Joseph Sabato Jr., M.D., an assistant professor and director of field operations and disaster management, and Julie A. Lewis, M.D., a June 2009 graduate of the emergency medicine residency program, completed the application over the course of the academic year as a senior resident project.

The NDLS course focuses on a comprehensive approach by physicians and other health professionals to dealing with all catastrophic emergencies, from terrorist acts, explosions and fires to natural disasters and infectious disease outbreaks. The overarching goal is to standardize emergency response training nationwide and strengthen the nation's public health system.

The National Disaster Life Support Foundation established the training program in conjunction with the American Medical Association to better prepare health-care professionals and emergency response personnel for mass casualty events.

Sabato and Lewis collaborated with Andy Godwin, M.D., associate chair for emergency medicine and director of Jacksonville's UF Center for Simulation Education and Safety Research, on the grant. Ashley E. Booth, M.D., associate program director for the emergency medicine residency program, and Thomas A. Kunisaki, M.D., associate professor of emergency medicine, helped facilitate the first course provided to emergency medicine department faculty and residents.

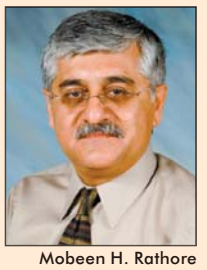
DISTINCTIONS

Robert C. Nuss

ROBERT C. NUSS, M.D., dean of the regional campus and associate vice president for health affairs, received the Florida Medical Association's highest award, the Certificate of Merit, during the group's annual meeting in July. Chosen by the FMA Board of Governors, Certificate of Merit recipients are members who have made significant contributions to the association, to the medical profession and to the public.

Kamela Scott

KAMELA SCOTT, Ph.D., was one of five people across the country to receive the Kamangar Ethics Award for Surgery Residents Training Program in Medical Ethics. Scott is an associate professor in the department of surgery's division of acute care surgery. These awards are designed to assist surgical training programs in developing and implementing ethics training for residents by providing funds to support regular surgery ethics discussions as well as training materials.


Mobeen H. Rathore

MOBEEN H. RATHORE, M.D., professor and chair of the department of pediatrics and chief of pediatric infectious diseases and immunology, was unanimously selected for the Beals Award for Medical Research in the Original Investigations category by the Duval County Medical Society's Beal/Shahin Award Committee. Rathore was chosen for the award based on his involvement in a study investigating the continuous improvement of the immune systems of children infected with HIV. He received the award Sept. 22.

Jay Schauben

JAY SCHAUBEN, Pharm.D., director of the Florida Poison Information Center Jacksonville and a courtesy professor of emergency medicine, has been elected a 2009 at-large board member for the American Association of Poison Control Centers.

Ophthalmology department wins grant

The UF College of Medicine-Jacksonville Ophthalmology Residency Program was one of eight institutions awarded the 2009 Pfizer Visiting Professorships in Ophthalmology grant. This nationally competitive grant provides an opportunity for the institution to host a prominent medical expert. Kakarla V. Chalam, M.D., Ph.D., M.B.A., professor and chair of the department of ophthalmology and program director of the ophthalmology residency program, selected Deepak P. Edwards, M.D., an ocular pathologist with the Summa Health System, as the visiting professor because of his expertise and excellent mentoring in the area of ocular pathology.

Hail to the chief

Samuel Low, D.D.S., M.S., an associate dean and a professor in the department of periodontology was recently named president of the American Academy of Periodontology board of trustees during its 95th Annual Meeting in Boston. Low also serves as an advisory faculty member to the Pankey Institute for Advanced Dental Education, a dental school that focuses on hands-on educational experiences and a highly developed dental curriculum.

COLLEGE OF DENTISTRY

Nery Clark

NERY CLARK, D.M.D., an associate professor in the department of operative dentistry, was selected as a semifinalist for the 2009 Examples of Excelencia, a national award give by the Excelencia in Education, which focuses on improving Latino educational success. Clark received the award in recognition of her directorship of the Internationally Educated Dentist Program.

Glenn Turner

GLENN TURNER, D.M.D., M.S.D., director of the Maxillofacial Prosthetics Service and an associate professor in the department of prosthodontics, is currently serving as president of the American Academy of Maxillofacial Prosthetics and will preside over the 57th annual meeting in October in San Diego. Turner has been director of maxillofacial prosthetics since 1984.

COLLEGE OF MEDICINE

Christopher Cogle

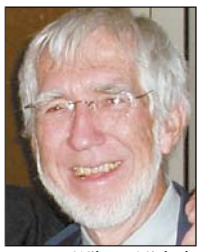
CHRISTOPHER COGLE, M.D., an assistant professor of medicine, recently co-edited the textbook *Cancer Microenvironment and Therapeutic Implications,* which was published in April. The book, which he collaborated on with scientist Gianfrancco Baronzio, centers on the cancer microenvironment — all the interactions around and among cancer cells. Cogle also wrote one of the book's chapters.

Jamie Beth Conti

JAMIE BETH CONTI, M.D., has been named chief of the division of cardiovascular medicine in the department of medicine. For the past year, Conti has served as the interim chief of the division of cardiovascular medicine and currently is a professor of medicine. Conti is a graduate of UF's College of Medicine and completed cardiology and cardiac electrophysiology fellowships at UF before joining the UF faculty in 1994.

Lyle L. Moldawer

LYLE L. MOLDAWER, Ph.D., a professor and vice chair of research for the department of surgery, recently was honored with the Shock Society Scientific Achievement Award. The award is presented annually to an outstanding scientist with lifetime contributions to the study of shock. Moldawer, who joined UF in 1993, established the Laboratory of Inflammation Biology and Surgical Science, which seeks to translate current developments in molecular biology, gene therapy and functional genomics into the treatment of critically ill patients.


Wilmer Nichols

WILMER NICHOLS, Ph.D., the director of basic cardiovascular research, received the Lifetime Achievement Award from ARTERY, the Association for Research in Arterial Structure and Physiology. Nichols, who grew up working on farms as the son of sharecroppers, joined the Navy at 17 and served in the Philippines during the Korean War. He earned a general equivalency diploma and, later, a Ph.D. in physiology and biophysics, worked for NASA on the first manned flight into space as well as the Gemini and Apollo flights, and co-edited four editions of *McDonald's Blood Flow in Arteries*, a well-known hemodynamics textbook.

Richard Shriner

The department of psychiatry recently added a seventh division, extending its commitment to patient care, research and education to the national obesity epidemic. Researchers and faculty of the new eating disorders and obesity division will expand on the years of work done within the division of addiction medicine. The division is headed by **RICHARD SHRINER**, M.D., a double-boarded internist-psychiatrist who joins UF after years spent in private practice.

COLLEGE OF PHARMACY

Julie Johnson

JULIE JOHNSON, the V. Ravi Chandran professor of pharmaceutical sciences and chair of pharmacy practice, has been selected by the American College of Clinical Pharmacy as its 2009 Therapeutic Frontiers Lecture Award winner. The Therapeutic Frontiers Lecture Award, the highest honor in the ACCP, is presented to an outstanding, internationally recognized scientist whose research is actively extending pharmacotherapy into new frontiers.

COLLEGE OF VETERINARY MEDICINE

Ellis Greiner

ELLIS GREINER, Ph.D., a professor of infectious diseases and pathology, has received the American Association of Veterinary Parasitologists' Distinguished Veterinary Parasitologist Award. Greiner has served on UF's veterinary faculty for more than 30 years. His research has involved reptiles, birds, livestock and domestic pets, but mostly has centered on sea turtles and marine mammals. Earlier in his career, he worked extensively with bluetongue, a viral disease affecting sheep and cattle, and with a devastating neurological disease that affects horses, known as equine protozoal myeloencephalitis, or EPM.

Keepin' computers secure

The PHHP Information Technology team, along with **Andrea Burne** as the college's information security administrator, received the 2009 Security Shining Star Award from Health Science Center SPICE. Award criteria include technology competency, a good track record of protecting information, teamwork with unit administration and the ability to be effective security leaders in their college and in the HSC.

The SCIENCE of feelings

UF professor lays foundations in the psychology of emotion

By Laura Mize

Peter Lang was on the cusp of earning his Ph.D. in psychology in the 1950s when the U.S. military came calling.

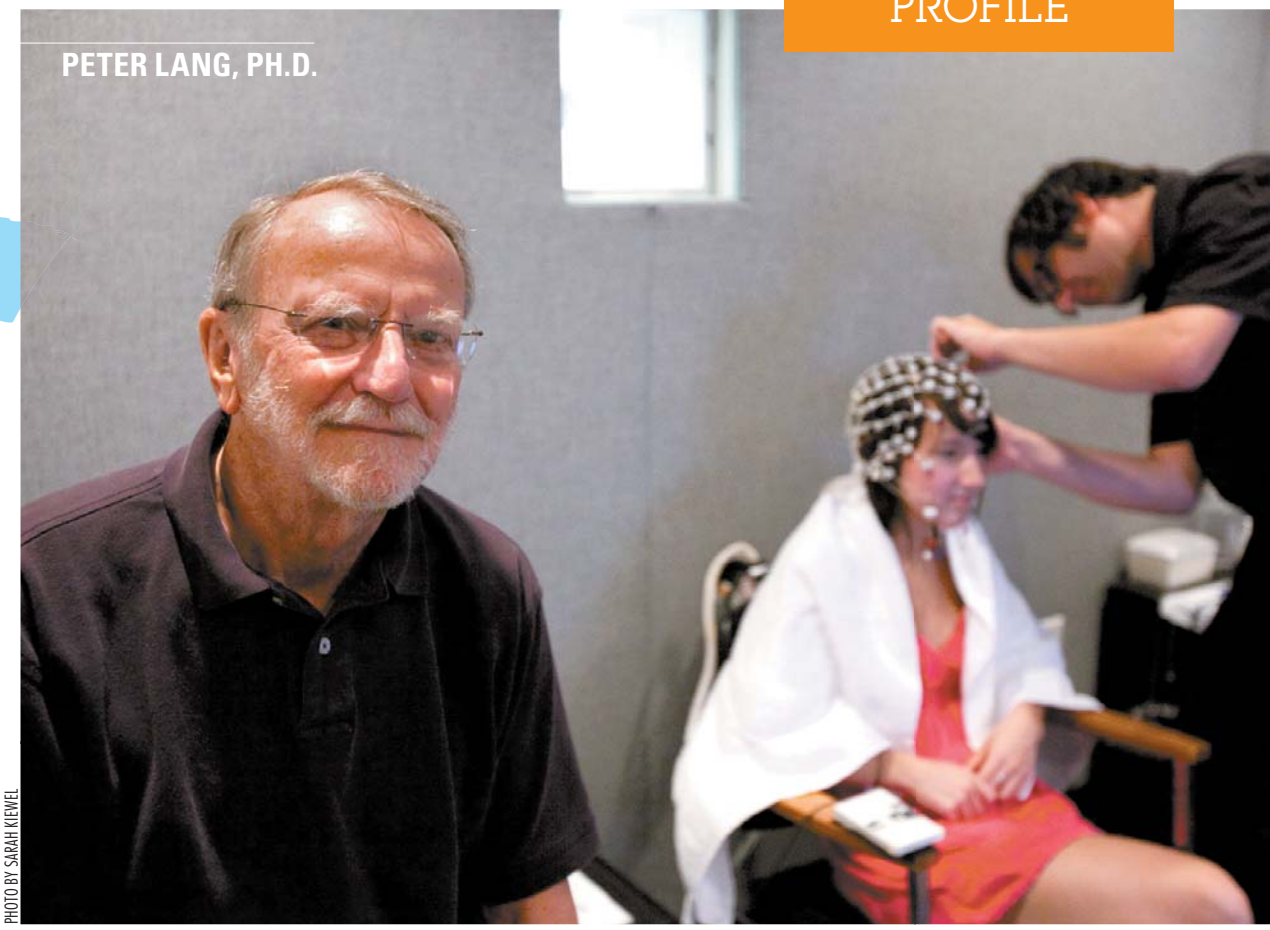


PHOTO BY SARAH KIEWEL

He was drafted into the Army. Instead of finishing his degree then, Lang, now executive and research director of the Fear and Anxiety Disorders Clinic in the College of Public Health and Health Professions and director of the National Institute of Mental Health's Center for the Study of Emotion and Attention, served as a clinical psychology technician in the neuropsychiatry ward of a stateside military hospital.

"I never got out of Fort Knox, Ky.," Lang said of his Army career. "Of course, many patients were veterans or were active in the Korean War. (They) wound up as patients with PTSD (posttraumatic stress disorder) and other mood or anxiety disorders, although that wasn't the diagnosis at the time."

Lang saw previously mentally stable soldiers deal with mental illness brought on by the war.

"You saw clinical phenomena then that you can still find in the old textbooks, but which you almost never see now because the present wide use of psychotropic drugs masks the more flamboyant symptomology that then characterized schizophrenia and other psychotic conditions."

After the war, Lang finished his Ph.D. and pursued his research, focusing initially on schizophrenia. But a new treatment for fear and anxiety disorders caught his attention and shifted his focus. "Desensitization therapy," developed by the late Joseph Wolpe, a well-known South African psychiatrist, involves exposing patients to an increasing amount of stimuli that cause fear until the patient is no longer afraid.

"If somebody was a phobic in regard to snakes, then maybe it would be just writing the word snake," said Lang, also a graduate research professor in the college. "And then (Wolpe) would build a hierarchy with the patient of different situations and then have them imagine them successfully."

Lang tested the new therapy to see if it stood up in a laboratory.

"We began studies of systematic desensitization, and they were probably the first comprehensive studies done, certainly the first studies funded by NIMH, in behavior therapy," he said. "They were quite successful."

Lang continued to study treatments for fear and anxiety and determined that a better scientific understanding of emotion was necessary. He developed a set of factors to measure emotion, which include language, behavior and physiology. With the advancement of technology, brain imaging has become a big part of the study of emotion.

"You can't ever know another's feelings, but you can measure what one says, how one behaves, how the body's organs react and increasingly how the brain orchestrates this complex expression of emotion," Lang said.

Greg Miller, Ph.D., a professor of psychology at the University of Illinois who studied under Lang, said his former professor "has made pioneering contributions in each of these areas and has provided leadership in how to integrate these different kinds of data."

Methods of measurement Lang developed have become standards in the field of emotion science.

In September 1994, UF's Center for the Study of Emotion and Attention, founded by Lang, became a National Institute of Mental Health center. Today the center supports investigators at the University of Chicago, the University of Minnesota, Emory University and Karolinska Institute and Hospital in Stockholm, Sweden. There are also affiliated researchers working at institutions in the United States, Belgium, Brazil, Germany, Spain, Italy and other countries.

Lang has been awarded four honorary doctoral degrees from universities in Germany, Spain and Sweden.

Miller said Lang's work in the field has been "extensive and trend-setting." Lang developed a well-known paradigm about the startle reflex, which states that a person's mood can dictate the intensity of his or her reaction when startled. Lang also developed the International Affective Picture System, a series of images used in psychological experiments worldwide that Miller described as the "most commonly used stimulus set" in emotion research.

Miller said one way Lang affected him was by teaching him how to think about and organize ideas into research studies.

"What's a wise way to go about testing this idea you have? What's a really careful way to test a creative idea? I'm still kind of realizing how much I learned from him about that," Miller said. P

The **Fear and Anxiety Disorders clinic** offers free assessments for qualified people suffering from fear and anxiety. Call 352-294-FEAR (3327) for more information

SEE YA!

PHOTO BY SARAH KIEWEL

Crew members from the documentary "Darius Goes West" visited UF in September for the largest screening ever of the award-winning movie, which chronicles Darius Weems' (second from left) trip across the country to get his wheelchair "pimped" and raise awareness about Duchenne muscular dystrophy. The day after the screening, crew members came to the HSC to discuss what life was like behind the scenes.

PHOTO BY SARAH KIEWEL

UF dental students (from left) Danielle Poole, Tori Brown, Allison Robbins and Brittney Stokes peek at dental artifacts stored in the College of Dentistry's museum, located on the first floor of the Dental Building.

PHOTO BY SARAH KIEWEL

Florida's Surgeon General, Dr. Ana M. Viamonte Ros, led a healthy discussion on the state's current health priorities. Ros' September visit was part of the HSC fall Diversity Dialogue and College of Medicine Dean's Lecture Series.

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