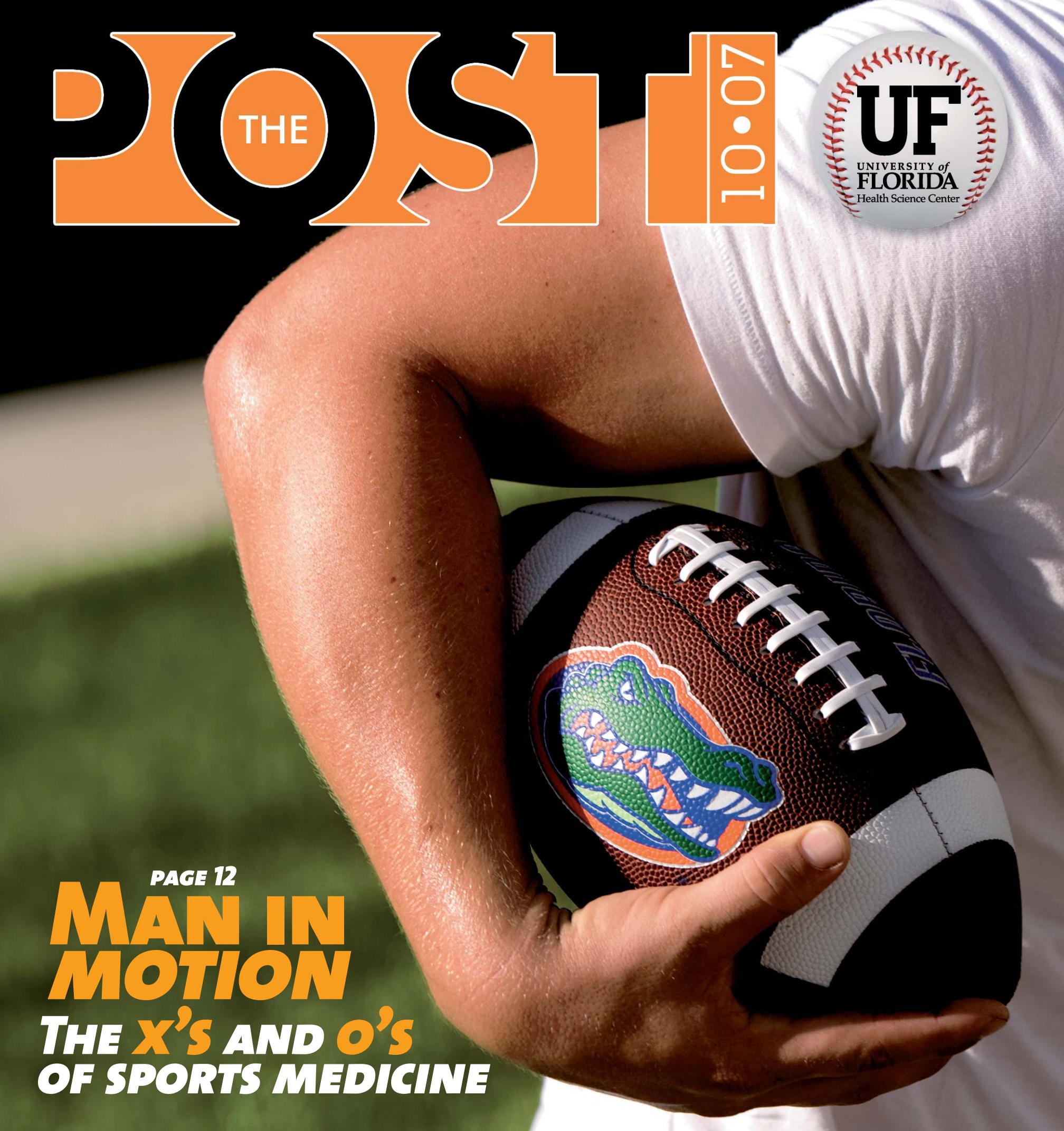


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MAN IN MOTION

THE X'S AND O'S OF SPORTS MEDICINE

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On the Cover

At the UF Biomechanics and Motion Analysis Laboratory, researchers can analyze an athlete's motion to help them perform better on the field and keep injuries at bay. The knowledge garnered in the lab helps amateur athletes too. About one-tenth of the 40 million children and adults who play recreational sports are injured each year. (Photo by Sarah Kiewel)

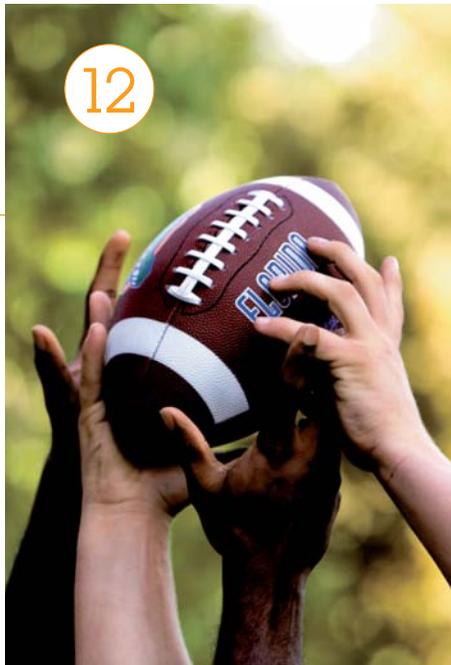


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UP FRONT



Destination, UF

Last month, Florida Lt. Gov. Jeff Kottkamp visited the UF colleges of Medicine, Business and Law to meet faculty and students and to participate in a number of events. During his visit to the Health Science Center, Kottkamp (above, right) met with College of Medicine Dean Bruce Kone (left), medical student Rana Yehia, Dr. Hubert Fernandez, Dr. Richard Bucciarelli and Dr. Marco Pahor. Kottkamp also got hands-on experience using the UF-developed Human Patient Simulator. Leading the demonstration was Dr. J.S. Gravenstein, a UF graduate research professor emeritus of anesthesiology who helped pioneer the simulator, which is in use worldwide to help teach students critical care skills. (Photos by Sarah Kiewel)



Post it

A dog's best friend

A Missouri veterinarian whose collaboration with UF veterinary surgeons in June 2006 helped restore full walking ability to a service dog named Eagle has been named the national winner of *Dog Fancy* magazine's "Thank Your Vet for a Healthy Pet" contest. Eagle's owner, Michael Ray, of Deltona, Fla., nominated James "Jimi" Cook, D.V.M., the director of the Comparative Orthopaedic Laboratory at the University of Missouri-Columbia, for the award. Cook volunteered his services and UF veterinary surgeon Dan Lewis, D.V.M., a longtime friend and colleague of Cook's, arranged for the operation to take place in Gainesville. UF veterinary surgeons were able to learn from the procedure while Eagle benefited from Cook's expertise in treating front-limb lameness in dogs. In his nomination letter, Ray, who is paralyzed, wrote, "Not only did Jimi save my best friend and companion from a life of pain and misery, he also gave me back my service dog." (Photo by Sarah Kiewel)



Everyone's a winner

Q. Who knows how hard-working your colleagues are?
A. That would be you, so nominate your favorite office MVP for a UF Superior Accomplishment Award. Awards range from the honor of just being nominated to \$200 and \$1,000 prizes. Nominations must be received by Oct. 31. For more information, visit www.hr.ufl.edu/saa.

Read all about it

Trying to keep up with state's latest health news? Florida Health News Inc., an independent online news service, is a not-for-profit journalistic enterprise that aims to inform the public about state and local health policy and finance issues as they develop. FHN posts health-related stories reported around the state, highlights the Florida impact of national stories and tracks state health legislation. The news service, which received start-up funding from the Florida Health Policy Center — a unique collaborative of Florida foundations dedicated to furthering access to neutral and objective health information — will also periodically feature original coverage of major health policy developments. A free Monday-through-Friday news service with daily summaries of breaking health care-related news is available by subscribing at www.floridahealthnews.org. Just click the "Subscribe to e-Alerts" button at the top of the home page to sign up.



HEALTH



Fitness made simple

So you don't have time to work out, huh? Patients need you. The kids missed the bus. Your cubicle is waiting for you to sit in it all day. There are plenty of excuses for not getting fit, but convenience isn't one of them for Shands and UF employees. Through the Fitness Express program, Shands and UF employees can take part in exercise classes led by athletic trainers and exercise physiologists five days a week. The program is flexible — exercisers don't have to come every day and can choose between early morning or late afternoon sessions — and targets the entire body. Memberships are \$35 or \$40 per month. For more information e-mail Mike Wasik at wasikmp@shands.ufl.edu.

Labor of love

College celebrates 25 years of nurse-midwifery education

By Tracy Brown Wright

When Betty Hilliard came to Florida in 1960 to join the UF College of Nursing's faculty, she was one of only three nurse-midwives in the state. Now, almost 50 years later and 25 years after she founded the first nurse-midwifery program in Florida, there are more than 300 practicing nurse-midwives in the state. Many are alumni of the UF nurse-midwifery program.

Establishing the program was no easy feat, though. Hilliard faced detractors who thought midwives might compete with physicians and struggled to find qualified faculty and preceptors. It was a challenge, but it's one that the students, leaders and alumni who gathered Sept. 7 to celebrate the program's 25th anniversary are glad Hilliard tackled.

"Although encountering resistance to the nurse-midwifery profession in much of her professional life, Betty persevered and continued to dedicate herself to women's health," said Alice Poe, C.N.M., D.S.N., a UF associate professor of nursing and coordinator of the nurse-midwifery program. "Betty doggedly pursued the establishment of the nurse-midwifery program that we celebrate today. She was such a wonderful mentor to me and so many others — so kind and giving and willing to share her knowledge."

After the initial struggles, the UF nurse-midwifery program opened in 1982 in Gainesville. At the time it was one of two nurse-midwifery programs in the state. The program, which seeks to prepare students to be professional nurse-midwives who can meet the health needs of childbearing women and their families, eventually moved to the college's Jacksonville campus.

"The UF nurse-midwifery program was founded and continues today with the core mission that nurse-midwifery care focuses on the care of both the individual and the family," Poe said. "We are preparing nurse-midwives to provide the highest level of care to childbearing women and their families based on a sound curriculum of science and clinical care. UF



(Top) Elizabeth DiCarlo, left, a certified nurse midwife and one of the first faculty of the nurse midwifery program, and Betty Hilliard, founding coordinator of the program, advise Sonja Speed, of Citra, Fla., concerning her newborn daughter.

(Bottom) The College of Nursing recently celebrated the 25th anniversary of its nurse-midwifery program. Shown here at the celebratory luncheon are, from left, Alice Poe, the program's coordinator; Betty Hilliard, a UF professor emerita of nursing and founder of program; Charles Mahan, a former Florida state health officer; and Kitty Ernst, the president of the American College of Nurse-Midwives.

nurse-midwives consider themselves partners with physicians in ensuring that women and families have a safe and satisfying childbirth experience."

After Hilliard retired in 1990, Poe took the reins of the program and remains the coordinator today. Since 1990, Poe has helped the program secure significant state and federal funding and also has helped increase the nurse-midwifery workforce by recruiting students from disadvantaged backgrounds, medically underserved areas and underrepresented populations.

"I think what strikes me most from my 17 years as coordinator of this program and 22 years as a faculty member has been our graduates," Poe said. "We have nurse-midwifery graduates across the state of Florida and the country who have made an indelible mark on the health of women and their families."

During the celebratory luncheon, Eunice "Kitty" Ernst, president of the American College of Nurse-Midwives, presented Poe with a lifetime Gold Commendation award for the program's 25 years of innovative and compassionate midwifery care provided to families in Florida and the education provided to midwifery students. 

Ctrl, alt, anesthetize

New computer simulation allows users to practice providing anesthesia

By Ann Griswold

Welcome to the O.R. Your patient is Tom, a 35-year-old man whose pre-op chart shows he's a 6-foot, 175-pound nonsmoker with mild asthma and occasional heartburn — relatively healthy except for two painful gallstones.

Your mission, should you choose to accept it, is to anesthetize Tom during a routine procedure to remove his gallbladder. You'll have 90 minutes to administer the correct drugs — at the correct doses, in the correct order, at the correct time — and bring him safely back to consciousness when the operation is complete. The surgeon, Dr. Stone, picks up a scalpel. Tom's heart monitor beeps out a rhythmic beat. The timer is set ... Go!

All eyes are on you, waiting for your next move. Time in the operating room is precious, so you'll need to be quick. You see a tray of syringes, but which to choose? How much medication to administer and when? Dr. Stone frowns, crossing his arms. Tension mounts as you inspect various interactive monitors, note Tom's vital signs and mull over the best course of action.

If this were real life, Dr. Stone would declare you inept, the surgery would be rescheduled and Tom would probably file an official complaint. But relax! On a computer, medical residents and other anesthesia providers can repeat the scenario as many times as necessary without endangering lives during the learning process.

UF anesthesiology researchers from the Center for Simulation, Advanced Learning and Technology have developed the virtual O.R. program "Simulated Anesthesia Experience" to give users a realistic way to hone their skills. To create the background, the team used a panoramic photograph of an empty operating room at Shands at UF.

Sem Lampotang, Ph.D., a UF professor of anesthesiology in the College of Medicine, says the simulation program is a safe and engaging way for anesthesia residents and providers to understand how body size affects a patient's response to anesthesia and influences the potential for complications during surgery.

"When we teach medical students and residents, we usually assume (the patient is of average weight)," he said. "But here, the inter-patient variability is pretty dramatic and that makes the program more unpredictable. With some things, after you play three times you know exactly what you need to do to get the desired result, so after awhile it can get boring. This is more realistic."

Lampotang, also a co-inventor of the Human Patient Simulator, collaborated with researchers David Lizdas, B.S., John Tumino, Nikolaus Gravenstein, M.D., and Harshdeep Wilkhu, M.D., on the project. The team received funding from the drug company Organon USA to develop the program, which is now used by the company's sales staff to train and educate anesthesia personnel around the nation.

"If students are learning to be proficient and safe health-care providers while having fun using the (simulation), we have succeeded as instructors and simulation designers," Lampotang said. **P**



PHOTO BY SARAH KEWEL

UF researchers developed the program shown above to help medical residents and other anesthesia providers hone their skills outside of the operating room.

The science of sharks

Genetic origin for limbs found in creature known for biting them

By John Pastor

When the first four-legged animals sprouted fingers and toes, they took an ancient genetic recipe and simply extended the cooking time, say UF scientists, writing in the journal *PLoS ONE*.

Even sharks, which have existed for more than half a billion years, have the recipe for fingers in their genetic cookbook — not to eat them, but to grow them.

While studying the mechanisms of development in shark embryos, UF scientists identified a spurt of genetic activity required for digit development in limbed animals.

Previous work suggested the transition from fins to limbs involved the addition of a late phase of gene activity during embryonic development, something thought to be absent during the development of fish fins.

The finding shows what was thought to be a relatively recent evolutionary innovation existed eons earlier than previously

believed, shedding light on how life on Earth developed and potentially providing insight for scientists seeking ways to cure human birth defects, which affect about 150,000 infants annually in the United States.

“We’ve uncovered a surprising degree of genetic complexity in place at an early point in the evolution of appendages,” said developmental biologist Martin Cohn, Ph.D., an associate professor with the UF departments of zoology and anatomy and cell biology and a member of the UF Genetics Institute. “Genetic processes were not simple in early aquatic vertebrates only to become more complex as the animals adapted to terrestrial living. They were complex from the outset. Some major evolutionary innovations, like digits at the end of limbs, may have been achieved by prolonging the activity of a genetic program that existed in a common ancestor of sharks and bony fishes.”

Researchers say the same genes that produced ancient fins likely enlarged their role about 365 million years ago in amphibians struggling to adapt to swamps and terrestrial living, creating a distinct burst of development and more versatile appendages.

Using molecular markers to study the formation of skeletal cartilage in embryos of the spotted catshark, UF scientists isolated and tracked the activity of Hox genes, a group of genes that control how and where body parts develop in all animals, including people.

They discovered a phase of gene expression in sharks that was thought until recently to occur only when digits began to form in limbed animals.

Why, then, don’t sharks have fingers?

Renata Freitas and GuangJun Zhang, co-authors of the paper and graduate students in the zoology department of the College of Liberal Arts and Sciences, speculate that sharks and many other types of fish do not form more dramatic appendages during this late phase of Hox gene expression because it occurs briefly and only in a narrow band of cells, compared with the more extended time frame and larger anatomical area needed to prefigure the hand and foot in limbed animals.

“We know when this particular Hox gene is mutated in humans, it results in malformations of fingers and toes,” Cohn said. “Until now it was thought these mutations were affecting a relatively recent innovation in the genetic process of limb development. Our results show that this phase of Hox expression is much more ancient and suggest that if the origin of digits involved a prolonged activity of Hox genes, a truncated period could result in defective digits.”

In a parallel study, researchers at the University of Chicago found this second phase of gene expression in paddlefish, a primitive living descendant of early fish with the first bony skeletons.

Finding the second phase in sharks, which have skeletons

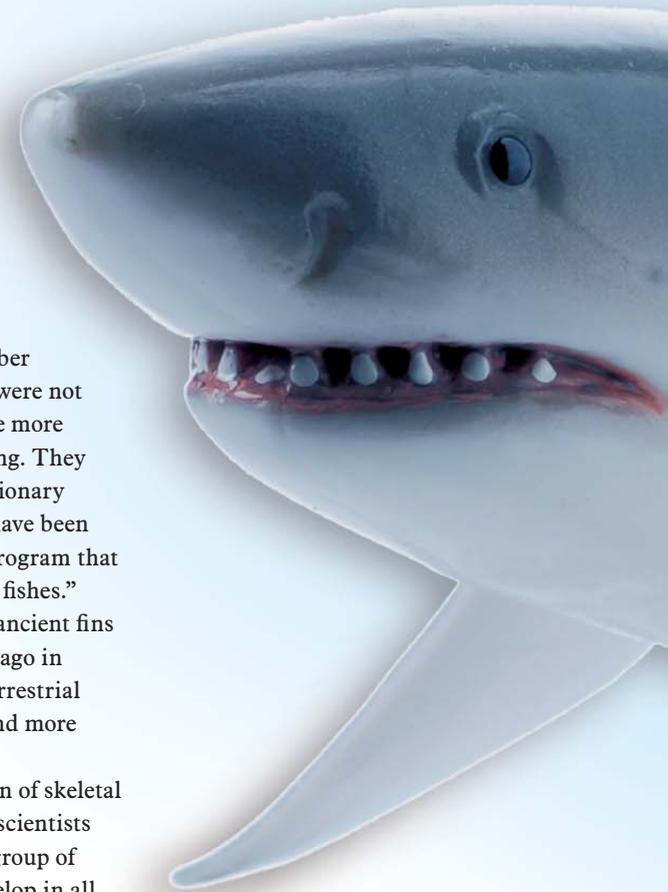


PHOTO BY SARAH KIEWEL

By studying development in sharks, UF biologist Martin Cohn uncovered evidence that the genetic processes for digits in limbed animals — thought to be a relatively recent evolutionary innovation — have an extremely ancient origin.



Toxic avengers

UF researchers studying how pollutants affect bull sharks

By Meredith Woods

Sending commonly prescribed medications down the drain may be taking a bite out of the environment — at least when it comes to shark habitat, UF veterinary scientists say. In fact, the combination of flushing unused medications and the natural excretion of drug residue from antidepressants, cholesterol-regulating drugs and contraceptives into wastewater systems could be having repercussions on aquatic animal life in general.

Researchers at the UF College of Veterinary Medicine's Analytical Toxicology Core Laboratory, in collaboration with Mote Marine Laboratory in Sarasota, are studying the bull shark's exposure to pharmaceutical drug residue found in the waters of the Caloosahatchee River near Fort Myers. Bull sharks leave the ocean to spend time in brackish rivers and estuaries, and the river serves as a nursery for their young.

"Because bull sharks have the unique ability to survive in both saltwater and freshwater environments, they are in close, frequent contact with people — and, as a result, are frequently exposed to wastewater pollutants found in freshwater basins," said Jim Gelsleichter, senior scientist at Mote Marine Laboratory.

Scientists are trying to determine whether exposure to prescription residue contaminants from water treatment plants and other sources affects the sharks' ability to grow and reproduce.

"Treatment plants were designed to remove pathogens like viruses and bacterial agents, and that they do very well," said Nancy Szabo, Gelsleichter's co-investigator and director of UF's Analytical Toxicology Core Laboratory. But these facilities simply aren't designed to deal with pharmaceuticals, she said.

Evidence suggests that low-level pharmaceutical pollution is widespread. In 1999 and 2000, the U.S. Geological Survey sampled 139 streams in 30 states for organic wastewater contaminants, including common pharmaceuticals. Eighty percent of the streams studied contained traces of chemical pollution. The consequences of such contamination are not yet fully known, although some research has shown even low levels of these contaminants affect several fish species.

Federal guidelines for proper disposal of prescription drugs recommend flushing them down the toilet only if the accompanying patient information specifically says it is safe to do so.

Gelsleichter is testing for the presence and levels of human drug contaminants in bull shark blood by tagging bull sharks in the river basin with passive sampling devices — silicone rubber discs that collect chemical samples in the water for later examination. When sharks are caught by local anglers or by the Mote team on subsequent research expeditions, the tags are retrieved and sent to UF's Analytical Toxicology Core Laboratory for analysis.

When the blood and silicone-rubber discs from the bull sharks arrive at the laboratory, Szabo's team analyzes the samples to determine the variety and concentration of chemicals present in the bull shark's environment.

The UF laboratory specializes in non-routine analysis. Szabo's team works with researchers both at UF and elsewhere to develop appropriate methods for measuring and analyzing whatever toxins are being examined. These techniques are tailored specifically to each client.

For the bull shark study, the UF laboratory has been able to use distinctive techniques to gauge chemical levels in bull shark blood. The laboratory worked with Mote not only to design the experiment but also to adapt the analytical methods used to ensure valid results are produced.

"The type of work we do requires a lot of effort, and one has to have the expertise available to know where to even begin," Szabo said. **P**

consisting not of bone but of cartilage, means the genetic processes necessary to muster fingers and toes existed more than 500 million years ago in the common ancestor of fish with cartilaginous skeletons and bony fish — more than 135 million years before digits debuted in the earliest limbed animals.

"The leap from aquatic life to terrestrial life is an extremely dramatic, important point in evolution that has captured the interest of many," said Marie Kmita, Ph.D., director of the Genetics and Development Research Unit at the Institut de Recherches Cliniques de Montreal. "Understanding how changes in gene regulation modify the body architecture is of extreme interest to scientists who are trying to find ways to improve human health by learning from developmental processes. This work shows a late phase of gene regulation seems fated to the emergence of digits." **P**



Where there's smoke, there's a diet?

Beginning a diet increases teen girls' risk of smoking

By April Frawley Birdwell

Starting to diet seems to double the odds a teenage girl will begin smoking, a UF study has found.

UF researchers, who analyzed the dieting and smoking practices of 8,000 adolescents, did not find the same link in boys, who were also less likely than girls to diet, according to findings published in the *American Journal of Health Promotion*.

"Dieting was a significant predictor of initiation of regular smoking among females," said Mildred Maldonado-Molina, Ph.D., a UF assistant professor of epidemiology and health policy research and lead author of the study.

"We were expecting that this relationship was going to be stronger among females. That has been well-documented, especially because (nicotine) can suppress your appetite.

"In boys we found something we don't understand yet," she said. "We found that those who were inactive dieters, those who first started dieting and then stopped, were more likely to engage in smoking behaviors."

The researchers derived their findings from the answers of 7,795 adolescents who were surveyed during the first two waves of the National Longitudinal Study of Adolescent Health, completed in 1994 and 1996. The teens were in seventh, eighth and ninth grade when surveyed.

UF researchers included the answers of adolescents who said they were trying to lose weight and divided the group into four units: non-dieters, new dieters, former dieters and consistent dieters, who said they were dieting both times they were surveyed. They excluded teens who were already smokers and those who admitted to taking diet pills, vomiting and using other unhealthy weight-loss tactics.

"That group (of teens who were beginning to diet) was the one we were most interested in, seeing how the start of one behavior related to initiation of smoking," Maldonado-Molina said.

Researchers also found that girls who consistently dieted were more likely to smoke.

Still, the number of children smoking in the United States has dropped in the 10 years since the first two waves of the survey were completed. In 1995, about 35

percent of high school students smoked regularly, according to the Centers for Disease Control and Prevention. Now about 23 percent of high-school age children reportedly smoke and 8 percent of middle school students do. The percentage of girls who smoke is slightly higher in both age groups, according to



MILDRED MALDONADO-MOLINA, Ph.D.,

"In the last decade there has been a decrease in smoking among adolescents, in part because of all the campaigns and policies against smoking."

— Mildred Maldonado-Molina, Ph.D.

a 2006 CDC report on tobacco use among youth.

"In the last decade there has been a decrease in smoking among adolescents, in part because of all the campaigns and policies against smoking," Maldonado-Molina said. "On the other hand, the practices of dieting are going up in both females and males. We don't know if we did this study right now if that relationship between smoking and dieting is going to be stronger (among females) or different among males."

Smoking to suppress the appetite may be one reason why some dieting teens pick up the habit, Maldonado-Molina said. But nicotine's ability to suppress the appetite may not be the only reason teenagers are more likely to smoke after they start dieting, said S. Bryn Austin, Sc.D., an assistant professor of pediatrics in the division of adolescent medicine at Children's Hospital Boston and Harvard Medical School.

"It's also possible that dieting itself is making people more vulnerable to smoking," Austin said, noting that animal studies have shown a link between food deprivation using substances such as tobacco. "If (animals) are extremely food-deprived, they will use more drugs."

Despite the link, Maldonado-Molina said parents shouldn't go on red alert if their child starts a diet. Some dieting practices, such as eating balanced meals, can be a part of a healthy lifestyle, she said.

"This doesn't mean if your child starts dieting they are going to start smoking," she said. "I think (parents should) be vigilant and talk about it. It's looking for those changes in behavior." 

UF researchers to study 'designer' cells

By John Pastor

University of Florida regenerative medicine researchers have received a \$1.6 million federal grant to study whether “designer” cells can be used to rescue the brain from Parkinson’s and other neurological diseases.

Using cell cultures and a rodent model of Parkinson’s disease, scientists want to study whether stemlike cells from mice and from adult human brains and bone marrow can be adapted to deliver a potentially protective protein to the brain.

“Certain cells derived from brain or bone marrow may have the potential to be engineered to release therapeutic factors in Parkinson’s disease,” said Dennis Steindler, Ph.D., principal investigator of the five-year grant and executive director of the Evelyn F. and William L. McKnight Brain Institute. “The possibility of using a person’s own cells to slow or perhaps even halt the course of devastating neurological disorders offers a tremendous advantage, because there is less chance the therapy will be rejected.”

The new, five-year study is funded by the National Institute of Neurological Disorders and Stroke. Scientists want to dose the brain with engineered cells capable of producing growth factors that have shown promise for replacement and preservation of neurons.

The idea is to nourish and protect brain cells that produce dopamine, a substance essential for normal movement that is depleted in Parkinson’s patients.

About 1.5 million Americans currently have Parkinson’s disease, according to the National Parkinson Foundation. The condition usually develops after the age of 65.

“It takes a great deal of dopamine-producing brain cells to die before symptoms appear,” said Ron Mandel, Ph.D., a professor of neuroscience in the College of Medicine. “Our strategy is to protect these cells to slow or halt the progression of the disease.”

Scientists will first genetically engineer the ability to produce two particular



DENNIS STEINDLER, Ph.D.

PHOTO BY SARAH KEEVEL

growth factors into immature human cells that haven’t quite finished developing, and then introduce the modified cells into the models of Parkinson’s disease.

“The idea is to obtain a few cells of the needed type from a patient, grow those cells, modify them to produce growth factors that protect at-risk dopamine neurons, and then put them back in the patient in a reasonable time,” said Kenneth Berns, M.D., Ph.D., a collaborator on the project and director of the UF Genetics Institute. “It will be a challenge, but it will be a terrific application of human gene therapy in adult human stem and progenitor cells as well as differentiated cells.” 



UF diabetes researcher Mark Atkinson is overseeing a new research center at UF geared toward studying the human pancreas to learn more about diabetes. The center will bank organs from thousands of patients with or at risk for type 1 diabetes.

New UF pancreas bank could help uncover clues about diabetes

By Melanie Fridl Ross

University of Florida will house a newly organized international research center for the study of the human pancreas that will bank organs from thousands of patients with or at risk for type 1 diabetes in an effort to learn more about the disease.

Known as nPOD, the Network for Pancreatic Organ Donors with Diabetes is supported by nearly \$3 million per year in grant funding from the Juvenile Diabetes Research Foundation, monies that also fuel research efforts at major medical centers worldwide.

Type 1 or “insulin-dependent” diabetes occurs when white blood cells vital to the body’s defenses against infectious diseases launch a self-directed or “autoimmune” attack on cells in the pancreas that produce insulin, which helps regulate how the body uses and stores sugar and other nutrients for energy.

But much remains to be learned about how type 1 diabetes develops, and the organ repository will help support a massive research effort to answer key questions, said Mark Atkinson, Ph.D., the American Diabetes Association Eminent Scholar for diabetes research at UF’s College of Medicine and nPOD’s director.

“Essentially, we need to learn a lot more about the human pancreas,” said Atkinson, a pathologist. “Eight thousand organ donors a year donate their pancreas. A large number go to pancreatic or islet cell transplantation. Some go to research. But sad to say, many go unutilized. With nPOD, we hope to change that.

“Some of our theories on how diabetes develops date back to autopsy-based research studies that occurred during the 1960s. It is time to address old concepts with more modern tools,” he added.

The bank will obtain organs in three ways. With the help of national organ procurement agencies, it will receive organs from patients who exhibited risk factors associated with disease development. Through a collaboration with the National Disease Research Interchange, the nation’s largest placement unit for donated organs slated for research, the bank will also receive organs from donors who had type 1 diabetes.

The third way nPOD will eventually obtain organs will be in cooperation with Dr. George King, M.D., from Harvard’s Joslin Diabetes Center. Under a proposal not yet finalized, pancreases obtained from deceased patients who have had type 1 diabetes for more than 50 years will be sent to UF. 



Food for thought

Diet rich in fatty acids could thwart diabetes onset

By Melanie Fridl Ross

Omega-3 fatty acids have long been touted for their heart-healthy and brain-boosting benefits. Consider cod liver oil, fortified infant formula and enriched eggs.

Now a study of nearly 1,800 children at risk for type 1 diabetes has found that increased consumption of dietary omega-3 fatty acids appears to reduce the risk of the body attacking its own insulin-producing cells, a precursor to this form of the disease, report UF and University of Colorado researchers.

The findings appeared in the Sept. 26 issue of the *Journal of the American Medical Association*.

In the past few decades, there has been a dramatic rise in the incidence of type 1 diabetes, both in the United States and in Europe — a jump that coincides with changes in food manufacturing that have led to a decline in omega-3 fatty acids in the diet and an increase in the content of omega-6 fatty acids, said Michael Clare-Salzler, M.D., a professor and the Stetson chair in experimental pathology at the UF College of Medicine.

“The foods we are eating now are qualitatively much different than those produced on a 1900s-era farm,” Clare-Salzler said. “When animals are commercially raised today, they are often fed grains rich in omega-6 fatty acids, fatty acids that can promote inflammation. In the old days, animals received a much more balanced intake of omega-3 and omega 6-fatty acids.”

The amount of omega-3 fatty acids found in food today has dropped 28-fold from 100 years ago, Clare-Salzler said. In contrast to the omega-6 variety, omega-3 fatty acids have potent anti-inflammatory effects.

“Animal studies have shown inflammation in the insulin-producing cells of the pancreas is an early event that leads to type 1 diabetes,” said Clare-Salzler, who also directs UF’s Center for Immunology and Transplantation. “From these studies in mice, it appears if you thwart inflammation you can prevent the disease from occurring. The human parallel in this study indicates that higher dietary intake of anti-inflammatory omega-3 fatty acids reduces the risk of developing an immune response to the insulin-producing cells.”

Scientists set out to study whether increased intake of omega-3 fatty acids would be associated with prevention of or delay in the emergence of autoantibodies in the blood that signal the immune system’s attack on insulin-producing cells. Children enrolled in the Denver-based Diabetes Autoimmunity Study in the Young were all at increased risk for type 1 diabetes and were evaluated until they were, on average, 6 years old.

Parents were asked annually to report what their children ate, including how often they consumed certain types of seafood and what kind of fat was used in cooking. Blood samples also were taken to test study participants for the presence of autoantibodies. Nancy J. Szabo, Ph.D., director of the Analytical Toxicology Core Laboratory at UF’s College of Veterinary Medicine, evaluated the fatty acid composition of red blood cell membranes isolated from blood samples taken from a subset of 244 children.

“Kids who had higher intakes of omega-3 fatty acids had a significant reduction in the risk of development of autoantibodies,” Clare-Salzler said, adding that the risk of developing the autoantibodies also went down as the concentration of omega-3 fatty acids rose in the red blood cells.

All fatty acids help bolster the structure and function of cell membranes, but omega-3 fatty acids strongly support the production of anti-inflammatory molecules than can quell an immune attack on insulin-producing cells, Clare-Salzler said.

The study’s lead author was Jill M. Norris, Ph.D., M.P.H., a professor of preventive medicine and biometrics at the University of Colorado at Denver’s School of Medicine. Funding came from the National Institutes of Health and the University of Colorado’s Diabetes Endocrine Research Center.

UF and University of Colorado researchers are continuing to explore links between diabetes and diet. Researchers are leading a National Institutes of Health-funded multicenter pilot trial to examine whether babies who receive dietary supplementation with the omega-3 fatty acid docosahexaenoic acid, or DHA, show fewer signs of inflammation. An expanded version of the trial will then determine whether DHA protects infants and children from the development of autoantibodies that lead to diabetes in comparison with babies who receive standard formula or diets with a much lower level of the omega-3 fatty acid.

If the trial confirms the hypothesis that dietary supplementation with DHA in infancy blocks early inflammatory events key to diabetes development, then, the authors write in *JAMA*, “dietary supplementation with omega-3 fatty acids could become a mainstay for early intervention to safely prevent the development of type 1 diabetes.” **P**



MICHAEL CLARE-SALZLER, M.D.



NANCY J. SZABO, Ph.D.

Public health phenom

Student combines veterinary medicine and public health to study infectious diseases

By Jill Pease

When Tara Anderson, D.V.M., graduated from the UF College of Veterinary Medicine in 2003, she decided to work at a small animal hospital first to hone her medical skills.

She liked working with patients, too, save the occasional biter and scratcher. But Anderson realized she wanted to focus her attention on helping animals and people in another way — through infectious disease research and public health.

She found an opportunity to do just that in the College of Veterinary Medicine's doctoral program and the College of Public Health and Health Professions' Master of Public Health program. As a doctoral student, Anderson has joined the UF team investigating the recently discovered canine influenza virus, and as a public health student, she expanded her knowledge of epidemiological research methods.

Anderson, who graduated with a master's degree in public health in August and expects to complete her doctorate in 2009, believes veterinary medicine and public health are natural partners.

"Public health is a traditional component of the veterinary profession and is an important focus of its future," Anderson said. "Although companion animal clinical practice and appreciation of the human-animal bond are very important, we need to highlight the vital roles veterinarians also play in public practice."

Emerging infectious diseases such as SARS and H5N1 avian influenza are just two examples of zoonotic diseases — diseases that can spread from animals to humans — that have recently caused major public health crises. With expertise in wildlife and domestic animal health, veterinarians are instrumental in the research, prevention and control of these and many other public health threats, Anderson said.

Anderson is currently investigating the canine influenza virus under the direction of veterinary researchers Paul Gibbs, B.V.Sc., Ph.D., and Cynda Crawford, D.V.M., Ph.D. The UF team, along with collaborators at Cornell University and the Centers for Disease Control and Prevention, announced the discovery of canine influenza three years ago when they confirmed that a form of equine influenza had jumped species to dogs. Cases of the respiratory infection have now been reported in dogs in 25 states and Washington, D.C., with preliminary data showing a 16 percent infection rate. At this point there is no evidence that canine influenza is a zoonotic disease.

"Since canine influenza is so new, we look to the literature on equine, avian, swine and human influenza viruses for clues regarding potential mechanisms of transmission, viral pathogenesis, diagnosis and control," Anderson said. "We are in the process of studying the epidemiology of canine influenza — trying to determine if there are any particular age groups or breeds of dogs that are more susceptible to the disease, and if there are hot spots for outbreaks, such as boarding kennels, shelters and dog day care centers. Hopefully as we learn more about canine influenza, we can contribute to the study of influenza viruses in other species as well."

Anderson has also been involved in the development of UF's new joint D.V.M./M.P.H. program. The program was launched this summer with 10 students currently enrolled.

Anderson is an excellent role model for students pursuing veterinary and public health training, said Nabih Asal, Ph.D., a professor of epidemiology and biostatistics in the College of Public Health and Health Professions.

"Tara is one of the most outstanding graduate students I have encountered in academia," Asal said. "She has all the qualities needed for a successful career combining veterinary medicine and public health: high intellect, knowledge, curiosity, organizational and communication skills, training in veterinary medicine and epidemiology, and motivation." 

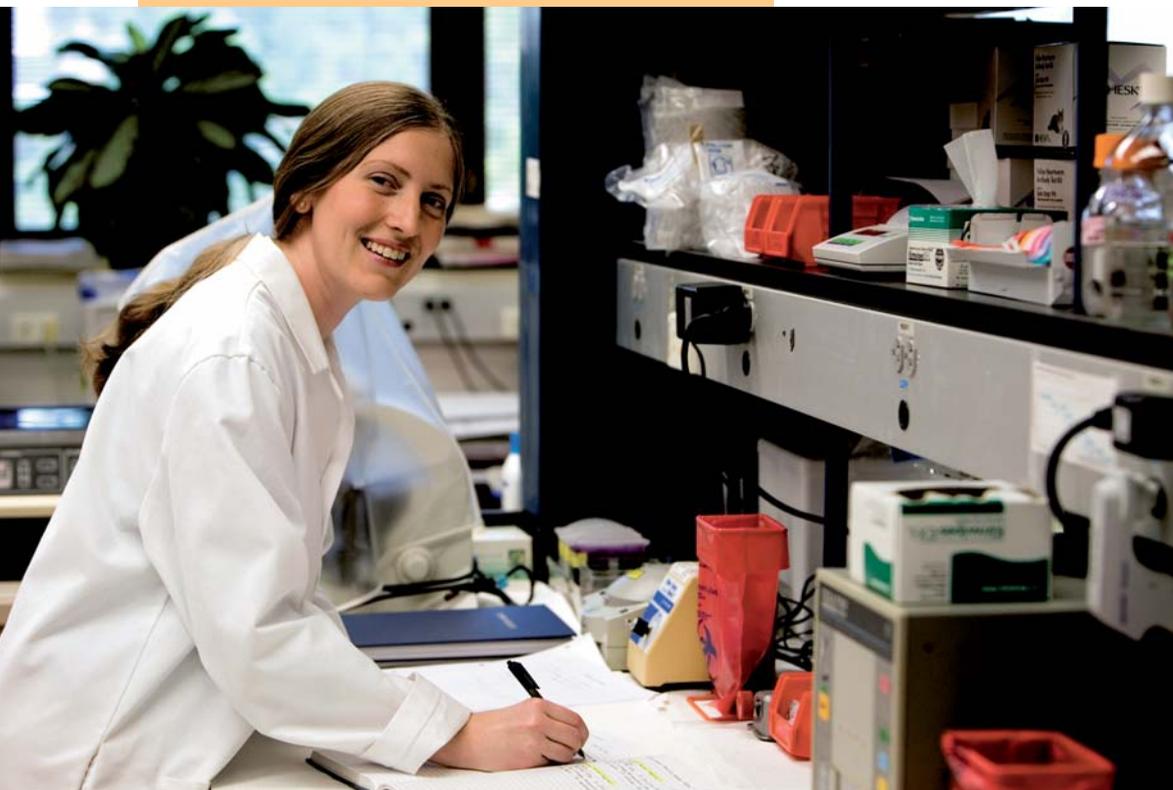


PHOTO BY SARAH KIEWEL

Dr. Tara Anderson is combining her knowledge of veterinary medicine with a degree in public health to study infectious diseases in animals and humans.



GAME ON

UF's Biomechanics and Motion Analysis Laboratory helps athletes improve their mechanics and avoid injuries. Freshman baseball player Travis Lawler visited the lab in September to participate in a study on the mechanics of pitching.

A PLAY-BY-PLAY BREAKDOWN OF A LAB **BY ANN GRISWOLD**



PHOTO BY SARAH KIEWEL

The rising star of the Gator baseball team, freshman pitcher Travis Lawler, stands on the other side of an observation window with quarter-sized reflective markers stuck to his arms, legs and torso. As Lawler raises a baseball to his chest and prepares to hurl an 80 mph fastball across the length of the room, red strobe lights fire at lightning speed, gleaming off the markers on his body.

Lawler, like most elite athletes, lives his life at the brink of physical devastation. But if you asked him about it, he'd beg to differ.

What Lawler would agree on — the thing he has in common with some of baseball's fastest pitchers and hardest hitters, think New York Yankees stars Roger Clemens and Alex Rodriguez — is his uncanny ability to breach the corporal barriers that constrain most people. Each pitch generates enough force to snap the tendons in an average person's shoulder like brittle twigs crunching under a hiker's heavy foot.

But however invincible these champions appear on the outside, their fates are, in fact, delicately balanced above a pivotal point where one false move — a single bad throw or a lapse in mechanics — could send them careening down the scale toward irreparable injury.

"To perform at that level, they've always got to be right at the edge of damage," says Bryan Conrad, M.S., a biomedical engineer who has worked with UF's Biomechanics and Motion Analysis Laboratory since it was built three years ago. "So obviously they train for that and develop physically to accommodate those stresses, but over time the microdamage can accumulate."

That's why Gainesville is the place to be if you're an athlete. The College of Medicine's motion analysis laboratory at UF's Orthopaedics and Sports Medicine Institute is one of only two facilities in the nation that can analyze the mechanics of your baseball pitch, golf swing, volleyball spike or football pass in minute detail and send you away stronger, faster ... and smarter, with a new set of performance-enhancing skills that evaluate — and minimize — your potential for serious injury. Even UF's own "Superman" quarterback Tim Tebow visited the lab this summer to work on his passing technique. The motion analysis lab got to the bottom of Tebow's mysterious shoulder soreness and sent him away with a few pointers for improving his throw.

Sports-related injuries sideline more than just professional and collegiate athletes, though. Nearly 40 million kids and young adults play team sports and about a tenth of them suffer recreation-related injuries each year, according to the Centers for Disease Control and Prevention. As Americans become more active, data gathered in labs like UF's could help the backyard quarterback as much as it helps UF athletes now.

"This is state-of-the-art technology. It's what the best use and Gators are the best, so this is it," says John Barrett, M.S., head athletic trainer for the UF baseball team and a clinical instructor of athletic training in the College of Health and Human Performance. "There's so much they can do, preventive-wise. The data is so helpful. You strive to have injury-free seasons, because that's what helps you win."

HOW DOES IT WORK?

The entire scene — the pitch, the lights, the athlete in motion — is captured by a network of high-speed cameras and transmitted back to a Dell computer, where Lawler appears as a 3-D bionic man, throwing a ball on a gridlike field.

"This is the same system people are using for animations, like Toy Story 2," says Nigel Zheng, Ph.D., adjusting various controls on his keyboard that bring the bionic man to life on his flat-panel monitor. "We're using the same technology to analyze human motion."

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WHERE UF ATHLETES ARE ALWAYS No. 1



PHOTO BY SARAH KEWEL

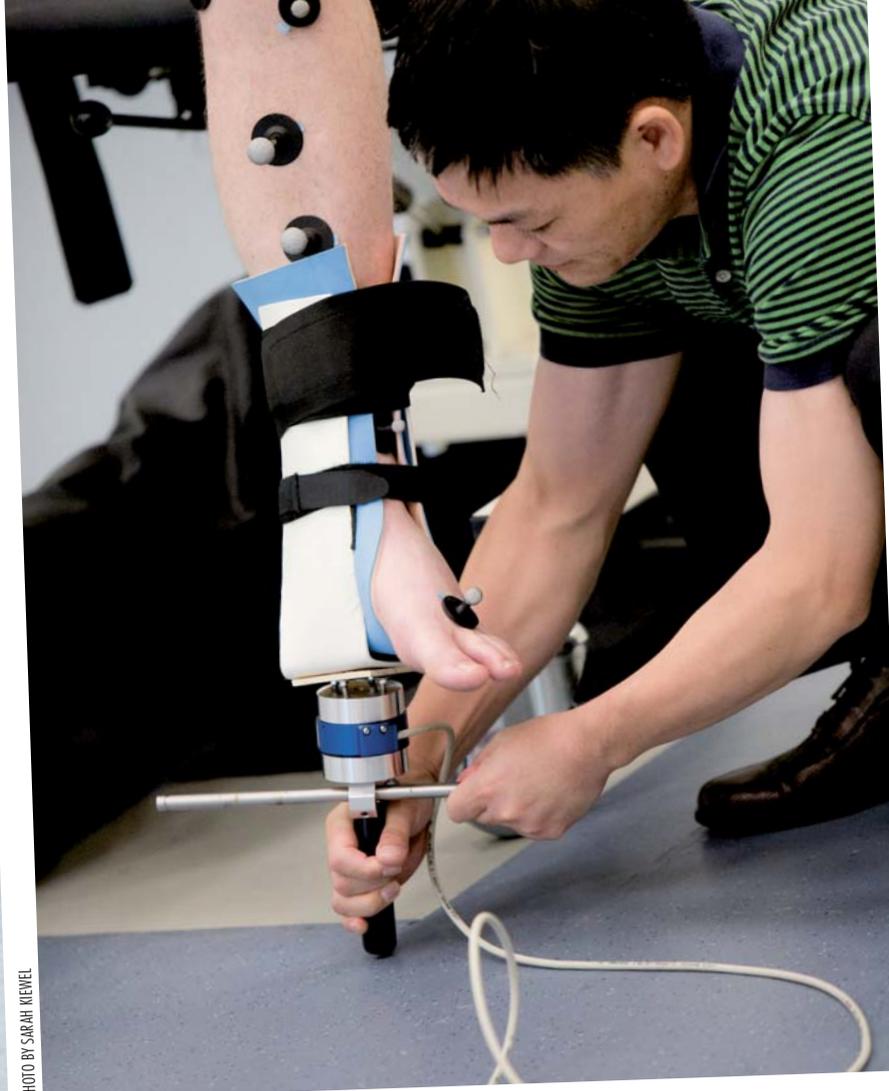


PHOTO BY SARAH KEWEL

AIR-CONDITIONED FOOTBALL PADS

were devised in 2002 by UF anesthesiologist **Nikolaus Gravenstein, M.D.**, and collaborators with Williams Sports Group. The pads keep players cool on the sidelines by circulating cold air through ventilation channels running through the inside lining. Air conditioning now comes standard in top brands like Douglas Custom Pro and Riddell Power shoulder pads.

Zheng, director of the motion analysis laboratory and an assistant professor of orthopaedics and rehabilitation in the College of Medicine, isn't the first scientist to measure the velocity of bones and joints under the skin using biomechanical analysis, the technical term for his impressive array of strobe lights, cameras and reflective markers.

But he is an innovator in the science of sports motion: Zheng was one of the first to develop a series of computer programs that compares detailed analyses of the mechanics of professional and novice athletes to reveal how a baseball pitch, for example, could be tweaked to enhance performance.

Zheng's current work with Lawler and several other Gator baseball pitchers is part of a collaboration with the Tampa Bay Devil Rays that was recently funded by Major League Baseball.

"Basically, these are the professionals — this is what they are doing," he says, paging through a report filled with algorithms, models and 3-D images of baseball pitchers in various stages of motion. "We break down those biomechanical variables into sections like the arm-cocking phase and the acceleration phase, based on where your arms are positioned."

It's simple: Professional athletes provide the baseline for near-perfect technique, while everyone else tries to measure up. Things like the motion and angle of an athlete's spine, the exact degree of each shoulder and hip rotation and the velocity of each bone are analyzed in minute detail to identify areas for improvement.

For example, Tebow's analysis revealed he relies too much on his shoulder to throw the ball and not enough on his hips. The solution? Rotate his hips earlier, which Conrad says will generate more power and give Tebow's shoulder a much-needed rest.

Because performance enhancement and injury prevention go hand in hand, UF's motion analysis lab provides Gator athletes with an advantage over most other college teams by identifying the potential for serious injuries before they occur.

"We do research to understand injury mechanisms," Zheng says. "We would like to be able to prehab before an injury so we can say, 'OK. You're about to break your tendon. Let's do something to make this stronger.'"

In many cases, the news comes as little surprise. Athletes occasionally feel warning signs of a serious injury before throwing the final ball that breaks the camel's back.

Lawler, who's still pitching on the other side of the observation window, seems skeptical about the tightrope Conrad claims he's walking between fame and early retirement.

"If you know what you're doing, then it's not necessarily one pitch," Lawler says,

grappling with the idea of being a fastball away from disaster. “Sometimes it’s a constant pain, but it feels like you can deal with it. And then all of a sudden there’s just one big pop.”

But how can a computer algorithm predict what an athlete only suspects?

“Obviously we can’t rotate a patient’s knee until something breaks, just to measure the strength of his knee joint flexibility,” explains Conrad.

That’s where the cadavers come in.

Zheng and Conrad study the anatomy of cadavers to develop 3-D models of human bones and determine how contact between bones and joints influences recovery after sports injuries, such as a torn anterior cruciate ligament.

“We actually put the ligaments on a machine and apply the forces to see what the ultimate strength is,” Conrad says “Then we can say, ‘Okay, the actual patient is well under that threshold.’”

COPING WITH CURVE BALLS

Despite the warning signs, most athletes aren’t lucky enough to catch a potential injury before it’s too late. Virtually all athletes will experience a physical setback at some point in their careers.

“The most common serious injury we see is a ligament injury to the knee, an ACL injury,” says Peter Indelicato, M.D., head team physician for the UF Athletic Association and division chief of sports medicine in the College of Medicine.

“How somebody moves in space — where their head is in relationship to their shoulders, their shoulders in relation to their hips, their hips in relation to their knees, their feet in relation to their hips — may be a factor in why one person tears their ACL doing an activity and somebody else doesn’t,” Indelicato says.

Football players suffer more ACL injuries than other athletes, but these setbacks are nowhere near as frightening as the prospect of a spinal injury that could cause life-long paralysis.

On Sept. 9, during the first NFL game of the season, Buffalo Bills player Kevin Everett suffered what doctors deemed a life-threatening spinal injury. Doctors thought his chances of walking again would be slim, but because they used an experimental cooling technique, he is making what experts consider a miraculous recovery. But other players haven’t been so lucky. Since 1978, five other NFL players have suffered similar injuries, some faring better than others.

As it turns out, spinal injuries aren’t over after the initial collision between two players.

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PHOTO BY SARAH KIEWEL

In the lab, researchers (above) use tape to keep the reflective marker on Travis Lawler’s pitching hand secure when he throws the ball. (Opposite page) Researchers in the lab also work with people who have been injured, such as Trevor Fleming, who tore his anterior cruciate ligament playing football. High-speed cameras track the markers on Fleming’s legs as he walks and transmit that information back to computers, where researchers can analyze his gait. UF biomechanical engineer Nigel Zheng, right, also measures the internal and external rotation of Fleming’s knee joint.

As UF’s team physician, Dr. Peter Indelicato, below, is on the field anytime a UF athlete is injured. Here, he talks with a UF football player during the Florida-Tennessee game in September.



PHOTO BY KRISTEN BARTLETT GRACE

GATORADE

One of the most popular sports drinks on the market was formulated in 1965 in the lab of J. Robert Cade, M.D., a UF professor of medicine. The blend of water, sodium, potassium, phosphate and glucose was designed to keep Gator football players hydrated in the sweltering Florida sun. Cade also invented hydraulic football helmets that protect players from concussions and a milk protein shake that enhances muscle recovery after exercise.



PHOTOS BY SARAH KEVEL

An injured player is still at risk for more damage afterward, and the most dangerous part is often simply moving the athlete to a spine board to the ambulance and finally to the operating table.

An ongoing project at the motion lab mimics the entire process in cadavers, injury and all, to identify potentially risky maneuvers.

“We have a team of athletic trainers, EMTs and orthopedic surgeons — the types of people who would be on the football field when they transport an injured player onto the spine board, into the ambulance and into the hospital,” Conrad says.

After inducing a spinal cord injury in a corpse, the team attaches GPS-like sensors to various bones and tries to pinpoint unnecessary movement that could exacerbate an already life-threatening injury. The data will help experts develop new guidelines for moving injured athletes off the field.

Most of the time, Zheng and Conrad focus on routine health maintenance and minor injury prevention, working with athletes such as Lawler and Tebow.

“We’ve taken athletes like our quarterbacks and analyzed their throwing motion to see if they’re heading toward a problem we can prevent,” says Indelicato.

MIND OVER MATTER?

Improvements to technique don’t always translate to more strikeouts and touchdowns, though. At least not right away. While it might seem like working with the motion lab could enhance an athlete’s performance simply by boosting confidence, sport psychologist Christopher Janelle, Ph.D., says that’s probably not the case.

“You’re changing something that is a well-learned habitual behavior,” Janelle says. “The whole process of thinking about what you’re doing interferes with the ability to do it. You’re adding a cognitive element to performance that is typically not there, particularly for elite-level athletes.”

Janelle says those psychological barriers eventually can be overcome through repetition, practice and focus, but the time it takes varies among athletes. In most cases, athletes have been performing the same motion since they were only a few years old. The prospect of changing that overnight is daunting and highly successful athletes are not used to failure.

“The hope — the reason that elite-level athletes are willing to take that risk — is because they know there’s something that could be better with what they’re doing,” Janelle says. “There’s the recognition that whatever this glitch may be, it has to change for them to maximize their potential. It’s hugely courageous for people to do this.”

FOUNTAIN OF YOUTH

The secret to making the big leagues? Start young, Zheng says.

The reason Lawler can hurl a fastball with no problem while the average person might require immediate transport to the emergency room is because athletes who compete at an early age are built for success. Literally.

Lawler, who says he started playing ball as soon as he could walk, is a perfect example. Repeated motion during early development can coax muscles to attach at different locations, expanding the young athletes’ ranges of motion.

Baseball pitchers can reach surprisingly far back behind their necks to gain enough momentum to throw a fastball. But the rest of us are better at doing the mirror opposite — pointing our fingers down toward the ground and extending our hands back behind our body.

That just means we’re not built for pitching, Zheng says. And no amount of weightlifting or practice can change the attachment locations of muscles after the body has stopped growing.

“You have to realize what you can and cannot do. Some things improve with strength and conditioning, but for some things it’s too late,” Zheng says. “You never hear of someone going to the U.S. Open without playing tennis before age 10. They all start early. You can’t catch up with them.”

That doesn’t mean elite athletes are immune to physical injury. As Lawler, Tebow and dozens of other Gator athletes have learned at the motion analysis lab, it just means they have to stay vigilant. One careless move could land them on the sidelines for a day. Or for good.

But Lawler says that won’t stop him from playing the game.

“I’ll play forever, as long as I can,” he says. “If I get hurt, I’ll go to rehab. Then if I can still play, I’ll play.”

And if he has to hang it up?

“Then I’ll coach, probably.” **P**

GAKIC

A muscle-boosting powder, was developed by **Bruce Stevens, Ph.D.**, a UF professor of physiology and functional genomics. Officially called glycine-L-arginine-alpha-ketoisocaproic acid calcium, the concoction boosts muscle recovery and enhances athletic performance if taken before strenuous exercise. And it doesn’t just work in humans — GAKIC is patented for use in racehorses, too.

THE MAXOUT

A negative exercise machine that emphasizes lowering a heavier weight and then lifting a standard weight, was designed in the early 1990s by UF orthopedic surgeon **Michael MacMillan, M.D.**, and a team of researchers. The computerized machine was used to help rehabilitate the injured hamstrings of former UF and Dallas Cowboys star running back Emmitt Smith.

Study of online research skills aimed at helping scientists

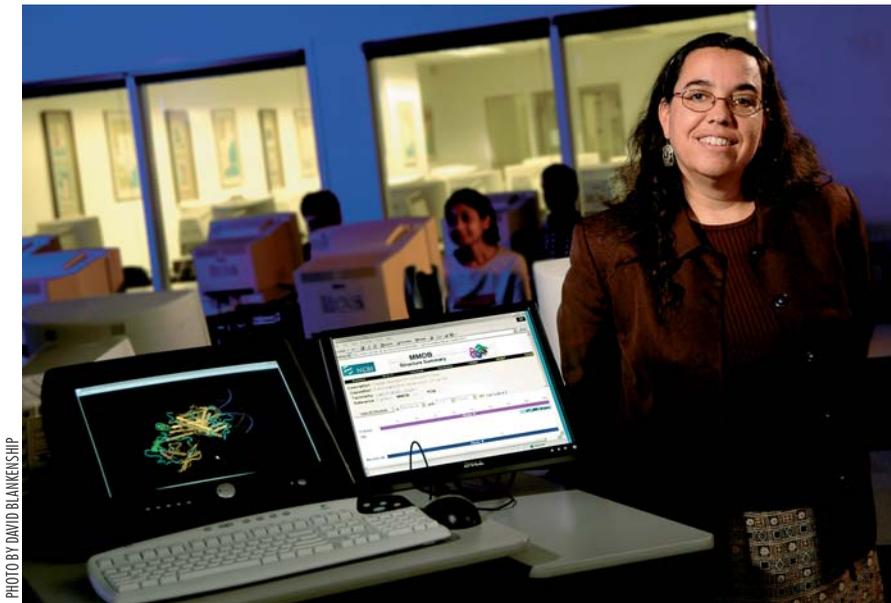


PHOTO BY DAVID BLANKENSHIP

Health Science Center bioinformatics librarian Michele Tennant is assessing how well faculty, postdoctoral associates and graduate students use online resources to evaluate their training needs.

By John Pastor

How good are scientists at using bioinformatics databases to answer biological questions?

Health Science Center bioinformatics librarian Michele Tennant, Ph.D., M.L.I.S., intends to find out.

Aided by a \$25,000 Donald A. B. Lindberg Research Fellowship from the Medical Library Association, Tennant is assessing how well faculty, postdoctoral associates and graduate students use online resources in an effort to evaluate their training needs.

Her research, which took her to health and science libraries at the University of Arizona, the University of Southern California-Norris and the University of Colorado-Denver this summer, will help support scientists studying subjects that range from human cancer treatments to plant evolution.

Anecdotal evidence suggests researchers may not be as proficient as they think at using online resources, such as those from the National Center for Biotechnology Information. Tennant wants to find out how accurate that idea is.

In addition, she wants to determine the extent to which multiple paths can be taken to arrive at a correct answer — which is how NCBI resources are intended to work.

Also of interest is why users take particular paths and what they do when they reach roadblocks. This portion of Tennant's project aims to shed light on the design of the online resource.

In a separate research endeavor, she was awarded a \$2,000 David A. Kronick Traveling Fellowship to help her study bioinformatics support services at various medical libraries. A bioinformatics research specialist affiliated with the UF Genetics Institute, Tennant was one of the first librarians in the United States to provide such services through the library.

Other institutions have since copied and enhanced the UF model, so Tennant is traveling to four libraries to research new methods, aiming to identify how these contemporary systems provide their services and how they could be applied to UF.

"I am interviewing librarians, library directors, and clients," she said, "to explore areas such as how duties and responsibilities are divided among the bioinformatics support specialists, how funding was secured for these positions, what added value comes from such services and multiple individuals providing them, and what attributes an individual must have to perform well as a library-based bioinformatics support person."

In addition to USC-Norris, she recently visited Harvard's Countway Medical Library as part of the Kronick project. **P**

Nursing researcher to study depression in Latina women

By Tracy Brown Wright

Depression is fairly common among Latina women but is often left untreated, says a UF nursing researcher who has received a National Institutes of Health grant to study the problem.



JEANNE MARIE STACCIARINI, Ph.D.

Jeanne Marie Stacciarini, Ph.D., R.N., a UF assistant professor in the College of Nursing, has received a \$202,113 grant from the NIH to study depression in Latina women and promote diversity in health-related research. The supplementary grant is part of a larger project looking at ways to reduce women's health disparities through an approach called

community-based participatory research. UF nursing researcher Shawn Kneipp, Ph.D., A.R.N.P., is leading that study.

Stacciarini's preliminary findings revealed that unique health beliefs, strong community values, language barriers and dependency on men make it difficult for Latina women who are depressed to be properly identified. These factors also impair their ability to receive treatment, leaving many women incapable of taking care of themselves and their families.

Stacciarini's goal is to develop an effective community-based, culturally appropriate intervention to treat depression in Latinas and to help more Latina women access treatment. She plans to collaborate with researchers and community representatives from Central and North Central Florida.

In the first year of the two-year grant, Stacciarini will work with Kneipp and her research team to learn more about community-based research and make research connections in the community.

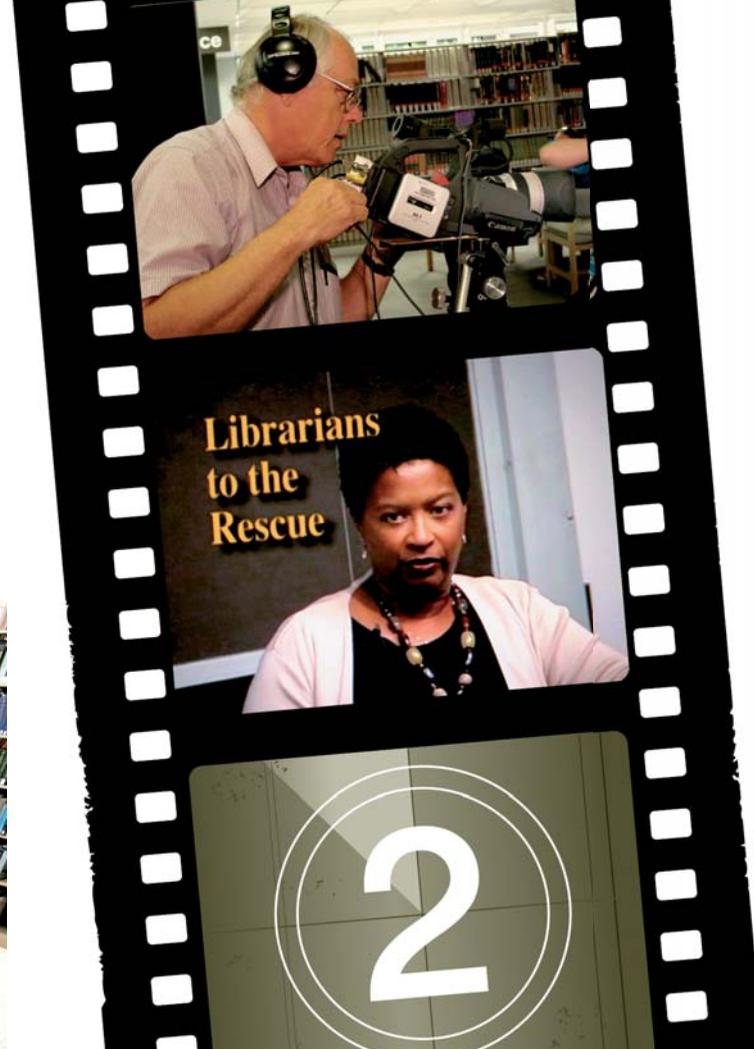
In the second year, Stacciarini will conduct a pilot study to learn more about mental health services for Latina women in Alachua County, determine cultural barriers to treatment and examine possible community-based approaches to intervention. **P**

And now for our feature presentation

UF video 'Librarians to the Rescue' wins award at international film festival



PHOTO BY SARAH KIEWEL



HSC library staff members, from left, Dwight Bennett, Nita Ferree, Ned Davis and Ellie Bushhousen were key members of the cast and crew of "Librarians to the Rescue." Bushhousen, above, played the part of Dr. Stern. UF videographer Don Loftus, above, spearheaded the project and filmed the video.

By April Frawley Birdwell

Anyone who's ever been in school will recognize this scene: Tough-talking professor enters classroom, issues stern reminder about research assignment. Students groan, conk heads on desks, look confused — befuddled, even.

And then she delivers the clincher. Cue the ominous music, please.

"It requires materials that can only be found in our libraries," the professor says. "You can't just 'Google' or 'Yahoo' your way through this, people."

The library? Isn't that just a place where bespectacled librarians dust books, bark "Shhh!" and mumble about the Dewey Decimal System?

That's the misconception librarians have been battling for years and one of the reasons staff members from the Health Science Center Libraries produced "Librarians to the Rescue," an educational video about the UF Libraries system and its services.

There's no word yet whether the video, which airs on the closed-circuit televisions in dorm rooms and on cable channel 96, has yielded more library visitors. But "Librarians to the Rescue" is already making a mark ... at film festivals. The video, written and directed by HSC Libraries webmaster Dwight Bennett, received honorable mention honors from the Columbus International Film and Video Festival as part of its 55th annual Chris Awards. The awards ceremony, which Bennett plans to attend, will be held Nov. 10.

"It's not merely a library award. This is a 55-year running film festival for educational videos and there were 600 submissions, so we were pleasantly surprised to win," said Ned Davis, a marketing and public relations coordinator for the HSC Libraries who served as assistant director for the project.

The idea for the video started with Don Loftus, a video production coordinator in the UF Office of Academic Technology, Bennett said. Loftus suggested the university produce several videos to teach students about UF's nine libraries and the different ways librarians can help students gather information. Bennett offered to write the first one and lead the project.

The 22-minute piece chronicles four students and their quest to complete an assignment from the aptly named Dr. Stern. With a background in theater, HSC librarian Ellie Bushhousen, M.S.L.I.S., plays Dr. Stern to professorial perfection, barking, "This assignment was designed to be hard," amid a classroom of wide-eyed students.

She was convincing. She confused "real" students by barging into a lecture hall proclaiming their assignment was due in a week. The announcement was

just for a quick classroom shot the crew needed for the movie, but the students there didn't realize it until afterward.

"You could have heard a pin drop," Bushhousen said, with a laugh. "Those kids were freaked."

In all, 19 people worked on the video, including students from UF and Santa Fe Community College and staff members from several UF libraries. The crew spent several months shooting and then editing the video, which premiered in the dorms about a year ago, Bennett said.

"There were a lot of people working on this for no other reason than just because they thought something positive needed to be done," Bennett said. "They were all volunteers."

Bushhousen and Nita Ferree, M.L.I.S., also an HSC librarian, hope the video teaches those who watch it that the library is more than just a place where books are kept on shelves. Librarians actually spend most of their time helping people scour through databases for information, finding facts and teaching others how to search journals and other sources.

"We're here to be the guides," said Ferree, who played a librarian that helps the students in the movie. "Information is power and we want to give that power to the people."

"This isn't the 18th or 19th century," Bushhousen added. "Libraries are dynamic places. There's something for everyone."

Ferree nodded and said, "And, the price is right."



ERIC FRYKBERG, M.D.

For the American warrior

UF professor spent two weeks overseas in hospital for wounded troops

By Patricia Bates McGhee

“Give a thumbs up.”

That’s the first order wounded soldiers receive at the Landstuhl Regional Medical Center in Germany. As the largest U.S. military hospital outside the country, Landstuhl is the chief caretaker of injured troops evacuated from Iraq and Afghanistan. Often, because soldiers’ injuries from roadside explosives and bombs are so severe, a thumbs up is the only way doctor and patient can communicate, says Eric Frykberg, M.D., a UF professor of surgery at the College of Medicine-Jacksonville.

“It was incredibly touching to see these patients — intubated so they couldn’t talk, with devastating injuries and covered with burn dressings — somehow muster the strength to give us that universal ‘I’m OK’ sign,” said Frykberg, who spent two weeks at the hospital in August as part of an American College of Surgeons visiting surgeon program.

Even with years of experience as a former U.S. Navy surgeon deployed to Saudi Arabia during the first Gulf War and as a busy trauma surgeon in Jacksonville, Frykberg said he was surprised by the level of devastating injuries among soldiers taken directly from combat-zone field hospitals to Landstuhl.

“I was in the military, but what I saw at Landstuhl was something you rarely see — it was mass casualty and managing mass casualty is very different from anything we’ve learned and requires a whole new approach to medical care,” he said. “I’ve been here in the trauma center for 22 years and published a lot about trauma. (They wanted) someone experienced in trauma to go over there and have a give-and-take approach to educating surgeons about trauma care while also learning from them new techniques being applied to wounded soldiers.”

Frykberg conducted two grand rounds lectures and was involved in the care of about 36 patients at Landstuhl.

“The most common reason, by far, for injuries are bomb blasts — the IEDs (improvised explosive devices), suicide bombers and roadside bombs,” he said. “I saw only two typical war injuries from gunshot wounds.”

Bombs cause devastating blast injuries rarely seen in a typical trauma center stateside, Frykberg added.

“You hear about the deaths on the news, but there’s very little you hear about a whole generation having really devastating injuries like mangled bodies and lost limbs,” he said. “We have a huge level of amputees among these young soldiers now looking toward a life of significant disability.”

Like the injuries, the type of care provided at Landstuhl differs from hospitals here. The focus at Landstuhl is stabilizing patients so they can be sent back to the U.S. The hospital is just a way station between the battlefield and hospitals where they will recover, such as Walter Reed Hospital in Bethesda, Md., or the San Antonio Burn Center in Texas.

“We helped stabilize the patients, assisted surgeons in the O.R. and got the medical records up to date so we could provide the continuity of care needed to get the patients back to the states for their definitive care,” Frykberg said. “Then we turned around and prepared for more incoming patients.”

But each patient leaves with one thing from Landstuhl, a quilt with the words “For an American warrior” embroidered on it. Each patch is signed with personal messages from the volunteers who make them.

“Even now, when I look at my photos from my Landstuhl experience and see the quilts being loaded with each patient for the flight home, I recognize the dedicated and caring medical personnel who helped that patient make it that far,” Frykberg said. “The handwritten signatures, comments and drawings say it all.” 

It was incredibly touching to see these patients — intubated so they couldn’t talk, with devastating injuries and covered with burn dressings — somehow muster the strength to give us that universal ‘I’m OK’ sign.
— Eric Frykberg, M.D.

PUBLIC HEALTH AND HEALTH PROFESSIONS

ALBA AMAYA-BURNS,

M.D., M.Sc. C.T.M., a clinical associate professor in the department of behavior science and community health, traveled to La Paz, Bolivia, in August as a technical adviser for the Americas Antimicrobial Resistance Initiative sponsored by the Pan American Health Organization/World Health Organization and the U.S. Agency for International Development. She worked with medical school deans from the private and national universities of El Salvador, Paraguay, Peru and Bolivia to update their curricula by adding guidelines for the prevention and control of hospital-acquired infection and the rational use of antibiotics. Amaya-Burns has served as a technical adviser for the initiative since 2001.



Amaya-Burns

MICHAEL DANIELS, Sc.D.,

a professor and chief of the division of biostatistics in the department of epidemiology and biostatistics, was elected to be a fellow of the American Statistical Association in recognition of his professional contributions and leadership in the field of statistical science. He was honored at the association's annual meeting in July in Salt Lake City.



Daniels

AMY YARBROUGH, Ph.D.,

an assistant professor in the department of health services research, management and policy, received the American College of Healthcare Executives' 2007 Health Management Research Award. The \$25,000 award will support Yarbrough's research on the challenges and benefits of employing health-care managers who have no formal education in health administration. She will conduct a multilevel study of 10 U.S. hospitals and a follow-up survey of 2,000 health-care executives.



Yarbrough

COLLEGE OF PHARMACY

JULIE A. JOHNSON,

Pharm.D., received the American Association of Colleges of Pharmacy's prestigious Paul R. Dawson Biotechnology Award at its annual meeting in July. Johnson's research focuses on disease-gene associations and the influence of race and ethnicity on drug response. The National Institutes of Health and the American Heart Association have continuously funded her work since 1990. "Julie has found an area of research that promises to change the way patients are treated with drug therapy," said William H. Riffe, Ph.D., dean of the College of Pharmacy.

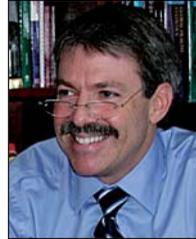


Johnson

COLLEGE OF MEDICINE

WAYNE GOODMAN, M.D.,

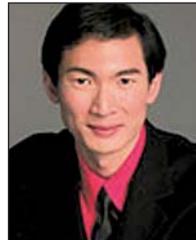
chairman of the department of psychiatry, has begun a three-year term on the state's Suicide Prevention Coordinating Council. "The Suicide Prevention Coordinating Council will develop and implement a statewide strategy to reduce Florida's suicide rate," said Gov. Charlie Crist in a written statement. "I am hopeful that through their work, fewer families and communities will be affected by suicide."



Goodman

STEPHEN I. HSU, M.D.,

Ph.D., the R. Glenn Davis associate professor of clinical and translational medicine in the division of nephrology, hypertension and renal transplantation, has been named director of the M.D./Ph.D. program. Hsu came to UF in July from Harvard Medical School, where he was an assistant professor of medicine at Brigham and Women's Hospital. Hsu is an expert in the fields of cell cycle regulation, nephrogenomics and nephroproteomics.



Hsu

SAMSUN LAMPOTANG,

Ph.D., a professor of anesthesiology, received the Society for Education in Anesthesia's annual \$5,000 award for excellence and innovation in anesthesia education at the association's 2007 meeting. Lampotang, a member of UF's Center for Simulation, Advanced Learning and Technology, was instrumental in designing the Human Patient Simulator, as well as numerous other teaching tools, including the "Simulated Anesthesia Experience" featured on page 5.



Lampotang

COLLEGE OF VETERINARY MEDICINE

PABLO PINEDO,

a graduate student in the college, has received the Richard Merkal Memorial Fellowship to attend the International Colloquium on Paratuberculosis this month in Tsukuba, Japan. Pinedo will give a presentation on his research, which focuses on genetic resistance to paratuberculosis — also known as Johne's disease — in beef and dairy cattle.



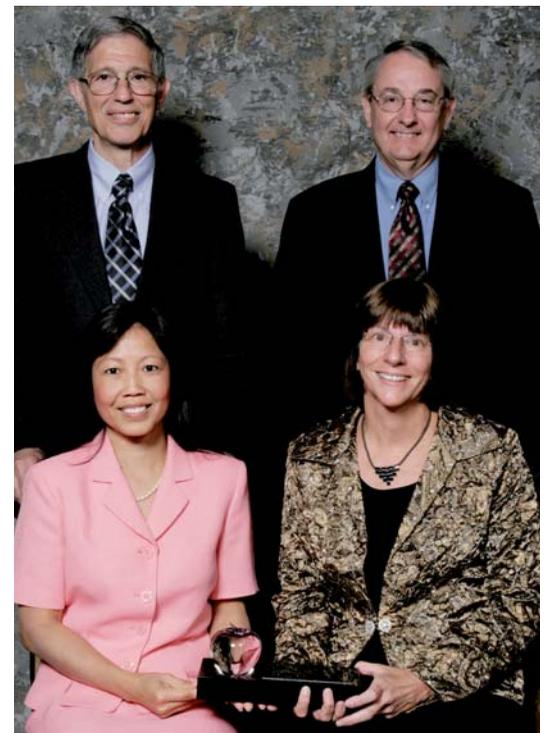
Pinedo

MIKE WALSH, D.V.M.,

has been named the associate director of UF's Aquatic Animal Health program. Walsh was formerly a head veterinarian at Sea World of Florida. His 21 years in aquatic health have been marked by innovation and improvement in the care of manatees, seals and sea lions, penguins, dolphins, whales, sea turtles and sharks as well as beached whales and dolphins.

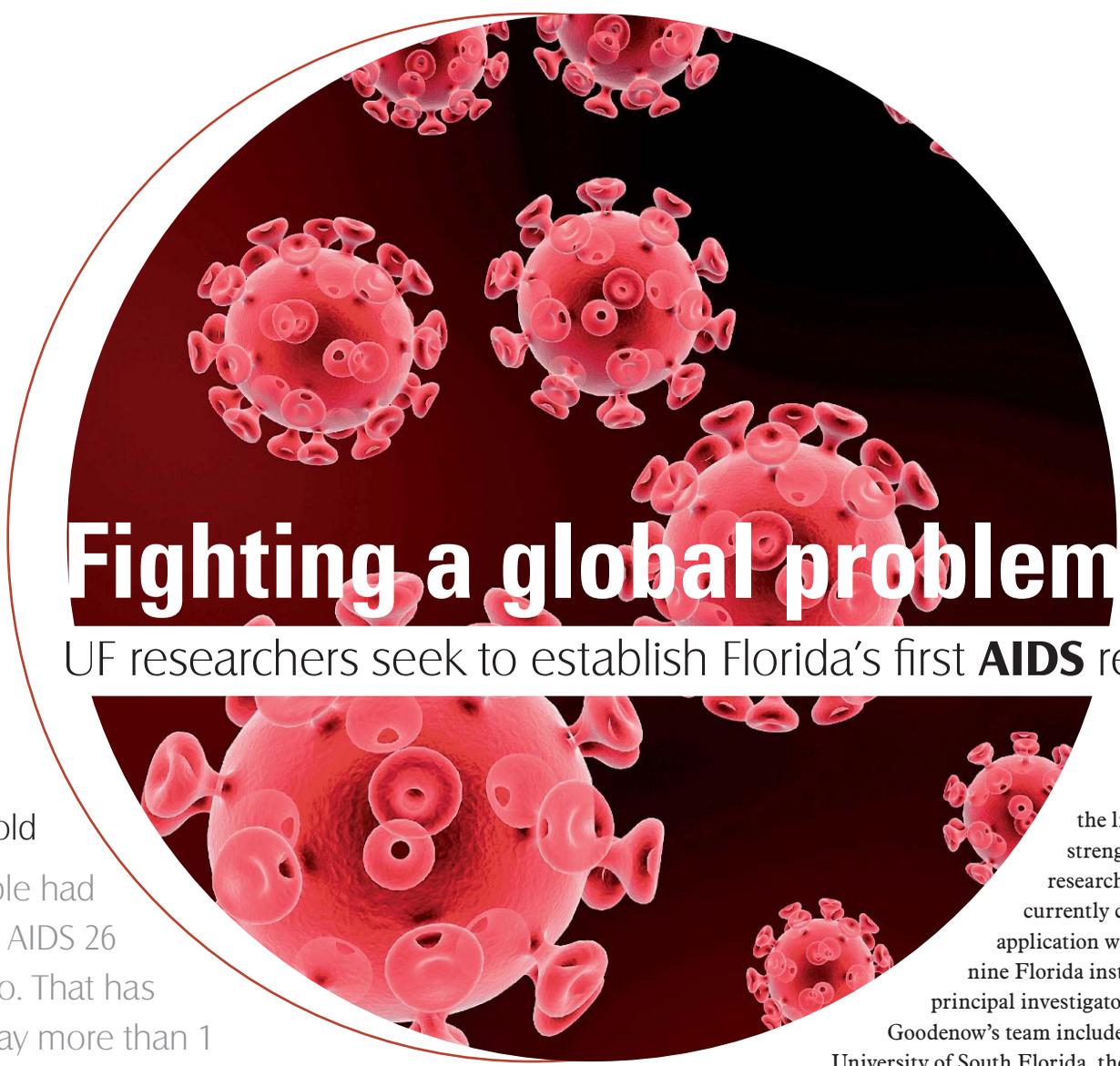


Walsh



Pharmacy wins Crystal Apple Award

The UF College of Pharmacy was one of eight pharmacy schools to receive the first-ever Academic-Practice Partnerships for Learning Excellence Award — also called the Crystal Apple Award — from the The American Association of Colleges of Pharmacy this summer. UF was chosen for having an exemplary partnership with Shands that helps produce quality educational experiences and patient-care teaching environments for pharmacy students. The award was presented to pharmacy educators David M. Angaran, M.S., a clinical professor of pharmacy, Thanh Hogan, Pharm.D., the director of pharmacy at Shands Jacksonville, and Sharon A. Basile, Pharm.D., a pharmacist and preceptor at Shands Jacksonville. The award was created to improve pharmacy education and practice by encouraging quality professional experience programs. Each of the 2007 awardees will be featured in *US Pharmacist* and in the Advanced Practice Experience Site Profiling System, a tool kit designed for pharmacy schools to identify, document and profile models of exemplary education practice sites. Shown with the award in the photo above are, clockwise from top right, Dean William Riffe, Basile, Hogan and Angaran.



Fighting a global problem

UF researchers seek to establish Florida's first **AIDS** research center

By Ann Griswold

Few people had heard of AIDS 26 years ago. That has changed. Today more than 1 million people have HIV or AIDS in the U.S. and more than a tenth of them are Floridians. To combat the epidemic, College of Medicine researchers are spearheading a multi-institutional effort to establish Florida's first Center for AIDS Research.



MAUREEN GOODENOW, Ph.D.

"HIV/AIDS is a significant public health problem in Florida," said Maureen Goodenow, Ph.D., a UF AIDS researcher who's leading the group. "As a state, we're third in the country with the numbers of HIV/AIDS cases. There are at least 100,000 infected individuals that we know about."

The National Institutes of Health initiated the Centers for AIDS Research program in 1988 to support collaborations between basic scientists and clinicians, bringing AIDS research from the lab to patients. The NIH currently supports 19 other centers at top-ranked institutions across the nation, including Harvard University, Duke University and Case Western Reserve University.

Florida researchers, who recently met for a planning session, hope to obtain seed money from the state's Centers of Excellence program first to help them generate preliminary data for the group's formal application to the NIH next spring.

If awarded, the Florida Center for AIDS Research will be the first center on

the list to harness the collective strength of more than three research institutions. Goodenow is currently collaborating on the application with HIV/AIDS experts at nine Florida institutions. Aside from principal investigators from four UF colleges, Goodenow's team includes experts from the University of South Florida, the University of Central Florida, Florida State University, the H. Lee Moffitt Cancer Center & Research Institute in Tampa, Tampa General Hospital, Wolfson Children's Hospital in Jacksonville, Merck & Co. Inc. and the Ponce School of Medicine in Puerto Rico.

The group aims to study the disease across the lifespan, with the goal of improving quality of life for adolescents and older individuals affected by HIV/AIDS, Goodenow said.

About 19 percent of Americans infected with HIV/AIDS are over 50, according to the Centers for Disease Control and Prevention. Sexually transmitted diseases in the elderly population have become increasingly problematic in recent years, thanks in part to performance-enhancing drugs such as Viagra.

"Body changes that occur with AIDS are comparable to accelerated aging," said Marco Pahor, M.D., director of UF's Institute on Aging and chair of the College of Medicine's department of aging and geriatrics.

Much of the current knowledge about the aging process, including the factors that influence loss of skeletal muscle mass and strength, originated from AIDS research, Pahor added.

"The proposal illustrates how the university can effectively draw on its comprehensive set of resources to target an important issue such as AIDS," said Win Phillips, D. Sc., UF's vice president for research. "By inviting so many other institutions in the state to collaborate, Dr. Goodenow and her colleagues have further strengthened the case for why Florida should have a Center for AIDS Research."

In an opening speech at a recent planning session, Douglas J. Barrett, M.D., UF's senior vice president for health affairs, said the center will provide an unprecedented opportunity for "Gators and Seminoles and Knights and Bulls to work together to do what's right, in terms of the best investment of Florida's dollars and Florida's people." 

October



Learn how diseases could affect dolphins

Oct. 11, 7 p.m.

Evenings at Whitney Public Lecture Series presents "Emerging Diseases in Marine Mammals: So What's Ailing Flipper?" with Greg Bossart, D.V.M., Ph.D.

The Whitney Laboratory for Marine Bioscience Center for Marine Studies, 9505

Ocean Shore Blvd., St. Augustine. *For more information, call 904-461-4000 or e-mail sigridn@whitney.ufl.edu.*

A lunch with history

Oct. 11, 12 p.m.

The History of Medicine Lecture Series presents "How to improve medical care: An 18th-century approach," with Antoinette Emch-Deriaz, Ph.D., a UF professor of history.

Communicore Building, Room C1-15

College of Nursing clinic gets new digs

Oct. 12, 2 p.m.

Archer Family Health Care new clinic dedication 16939 SW 134th Ave, Archer. *For more information, call 352-495-2550.*

For the future pharmacist

Oct. 14, 1 p.m.

College of Pharmacy Open House Public Health and Health Professions/Nursing/Pharmacy Complex. *For more information, call 352-273-6217 or e-mail frontdesk@cop.ufl.edu.*

Raise money for breast cancer

Oct. 20, 9 a.m.

Making Strides Against Breast Cancer of Gainesville Walk.

Northeast Park, 400 N.E. 16th Ave., Gainesville To join the Shands Team for the walk, e-mail Kara White at whitkd@shands.ufl.edu or call 352-265-0680, ext. 72222.

Carve a jack-o-lantern

Oct. 31



Reminisce about nursing school

Nov. 2, 2 p.m.

College of Nursing Reunion Open House Health Professions/Nursing/Pharmacy Complex. *For more information, call 352-273-6395.*

Celebrate UF Homecoming

Nov. 2



November



Medical school memories

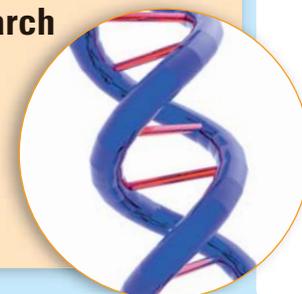
Nov. 2-4

College of Medicine Alumni Reunion *For more information on events, visit www.drgator.ufl.edu/alumni/reunion2007.shtml.*

Learn about genetics research

Nov. 7-8

Florida Genetics 2007 conference Cancer & Genetics Research Complex. *For more information, call Diana Nolte at 352-273-8290 or e-mail dnolte@ufl.edu.*



Krista's kids

UF researcher studies therapies for muscular dystrophy

By Stephanie Fraiman

It all started with a game of handball and a torn ligament.

Krista Vandeborne, Ph.D., P.T., ended up in a cast after tearing a ligament playing handball in her native Belgium. Months later, when the cast was removed, Vandeborne couldn't believe how her leg looked without it. Deteriorated. Weak, even.

"I wanted to learn more about how and why that happened," said Vandeborne, a professor and chair of the department of physical therapy in the College of Public Health and Health Professions. "I think it's pretty typical. People don't really think about a profession until they need it."

Now an internationally known leader in human muscle physiology and rehabilitation, Vandeborne has focused her attention on helping children with a far more serious form of muscular degeneration — muscular dystrophy. There are nine types of muscular dystrophy, a neuromuscular disease that affects about 250,000 Americans, according to the Muscular Dystrophy Association. The most common form in children — Duchenne muscular dystrophy — only affects boys and by age 12, many need a wheelchair. Vandeborne is developing imaging strategies to help determine the effectiveness of different muscular dystrophy therapies in young children using the McKnight Brain Institute's powerful magnet, the 3-Tesla whole-body scanner.

Magnetic resonance imaging provides precise, noninvasive assessments of muscle tissue quality that allow researchers to determine the natural progression of muscular dystrophy throughout the body, the muscles that should be targeted for therapy and the efficacy of therapeutic interventions.

"Muscular dystrophy is a disease that has a huge impact on patients and currently there is no cure," Vandeborne said. "It's a devastating disease that deserves a lot of attention."

A mother of two, Vandeborne empathizes with the parents whose children are the focus of her research.

"It's hard as a parent. You want to help as much as you can," she said.

Vandeborne's commitment to the children and families involved in her research is remarkable, said Roxanne Moseley, whose son Kenneth, 15, is a study participant. When Roxanne's younger son, Thomas, decided to focus on muscular dystrophy research for his middle school science fair, Vandeborne met him at the library on a Sunday afternoon to advise him on his project.

"She ended up giving us two hours of her Sunday," Moseley said. "When people are giving up their Sundays to help with a school project, that's dedication. No doubt about it."

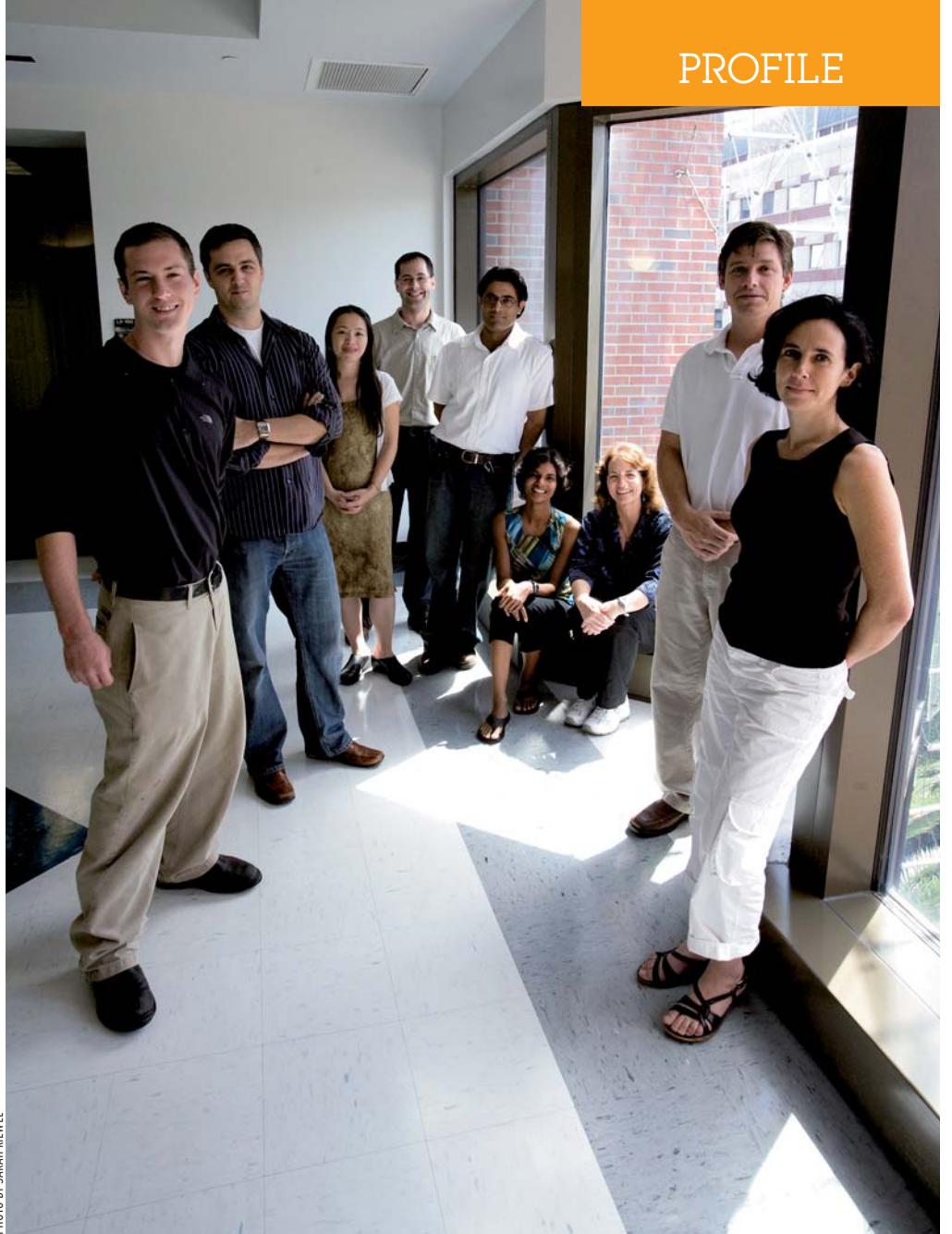


PHOTO BY SARAH KIEVEL

Krista Vandeborne, right, and her husband, Glenn Walter, second from right, lead the Muscle Physiology Laboratory, where researchers conduct basic science and clinical studies on muscle degeneration and regeneration. Research team members also include, from left, Nathan Bryant, Sean Germain, Wendy Han, Donovan Lott, Ravneet Vohra, Sunita Mathur and Claudia Senesac.

Working to cure muscular dystrophy is a family affair for Vandeborne. Her children run lemonade stands and donate the money they earn to muscular dystrophy research. Her husband, Glenn Walter, Ph.D., an assistant professor of physiology and functional genomics in the College of Medicine, also studies muscular dystrophy. The couple, who met in a lab during graduate school at the University of Pennsylvania, sometimes collaborate on research projects.

Vandeborne and the researchers in her lab are also studying muscle adaptation after spinal cord injuries and during cast immobilization — the problem that got her interested in muscle degeneration in the first place.

Graduate students say Vandeborne not only involves them in her research but also encourages them to think independently and design their own projects.

"When we are thinking of new topics for research, Dr. Vandeborne has us explore the options and think about everything by ourselves," said Prithvi Shah, a graduate student who conducts spinal cord injury research in Vandeborne's lab. "In the long run, you feel good that you created the entire research yourself."

As chair of the physical therapy department since 2002, Vandeborne has also led her department to new heights with increased research funding, the development of a Doctor of Physical Therapy degree, clinical fellowships, NIH-funded predoctoral training programs and a highly successful research and clinical seminar series.

"She has a vision and it's easy to get motivated by her because she's so motivated by what she sees for the future," said Claudia Senesac, Ph.D., P.T., a UF clinical assistant professor of physical therapy who collaborates with Vandeborne. 



PHOTO BY SARAH KIEWEL

Dr. Mobeen Rathore, a professor of pediatric infectious diseases and immunology at the College of Medicine-Jacksonville, founded the Rainbow Center, the only comprehensive pediatric and family-focused AIDS program in Northeast Florida.



PHOTO BY SARAH KIEWEL

The founder of UF's neuropsychology program, Paul Satz, right, spoke about the early years of the program at the College of Public Health and Health Professions' advisory board meeting Sept. 14. Satz, who directed the UF program from 1964 to 1979, went on to establish similar programs at the University of Victoria and the University of California, Los Angeles. He is now retired and living in Hawaii. In his talk Satz praised his former UF students, several of whom are internationally recognized in the field, including Russell Bauer, chair of PHHP's department of clinical and health psychology, left, and Charles Schauer, vice president of clinical research and external affairs for the Brooks Health System in Jacksonville. "What happened in those early years pushed the field of neuropsychology to the boundaries, and it happened here at the University of Florida," Satz said.

Dr. Sarosh Batlivala (center left), a senior resident in pediatrics, stood in the rain with about 25 of his colleagues Oct. 2 in front of Shands AGH. They joined doctors at hospitals around the country in the 15-minute stand to protest a possible presidential veto of extended funding for the State Children's Health Insurance Program.



PHOTO BY SARAH KIEWEL

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**Senior Vice President,
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Douglas J. Barrett, M.D.

**Director, News &
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Tom Fortner

Editor
April Frawley Birdwell

Senior Editors
Melanie Fridl Ross, John Pastor

Designer
Mickey Cuthbertson

Staff Writers
April Frawley Birdwell, Tracy Brown,
Sarah Carey, Anney Doucette, Linda
Homewood, Lindy McCollum-
Brounley, Patricia Bates McGhee, John
Pastor, Jill Pease, Melanie Fridl Ross

Contributing Writers
Stephanie Fraiman, Meredith Woods

Photojournalist
Sarah Kiewel

Support Staff
Cassandra Jackson, Beth Powers,
Kim Smith

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