

WINTER 2009 | VOL 51 NO 1

USE

MAGAZINE



USE HISTORIAN
LEADS DISCOVERY
OF GEORGE
WASHINGTON'S
BOYHOOD HOME



SCENE ON CAMPUS



"One Hundred Years," choreographed by Visiting Artist Mariah Maloney for USF's 2008 Spring Dance Concert, was inspired by the pain, passion and disintegration of the life and work of Mexican painter Frida Kahlo.

USF

MAGAZINE



JOSEPH GAMBLE

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SCENE ON CAMPUS:
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PERFORMING ARTS.



JOSEPH GAMBLE

Sharvettie Frazier is one of 10 full-time certified athletic trainers working to improve athlete safety in Hillsborough County Public Schools through USF Health’s SMART Institute. See story page 20.

Cover Photo: George Washington Foundation Director of Archaeology David Muraca and USF’s Philip Levy, historical archaeologist and associate professor of history, examine evidence of a fire that damaged the Washington family home in 1740. See story page 26.



MARK WEMPLE

HAPPY NEW YEAR! In the fall, during my annual President's Address, I said USF stands at a tipping point. We have developed so much momentum and remain so focused on our goals as an institution that we are truly poised to be one of the great universities of the future.

You only need to read through this issue of *USF Magazine* to understand what I mean—\$360 million in research funding, discoveries that are making news around the world, initiatives that are safeguarding the health of our youth, and models for education that are transforming learning. We have boldly moved into this new year as a university that is global, interdisciplinary and engaged.

Imagine that USF historical archaeologist Philip Levy led one of the most significant archaeological finds in American history—the discovery of George Washington's boyhood home. Students from the USF archaeological field school have been involved in this seven-year labor of love from the start. Together, they represent what is great about this institution.

And there's another example, the Sports Medicine & Athletic Related Trauma Institute

at USF. In just three years, supported by the Florida Legislature, the program is helping improve sports safety on playing and practice fields throughout the region, and particularly in Hillsborough County.

This year at USF, research takes center stage. With an increase of more than \$50 million in federal, state and local funding—the highest increase in this university's history—we are forging ahead on our path to excellence. In this issue, you will read about biologist Jason Rohr's fascinating research into the role of pollution, climate change and disease in the mass decline of amphibians, and you will read about solar cells so tiny they can be sprayed onto surfaces where they can convert solar energy into electrical power.

We are entering one of the most exciting chapters in USF history. We face many challenges, no doubt, but with our commitment to achieve the bold mission of this university, combined with the great people of USF, I believe we are unstoppable as an institution.

Judy Genshaft
JUDY GENSHAFT, PRESIDENT

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Research Funding Tops \$360 Million

AS USF MOVES FORWARD WITH ITS STRATEGIC plan to make USF equal to many of the nation's greatest research universities, it has achieved yet another milestone—an all-time high in research funding.

USF's external research funding for fiscal year 2007/2008 rose by 17 percent over the previous year to \$360,169,573, a more than \$50 million increase in federal, state and local funding.

Putting this feat into perspective translates to a powerful display of confidence in USF, its distinguished faculty and their research endeavors. According to Karen A. Holbrook, vice president for research and innovation, these grants come from a more diverse range of sources than ever: federal, state and local government as well as a range of private sources, both nonprofit foundations and corporate. In addition, the university has achieved this success during a time when research dollars have been tightening at institutions across the nation.

"Bigger numbers are always a pleasure to announce," says USF President Judy Genshaft, "but the real satisfaction, and the real benefit to society, comes from the USF people behind the research dollars and their innovative efforts to do good for people."

While funding for medical and health research leads the university's quest for excellence, faculty members in the College of Arts & Sciences are also fueling this upward trend in funding growth. A few examples include:

- Dr. Donald Policella received a \$1.7 million grant from the Florida Department of Children and Families to develop best practices in child welfare cases that will benefit children throughout the state.
- Dr. Jason Rohr was awarded a \$364,414 grant from the U.S. Department of Agriculture to study wetland ecosystems and responses to pesticides.
- Dr. Dennis Kyle received \$1,162,789 in awards from multiple sources, including the Bill and Melinda Gates Foundation, the World Health Organization and the Na-



JOSEPH GAMBLE

Vice President for Research and Innovation Karen Holbrook presents Giovanna Benadusi, associate professor in the History Department, with the Outstanding Research Achievement Award.

tional Institute of Allergy and Infectious Diseases to help monitor anti-malarial drug resistance and develop guidelines on malaria treatment and policy.

- Dr. Jeffrey Krischer and the pediatric epidemiology team's most recent award was a \$127.7 million dollar grant to track studies to treat Type 1 diabetes.

"USF's success in attracting research dollars reflects our commitment to our neighbors, the state, the nation and the world," says Genshaft.

USF's external research funding for fiscal year 2007/2008 rose by 17 percent over the previous year . . . a more than \$50 million increase in federal, state and local funding.

That commitment was on display for a week in November during ResearchOne, an event showcasing the wide variety of USF's world-class interdisciplinary research through symposia, talks by researchers and discussion groups. While the research spotlight shone on the Florida Center of Excellence for Biomolecular Identification and Targeted Therapeutics, the first multidisciplinary university-wide Center of Excellence at USF, exhibitors included research and technology groups that are USF spin-offs and partners.

"When I see the figure for external funding for research rise, or when USF researchers are featured prominently in the news for developing innovative drugs or nanotechnologies for devices that save lives or provide a better quality of life for those with diseases or disabilities," says Genshaft, "I know that, as a university, we are on the right path."

Groundbreaking Exchange

MARKING THE FIRST affiliation of a Thai institution and an institution of higher education in the United States, USF President Judy Genshaft traveled to Bangkok in December to sign an Academic Collaboration and Student Exchange Program agreement with Srinakharinwirot University President Wiroon Tangcharoen. The agreement outlines an exchange of undergraduate and graduate students and plans for joint medical training. The first exchange of students is expected in 2010.

"This is an exciting and important agreement for global education in medicine and other fields for both institutions," said Genshaft, who traveled to Thailand with a group including Rhea Law, chair of the USF Board of Trustees.

During the trip, Genshaft and Stephen Klasko, CEO for USF Health and dean of the College of Medicine, were presented the Global Leadership Award by Her Royal Highness Princess Maha Chakri Sirindhorn. The award is the first such award given in recognition of leadership and commitment to excellence in global education.

"International medicine is more than a trend—it is a force to contend with," said Klasko, who, along with several USF Health faculty members, attended an international medical summit at the Srinakharinwirot University College of Medicine.

Digging Deep

Archaeology joins the popular "For Dummies" lineup.

USF PROFESSOR NANCY MARIE WHITE is now part of a prolific group of popular writers—she's joined the "For Dummies" lineup with a new book.

Archaeology for Dummies is aimed at students, interested lay people and readers of all kinds who are fascinated with archaeology. The book explores how archaeology uncovers the lives of our ancestors, examining dig sites around the world and explaining theories about ancient human societies. It traces over two million years of prehistoric times and the earliest civilizations on earth.

"Archaeology has little to do with how it's portrayed in the movies," says White. "The field is not about obtaining fancy artifacts and has nothing to do with dinosaurs. Instead, it aims to learn of the human past on this planet. More than anything, archaeology is fun and very accessible to people in all walks of life."

When Wiley Publishing approached White, a registered professional archaeologist, to write this installment in its "For Dummies" series, she was happy about the prospect of demystifying her field. She enjoyed the challenge of cutting mountains of knowledge on all the subjects down to quick, readable bites.

White is a natural to serve as author of *Archaeology for Dummies*. A professor and author, she has held public archaeology programs since the late 1970s to bring her findings to the local communities where she digs. And, she's helped build USF's Department of Anthropology, which is famous for being the first in the nation to feature graduate training in public archaeology. "So," she notes, "it is only fitting to have such a book come out of this institution."



JOSEPH GAMBLE

NEWS & NOTES

■ **Linda Whiteford**, an award-winning teacher and researcher, has been appointed associate vice president for global strategies and international affairs. The new position was created to help organize the university's leadership around its strategic goals. Whiteford will continue in her role as associate vice president for academic affairs, with responsibility for sustainability and community initiatives.

■ **Joel D. Momberg** has been tapped to direct the university's fundraising as vice president of University Advancement and chief executive officer of the USF Foundation. Momberg joins USF from All Chil-

dren's Hospital in St. Petersburg, where he recently directed a successful campaign to help build a new \$400-million hospital. Momberg is a founding member of the Children's Miracle Network.

■ **Pat Rogers**, Eminent Scholar and DeBartolo Chair of the Humanities, has been installed as a Corresponding Fellow of the British Academy in recognition of his outstanding achievements as a literary scholar. On par with the National Academy of Sciences, the British Academy focuses on the social sciences and humanities. Rogers, a specialist in 18th century British literature, has authored or edited 44 books.

■ Professor of Government and International Affairs in the College of Arts & Sciences at USF St. Petersburg **Ambe Njoh** has been selected to contribute two chapters and four case studies for the 2009 edition of the United Nations Global Report on Human Settlements. Njoh is one of only two scholars from the United States to be selected. The publication is a vehicle for monitoring and reporting on human settlement conditions and trends.

Charit-a-Bull Act

FOR THE SEVENTH TIME IN AS MANY YEARS, hundreds of USF students converged on the Marshall Center in October to build sculptures out of canned goods. The event, known as Charit-a-Bull, marked the official start of Homecoming Week.

Competing Charit-a-Bull teams created about 80 sculptures in the allotted two-hour timeframe. A panel of faculty, staff and students judged the entries based on creativity and size to arrive at a first, second and third-place winner.

For the first time, students from University Experience classes participated in the event. UE classes are designed specifically for first-year students to welcome them to USF.

Contest entries included a hungry monster, a skyscraper, and even "Rocky in Wonderland."

In all, the 2008 Charit-a-Bull event collected 18,720 pounds of food, a more than 50 percent increase over last year's total of 12,000 pounds. All food is donated to Metropolitan Ministries to feed the hungry in Tampa.

Charit-a-Bull is co-sponsored by USF Homecoming and the USF Center for Leadership & Civic Engagement.

— Ann Carney



AIMÉE BLODGETT

A Promise for Education

A \$22 million grant aims to prepare math and science teachers for the 21st century classroom.

WHEN THE FLORIDA Department of Education sought proposals for a statewide effort to prepare K-12 mathematics and science teachers for the 21st century classroom, faculty at the

state's three largest public universities came to the table. Drawing on their collective strengths, the team developed and submitted a plan that would support the implementation of Florida's Next Generation Math and Science Standards.

Their efforts paid off. The Florida Department of Education, funded by the U.S. Department of Education's Mathematics and Science Partnership Program, awarded a \$22 million grant to the David C. Anchin Center at USF's College of Education. The grant will fund a three-year initiative in which the three universities—USF, The University of Florida and Florida State University—will work with four of Florida's largest school districts, various multi-county educational consortia and a private firm to develop and disseminate professional training materials to all school districts in Florida to help math and science teachers meet the state's new, tougher standards.

Dubbed Florida PROMiSE (Partnership to Rejuvenate and Optimize Mathematics and Science Education), the grant represents the first major math and science education effort undertaken collaboratively by the three universities. Each of the universities has engaged independently on prior mathematics and

science initiatives. Florida PROMiSE builds upon prior collaborative mathematics and science education projects that involve USF faculty from the College of Education, the College of Arts & Sciences and the Coalition for Science Literacy.

"We all benefit when we can say that we are preparing Florida's students to achieve in mathematics and science. We want our students to be competitive not only locally, but globally," says Gladis Kersaint, USF associate professor of mathematics education in the Department of Secondary Education and the grant's principal investigator.

Under the new math and science standards adopted during the 2007-2008 school year, the curriculum in grades K-8 will focus on smaller amounts of content at each grade level, rather than touch upon a larger amount of content and revisit that content over several years. The high school curriculum will enhance students' understanding in various content-specific areas, such as algebra and biology.

The new requirements come against a backdrop of crisis in science and mathematics education in Florida and in the nation as a whole. The goal is for teachers to develop depth, rather than breadth, of students' knowledge.

Kersaint says the team is taking a holistic approach that includes a multi-tiered public awareness campaign to provide information about the new standards. "All stakeholders, including parents, teachers, school leaders and the community will need information about these standards and their implication for classroom instruction."

To date, 700 principals from 63 of the 67 school districts in Florida have registered to participate in professional development training that will help them understand how to support the implementation of the



MEL YATES / GETTY IMAGES

new standards at their respective schools. In addition, professional development materials that focus on enhancing math and science teachers' knowledge have been developed and distributed to all school districts in Florida. Materials were developed for both new teachers, including change-of-career teachers, and current teachers. Online technical assistance is also available to assist teachers with the new standards.

The partnership has accomplished a lot in its first year and is making positive progress toward its continued objectives," says Kersaint. "This type of project would not be possible without the dedication and commitment of all team members. They have been amazing."

This summer, as part of the Year 2 effort, Florida PROMiSE will offer two-week, content-specific summer institutes for teachers in the partner school dis-

tricts. Dedicated science, technology, engineering and math faculty from each of the three universities will participate in the institutes that will immerse teachers in the subject matter they will be expected to teach. Additional content-specific support will be provided to teachers during the following year.

"This historic initiative will go a long way in helping the state meet its need to improve math and science education for students in Florida, while transforming the way these subjects are taught," says USF College of Education Dean Colleen Kennedy. "It is a supreme example of the leadership efforts under way at USF, and a tremendous opportunity to partner with the University of Florida and Florida State University for a common goal."

— Ann Carney

Artful Connections

Arts program provides a safe haven for at-risk youth.

CREATIVE OUTLETS HAVE been proven to channel children's energies away from the inevitable consequences of idle hands. Constructive ways to spend time are all the more critical for at-risk youth and young people who have had brushes with the criminal justice system. With annual funding of \$7 million from the Department of Juvenile Justice, USF's School of Social Work, in collaboration with the University Area Community Development Corporation, Bay Area Youth Services and 18 other community partners, provides the Prodigy Cultural Arts program to address the needs of these populations.

In essence, Prodigy is an innovative year-round afterschool delinquency prevention program for ages 7 to 17 where life lessons emerge from carefully planned cultural arts activities. Students learn to sing, dance, write, paint, animate—basically all the arts—performing and visual. Artists, many with national and international reputations, are hired and trained in how to facilitate the learning of social skills while teaching the young people to explore and express their thoughts, feelings and values through art.

"This differs from more traditional life skills trainings that focus on the skill sets directly," says School of Social Work Director William Rowe, who serves as the program's principal investigator. "What we do not only develops artistic skills, but also gives our instructors ways

to connect with the students who learn new ways to solve problems—in a safe environment,"

Prodigy got its start in 2003 at the University Community Center located in a distressed neighborhood close to USF's Tampa campus. Approximately 1,800 children and their families from the community as well as youth referred to the program by the juvenile justice system now participate in Prodigy each year. The program has expanded to six counties in west Central Florida—from Sarasota to Orange, with 4,000 students enrolled and serving an additional 10,000 family members and friends each year. Overall, Prodigy partners with 20 community organizations and operates in 18 inner-city and rural communities.

The School of Social Work has a research team of social work faculty and research assistants continually evaluating the program to determine its effects on children, families and the communities

served. There are two key outcome measures: program completion and recidivism rate. In both those measures, Prodigy excels.

"Eighty-five percent of the youth complete the program and nearly 90 percent do not recidivate," says Rowe. "Both measures represent a very strong outcome."

The art projects are shared with the community at large through an annual showcase that draws nearly 1,000 attendees. Recently, some of the projects were displayed at University Mall and in USF Provost Ralph Wilcox's office, where students met USF President Judy Genshaft along with Wilcox who hosted a reception last fall.

"What a joy it was to experience the results of USF's community engagement," says Wilcox. "Their art serves as a reminder of how important USF's contribution is to individual lives right in our neighborhood."

— Barbara Melendez



Prodigy teaches young people to explore and express their thoughts through artistic creations such as this. To see more projects, visit http://uacdonline.org/uacdc/prodigy_gallery.aspx.

Confronting Disparities

College teams with the Centers for Disease Control to improve the health of Latinos.

DESPITE BEING THE FASTEST GROWING minority in the United States, Latinos have less access to health care and poorer treatment outcomes than non-Latino whites. Now, thanks to a \$1.24 million grant from the U.S. Centers for Disease Control and Prevention, researchers at USF's new College of Behavioral and Community Sciences and the Louis de la Parte Florida Mental Health Institute are studying ways to eliminate health disparities in the Latino community.

The grant looks specifically at ways to better meet the needs of underserved members of the Latino community suffering from depressive symptoms (symptoms of depression) and co-occurring chronic diseases, such as diabetes, as well as improve their health outcomes. The three-year, translational research grant was one of the few awarded nationwide and comes out of a variety of federal initiatives.

"The Latino population in the U.S. represents the fastest growing minority. In the greater Tampa area, the Latino community is estimated to be over 21 percent of our total population," says Junius Gonzales, CBCS dean and the study's principal investigator. "This diverse population (compared to non-Latino whites), with origins in Mexico, Latin American and the Caribbean, suffer from a wide range of health problems, yet studies have shown that they experience disparities in access to the health care system and to appropriate quality care, so because of those disparities, have poorer outcomes."

As a first step, an interdisciplinary USF research team, working in concert with community partners and national experts, will work to better understand the barriers to seeking medical care. Next, the team will work

to implement a chronic disease self-management program in the Latino community.

"Once we understand the complex barriers and facilitators to seeking care, step two will be to adapt the chronic disease self-management program to their needs. Step three will be to use the trusted lay health workers, or 'promotores,' and the community, to deliver this time-limited group intervention," says Gonzales.

The chronic disease self-management program emphasizes self-management by providing health education and peer groups and addresses nutrition, physical activity, patient empowerment and positive behavior change.



ANDERSON ROSS / GETTY IMAGES

This particular intervention was chosen because it could be delivered by lay people in communities and in any setting.

"The goal of self-management for patients with chronic diseases is important because people make decisions on a daily basis that influence their health, says Gonzales. "Our goal is for everyone to learn to take charge of their illnesses and enhance their care through self-management."

— Ann Carney



Conner works with Mt. Zion students

JOSEPH GAMBLE

Empowering Youth

Computer literacy project benefits underserved children.

FROM CREATING COMPUTER ANIMATION to establishing information databases, children in one of St. Petersburg's most underserved communities now have access to new technology, thanks to a USF St. Petersburg research initiative.

Trey Conner, assistant professor of English, sparked a partnership with Mt. Zion Human Services that uses his New Investigator Research Grant to build cost-effective computer networks for the community center's children and teenagers while offering civic engagement opportunities for USF St. Petersburg students.

"This is youth empowerment," says Patricia Fried, executive director of Mt. Zion Human Services. "The program empowers them to develop a skill set and allows them to grow in the areas where they want to grow. Most of them are struggling in school; this will give them an opportunity to succeed."

Conner, his research assistant and economics senior

David Havasi and other students are building five open source computer networks for use by the youth attending midtown's Mt. Zion after-school and pre-school programs. Students in Conner's and other professors' English courses will also work with the center on designing a mentoring program, researching and writing grants and assisting with professional writing.

The center serves residents in an area challenged by poverty and crime. Open source technology, also called thin-client computing, is cost-effective for groups like Mt. Zion because there are no licensing fees for programs. Mt. Zion has more than 50 computers that are obsolete for current mainstream software, but operate efficiently with an open source network. Thin-client computing moves away from the personal desktop computer model and relies upon central servers with individual client machines that pull information and programs from the server. The program codes can be adjusted by the children using the network.

"In the process, this becomes a different approach to community literacy," Conner says. "Members of the community have an opportunity to learn how machines are built and how they are networked. Once everything is installed, there are any number of opportunities for connec-

tions and creativity.”

Thin-client computing uses less energy and recycles hardware that would have been discarded. The children, teenagers and adults who interact with the network at Mt. Zion will have the freedom and encouragement to use the technology in a variety of ways. They can design graphics, do sound recording, use financial software, set up Internet radio broadcasting or use mapping software.

Conner met Fried at the Civic Engagement Fair, an event held at USF St. Petersburg each fall and spring semester. After hearing about Mt. Zion's literacy focus in their children's center and the forthcoming youth community center for teenagers, Conner realized the programs fit perfectly with his computer literacy interest.

“This is an incredible opportunity,” Fried says. “Not just for the children of Mt. Zion, but for the students at USF St. Petersburg.”

—Melanie Marquez

Building Bridges

Project 10 aims to prepare students with disabilities for adult life.

WITH A FOCUS ON COLLABORATION, technology and regional representation, a new project based at USF St. Petersburg aims to assist Florida's special education personnel to prepare students with disabilities for a successful shift from school to adult life.

By placing five regional representatives throughout the state and offering tailored training materials with an enhanced Web site, Project 10: Transition Education Network offers the resources and tools every special education teacher needs to help students with disabilities develop the knowledge and skills to pursue further education, employment and to live independently.

Lyman Dukes, associate professor of special education in the College of Education at USF St. Petersburg, is the principal investigator on the \$1.02 million annual state grant supporting Project 10. Jordan Knab is project director. Project 10 serves as a primary conduit between the Florida Department of Education's Bureau of Exceptional Education and Student Services and school district personnel in addressing law and policy, effective instructional practices and research-based interventions in the area of



Knab and Dukes

MELANIE MARQUEZ

transition services for youth with disabilities.

“The goal is to impact every student with disabilities in the state of Florida,” Dukes says. “We hope to see reductions in our state dropout rate for students with disabilities, to see an increase in graduation rates as a function of our work, and to see an increase in the number of students with disabilities accessing and completing postsecondary education and engaged in productive employment.”

Dukes, Knab and their staff will collaborate with state and federal employment and workforce agencies to bridge the school-to-employment gap that exists for students with disabilities. They plan to establish a social networking service on their Web site to cultivate more communication among professionals serving youth and young adults with disabilities. An online training library features the latest information from sources throughout the country, making continuing education more accessible to classroom teachers.

“Teachers are the ones that interface on a daily basis with the youth we're trying to reach,” Knab said. “It's a priority that they receive training as conveniently as possible.”

Project 10 initiatives will help implement practices for students to determine their personal strengths, preferences and interests which will allow students and their families to better determine their post-high school goals. Instruction can run the gamut from traditional college preparatory coursework to daily living skills, leisure skills, community participation, understanding of health needs and communication skills. In its first year, Project 10 will focus on four major initiatives: capacity building to implement secondary transition services; interagency collaboration; transition legislation and policy; and student development and outcomes.

Knab was the director of the Transition to Independence Process Project at the Florida Mental Health Institute at USF before joining Project 10. Dukes joined the faculty of the College of Education at USF St. Petersburg in 2001. He is currently co-editing a book titled *College Students with Disabilities: A Practical Guide for Transition*.

—Melanie Marquez

Clinical Practice

New USF Health Simulation Center at Tampa General Hospital provides realistic, risk-free training for students and health professionals.

THE LIGHTS ARE LOW AND THE EKG monitor beeps as the vascular surgery fellow, observed by an attending physician, begins inserting a balloon catheter to open the blocked kidney artery of a “patient” lying on the table. It looks and feels like an operating room, but it’s not.

The 2,800-square-foot USF Health SimSuite Education Center opened on the first floor of Tampa General Hospital in November. The state-of-the-art center provides a realistic but risk-free clinical training environment for all levels of health care professionals, including medical students, physicians, nurses, therapists and technologists. The facility includes six simulation rooms with computerized mannequins that mimic the breathing, blood pressure, heart rate and other physiologic responses of living patients under varying medical scenarios. A conference area and a



USF vascular surgeon Dr. Murray Shames injects contrast dye into the kidney arteries of patient simulator Simantha™ as Dr. Patrick Austin observes. Above, the test results are displayed on a monitor.



control room where training sessions can be recorded and replayed for evaluation are also housed in the center.

“Simulation training allows students to gain hands-on experience and build confidence in a controlled setting. They can become really familiar with a technique and all its nuances before going into a real OR and performing the procedure on a live patient,” says USF vascular surgeon Dr. Murray Shames, who uses the patient simulation system Simantha™ to teach medical students and new physicians endovascular procedures like placing stents to prop open clogged blood vessels. The life-like simulator is so realistic that physicians can “feel” lesions in the blood vessel and the resistance of a catheter as they insert it.

USF partnered with Medical Simulation Corporation (MSC) to create the new center, the only one of its kind in the Southeast. The technology housed here can be used to teach basic techniques like cardiopulmonary resuscitation, intubation and tying surgical knots; to practice endovascular and cardiovascular procedures and critical care cases; and to hone surgical skills, particularly for laparoscopic and minimally invasive surgeries. Stephanie McKown, a full-time clinical education specialist with MSC, oversees all the SimSuite programmed simulator training scenarios.



PHOTOS: ERIC YOUNGHANS / USF HEALTH MEDIA CENTER

Simulation is rapidly becoming a key component of graduate medical education. In addition to being a resource for USF Health's faculty and students, the facility will provide simulation training and continuing medical education to health professionals in the Tampa Bay area and nationally.

"At USF Health, we are transforming the way we educate the next generation of health professionals and challenging the way we practice health care," says Stephen Klasko, CEO for USF Health and dean of the College of Medicine. "The new SimSuite Education Center fits in with our creation of an innovative curriculum that strives for excellence in clinical skills development. The goal is to promote patient safety and better outcomes by reducing the chances for medical errors."

"A wide range of health professionals will have access to all sorts of high-level surgical and interventional simulators designed to develop their technical expertise and problem-solving skills," says Deborah Sutherland, associate dean of the nationally prominent USF Health Continuing Professional Development Program. "These simulators can provide distinct experiences based on individual response times, decisions and actions."

The placement of the simulation suite at teaching affiliate Tampa General made strategic sense because nearly half of USF's 650 resident physicians practice there and virtually

SimSuite Clinical Education Specialist Stephanie McKown (pointing) prepares a simulation training scenario for, left to right, Dr. Murray Shames, USF vascular surgeon; medical student Arelia Thibbonier; and Dr. Patrick Austin, vascular surgery fellow.

all residents and medical students rotate through the affiliate hospital at some time in their training. Health professionals can repeatedly rehearse procedures or test new devices without putting real patients at risk. Complex training scenarios mimic the potential unpredictability of patient outcomes as care unfolds, giving practitioners the opportunity to manage complications—like what to do if a patient has a heart attack while an IV is being inserted.

Simulators "absolutely shorten the learning curve" for mastering surgical skills, says Dr. Alexander Rosemurgy, professor of surgery and medicine at USF. "The simulators can help teach team coordination and emergency protocols. Simulation is a very valuable tool for evaluating how well a surgical team communicates and manages decisions when confronted with an unexpected problem or crisis situation."

Sutherland sees the SimSuite Education Center as a steppingstone to the Center for Advanced Medical Learning and Simulation that USF Health wants to develop in partnership with the Museum of Science and Industry's proposed conference center.

— Anne DeLotto Baier



New Perspectives

Refugee children in Tampa Bay provide insight into their lives through photos.

WHEN USF SARASOTA-MANATEE Assistant Professor Dr. Lynn McBrien left her cushy job as an editor at CNN, she had one task in mind—to combine her two favorite worlds, human rights and education.

After receiving her doctorate in Educational Studies from Emory University in 2005, she followed her passions to the Tampa area and the USF Sarasota-Manatee campus, where she is currently working in the College of Education on a research project that is near and dear to her heart.

McBrien is the principal investigator on a project called “From There to Here,” a documentation of the lives of refugee children in the Tampa Bay area. Seventeen students from eight countries were given digital cameras by Gulf Coast Jewish Family Services and instructed to take pictures of life as they see it. A USF New Researcher Grant funded the research, and a \$5,000 private donation paid for the cameras. Community Tampa Bay sponsored a teacher workshop around the project at Studio@620 in St. Petersburg, attended by 55 teachers.

Although many of the students find themselves in a society where they are still struggling to fit in, many of the more than 2,000 photos they took are bright, intuitive, and full of hope for their futures in America. Smiling faces and family photos capture a group of people who see the United States as a place of limitless possibilities.

“We wanted these children to portray their lives through the voice of their photos and to capture their challenges and aspirations once they came to the U.S.,” says McBrien. “Photo captions include not only cultural differences, but also aspirations, such as gratefulness to receive a U.S. education, and the desire to pursue higher education. The pictures provide insight into their lives.”

Thousands of refugees who have fled their own countries live in the Tampa Bay area, and organizers of the project hope that it will guide educators as they help students integrate themselves into our culture. More than half of the world's refugees are children, yet their rights and special protection needs as children are frequently neglected.

“These people have come from extreme hardship,” says McBrien. “Civil war, dictatorships, unsafe drinking water, poverty, disease, military chaos, and the loss of family members and loved ones—the pictures they’ve taken are more hopeful than we anticipated.”

The images were on display at the USF Sarasota-Manatee campus during the months of September and October, when members of the public came to

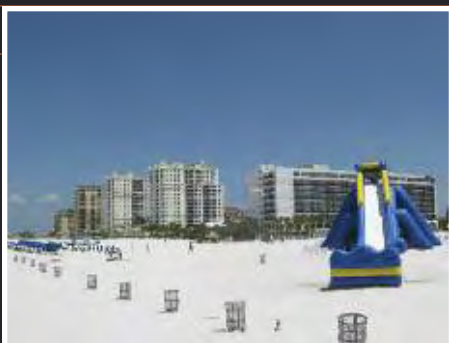
catch a glimpse into the lives of students who truly appreciate their freedom.

Next the project will move to Tallahassee, where Rep. Keith Fitzgerald and Sen. Mike Fasano are co-sponsoring the photography exhibit at the State House during the Spring 2009 legislative session.

“Hopefully we can take this project to the next level and inform our legislature about the refugees in Florida,” McBrien said. “Florida is among the top three states in the country for resettling refugees, and education is the path to human rights.”

— Crystal Rothhaar





ABOUT THE PHOTOS (clockwise from upper left):

A Girl Looking at an Album

"I like this picture because my little sister was looking at a picture of someone she has never seen before and she knew who it was the first time she saw him. It was my dad in Africa."

- Oliver O., 13, Liberia

The Rims

"In America the rims matter more because they attract attention to your car and what you have."

- Agostin Q., 14, Albania

[Agostin saw his father shot and killed in his home when he was just 6 years old. He is grateful to be here and to get an education, and many of his photos are an interesting commentary on U.S. culture.]

Roots

"People are not unlike trees – they grow wherever wind takes their seeds and they develop strong roots on good land."

- Juresha C., 14, Liberia

[Juresha spent 10 years in a refugee camp in Cote d'Ivoire. She remembers carrying buckets of water on her head and is happy that in the U.S., the water is already in the house.]

Sand Castles

"I took the picture because I'd never seen such tall buildings on the sand."

- Mai Ra H., 17, Burma

[Mai Ra H spent most of his life in a refugee camp in Thailand and has been in the U.S. for less than a year. He struggles with English but is thrilled to have the opportunity to receive an education.]

My Contribution to Van Gogh

"Beauty is what brings people together. People from different countries, different backgrounds, different continents."

- Vicky N., 15, Cameroon

Citrus Country

"In Sudan, the trucks carrying the oranges aren't as large. Here they are so big and colorful, plus I love oranges."

- Shadia Y., 17, Sudan

A Hard Working Friend

"A friend working hard at school who is also an immigrant from Vietnam and knows little English."

- Han H., 16, Vietnam

Stormy Seas

"Watching that picture, I feel that some people try to go somewhere by the water. The journey is dangerous because of many things including the sharks. That is why I think that people should travel by airplane instead of the boat."

- Rafael C., 12, Cuba

[Rafael frequently refers to the dangerous journey his grandfather took by boat to get to the U.S. He lives with his mother in the U.S., but his father and grandmothers are still in Cuba.]

Wooden Bridge

"The bridge symbolizes how you have a different view from up on the bridge."

- Luis B., 12, Colombia

(Inset) Disturbance

"Surprising, the change in my life"

- Tanya O., 16, Cuba

[Tanya says the small drop in the center – that one small change – brought much bigger changes, shown by the ripples.]

Small World

Newly developed spray-on solar cells have potential to power tiny electronic devices.

USF'S ROLE IN THE DEVELOPING WORLD OF MEMS (microelectronic machines) has just become bigger by making things smaller. The big question about how to power tiny electronic devices has found a small but significant answer through the research of USF physics professors Xiaomei Jiang and Jian Zhang and USF graduate student Jason Lewis.

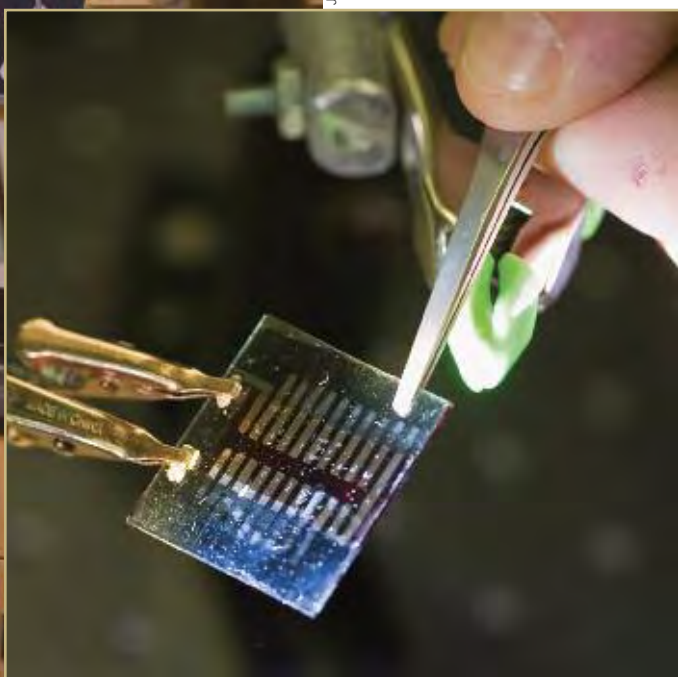
The research team, specialists in organic electronic materials, solar cells and carbon nanotubes, has developed solar cells that are so small—a quarter of the size of a 12 point font letter 'o'—that they can be sprayed or painted on a flexible backing where they can exploit solar energy and convert it to electrical power.

Publishing their work in the inaugural issue of the

USF physics professor Xiaomei Jang (right) leads a state-of-the-art research facility for investigating novel materials and approaches for photovoltaic power conversion. The lab's research team includes graduate student Jason Lewis (left), and physics professor Jian Zhang. Upper right: A single silicon chip can hold up to 20 tiny solar cells.

Journal of Renewable and Sustainable Energy, published by the American Institute of Physics, the research team explains that the tiny cells they devised are made of an organic polymer (long organic molecules strung together in repeating units). The polymer has the same electrical properties as silicon, the material of which computer chips are fabricated.

"These materials have a lot more potential than traditional silicon," says Jiang, who came to USF's Depart-



ment of Physics in 2006. "They could be sprayed on any surface that is exposed to sunlight."

The cells they developed were made into an array of 20 tiny solar cells and can serve as a power source for running micro-

scopic sensors built into carbon nanotubes and used for detecting dangerous chemicals and toxins. Such devices need a 15-volt power source to work and the USF researchers have gotten theirs up to a 7.8 volt delivery. It's just a matter of time, they say, before the voltage is optimized.

With the big question about how to power tiny sensors in an equally small but powerful way answered, their work represents a significant step in the further development of MEMS sensors.

"The combination of miniaturization and using flexible polymers in these solar cells represents a significant scientific and technological step forward in converting solar energy for a host of applications," says Prithvi Mukherjee, chair of the USF Department of Physics.

"Their work is timely because of the critical need to develop sustainable alternative energy sources. We are very proud of Dr. Jiang's work and look forward to other significant developments in the future."

With the vexing problem of finding a powerful electrical source adaptable to MEMS sensors solved, the microsensor world can, after all, stay small.

Jiang and colleagues were funded in part with the support of the Integrated Functional Materials initiative funded at USF Physics through a \$1.6 million grant from the U.S. Army Medical Research and Materiel Command.

— Randolph Fillmore

In Good Company

USF PHYSICS PROFESSOR Casey Miller is among an elite group of scientists and engineers nationwide selected to receive a grant through the Air Force's Young Investigator Research Program. Of the 210 researchers who submitted proposals for the intense competition, only 39 were selected to split the \$12.1 million in grants awarded through the program.

The grants will support research in areas including aerospace, chemical and material sciences; physics and electronics; and mathematics, information and life sciences. Miller will develop giant magnetocaloric alloys via nanostructuring and interfacial exchange interactions.

The Young Investigator Research Program is open to scientists and engineers at research institutions across the United States who hold a doctorate or have achieved an equivalent degree in the last five years and show exceptional ability and promise for conducting basic research.

Researchers selected for the award come from an impressive list of research institutions including Massachusetts Institute of Technology, University of Notre Dame, Harvard College, Cornell University, Rice University and Princeton University.

Natural Solution

USF researchers use cactus mucilage to clean water in Mexico.

IT'S ESTIMATED THAT OVER TWO BILLION PEOPLE face disease and death because they lack access to clean water. Worldwide, water that could be available for household use is dangerously affected by chemical, biological or geological contaminants. The World Health Organization (WHO) calls the global lack of clean water a "silent emergency."

A May 2006 WHO report gets down to earth, one might say, focusing on the threat posed by widespread, low but dangerous levels of arsenic in ground water. Such exposure, says WHO, can result in cancers of the bladder and kidneys, diseases of the blood vessels, reproductive disorders and impaired child intellectual development.

In response to that threat, USF chemical and biomedical engineer Norma A. Alcantar and USF geologist Thomas Pichler, along with colleagues from Mexico and Puerto Rico, have been working with residents of Temamatla, Mexico to refine a green way to remove arsenic from their drinking water as well as other suspended solids.

"Ours is a complex, interdisciplinary, international research project merging engineering principles, scientific explorations and socio-cultural investigations," says Alcantar, an assistant professor in the USF College of Engineering's Department of Chemical Engineering. "Temamatla, situated 25 miles southeast of Mexico City, was chosen for study because of its multiple water con-

tamination problems of both arsenic and suspended solids from volcanic sources as well as debris from a suspected collapsed well."

The many USF researchers in Temamatla include chemical engineers, geologists and hydrologists, as well as anthropologists. They have been working closely with their counterparts at three of Mexico's most important and internationally recognized research institutions.

"The team has been very successful in making our research and our presence in Temamatla culturally sensitive as we work to develop an inexpensive and appropriate technology to provide clean water for household use," says Alcantar.

The problem with turbidity in groundwater in Temamatla, as well as the contamination by arsenic and other heavy metals, is not unlike the water contamination and subsequent health threat problems in many parts of the world, according to Alcantar. In agreement with the WHO report, however, she says that arsenic in the town's ground water may be the most dangerous contaminant.





JOSEPH GAMBLE

Norma Alcantar looked to her family's heritage for answers on how to clean water using natural materials. Prickly pear cactus was the answer.

Where does the arsenic in ground water come from?

"Natural sources of arsenic include minerals, rocks, soil, sediment and the atmosphere where arsenic is transported due to industrial effluent, burning fossil fuels and natural volcanic emissions," explains Pichler, an associate professor of environmental geology in USF's Department of Geology. "Because arsenic is not a natural constituent of water, when arsenic is found in ground water it is the result of mobilization mechanisms, such as absorption-desorption."

Scientists remove the arsenic using the thick, gooey mucilage drawn from inside the pads of the prickly pear cactus (*Opuntia ficus-indica*) to filter water. It's an environmentally friendly and culturally appropriate, homespun technique that Alcantar's grandmother taught her as a child.

The thick, gummy substance in the flat, tennis racket-shaped prickly cactus pads helps the plant re-

tain scarce water in the dry climate. When the gum-like mucilage is removed from the pads by boiling them, the mucilage is placed in contact with the water to be filtered and the mucilage swells. The increasing density of the mucilage causes larger particles to settle out of the water.

Close up, lab research has shown that cactus mucilage is a mixture of 55 high molecular weight sugar residues and that arsenic binds to natural sugars in the swelling mucilage. Bound to the mucilage, arsenic is then removed when the whole glob is filtered through sand or a membrane filter. The amount of arsenic removed depends on several variables, such as the source and the pH values of the water to be treated.

According to Alcantar and Pichler, who have found that the mucilage can also bind to and starve bacteria, the process may prove useful in removing other dangerous heavy metals from drinking water, such as cadmium, chromium and selenium.

"The ability to clean drinking water through a natural and inexpensive process will be a great advantage for people in a great many places," notes Alcantar, adding that the prickly pear cacti range from western Canada to the tip of South America.

She hopes that in Temamatla, and in similar towns elsewhere, residents can develop a 'green technology' industry by harvesting the cactus for its mucilage. Such an industry could provide a beneficial 'cash crop' for economically depressed areas when the process can be employed for wastewater treatment on a larger scale.

"Because of their renewable character and low toxicity, the use of natural, environmentally friendly agents in the treatment of drinking water is rapidly gaining interest."

— Randolph Fillmore

BY ANN CARNEY

PHOTOS BY JOSEPH GAMBLE

Playing Smart

A YOUNG BOY DIES from heat stroke during a summer football practice. A female high school cheerleader fractures her skull when teammates fail to catch her during a routine stunt. A child dies after being struck by a falling soccer goal post.

When catastrophic sports injuries began grabbing headlines in 2005, Stephen Klasko, CEO for USF Health and dean of the College of Medicine, saw an opportunity to reach out to the community. Combining research, teaching and a clinical initiative, he conceived a plan that would bring new perspectives to the prevention and treatment of sports-related illness and injury in athletes of all ages.

His vision, bolstered by a \$600,000 appropriation from the Florida Legislature that year, set the wheels in motion for a statewide Sports Medicine & Athletic Related Trauma (SMART) Institute at USF. Today, with approximately \$3 million in state funding, the multidisciplinary institute is helping to improve sports safety on playing and practice fields throughout the region.

In just three years, the program is an undisputed success—nowhere more so than in Hillsborough County Public Schools where SMART has placed 10 full-time certified athletic trainers (ATCs) in secondary schools that previously had no formal health care available for athletes. The athletic trainers come at no extra cost to the school.

Over the course of the 2007-08 academic year, the ATCs directly supervised 4,180 athletes and were present at 5,040 practices and 1,112 games. The numbers don't





SMART athletic trainer Sharvettie Frazier tends to an injury courtside.



even take into account the athletes from competing schools that also were supervised by the ATCs.

“The program is a reflection of some very forward thinking by the legislature,” says Dr. Robert Pedowitz, professor and chairman of the Department of Othopaedics and Sports Medicine at USF Health. “This is a very intelligent and thoughtful approach to maximizing the quality of care for high school athletes.”

“SMART provides an unmatched service our student athletes deserve and desperately need,” adds Lanness Robinson, athletic director for Hillsborough County Public Schools.

That service, according to Jeff Konin, executive director of the SMART Institute, includes injury prevention, in-

jury care, education and data collection for all high school sports programs, from cheerleading, swimming, tennis and golf to cross-country, football, soccer, baseball and basketball.

For Tammy Hansen, whose son sustained a severe injury during a high school football game last year (see sidebar page 24), SMART was the difference between a career-ending injury and a complete rehabilitation. “Without [SMART ATC] Matt, my son probably would not have returned to high school sports,” she says.

SMART athletic trainers provide guidance to male and female high school athletes in the prevention, treatment and rehabilitation of sport-related injuries, often managing injuries that would otherwise require a trip to the ER. Dur-



All In a Day's Work

Blake High School ATC Sharvettye Frazier calls SMART a “year-round safety net for competitive high school athletes.” A typical day finds her in the training room taping, icing or evaluating up to 15 student-athletes even before practice gets under way.

Frazier starts her afternoon icing, examining and wrapping knees, wrists and ankles in the Blake High School training room. She’s caring for and protecting existing injuries and working to prevent new ones. Ashley Borders, a senior in USF’s Athletic Training Education Program, learns on the job assisting Frazier in the training room. Frazier stays with the students throughout the evening’s scheduled games—women’s basketball, women’s soccer and men’s soccer—ending her day after 9 p.m.

ing scheduled high school events, SMART athletic trainers receive additional support in the form of a physician on the field or a USF Sports Medicine specialist readily available by telephone.

Blake High School ATC Sharvettye Frazier calls the program a “year-round safety net for competitive high school athletes.” And their parents. A typical day finds Frazier in the training room taping, icing or evaluating up to 15 student-athletes even before practice gets under way.

Steve Williams, the school’s athletic director, says Frazier has taken sports injury prevention and care to a different level. “Before Sharvettye, there was no one to care for athletic injuries. She has developed a relationship with our student-athletes,” he says. “She makes outstanding de-

cisions about keeping kids out of the game when it’s in their best interest. We’re on it at Blake High School because she’s here.”

As they care for injuries, the athletic trainers collect data, providing the basis for a Sports Injury Surveillance Registry for Florida stakeholders including legislators, the Florida High School Athletic Association, coaches, administrators and parents. Karen Liller, an expert in injury epidemiology and interim dean of the Graduate School, spearheads the registry project. “Until now, there were no comprehensive national, state or local injury surveillance registries that capture incidence, prevalence, risk factor and exposure information for high school athletes,” says Konin.

That information is vital.



Tammy Hansen credits SMART athletic trainer Matt Huber (left) with helping her son, Casey, return to sports after a severe injury that put him in the intensive care unit.

SMART Intervention

WHEN WIDE RECEIVER CASEY LEISTER sustained a severe lung injury during a regular season high school football game last year, SMART athletic trainer Matthew Huber was first on the scene. As Leister's mother, Tammy Hansen, looked on, Huber cared for and reassured the young athlete until paramedics arrived.

Huber is the ATC for Dr. Earl J. Lennard High School in Ruskin. Before joining SMART, he was an emergency medical technician.

"Matt stayed on the phone with me during the entire ride to the hospital," recalls Tammy. "He talked me through everything that was going on." When the game was over, Huber headed to the hospital, waiting with Tammy as Casey was admitted into the intensive care unit with severe lung contusions.

"The injury could have ended Casey's sports career," says Tammy. "But thanks to Matt, it did not."

Over the next two months, Huber worked with Casey to rebuild his lung capacity. He consulted with Casey's physician to develop a rehabilitation program. And, when Casey's spirits got low, Huber created an assistant trainer position to make the recuperating senior an integral part of the school's athletic program.

"It was tough. Casey was a senior. He was captain of the baseball team. He played soccer," says Tammy. "Casey would not have returned to football or baseball or soccer if it weren't for Matt. He kept him focused; he gave him advice; he really went above and beyond."

Today, a freshman at Florida State University, Casey is pursuing his first love—baseball. His brother, an athlete as well, is a freshman at Lennard High School.

"With the experience I went through with Casey, knowing that Matt is there for my younger son has taken a lot of fear away from me," says Tammy. "He is so well trained and cares so much."

An analysis of the 2007-2008 academic year sports injury data by SMART and the USF College of Public Health reveals, in part:

- Overall, 732 injuries were reported by the ATCs during the academic year. Of those injuries, 614 were sports-related.
- The leading rate of sports-related injury per 1,000 athlete-exposures for practices was football at 2.73, followed by women's soccer at 2.03 and men's basketball at 1.67.
- The risk for injury was much greater in competitions than in practices, and nearly seven times as great for football.
- Football accounted for the greatest number of injuries reported (51.82%), followed by wrestling (6.95%) and women's soccer (6.79%).
- Sprains and strains were the leading physiologic injuries. The leading body sites injured were the ankles, knees and heads.

Based on these and future findings, SMART plans to make recommendations and develop targeted interventions to improve athlete safety. Given the high incidence of knee ligament tears in female athletes, for example, SMART has developed a program to prevent such injuries among young athletes.

While placing ATCs in schools is a major SMART initiative, it is only one facet of the institute's work in the community. Members of the SMART team regularly provide on-site coverage for community events ranging from Florida state tournaments and college championships to not-for-profit sporting events and sporting exhibitions.

In November, Barbara Morris, assistant program director for SMART and director of the institute's high school outreach program, coordinated sports medicine coverage for the Florida High School Athletic Association state volleyball championships in Lakeland. The event featured 24 teams of 10 to 12 players each, competing for six state titles. "We had at least one certified athletic trainer on site at all times," she says. In 2008 alone, the institute provided ATC coverage for about 25 non-school-related sporting events.

SMART's certified athletic trainers additionally spend countless hours educating coaches, parents, teachers and

In the fall, SMART team members provided safety information and instruction to more than 700 K-12 physical education teachers, coaches and aides in Pinellas County during a two-hour physical education safety course.

student-athletes on sports safety and injury prevention. In the fall, SMART team members provided safety information and instruction to more than 700 K-12 physical education teachers, coaches and aides in Pinellas County during a two-hour physical education safety course.

Courses are tailored to meet the needs of the specific organization or group, like the Hillsborough County Athletic Association, Pasco County Police Athletics, the New Tampa YMCA, the Florida High School Basketball Officials Association and the Clearwater Raiders Youth Ice Hockey Organization. Among the topics addressed are heat illness, lightning safety, sports-specific injury programs and preventing the spread of infectious disease, such as community acquired methicillin-resistant staphylococcus infection, better-known as MRSA.

Konin, an ATC and licensed physical therapist who personally provides medical coverage for the university's ice hockey club, says the institute is unique in part because it is housed in the College of Medicine's Department of Orthopaedics & Sports Medicine.

That translates into a number of benefits, according to Pedowitz. "Our experience working with intercollegiate programs translates into care we can provide at the high school level. These ATCs are highly trained medical personnel who are on the field providing initial treatment and triage," he says. "Add to that our physicians, surgeons and imaging capabilities and what you've got is as good as it gets in sports medicine."

As Konin looks to expand the model statewide and beyond, he articulates the institute's mission quite simply—"to continue to save lives on playing and practice fields and to increase awareness of sports safety at all ages." ■

BY GEORGE, TH

USF HISTORY PROFESSOR LEADS EXCAVATION THAT DISCOVERS GEORGE WASHINGTON'S BOYHOOD HOME.

BY MARY BETH ERSKINE

YOU COULD SAY THAT PHILIP LEVY, historical archaeologist and associate professor of history at USF, and his students really “dig” American history—so much so, that year after year, in often stifling summer heat, they painstakingly turned their trowels into the rocky Virginia soil in pursuit of the elusive link to George Washington’s childhood: the remains of Ferry Farm, Washington’s boyhood home.



JOSEPH GAMBLE

EY FOUND IT!



Previous page: Working with colleagues from The George Washington Foundation and USF students, Associate Professor Philip Levy led the archeological team that located and excavated the foundation and cellars that were once part of George Washington's boyhood home. Photo courtesy of The George Washington Foundation.

In 2008, during their seventh season of difficult and exacting labor on the 113-acre site located 50 miles south of Washington D.C., they finally hit paydirt. With a growing pool of physical evidence increasingly coinciding with historical data, the research team could draw a definitive conclusion. The foundation remains and cellars that were excavated were once part of the clapboard-covered wood structure that had been home to George, his parents and siblings.

On July 2, 2008, the USF contingent joined the rest of the research team from The George Washington Foundation, including Director of Archaeology David Muraca, Virginia's governor and the National Geographic Society, which helped fund the project, in making the announcement. The remains of the house in which one of the most honored and admired men in American history had spent his formative years had been found.

A "CROWN JEWEL" OF AMERICAN HISTORICAL ARCHAEOLOGY

The discovery generated national and worldwide attention—from the United States to China and India—appearing in hundreds of newspapers and magazines, on all three major television networks and National Public Radio. In addition, the find was featured in *Smithsonian Magazine* and two National Geographic documentaries.

"This find represents one of the crown jewels of American historical archaeology," says USF Department of History Chair Fraser Ottanelli. "The site provides the best chance yet available to more fully understand Washington's relatively poorly documented youth. Professor Levy's project is a significant national-level find and one of the last large-scale projects focusing on such a well-known figure from American history."

"There is so little actual documentary evidence of Washington's formative years," says Levy. "What we see at this site is the best available window into the setting that nurtured the father of our country."



THE TAMPA-VIRGINIA CONNECTION

How did a USF history professor in Tampa become lead researcher and co-director of an archeological excavation searching for George Washington's childhood home in Virginia—arguably the most significant excavation in American history in recent times? The answer traces back to upstate New York, to Levy's roots in the building industry.

Pursuing a doctorate in American history at the College of William & Mary during the 1990s, Levy participated in the archaeology field school at Colonial Williamsburg and worked with David Muraca, staff archaeologist. While analyzing the walls from a 17th century building, Levy impressed Muraca with his knowledge of construction and his ability to apply it to historical remains. A collegial relationship developed that further grew with Levy's faculty appointment at USF in 2001 and Muraca's move to The



PHOTOS COURTESY OF PHILIP LEVY AND THE GEORGE WASHINGTON FOUNDATION



David Muraca, director of archaeology for The George Washington Foundation, guides students from USF's archaeological field school program as they excavate and map 18th century building features at the site of the Washington home.

More than a half-million artifacts have been found at the site.

Left: A carnelian bead—the only one of its kind found archaeologically in the United States. Gems like these were



popular in West Africa and have been found in burials of enslaved Africans in the Caribbean.

Center: Levy and Muraca pay special attention to objects like this padlock. Artifacts like this convey important information about domestic slavery.



Right: A clay pipe bearing a Masonic crest found in layers dating to the time when Washington joined the Free Masons in Fredericksburg.

"DIGGING HISTORY OUT OF THE GROUND"

JUSTIN CASTELLS' FACE SHINES and his voice dances with excitement when he talks about the four summers he has spent at Ferry Farm with the George Washington's Boyhood Home Archaeological Field School.

Currently pursuing a master's degree in history, Castells' first experience took place when he was an undergraduate and was accepted as a field technician in the school directed by his history professor, Philip Levy.

Little did he know what lay ahead.

"Archaeology is grueling work. It's extremely labor intensive and tedious," says Castells. It involves scraping and scratching ground so rocky and hard that it has to be soaked in order for shovels to penetrate its surface. It means meticulously sifting soil samples through heavy wire screens. It's sore muscles from constant bending, digging and lifting, blisters on tender hands yet to be toughened and calloused from manual labor, and headaches from the pounding sun. And even when tasks move indoors to the lab, archaeology involves painstakingly identifying, labeling and preserving with care every minute artifact.

Surprisingly, however, the most difficult adjustment of all for students from Florida, where air conditioning is a ubiquitous way of life, was the relentless, exhausting heat.

Despite the challenges, Castells and dozens of his fellow students believe it was the opportunity of a lifetime.

"It's all an exceptionally small price to pay, a mere blip on the radar screen, to be able to literally pull history out of the ground. Uncovering pieces of ceramic that graced the table of George Washington! You don't even think about the heat when you're doing that."

The first artifact Castells discovered was a Civil War bullet, followed by the back of a pocket watch and numerous coins, to name just a few. His favorite artifact was a wig curler, which has since become the focus of his first paper presentation at a professional academic conference.

And just like that, after his first summer at the Ferry Farm site, Castells was captivated. He went back for a second summer as a short-term intern, a third summer as a long-term intern, and then again last summer as the field school's graduate assistant. Like most of the students and interns, he was



hooked on the history, but he had also become a member of the unique 'family' archaeological field schools are inclined to spawn. The camaraderie that develops from the hardships shared in pursuit of a common goal gives rise to rituals, traditions and ways to pass the time in small towns and remote locations, and the Ferry Farm team was no exception.

"Within the crucible of archaeology, you form these extraordinary bonds," says Castells. "I made some of my best friends at Ferry Farm."

With plans to pursue a doctorate in American history and then teach at a university, Castells believes that archaeological experience has only enhanced his knowledge and application of history.

"Studying archaeology has changed my approach to history," Castells says. "It has broadened my perspective immeasurably."

Castells says that the opportunity to observe experts such as Levy and The George Washington Foundation's David Muraca at work has been invaluable. As the excavation process developed, the theoretical blueprint of the house continued to evolve, and students were able to observe first-hand how experts decipher and interpret new data and alter their hypothesis accordingly.

"Instead of digging facts out of books, we've been digging them out of the ground. The implications of what we find will be part of textbooks in the future. Now we can piece together Washington's world. We can reconstruct what his childhood was like."

The prospect is enough to leave a future history professor speechless.

George Washington Foundation, the organization that owns the Ferry Farm site.

According to Levy, the connection between USF in Tampa and Ferry Farm in Fredericksburg developed through a concept for an archaeology field school that he and Muraca conceived during their Colonial Williamsburg days. It was a field school model that included “a heavy reliance on student involvement” and it evolved into a joint venture between USF and The George Washington Foundation.

USF STUDENTS PROVIDE EXCAVATION’S BACKBONE

Students from Levy’s USF archaeological field school program have been part of the excavation at Ferry Farm since the 2002 season. During those years, more than 60 USF graduate and undergraduate students, the greatest number of students from any one college or university, have participated as field technicians and interns. “Quite simply, we could not have succeeded without them,” says Levy. “They made this discovery possible.”

According to Muraca, not only have USF students been “bright, hard-working and eager to master excavation techniques,” they have served as the “backbone” of the project.

In return for their efforts, during the six-week-long program, students learn excavation skills, archaeological theory and issues, and museum studies and earn class credits. They work in the field, take weekly field trips to Virginia and Maryland museums and historical sites, and participate in class discussions. They also have the privilege of being the first people to see artifacts that had been hidden for hundreds, and in some cases, thousands of years.

Ceramic plate fragments.

Cutlery.

Stemware.

A Wedgwood tea set that likely belonged to Washington’s mother.

Toothbrush handles made of bone.

Pieces of the house’s ceilings, walls and hearth.

A well-preserved bowl of an 18th century pipe, blackened from use and bearing a Masonic crest — an intriguing find given the fact that Washington joined the Freemasons while still living at Ferry Farm.

To date, more than a half-million artifacts from 11 distinct time periods have been discovered at the site, the oldest dating back more than 10,000 years. In addition to the

foundation remains and four cellars of the Washington house, the research team also located the kitchen and slave quarters and is continuing to look for the dairy, smoke-house and possibly, warehouses.

“Archaeology is always a team effort,” Muraca says. “Every team member has an assignment and without everyone doing their part, the whole project can tumble like a house of cards.

“The work the students did started the process. The data they collected has become the foundation for all the analysis that will continue for years to come.” ■

CHERRY TREES AND SILVER DOLLARS

How true are some of the best-known tales about George Washington? Did he really chop down a cherry tree and utter those legendary lines to his father, “I cannot tell a lie?” What about throwing a silver dollar across the Rappahannock River?

According to Philip Levy, USF history professor and director of the university’s archaeology field school at Ferry Farm, there

has yet to be any evidence uncovered at the site to support either story.

“The cherry tree story is doubtful, but compelling nonetheless,” he says.

“But if George Washington did chop down a cherry



tree as generations of Americans have believed, this is where it would have happened.”

The silver dollar story? “That’s more probable,” he says. “It’s a known fact that George Washington had a great arm. He loved throwing things, and he loved showing people that he could throw things.”

Therefore, one of those ‘things’ very well could have been a silver dollar across the Rappahannock.

But did it make it all the way across?

“Well, two years ago one of my grad students did, in fact, throw a rock clear across the river,” he says with a smile.

ILLUSTRATION: ANTIQUE 1909 POSTCARD ART
SUPPLIED BY VINTAGE POSTCARDS.ORG



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USF Biologist Jason Rohr explores pollution, climate change and disease in an attempt to understand the global decline of amphibians.

Where have all the frogs gone?



BY RANDOLPH FILLMORE

PHOTOS BY JOSEPH GAMBLE

ACCORDING TO JASON ROHR, assistant professor of ecology in USF's Department of Biology's Division of Integrative Biology, amphibians might have replaced canaries in their role of predicting environmental dangers. Canaries were once carried into coal mines by miners for use as early warning systems to detect toxic gasses such as carbon monoxide and methane. Miners knew that the toxic gasses would kill the fragile birds before affecting them.

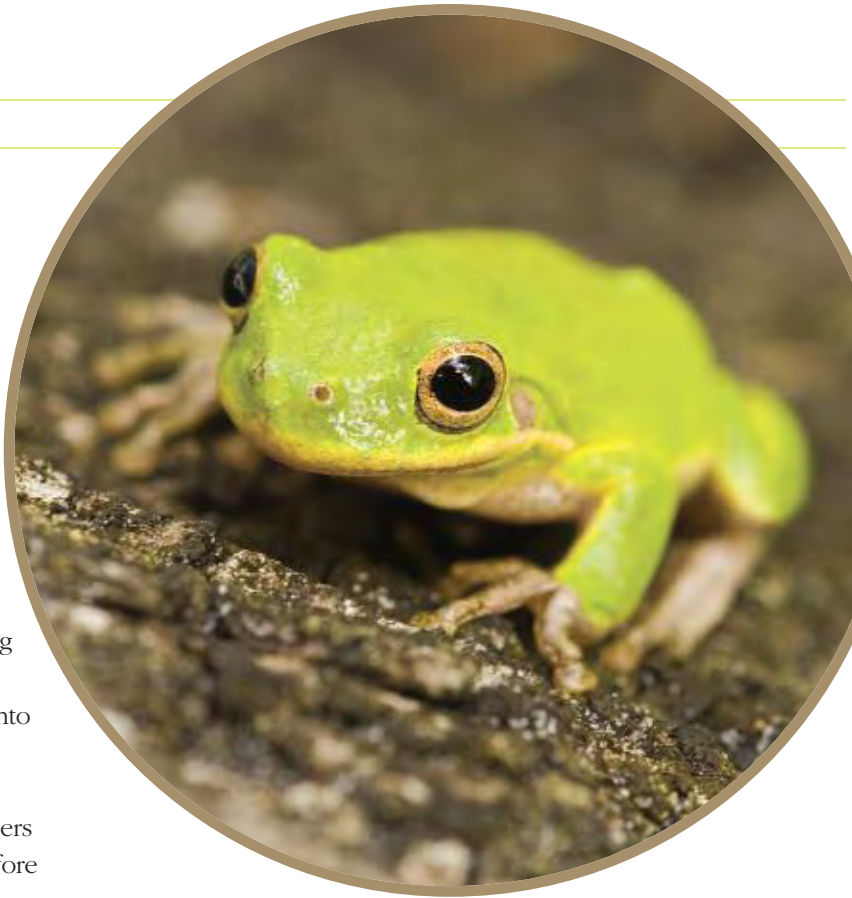
Amphibians, says Rohr, might be like present day canaries-in-the-coal mine for our freshwater environments because reductions in their health might warn us that other species may be at-risk from a variety of factors.

"Much of my research focuses on amphibians because they are declining globally," explains Rohr. "We are in the midst of a sixth mass extinction and amphibians are the most threatened vertebrate taxon on the planet. They have become the 'poster child' for this mass extinction."

Rohr and colleagues recently published studies in the journal *Nature* and in *Proceedings of the National Academy of Sciences*, investigating the roles of pollution, climate change, and disease in amphibian declines. Their research is being funded by the National Science Foundation, the U.S. Department of Agriculture, the U.S. Environmental Protection Agency and an Australian Research Council grant.

According to Rohr, more than 32 percent of amphibian species are threatened and more than 43 percent are experiencing some form of population decline. Unlike past mass extinctions, this one is driven by human activities, he says.

"The combination of atrazine, a widely used herbicide, and phosphate, a primary ingredient in fertilizers, accounted for 74 percent of the variation in larval trematode abundance in frogs," explains Rohr. "We showed that these agrochemicals increase trematode infections by augmenting snail intermediate hosts—the source of trematodes that infect amphibians—and suppressing amphibian immune systems."



Data collected from 18 Minnesota wetland areas, as well as experiments conducted in outdoor, 300-gallon tanks, verified that atrazine increased snail abundance caused amphibian immuno-suppression and elevated amphibian trematode loads, says Rohr.

"Tanks with a single dose of atrazine eventually contained more than four times as many snails as control tanks," cites Rohr.

In their *Proceedings of the National Academy of Sciences* paper, Rohr and colleagues evaluated three competing hypotheses for worldwide amphibian declines putatively caused by the deadly chytrid fungus, a fungus Rohr called "possibly the most deadly invasive species on the planet behind humans."

Rohr and his colleagues confirmed that the pattern of amphibian extinctions is consistent with the introduction and spread of this fungus and settled the controversy surrounding the association between global warming and amphibian extinctions.

"There is indeed a positive, multi-decadal correlation between amphibian extinctions in Latin America and air temperature in the tropics," concluded Rohr. "But the relationship should not necessarily be interpreted as causal."

Why? Because their analyses revealed that temperature-dependent chytrid growth could not explain the pattern of amphibian extinctions and that climate change appears to be reducing, rather than increasing, the growth of this cold-



Rohr's research takes him into the field to collect data. The squirrel tree frog (*Hyla squirella*), above left, is a Florida native species that is experiencing declines due to the introduction of the Cuban tree frog shown on page 33. Factors other than invasive species are also likely contributing to local and global amphibian declines.

tolerant pathogen. But the third line of evidence was most creative. They tested whether other variables, including ones as far-fetched as beer production, were better positive predictors of the timing of amphibian extinctions than increasing air temperature.

"There are many convincing examples of the consequences of modern climate change for biological systems," he explains. "But, when beer production is a better predictor of declines than increasing air temperature, it seems really unlikely that increasing temperature is causing the declines."

Past mass extinctions were, of course, not driven by hu-

mans. Because the risks are anthropogenic, a change in human practices could alter what appears to be a destiny of extinction.

According to Rohr, in the case of the potent combination of atrazine and phosphates, these problematic drivers could be managed to reduce disease risk for amphibians. The goal of his work, he says, is to develop solutions to environmental problems like those of his recent investigations in order to enhance the likelihood of developing a sustainable existence for both humans and wildlife.

"Altogether," he says, "our work demonstrates the value of quantifying the relative importance of several plausible drivers of disease risk and population declines using a combination of field surveys, manipulative studies, and mathematical models to better understand and prioritize how we might go about reversing some of the effects of these risk factors." ■

A Building Presence

Linda and Randy Simmons build with a purpose.

IT DIDN'T TAKE MUCH CONVINCING for Linda Simmons, USF alumna (B.A., Psychology, 1975) and president and chief executive officer of R. R. Simmons Construction Corporation, to sign on as a founding member of Women in Leadership & Philanthropy at USF (WLP). She only had to look back on her own life to see the value in a program that would empower women to pursue higher education and become leaders in their own right.

Linda was just a teenager when her father died unexpectedly, leaving her mother a widow with three children to raise and little in the way of savings. At the time, Linda's mother was two years into an education degree at USF.

"My mother made the right choice. She got her master's degree and became the principal of a school for the mentally disabled," says Linda, who today is chair of WLP.

Influenced by her mother's experience, Linda pursued a degree at USF that would prepare her to earn a supporting wage. "Psychology allowed me to have a concentration with enough flexibility to explore electives in the College of Business," she says. "USF provided the foundation of education, knowledge and exposure that allowed me to move forward."

Upon graduation, Linda accepted a position at a local bank where she had worked while earning her degree. As she honed her finance skills over the years, she contemplated her future in business.

In 1988, Linda agreed to help out her husband, Randy Simmons, temporarily with the financial operations of the family business—R. R. Simmons Construction Corporation.

"I started as a volunteer," she says. "And never left. I ended up managing the company."

It was Randy who put Linda back in touch with USF, introducing her to the Gus A. Stavros Center, where R. R. Simmons was making a scholarship pledge. The connection was made again during a corporate-sponsored golf outing during which Linda met the president of the USF Alumni Association.

Since then, Linda has been active in the USF community. In addition to her position with WLP, Linda is a trustee



In the spring, Linda and Randy Simmons will move their offices into the new R. R. Simmons corporate headquarters in Telecom Park. The 24,000 square-foot LEED-certified building features a large break room, an employee work-out room and spacious conference rooms.

for the USF Foundation and a board member for the Gus A. Stavros Center Advisory Board. She is a member-at-large of the USF Athletics Hall of Fame Executive Committee, a former member of the USF Alumni Association Board, the 2004 USF Athletic Director Search Committee and the USF Free Enterprise and Economic Education Advocacy Board.

Together, she and Randy, chairman of R. R. Simmons, have an endowed athletics scholarship at the university and the Simmons Board Room in the Gibbons Alumni Center is named after them. Their presence is uniquely visible on the Tampa campus—R. R. Simmons built the foundation wing



**"The community has afforded us success
and we want to give back."
– Linda Simmons**

JOSEPH GAMBLE

of the USF Gibbons Alumni Center and the Intercollegiate Athletics Facility, the project of which Randy is most proud.

"The facility was a launching pad for USF Athletics; it was a catalyst for the program," says Randy. "The Big East was a quantum leap forward for USF. Equally profound is what is going on in the medical school and the tremendous increase in research grants. There are incredible things going on at USF."

An ardent Bulls fan, Randy is a graduate of the University of Florida Rinker School of Building Construction. He serves as a board member of the Greater Tampa Chamber of Commerce and is a member of the Tampa Bay Committee of 100 and a graduate of Leadership Tampa. His father, Robert Simmons, who passed away in 2004, founded R. R. Simmons in 1968.

Linda and Randy's philanthropy can be felt throughout the USF community. Together they support WLP, the

Alumni Association, USF Athletics, the College of Education, the College of Business and the School of Architecture and Design. Outside of USF they have been generous donors to the United Way of Tampa Bay, the Community Foundation of Tampa Bay, H. Lee Moffitt Cancer Center and the University of Florida.

"The community has afforded us success and we want to give back," says Linda. "I see what the university is doing for students and the community on many levels; I see unmet needs."

Adds Randy, "I wish everyone realized what an impact—directly and indirectly—USF has on the health and welfare of our community at large. USF is a huge influence on the Tampa Bay community."

– Ann Carney



Elite Run

Men's soccer ends record-breaking season with a first BIG EAST championship for men's sports.

With a BIG EAST championship and an Elite Eight run, USF men's soccer went further this season than any Bulls soccer team in the program's history.

That kind of success was projected in the preseason when the Bulls were chosen by the league's 16 coaches to finish first in the Red Division. The voting wasn't of much interest to head coach George Kiefer, who refused to focus on the preseason polls and predictions.

"I look at the division and it's so tight," says Kiefer. "To say we're this or that, it's tough for coaches to predict where we're going to finish up. I don't think it has much of an impact on us."

Kiefer made sure his team stayed focused on one game at a time and not on the hype created by rankings.

The technique proved successful. The Bulls were ranked in the top 25 all season and cracked the top 10 on five different occasions, including a No. 5 national ranking in Soccer America. They finished their season with a perfect 8-0-2 record at home.

The postseason set up a string of heroic moments. Junior forward Francisco Aristeguieta scored his first and second goals of the season in the postseason, helping to edge out Notre

Dame in the BIG EAST semifinal matchup. The Bulls fell to Notre Dame 5-0 back in early September, making the postseason victory that much sweeter. Showcasing the depth of the Bulls offense was freshman forward Sebastien Thuriere, who buried a shot in the back of the net in overtime against St. Johns to clinch the BIG EAST Championship in dramatic fashion.

The Bulls proceeded to the NCAA tournament with a first-round bye as the eighth seed. Harvard, coming off of a big win against the University of Massachusetts, fell to the Bulls 2-1. In the next round, the Spartans from UNC Greensboro proved to be more of a challenge for USF, taking the Bulls all the way to penalty kicks. The Bulls offense took some time to warm up in the sweet 16 matchup, tying the game at 1-1 in the 82nd minute of play. That set the stage for sophomore goalkeeper Jeff Attinella to play hero to the hometown crowd of more than 1,800. Attinella blocked three of the four penalty kicks to move USF into the Elite Eight to take on the defending national champions Wake Forest.

The Bulls fell to the No. 1 seed Wake Forest in the Elite Eight in North Carolina, bringing the Bull's stellar season to an end.

"Wake Forest is a very good team," says USF head coach George Kiefer. "I give them credit. I've been around a lot of



PHOTOS: USF ATHLETICS



good college soccer teams, and they are one of the best I've seen in a long time. I was very happy with our team and the way that they fought until the final second."

Less than one week after ending their NCAA run, the Bulls were in the spotlight again—honored by the National Soccer Coaches Association of America with a Team Academic Award for the 2007-08 academic year. The Bulls registered a team GPA of 3.14 to earn the national recognition.

"When you look on the field at what we have done," says Kiefer, "reaching the Sweet 16 and getting to an Elite Eight and then also doing a good job in the classroom, it shows the program is heading in the right direction."

— Amanda L. Roehn

- Sophomore goalkeeper Jeff Attinella blocked three of four penalty kicks to advance USF into the Elite Eight round of the NCAA championships.
- Bulls striker Sebastien Thuriere scored the gamewinner against St. John's to capture the Big East title.
- Captain Yohance Marshall savors the victory—the first BIG EAST championship for men's sports.
- Forward Francisco Aristeguieta scored two goals in the semifinal matchup against Notre Dame, helping set the stage for the BIG EAST championship against St. John's.



ERIC YOUNGHANS/USF HEALTH MEDIA CENTER

Sandra Cadena

Through education and shared experiences, lifelong nurse helps young nurses get started on their path.

THROUGH COUNTLESS TWISTS AND TURNS in her life, there was always one constant for Sandra Cadena—nursing. Today, assistant dean of undergraduate studies and director of global health in the College of Nursing, Cadena believes she was born knowing she wanted to be a nurse. “I hit it lucky,” she says, “nursing picked me.”

Cadena joined the College of Nursing faculty full-time in 2000 after more than 15 years as an adjunct professor. She earned her nursing degree from Kent State University in 1976, and accepted her first RN job at a rehabilitation

county hospital in inner city Cleveland. After spending three days snowed-in at the hospital that winter, she packed her bags and moved to Clearwater Beach.

In the years that ensued, Cadena worked in local hospitals, community health clinics and the VA hospital in Tampa, and spent 15 years in private practice. She earned a master’s degree in psychiatric nursing and a doctorate in nursing science with a minor in political science, all the while remaining active in the clinical setting. In 2006, she closed her private practice for good.

“As a nurse, it is a privilege to be a part of people’s intimate lives, to improve their quality of life and sometimes cure them,” she says. “In education, I found that if I influence students, I can impact and help so many more people.”

Today, in addition to her teaching and administrative responsibilities, Cadena is president of the Delta Beta chapter of Sigma Theta Tau International Society of Nursing and the College of Nursing Faculty advisor for the In-

ternational Health Service Collaborative at USF.

In 2005, she was part of a USF Health advisory group that traveled to Panama to explore opportunities for student field experiences in that country. That led to the creation of the College of Nursing Study Abroad Program in Panama, a program so popular that interested participants are chosen by lottery.

"It's one thing to deal with culturally diverse patients and students in one's own comfort zone. But when you pick these students up, move them, and immerse them in a different culture, it really challenges who they are and how they think about things," says Cadena, who has led two student groups on the three-week summer program. "We need to work out a way for everyone to have this experience."

No doubt, she will.

USF: What is the most important thing you try to teach your students?

Cadena: Two things—one, to really embrace the values of what it means to be a professional nurse, one of the most highly trusted professions in this country today; and two, to learn how to listen to what patients are telling you.

USF: Why is the focus on global health so important today?

Cadena: We truly are a global community. There is an expectation and a desire on the part of our students to reach out and to understand other people from other parts of this world. It is important that we position our students to positively contribute to various aspects of global health.

USF: What is the biggest difference between nursing in the U.S. and in other countries?

Cadena: Nursing in the U.S. is very focused on interventions with diseases and disease processes. In other coun-

Quick Takes

Classroom or Clinic: Classroom

Best Medicine: Compassion

Favorite Place: The Sea

Hands-on or High Tech: Hands-On!

Burgers or Empanadas: Empanadas

Home or Abroad: Abroad

Hero: Colombian President Alvaro Uribe



tries, particularly where much of health care is 30 years behind, the focus is on community and prevention activities.

USF: Why psychiatric nursing?

Cadena: I've done it all—intensive care nursing, home health, rehabilitation, medical/surgical. To me, psychiatric nursing was attractive because it is the one area of expertise where the one main intervention you have is yourself.

USF: What is the greatest change in nursing you have witnessed over the years?

Cadena: The cultural and linguistic diversity of the patients, nursing professionals and the students we work with. It is amazing and really evident in this community. There are both opportunities and challenges that come with it.

USF: What is the most exciting thing happening in nursing education today?

Cadena: The blending of high technology with the intense desire of students to be helpful. Combining the two is really exciting because they can be such polar opposites.

USF: What's next?

Cadena: Establishing an international center for nursing at USF. In fact, I'm on my way to Ecuador tomorrow to get started on that.

— Ann Carney



USF captured its first BIG EAST Men's Soccer Championship title in program history with a 1-0 overtime victory against St. John's in November. The win earned the Bulls an automatic bid into the NCAA Championship. The Bulls finished in the Elite Eight, the highest place ever for men's soccer in NCAA tournament play. See story page 38.



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