Healing Combination
Alicia Billington is optimizing medicine through engineering
COVER FEATURE

Healing Combination

Alicia Billington, one of only a small group of students nationwide to graduate with dual degrees in medicine and biomedical engineering, is poised to become a leader for the next generation of physician scientists.

PHOTOS, COVER AND ABOVE: Billington’s groundbreaking research, which combines two related but disparate fields, could change the lives of millions of people living with limited mobility.
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USF is a high-impact, global research university dedicated to student success.

Summer may be a time to rest and rejuvenate, but as you read this issue of USF Magazine you will see our students and faculty are busier than ever pursuing academic, entrepreneurial and research initiatives.

At the Student Innovation Incubator in the USF Research Park, student entrepreneurs are tapping into the expertise of faculty, mentors and business leaders to launch their ventures into the commercial marketplace. The student-led incubator, which is surpassing all expectations since opening in November, is a testament to the entrepreneurial spirit that is so much a part of this vibrant university.

Across campus, Alicia Billington is joining an elite category of students, graduating with both an M.D. and Ph.D. in biomedical engineering. As she begins her residency in plastic and reconstructive surgery at the USF Health Morsani College of Medicine, Alicia will further her groundbreaking, multidisciplinary research to improve the lives of patients with limited mobility.

At the USF Tampa Library Special Collections department, librarians are perusing a treasure trove of journals and logs donated to USF by the Audubon Society. The collection offers a rare glimpse into the early efforts to save Florida’s bird populations.

In this issue you will meet Charles J. Lockwood, M.D., an accomplished researcher and entrepreneur selected to lead USF Health. Dr. Lockwood, an elected member of the Institute of Medicine of the National Academies, joined USF as senior vice president for USF Health and dean of the USF Health Morsani College of Medicine in May. You will also meet USF Director of Athletics Mark Harlan, who joins USF from UCLA, and new men’s basketball coach Orlando Antigua.

Be sure to read about our Goldwater Scholars; the first cohort of students to graduate from USF’s dual MS/MBA Sport & Entertainment Management degree program; a USF invention that won the 2014 Cade Museum Prize; and a family-based scholarship program that has benefited more than 125 special education students.

There are so many wonderful stories in our summer issue. I hope you will find time to read them all!

President Judy Genshaft
The USF System is celebrating one of the most successful legislative sessions in recent memory.

On June 2, Gov. Rick Scott signed the 2014-2015 state budget, providing funding and policy support for several institutional priorities, including all of the USF System’s top five legislative priorities:

- **Establish and invest in the Florida Center for Cybersecurity, principally located at USF.** The newly created center was established within USF, and $5 million in recurring funds was allocated to support the center’s operations and initiatives.

- **Provide funding toward completing construction of the USF Health Heart Institute.** $15 million was allocated toward construction of the institute. The funds will be combined with nearly $20 million received in two prior sessions.

- **Provide funding toward completing construction of the USF St. Petersburg College of Business facility.** The $10 million allocated, combined with $5 million received last year, provides sufficient funding to break ground this year.

- **Invest in continued development of USF Sarasota-Manatee’s STEM programs and STEM faculty hiring.** $1.4 million in new recurring funds will allow USFST to hire additional faculty and expand STEM programs in partnership with Mote Marine Laboratory.

- **Guarantee all U.S. military veterans the right to pay the in-state tuition rate.** The Congressman C.W. Bill Young Tuition Waiver Program will allow honorably discharged veterans to pay the in-state tuition rate at state universities, regardless of how long they’ve lived in Florida.

In addition to the USF System’s top priorities, the Legislature and Governor also provided support for several projects that will directly benefit the university, including $200 million for performance funding across the State University System; $5 million toward the construction of a new, state-of-the-art Morsani College of Medicine; $1.25 million for the USF Health Byrd Alzheimer’s Institute; $850,000 to USF to provide assistance to veterans; $1.25 million to the Florida Institute of Oceanography, a statewide resource housed at USF; and $200,000 for USF Sarasota-Manatee community outreach programs.

USF System President Judy Genshaft thanked state leaders for their support.

“We are thankful our state leaders are making a significant investment in our state university system which will pay dividends for decades to come,” President Genshaft said. “The USF System will benefit from additional funding that will support our students, help us maintain our campus infrastructure and expand our scientific and research capacity.”
Increasing Computer Science Grads

USF’s Department of Computer Science and Engineering is hiring five new faculty members and additional teaching assistants as part of a multimillion-dollar, state-led initiative designed to increase the number of graduates in the exploding computer science, computer engineering and information technology fields. The department offers degrees in all three areas.

Two tenure track professors and three instructors will start teaching in the fall, thanks to a Targeted Educational Attainment (TEAm) grant funded by the Florida Legislature. USF is partnering with the University of Central Florida and Florida International University on the $4.9 million project.

“Students are flocking to the computing market because it’s lucrative, and the jobs are very, very good,” says Ken Christensen, USF computer science professor and undergraduate program director. “The TEAm grant will allow us to expand our offerings significantly and enable more students to pursue a major in computer science, computer engineering or information technology.”

The college plans to expand course offerings in the three fields, which have boomed over the past five years thanks to smart phones, cloud computing and robotics. Since that time, USF’s Department of Computer Science and Engineering has seen a surge in the number of undergraduate degrees awarded, from 70 in 2008-2009 to more than 140 in 2012-2013.

GLENN COOK | College of Engineering

Improving Water Quality

Researchers in USF’s Department of Civil & Environmental Engineering have been awarded a $2.2 million grant to establish a national research center studying nutrient pollution from wastewater and stormwater runoff.

Led by engineering professor James Mihelcic, the USF Center for Reinventing Aging Urban Infrastructure for Nutrient Management (RAIN-mgt) will focus on developing nutrient pollution management technologies and regional models for managing wastewater and stormwater from household to city levels.

USF was among four institutions receiving a total of $9 million in EPA grants to advance innovative and sustainable water research to manage harmful nutrient pollution—one of America’s most widespread, costly and challenging environmental problems, according to the EPA.

With more than 600 springs, Florida may have the greatest amount of freshwater concentration on the planet. However, where once most springs had white, sandy bottoms, many are now murky because their bottoms are covered in green algae and plant growth.

Mihelcic attributes the change to a steady rise in nutrient levels from fertilizer runoff, municipal wastewater treatment plant discharge, and thou-
sands of poorly designed and maintained household treatment systems such as septic tanks.

The issue is a problem for wildlife and humans who depend on water quality, as well as the tourism industry which depends on water visibility.

“Poor water quality lowers the economic, social and environmental value of our nation’s waters for current and future generations,” Mihelcic says. “In Florida, our springs, rivers, estuaries, coastal waters, and the Everglades all suffer because of nutrient pollution.” And, he points out, “nutrient management is a national and global issue as well because of food security.”

Mihelcic is joined in the project by USF environmental engineering faculty members Jeffrey Cunningham, Sarina Ergas, Maya Trotz, Daniel Yeh and Qiong Zhang.

Top Prize

A USF invention that turns waste into energy won the $50,000 Cade Museum Prize recently in Gainesville. The NEWgenerator machine was developed by Daniel Yeh, associate professor of civil and environmental engineering, and his team of graduate students.

“We are so honored to have won the Cade Museum Prize against the other inventive finalists,” says Yeh. “Our compact sanitation and resource recovery technology is in a niche where there is a dire need, and we are trying to do what many feel is an impossible task, that is to bring high technology to impoverished communities.”

Yeh was selected from among the 85 teams that entered this year’s competition. His invention was one of the final four technologies that was pitched to a panel of three national judges.

Yeh believes that his NEWgenerator membrane biotechnology can contribute to solving a global challenge in sanitation that impacts close to 2.6 billion people.

Shark Science

A team of scientists has unmasked the intricacies of how sharks hunt prey—from first whiff to final chomp—in a new study supported by the National Science Foundation and published in the peer-reviewed journal Plos One.

The study, led by scientists from USF, Mote Marine Laboratory and Boston University, is the first to show how vision, touch, smell and other senses combine to guide a detailed series of animal behaviors from start to finish. The researchers found that sharks with different lifestyles may favor different senses and can sometimes switch when their preferred senses are blocked.

“This is undoubtedly the most comprehensive multisensory study on any shark, skate or ray,” says Philip Motta, a USF biology professor and internationally recognized shark expert who co-authored the study.

Understanding how sharks sense and interact with their environment is vital for sustaining populations of these marine predators, which support the health of oceans around the world.

HAYLEY RUTGER | Mote Marine Laboratory
New Face of Civil Engineering

Here you have it: the new face of civil engineering. Trang Luong, who first came to USF from Vietnam in 2011, was named the American Society of Civil Engineers’ New Face of Civil Engineering–College Edition in April. Luong was selected from a highly accomplished candidate pool in an international process that first identified 10 finalists, then three.

Now Luong goes on to represent the field of civil engineering in the society’s 2014 activities.

In 2013, Luong became USF’s first international student to win a national scholarship when she was awarded a prestigious 12-week research internship in structural dynamics in Weimar, Germany. She shared her experience as an invited speaker at the USF College of Engineering 20th Anniversary Heart of Gold Scholarship Awards program, attended by USF President Judy Genshaft, as well as the dean and faculty from the USF College of Engineering, donors, sponsors and scholarship recipients.

“Having a chance to study abroad widened my horizons,” she says, “and showed that it was not too late for me to start learning math, physics and science—the subjects which I could not believe I would be capable of.”

In addition to her research, the fourth-year Honors College student is vice president of activities for the USF student chapter of the ASCE, and a member of the Florida Engineering Society, the Society of Women Engineers, the University Student Tutor Association, and Tau Beta Pi.

As part of the award, sponsored by the DiscoverE Foundation, Luong received a $500 cash scholarship.

ANN CARNEY | USF News
Florida’s Goldwater Scholars

Three USF students have been named Goldwater Scholars for 2014, chosen from a pool of more than 1,000 students nominated through a highly selective process. The award, given to just 238 students nationwide, is the most prestigious undergraduate award for science and research.

Michael Calzadilla, Kaitlin Deutsch and Fiona Kearns, all seniors in the Honors College and the College of Arts and Sciences, are the only students in Florida’s public universities to be awarded Goldwaters this year.

Calzadilla, who is double majoring in physics and mathematics, intends to earn a Ph.D. in astrophysics. He recently submitted his first journal publication on active galactic nuclei and black holes. During the next few months he will focus on an interdisciplinary project using radio antennas to observe the sun and Milky Way, collaborating with students from physics, electrical engineering and computer science. Calzadilla is also starting a physics club on campus.

Deutsch, a double major in biology and environmental science and policy, is an undergraduate research assistant in amphibian ecology. She is currently studying the behavioral resistance of oak toads to the devastating chytrid fungus. Currently studying abroad in Sydney, Australia, Deutsch intends to pursue a Ph.D. in entomology and/or ornithology, and hopes to build a career in conservation biology.

Kearns’ recent research on computational chemistry examines the relationship between catalase and nitric oxide. She is also studying the chemical defense mechanism of Antarctic sea sponges.

Kearns hopes to earn a Ph.D. in chemistry and conduct research in drug discovery, energy conservation or medical imaging technology.

The Barry M. Goldwater Scholarship and Excellence in Education Program was established by Congress in 1986 to honor Senator Barry M. Goldwater. Award recipients receive $7,500 for educational expenses and research support.

LAUREN CHAMBERS | Office of National Scholarships

USF’s Michael Calzadilla, Kaitlin Deutsch and Fiona Kearns are the only students in Florida’s public universities to be awarded Goldwater Scholarships this year.
Health Leader

Imagine sailing through a storm, the kind where the wind and the waves are so strong it takes every ounce of your strength, skill and judgment just to keep the boat from capsizing.

That’s where Dr. Charles (Charly) J. Lockwood is happiest.

“I like sailing long distances, and in conditions others might view as less than optimal,” he says. “In fact, I find those conditions exhilarating.”

Academic health itself is now navigating through rough waters—what Dr. Lockwood calls “a perfect storm” of pressure across its core missions of education, research and health care. So it’s appropriate that Dr. Lockwood, the new senior vice president of USF Health and dean of the Morsani College of Medicine, thrives on tackling challenges.

“There’s huge tumult and turmoil and we don’t know how it will all play out,” Dr. Lockwood says of today’s health landscape. “On the other hand, what an incredible time to be a doctor. We have imaging and technology that I couldn’t have dreamt of when I started medical school. For example, we can analyze the human genome in 24 hours.”

Dr. Lockwood took the helm at USF Health in May, coming here from the Ohio State University College of Medicine, where he was dean. He’s also held leadership positions at Yale University and at New York University. A maternal-fetal medicine specialist, Dr. Lockwood is a national leader in women’s health and also has received international recognition for his research and is a member of the Institute of Medicine of the National Academies.

“The University of South Florida System is thrilled to welcome an individual of Dr. Lockwood’s national standing to lead USF Health as we continue to provide leading-edge health education and care,” says USF System President Judy Genshaft. “Dr. Lockwood is not only an innovative medical educator, but he is an accomplished researcher and entrepreneurial thinker who will be a leader for our region, state and nation.”

Dr. Lockwood’s management career has been marked by building new programs and restoring faltering ones. That drive to fix, organize and improve is reflected in his approach to caring for patients as well, he says.

“There are issues, and patients need you to be there for them,” he says. “All obstetricians, and perhaps especially high-risk obstetricians, are to a certain extent ‘adrenaline junkies,’” he says. “When the situation is
most critical, we are brought in to figure things out, organize a cogent management plan and deliver a healthy baby."

At USF Health, Dr. Lockwood sees an organization that’s already great—but can do even more.

“The passion, the energy and the spirit of innovation that permeate this institution put it in great position to move ahead,” he says.

USF Health already encourages a “unique constellation of excellence,” he says, with its interprofessional collaboration across medicine, nursing, public health and pharmacy and outstanding hospital partners. He promises to deliver “innovation with value,” seeking out creative solutions focused on critical issues and vetted for high return on investment.

“People often marvel at how optimistic I am about the future of health care,” he says. “But I believe, absolutely and in my heart, that the solutions to our challenges are within our grasp. And I am certain that at USF Health we can do even more to keep making life better.”

LISA GREENE | USF Health

Edi-BULL

Lunch choices at USF Health just got healthier.

Graduate students in the Health Education Intervention Methods class in the College of Public Health designed and implemented Edi-BULL, a program that aims to bring healthier food choices to students, faculty and staff at USF Health.

Working with two popular USF Health food destinations—Rollin Zoinks food truck and Tarek’s Café—the students launched the pilot project April 7, coinciding with National Public Health Week.

The service-learning project is one of many COPH offers students to develop stronger project implementation skills. Based on the program’s success, Edi-BULL may be expanded to other eateries across campus.

SARAH WORTH | USF Health

Lithium Therapy

Researchers at USF have discovered an alternative salt form of lithium that could offer a safer, less toxic way to treat neuropsychiatric conditions, such as bipolar disorder.

In their recently published study, neuroscientists Douglas Shytle and Adam J. Smith, from the USF Health Center of Excellence for Aging and Brain Repair, found that oral lithium salicylate produced steady lithium levels up to 48 hours in rats without the toxic spike associated with lithium carbonate.

For years, lithium has been widely prescribed to treat mania associated with bipolar disorder. While the FDA-approved form of the drug, lithium carbonate, has been highly effective, it has a narrow therapeutic window and a host of adverse effects, including hand tremor, diarrhea, vomiting, weight gain and decreased thyroid function.

If confirmed in humans, their findings could be an important step in the development of the next generation of lithium therapeutics.

RANDOLPH FILLMORE | USF Health
MBAs in Guatemala

This spring, for the second year in a row, a group of USFSP MBA students traveled to the small town of San Juan La Laguna de Atitlán in Guatemala with their professor, Karin Braunsberger, to help women help themselves.

The students spent the better part of a week assisting four co-ops run by local women, including a weaving co-op, Manos Especiales, composed of mothers who have at least one special needs child.

“Our students are exposed to abject poverty,” says Braunsberger, who teaches marketing and social entrepreneurship in the College of Business. “All these women want is for us to help them put three meals on the table and send their kids to school.”

One student, Vanessa Ferrer, has created a startup which provides “funding for a higher education degree to Latin American women who will use education as a catalyst for change.”

Stories by JESSICA BLAIS | USFSP
Where Did the Oil Go?

USFSP senior Lauren Reilly graduated in May with a diploma like everyone else. But in addition to her Bachelor of Science degree in Environmental Science, Policy & Geography, Reilly can say she conducted her own research on the effects of the 2010 Gulf oil spill, that she’s likely to be published, and that she has presented a research poster at one of the world’s largest conferences of marine scientists and students.

Reilly began working as a research assistant in the Paleo Lab in the College of Marine Science in 2011. She joined a team led by associate professor David Hollander, which was analyzing the effects of the Gulf oil spill on zooplankton that live in the sediment.

“I literally learned the process piece by piece,” says Reilly.

Using a tracer, Reilly and the team found that the plankton they studied, *Benthic foraminifera*, were lighter in weight, indicating incorporation of oil molecules into the shells of the tiny animals.

Master Lecturer

USFSP psychology professor James McHale will be one of just six U.S. experts to address the World Association for Infant Mental Health’s (WAIMH) 14th World Congress in Edinburgh, Scotland this summer. McHale joins 17 other speakers from Africa, Asia, Europe and North America as Master Lecturer.

The honor reflects the 10-year anniversary of McHale’s having been named WAIMH’s “Decade of Behavior” lecturer in 2004. At that international congress, McHale introduced the framework of “co-parenting across diverse family systems” as a new and innovative way of thinking about, strengthening and supporting the family systems of all children around the world.

The co-parenting model is the basis of USFSP’s groundbreaking Infant-Family Mental Health certificate program, the first online graduate certificate program of its kind in the state of Florida and one of the few such programs in the nation.

Keynote Speaker

In March, USFSP psychology professor Mark Durand traveled to Princeton as a recipient of the highly regarded 2014 Princeton Lecture Series Fellowship. In recognition of his ongoing contributions to the field of autism, Durand was selected to be a keynote speaker at the 20th anniversary of the Princeton Lecture Series on Autism, where experts are invited to present new findings and future possibilities for the treatment and awareness of this complex developmental disorder.

For his lecture, Durand drew largely from his research and the resulting popular book, “Optimistic Parenting,” which guides parents and teachers of challenged children on how to develop more positive thoughts and perceptions—a key ingredient of successful parenting and effective behavior management.
Advancing Hospitality

Betty Schoenbaum believes in “giving while you’re living.” Her $100,000 donation to USFSM will provide the financial aid many students need to advance their hospitality leadership careers.

The donation from the Betty Schoenbaum Donor Advised Fund at the Community Foundation of Sarasota County will create the Alex and Betty Schoenbaum Scholarship Fund in the College of Hospitality and Technology Leadership. Scholarships from the permanent fund will be available to all graduate-level students for up to two semesters, based on merit and financial need.

Schoenbaum, a community philanthropist and supporter of many human service and educational causes, created the fund in memory of her husband, Alex, who died in 1996. He was an All-American football player at Ohio State University and a pioneer businessman in the hospitality industry, franchising a chain of motels and more than 2,000 restaurants in 36 states. Alex is best remembered for developing the Shoney’s restaurant chain.

“Betty is a great friend to USFSM and wants to help us become one of the top 10 hospitality colleges in the country by the year 2020,” says Arthur M. Guilford, regional chancellor of USFSM. “The income earned on her endowed scholarship will provide the kind of financial aid that students need when so many of them are juggling attending school, working and raising families while advancing their hospitality leadership careers. It will grow over time and provide a strong basis on which to build our high-quality, graduate-level student body—made up of valuable industry professionals who are highly sought after by the employers of today and tomorrow.”

RUTH LANDO | USFSM
Grand Stage

In April, USFSM business major Lauren Henry took the stage as lead in the School of Russian Ballet’s production of “The Little Mermaid,” choreographed by internationally renowned Ballet Master Vadim Fedotov. It wasn’t the first time the rising junior held the spotlight. Since her start with the Sarasota-based ballet school four years ago, Henry has held principal roles in “Snow White,” “Cinderella,” “Coppelia” and “The Nutcracker.”

Henry’s most recent performance demanded extensive practice—up to six days each week—as well as added rehearsals to master new dance routines. “As the Little Mermaid, I had a massive amount of choreography to learn so I had daily rehearsals to work on solo parts, group scenes and partnering pieces,” she says. “I worked with many dancers, including a guest artist from the Cuban National Ballet who danced the role of the prince.”

Henry auditioned for the coveted role, which called for acting ability as well as technical skill. “Dancers in lead parts carry the story and are responsible for communicating with the audience through their movements and expressions,” she explains.

Hard work and a rigorous schedule are nothing new for Henry.

When she’s not on the stage or rehearsing, the straight-A student serves as a USFSM Ambassador, volunteers weekly in the children’s department at Bayside Community Church, and loves to participate in anything creative, including painting.

With “The Little Mermaid” behind her, Henry is turning her focus back to academics. She plans to pursue a master’s degree, but first hopes to complete an internship or two to gain valuable work experience and narrow down her interests in the field of business.

Vice Chancellor

Terry A. Osborn, an internationally recognized scholar of critical language studies and dean of the College of Education at USFSM, has been named regional vice chancellor for academic and student affairs.

Osborn, who has been a tenured professor at USFSM and Fordham University, holds a Ph.D. in curriculum and instruction from the Neag School of Education at the University of Connecticut, a master’s degree in German from the University of Tennessee, and bachelor’s degrees in German and psychology from Berry College. He has seven years’ experience in senior higher education academic leadership and was recently named executive director of the Florida Association for Colleges of Teacher Education.

“Dr. Osborn’s career history shows a record of working effectively in collaboration with administrators, faculty, students, staff, alumni and a host of external partners,” says USFSM Regional Chancellor Arthur Guilford. “He recognizes that we are embarked on a time of significant change at USFSM, and that our academic and student affairs leader will play a key role in the shape of our future.”
Chemical engineering doctoral student Anne Caraccio is living in isolation on the slopes of the Mauna Loa volcano in Hawaii.

Caraccio is part of one of three University of Hawaii-led missions that simulate the conditions future space explorers will experience living on Mars, a project known as HI-SEAS (Hawaii Space Exploration Analog and Simulation).

The four-month mission focuses on the social, interpersonal and cognitive factors that affect team performance over time. A manned mission to Mars would take approximately six to nine months of travel just to reach the second closest planet to Earth, so it is vitally important for NASA to learn how a crew would adapt during a long-duration deep space mission.

“For a Mars mission, NASA would most likely have to hand over a lot of decisions to the crew, since mission control would not be able to be as involved minute by minute with decisions and directions like they are on the International Space Station,” Caraccio explains.

As a young child, Caraccio visited Kennedy Space Center and was awe-struck. In elementary school, she joined a rocketry club and viewed a number of Space Shuttle launches in her classroom. With inspiration from her high school chemistry teacher and her older brother, who studied engineering at West Point, she decided on a career in chemical engineering.

At Manhattan College in New York City, where she received bachelor’s and master’s degrees in chemical engineering,
Caraccio approached the NASA booth at a Society of Women Engineers career fair and applied for student opportunities, never thinking someone like her could work for NASA.

“I soon received two different student co-op positions and chose the research route,” she says. After approximately five years, the majority of her research projects have focused on technology development geared toward human spaceflight. When the opportunity for a Mars analog for HI-SEAS came about, she thought her current research project at Kennedy Space Center would be a good fit for an analog study to boost understanding of the technology on a long-duration deep space mission.

So she applied to the HI-SEAS program, a process which includes a class 2 flight medical certificate, personal research project proposal, essays, interviews and education requirements. “Very similar to the fundamental NASA astronaut application baseline requirements,” she adds.

The crew, which lives in a dome-like structure, has dubbed Caraccio “Chief Engineer” as she carries out a few research projects while keeping a watchful eye on the habitat’s energy and utility use. She recently had to fix the liquid cooling systems of the group’s spacesuits.

“So far, I’ve done everything from electrical wiring in our spacesuits to testing volatile organic compounds,” she says. “Every day brings something new.”

Caraccio’s mission ends July 28, just in time for some R & R before the fall semester begins. In case a trip to Mars doesn’t pan out in her future, she would like to continue with technology development for deep space missions that also have advantages for Earth applications.

“Spaceflight projects also benefit our planet,” she says. “I hope that my efforts in technology development and enthusiasm for space can lead to a positive future for Earth and the aerospace field.”

JANET GILLIS | College of Engineering
Most people know that an MBA gives people from a variety of backgrounds a chance to become better versed in managerial and business operations. But USF’s dual-degree MS/MBA in Sport & Entertainment Management gives students much more than a broad-brush overview. And students from its inaugural cohort, who graduated in May, say that the program’s residencies, faculty mentors and industry partners are the reasons why.

Launched in 2012 and made possible by a partnership with the Tampa Bay Lightning and the Lightning Foundation, the program requires students to firmly grasp important business concepts as well as industry-specific issues such as contract negotiation, conflict resolution and sports communication. But it isn’t all books, all the time. USF places students in “residencies” that provide on-the-job training and opportunities to see how classroom lessons play out in the industry.

Katie Hatch spent three seasons with the New York and St. Lucie Mets and a season with the Tampa Bay Rays before enrolling in the program. She says that the residencies and industry partners are as important as the program’s internationally respected faculty.

“I knew of the faculty’s reputation and I knew that earning an MBA would set me apart as my career progressed. I also knew that I would grow tremendously,” says Hatch. “And I have.”

More than half of those in the inaugural cohort had full-time job offers before graduation; just weeks later, nearly 75 percent had full-time, professional jobs in sports, entertainment or sport media. And, according to program director Bill Sutton, the remaining students will likely be fully employed in the industry within weeks. Those with early offers have accepted positions at the Tampa Bay Buccaneers, the Jacksonville Jaguars, the Tampa Bay Rays and North American Sports Group.

Before heading to New York to work as the director of marketing for the New York Knick’s new D-League affiliate, the Westchester Knicks, Hatch completed residencies at the Tampa Bay Championship (now the Valspar Championship) and FOX Sports Florida.

“Even though I had experience working in the sport industry before starting this program, I was able to fill several ‘gaps’ in my background because of it,” she says. “In baseball, I had my hands in a lot of areas—event management, sales, community relations.” But two pieces were missing, she says, namely merchandising and media.

“At FOX Sports Florida, I was part of the team that handled marketing, production, public relations and social media,” she says, pointing out that the graduate students are given specific responsibilities and purposeful tasks during the residencies.

“The variety of tasks that I was able to take ownership of really strengthened my resume,” Hatch says. “It made me a more competitive candidate for jobs like the one with the expansion team in New York, one directly owned by Madison Square Garden.”

Matt Schick, who earned an undergraduate degree from Virginia Tech...
and spent four years as a member of the Corps of Cadets and the Naval ROTC program, says his residency with the Tampa Bay Lightning gave him a chance to participate in the nitty gritty work involved with game and event operations. As a graduate resident in the operations department, he worked on “a little bit of everything” during his nine-month residency.

“It gave me a chance to develop my analytical skills from an operations perspective and expand my understanding of large venue operations,” says Schick. He did everything from supervise parking lots to assist in security operations. He gathered data in the field, too, and built, from scratch, a parking revenue tracker that provides Lightning leaders with event-by-event details.

“My supervisor treated me like another manager,” Schick says. “She included me in front-line manager and operations meetings and tasked me with manager-level projects.”

Schick and Hatch are quick to credit the program’s faculty for connecting them with key people and organizations.

“The people that you meet are one of the most important differentiators. I met more influential industry leaders in my two years of grad school than I did in four years in the industry,” says Hatch.

LORIE BRIGGS | College of Business
Prime Time

When young Marissa Streng, inventor of the patented Puff-N-Fluff dog drying system, took top prize at the USF Young Innovator Competition in 2011, she didn’t have her eyes set on celebrity. But nearly four years later, on February 19, Streng stepped onto the national stage as a featured guest on NBC’s Tonight Show Starring Jimmy Fallon.

Streng, now 12, and two other young inventors who were not from the USF competition, were featured in a segment called “Tonight Show Fallonventions.” With help from Fallon, Streng demonstrated the Puff-N-Fluff system on her dog, Mojo. At the end of the segment, Fallon surprised each of the young inventors with a check for $5,000, courtesy of sponsor GE.

Streng came up with the unique drying system after growing tired of attempting to towel-dry her dog after a bath, only to find that he was still soaking wet. The Puff-N-Fluff, which can be used by pet owners and groomers alike, gently circulates warm air around the dog. Streng’s system, which was awarded a U.S. patent in 2010, is easy to use, dries dogs in minutes and eliminates damp pet odors.

The Puff-N-Fluff is made using a rectangular piece of material with four elastic leg holes. The dog’s paws are placed through the openings, and the sides are brought together and fastened with a hook and loop. Drawstrings close the gap around the dog’s head and tail, and a blow dryer attached to a flexible hose brings air from the blow dryer into the Puff-N-Fluff, circulating warm air around the dog’s body.

The USF Young Innovator Competition was founded in 2009 by USF alumnus and intellectual property attorney Anton Hopen “to promote innovation and creativity in young people by motivating them to solve problems and improve upon the things around them.”

LAUREN GOLIN | USF Research News
Bird Watchers

Though roseate spoonbills are rare, they now populate southwest Florida. The species’ pink plumage once caused them to be hunted nearly to extinction.

Opposite page: Hats, like this Edwardian white lace hat with feather trimming, were fashionable in the early 1900s. Plume hunters gathering feathers for the milliners’ market nearly wiped out numerous species of wading birds.
he graceful herons and spoonbills that call Florida home are the living legacy of a small group of people who were responsible for some of the 20th century’s most heroic conservation efforts.

A collection of journals and logbooks donated to the USF Tampa Library Special Collections by the National Audubon Society is providing a rare and valuable glimpse into early endeavors to save threatened bird populations at a time when conservation was not a priority for most Floridians.

“Of course it was very fashionable in the late 1800s, the Victorian age, for women to have big ostentatious feathers in their hats,” Huse says. “By the turn of the century, it had become obvious that the bird colonies had been decimated by the plume hunters.”

Today we’ve become accustomed to the sight of blue herons fishing on the shoreline and ibises strolling through vegetation. But according to the documents, countless birds nearly became extinct in the early 1900s, when hunters sought to procure their elegant plumage.

Assistant Librarian Andy Huse calls the collection a “treasure trove” that sheds much-needed light on the intense conservation work that saved bird colonies in Florida and other regions, including numerous wading bird species that were on the brink of extinction.

The state deputized volunteers who worked with the Audubon Society to patrol the rookeries, focusing on areas of bird nesting activity near Tavernier in the Florida Keys, Lake Okeechobee and the southwest coast of Florida up to Green Key in Tampa Bay.

The wardens took meticulous notes in their journals, detailing any activity near the nesting areas. They carefully...
monitored and recorded the number of birds in each habitat, species diversity, nesting locations, migration patterns and foraging activity.

The records include information about human disturbances and the presence of fishermen or poachers. The wardens interviewed every person they encountered to ensure that no passersby were in fact poachers endangering and disrupting the environment.

Coordinator of Special Collections Matt Knight emphasizes the detailed nature of the wardens’ handwritten notes, where nesting area activity was documented in careful, pencil-drawn cursive.

“We have some records from 1901 and 1903 and a lot from the ’30s and ’40s,” Knight says. “This ledger that I have in front of me is from 1934, and it is fascinating. It includes intricate details. You can see, ‘April 5 1934, man and woman pass camp in a rowboat at 12 noon, said they were from Ft. Myers.’”

Notes in the archives indicate that the work was painstaking and dangerous. The wardens were unfailingly committed, venturing out in boats even in unpredictable weather in order to survey nesting areas.

In the early years of the patrol, plume hunters shot and killed two wardens. News of this violence spurred women’s groups around the world to take notice and shame others who continued wearing the feathered hats.

“The Audubon Society provided something that the state couldn’t, which was dedicated volunteers who were willing to do a job that wasn’t always very nice,” Huse says.

The daily observations recorded by the Audubon Society wardens led to the conservation efforts that eventually enabled bird populations to return to Florida.

“Sometimes that rebound can be agonizingly slow and sometimes it happens more quickly and people can see,” Huse says. “From the whooping crane to the blue heron, all these birds have been saved on the backs of the Audubon wardens and their work.”

Ann Hodgson, courtesy faculty member at USF Library and freelance biologist, worked diligently to help the library obtain the documents. Hodgson coordinated the donation with Peter Frezza, research manager for the Everglades region of the National Audubon Society, and secured the first set of collection boxes delivered to USF in March 2014.

The boxes had been stored for decades at the Everglades Science Center at Tavernier, in a humid environment that was not optimal for preservation.

After years of searching for a safe place to store the documents, Frezza made the decision to donate the documents to USF, where digital scanning will provide permanence for the delicate journals and enable the documents to be cataloged in a searchable database, available for the public to access and research.

“We were thrilled to hear the Special Collections department at USF was interested,” Frezza says. “It seemed like a great fit for these materials. We are glad they are staying in the southern Florida area as well.”
In acquiring the firsthand accounts of the Audubon’s efforts to save the plumed bird colonies, USF has become the new home of a significant piece of history that includes some of the only documentation on bird life.

According to Frezza, the information has been unavailable to anyone up until now. “It is a principal source of historic information on a plethora of bird species from many places throughout the country,” he says. “It could have important implications for anyone undertaking bird conservation in the areas where these wardens were reporting from.”

Here in Tampa, beautiful white and blue herons, flocks of ibises and the occasional wild spoonbill remind us how lucky we are. Without the efforts of the Audubon Society’s wardens, the elegant birds would be extinct.

“What the Audubon Society did in the past is borderline miraculous when you consider all of the things they were up against,” Huse says. “The fact that they saved so many species, and, in many ways saved Florida from itself or from the people here, is remarkable in and of itself, and that story hasn’t fully been told.”

The records were kept in humid conditions in the Florida Keys. The library’s digitization team will preserve the records for researchers in a database at the Special Collections department at the USF Library.

To view the Audubon collection and other special collections, visit www.lib.usf.edu/special-collections.
Incubating Innovation

Advised by USF research leaders, USF students run a business incubator of their own.
esmond Williams had just gotten to the bottom of a watermelon and was sipping the juice when he had his aha moment. There has to be a better way, he thought. There has to be a way to bottle the refreshing juice and make it available year-round.

But why hadn’t anyone done it before? Why was watermelon—the fourth-largest selling fruit in the United States—the only top-selling fruit without a significant presence in the juice market?

“The fruit juice industry overlooked the opportunity to solve a problem,” he says. “No one has made a product that successfully delivers the experience achieved when biting into a fresh slice of watermelon.”

That’s because they were using heat, according to Williams, a graduate student in the entrepreneurship program at USF. “Watermelon is low acid; that makes it very sensitive to heat. The fruit’s sensory properties are impacted when it is exposed to heat.”

Drawing on his background in science, engineering, marketing and sales, Williams set the wheels in motion to develop a cold-pressed watermelon juice product that would replicate the experience of eating watermelon on a hot summer day. And he signed on as a charter member of the USF Student Innovation Incubator—an incubator he helped found (see sidebar pg. 32).
Launched late last year, the incubator—a partnership between the USF Center for Entrepreneurship and USF CONNECT—helps turn students’ business ideas into reality. Student ventures with commercial potential are provided access to shared workspace free of charge. They’re paired with industry mentors, subject matter experts and community and corporate partners to develop scalable business plans and market-testable products. The center is 100 percent student-run with university oversight.

For Williams, the benefits—including peer connections, mentorship and more than $18,000 worth of plant time for research and development at JBT Food Tech in Lakeland, Florida—have been instrumental in catapulting his watermelon juice company, AquaMelon Water, into the marketplace.

“We developed about three-quarters of our process at JBT, the country’s largest manufacturer of citrus processing machinery,” he says. “There’s a lot of science behind our product.”

Williams also tapped into the expertise of Dennis Moncur, a partner at Dennis FruitSource with more than 30 years’ experience in the fruit juice industry. Moncur is one of the more than 50 community and business leaders who have volunteered to mentor the incubator’s student entrepreneurs.

“The mentors helped us expect the unexpected. They challenged us with questions.”

– CHITRA KANAGARAJ

“The incubator is a place where students have all the resources they need to be able to succeed,” says Center for Entrepreneurship Director Michael Fountain. “It’s a vibrant living-learning laboratory for students and a critical link between the university and the entrepreneurial ecosystem here in Tampa Bay.”

Executive MBA student Chitra Kanagaraj, whose technology company, PikMyKid, is among the incubator’s 15 active charter student companies, says having access to local technology executives has provided valuable support.

“They helped guide us through many steps, such as marketing and our pilot testing phase.”

PikMyKid, an app-based tool that automates the student after-school dismissal process and provides parents and school administrators real-time reports, is already being tested in one
The incubator puts us in a place with people with the same mindset and prompts us to think about what we need to do next.”

– ERIC BIEL

Hillsborough County public school. Kanagaraj and her partner-husband Saravana Bhava expect to sign a second school any day.

The husband-wife team came up with the idea for the app last year when Bhava was waiting in the car rider line to pick up their daughter from elementary school. “We asked ourselves, how can we use information technology to automate this process,” Kanagaraj recalls.

Participating schools are provided with iPads and a cloud-based, backend server, specific to the school, free of charge. Parents simply download the PikMyKid app and announce themselves when they arrive at school so teachers can queue the students accordingly. The app also tracks bus riders, informing parents if buses are running late and when children get on and off the bus.

“Our focus is in three to five years we should be everywhere,” says Kanagaraj, who with her husband is tapping into the Student Innovation Incubator’s resources to patent the workflow algorithms that steer the program.

“It takes an entrepreneurial mind to see an opportunity and an idea and determine if it’s worth pursuing,” she says.

Student entrepreneur and MBA student Eric Biel, who describes himself as a “serial entrepreneur,” says he and business partner Nathan Preseault hope their business, One Global Farm, will help solve the world food supply problem. Their product, a 4-foot by 4-foot micro-farm that can provide fresh, healthy food, is currently in the testing phase in Sarasota.

The feedback and data they collect will help determine what adjustments and modifications are needed for a successful launch.

Biel learned about the Student Innovation Incubator last year from incubator co-founder Keosha Poole and was quick to apply. Now he looks forward to Mondays when the incubator’s student entrepreneurs exchange ideas and discuss issues facing their new ventures.

“We bounce ideas off one another,” he says. “The incubator puts us in a place with people with the same mindset and prompts us to think about what we need to do next.”

And it provides valuable connections.

“I say I need a manufacturer and they say, ‘we’ve got someone for you.’ I can’t ask for more than that,” Biel says. “The incubator has been pivotal in moving our business forward.”

The company’s self-contained food systems produce fruits and vegetables and come stocked with fish. Customers choose which plants and vegetables to grow and pay a monthly fee for system monitoring and routine maintenance.

“The incubator has helped us realize what’s going to work, what’s not going to work,” he says. “It’s put revenue issues into focus and helped us adjust our rate of growth.”

Karina Becerra, a graduate student in the Patel College of Global Sustainability, doesn’t think of herself as an entrepreneur. But what she saw as a void in a market-based approach to sustainability sparked her inner businessman.

Five years ago, Becerra incorporated her venture, Fly Tribes, and has been refining the idea ever since. “I knew I wanted to work with indigenous people; I knew it would involve indigenous products,” says the mother of two who grew up in Colombia. “I just didn’t know what.”

As she began to delve into entrepreneurship last year, Becerra honed in on her concept—an online marketplace for indigenous people to sell their hand crafted products such as knitted bags, hand-beaded sunglasses, herb bundles and hammocks.
It’s amazing how following one little thread leads to something that leads to something.”

–KARINA BECERRA

“Like Etsy,” she explains, but for a targeted population.

“If we are going to alleviate poverty, we have to work with indigenous populations,” she says. “They represent 5 percent of the population and 15 percent of poverty. They are the poorest of poor.”

Today Becerra buys inventory from seven tribes, photographs the products, uploads the images onto her website, flytribes.com, and fulfills customer orders. Eventually she hopes the artisans will take the reins, but there are language and technology barriers they must first overcome.

As a charter member of the Student Innovation Incubator, she calls the assistance she has received “defining.” “It’s fabulous. It’s amazing how following one little thread leads to something that leads to something,” she says. “As an entrepreneur you need that environment that nurtures you and provides a support system. I have really enjoyed that process of going from nothing to something.”

“Poole says the inaugural class has already exceeded all expectations.

“This has been amazing,” she says, “more than we ever could have dreamed of.”

Williams agrees, adding, “Ultimately the crown metric is how many companies make it out of the incubator and into the commercial marketplace.”

“If we can look back in 2018 and know that we have been responsible for five incubator companies that have been in business for three or more years, we will have done an amazing job,” he says. ■
Graduate entrepreneurship students Desmond Williams and Keosha Poole were getting ready to pitch their model for a regional student incubator in Pinellas County when a serendipitous conversation with Wendy Plant, program manager for USF CONNECT, set them on a different path.

“I was speaking with Wendy about research for a health claim related to watermelon juice when she mentioned there was space in the research park for a student incubator,” Williams says. “She walked me over; she painted a vision and we discussed how it would work.”

Seven months later, Williams and Poole, with the support of USF Senior Vice President for Research & Innovation Paul R. Sanberg, Center for Entrepreneurship Director Michael Fountain and Plant as well as the Florida High Tech Corridor Council and Hillsborough County, launched the student-led incubator.

Fifteen student ventures, including an online marketplace for students, a medical supply company that distributes excess medical supplies to third world countries, and an app that helps college students locate their classrooms, make up the inaugural class (see full list at right).

The USF Student Innovation Incubator is open to any viable, student-led, growth-oriented product or service company.

Clockwise from back row, USF Senior Vice President for Research & Innovation Paul R. Sanberg, USF CONNECT Program Manager Wendy Plant, Center for Entrepreneurship Director Michael Fountain, and student incubator co-founders Desmond Williams and Keosha Poole launched the student-led incubator in the fall.
“It’s a diverse mix of students who are representative of the diversity on campus,” says Poole, who along with Williams, actively recruited members across all of the university’s colleges and schools. “We have students from five major colleges; we have first-year students and experienced professionals,” she says, adding that the incubator’s inaugural year has exceeded all expectations.

Unlike most incubators, Williams’ and Poole’s model isn’t solely focused on early-stage technology companies. The USF Student Innovation Incubator is open to any viable, student-led, growth-oriented product or service company.

“We accept companies that we believe can impact tomorrow,” adds Williams, whose AquaMelon Water is among the incubator’s charter business members. “We want enough groundwork on the back side that we can start putting them in front of mentors, venture capitalists and other researchers.”

Students spend up to two semesters in the on-campus incubator, which provides high-tech workspace and a collaborative business environment, as well as access to mentors, experts and community business partners.

“Those contacts are the most important thing we have,” says Williams.

“Dr. Fountain and Wendy opened up their Rolodex to help make this happen. Without their support this would have just been an idea,” says Poole, who also founded the USF Graduate Society of Entrepreneurs.

“Entrepreneurship is extremely powerful,” she says. “I am passionate about business. When I graduate, I’d love to travel the world and open incubators in every single country.”

### USF Student Innovation Incubator Companies

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<thead>
<tr>
<th>Company Name</th>
<th>Description</th>
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<tbody>
<tr>
<td>Collegebom.com</td>
<td>An interactive website where college students can buy, sell and trade school supplies, electronics and more.</td>
</tr>
<tr>
<td>Inova</td>
<td>A digital marketing company that focuses on social marketing, search marketing, digital video, creative concepts, analytics, email marketing and mobile marketing.</td>
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<tr>
<td>Kinetic Concepts</td>
<td>A technology company that develops apps for Android and iPhone. The company’s newest release, Find-MyClass, helps college students find their classrooms on campus.</td>
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<td>A watermelon consumer goods company. The company’s flagship product is bottled watermelon juice.</td>
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<tr>
<td>MedAlign</td>
<td>A company that distributes excess, usable medical supplies where there is demand around the globe.</td>
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<tr>
<td>TC Vencur</td>
<td>Provides a medium for the sale of event tickets online, graphic design services for tickets and event photography.</td>
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<tr>
<td>Scale Study Models</td>
<td>A business that provides architectural scale study models produced from CAD drawings and 3-D digital renderings of civil infrastructure and building structures.</td>
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<tr>
<td>Swap Shop Mobile</td>
<td>An app that lets students buy, sell and trade college textbooks with other students in the local vicinity.</td>
</tr>
<tr>
<td>One Global Farm</td>
<td>Creates sustainable micro-farms to provide fresh, healthy food to consumers and communities.</td>
</tr>
<tr>
<td>PikMyKid.com</td>
<td>A technology company built around an app that automates the student dismissal process and provides real-time reports to parents and schools.</td>
</tr>
<tr>
<td>1 Apple Grocery</td>
<td>A neighborhood grocery store that provides access to nutritious foods for underserved areas of Tampa Bay.</td>
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<tr>
<td>Draeh Studios</td>
<td>Creates simple, fun and affordable online video games.</td>
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<tr>
<td>Vascher Laundry Service</td>
<td>A pick-up and delivery laundry service catering to students who live on campus and in nearby student housing.</td>
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<tr>
<td>Queen of Nature</td>
<td>An all-natural, organic hair care product line.</td>
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Learn more at [http://sii.research.usf.edu](http://sii.research.usf.edu)
Healing Combination

KATY HENNIG | USF News

It’s all in the numbers.

By calculating movement and combining two different fields of research, Alicia Billington, M.D., is changing the way health care professionals diagnose and treat pressure sores—a common medical problem that affects millions of people each year.

“I think that a lot of the processes that we do in medicine can be optimized through engineering,” says Billington.

Billington is the first USF student to graduate with a dual M.D./Ph.D. degree in engineering, combining the two related but disparate disciplines of medicine and engineering. She is poised to become a leader for the next generation of physician scientists.

“It’s not easy,” says Dr. Peter Fabri, the academic adviser who co-designed Billington’s dual discipline research track along with William Lee, III. He describes the path as an integral connection between medicine and innovation, adding, “the shared skills and talents enrich medicine.”

Incorporating problem-solving skills from her background in biomedical engineering, Billington has invented a new method for analyzing how people move, which she is hoping one day could prevent pressure sores. The sores, commonly called bedsores, are injuries to the skin and underlying tissue that can result from pressure on the skin and muscles. They are common among nursing home patients, who may lie in bed or remain seated for long periods of time. They may also plague patients of all ages who experience limited mobility, such as veterans in wheelchairs.

“Alicia developed the ability to analyze massive amounts of data and reduce it into very simple concepts so you can actually track how people move as they sit in a chair,” says Fabri. “The real engineering accomplishment that she has made is developing a new approach for analyzing this type of data.”

Billington’s research has generated an algorithm to examine areas of high pressure in patients with varying levels of paralysis. According to Billington, there is an absence of information about how and why the sores, which can be extremely difficult to treat, form and become infected.

“There have been quite a few studies, and it is very hard to pinpoint the exact cause of the pressure sore. The word ‘pressure’ makes you think it’s pressure, but there are so many different confounding variables that it’s hard to figure out what causes it and how to cure it,” explains Billington.

Ultimately, the goal is to provide treatment in advance of the symptoms by monitoring a patient’s movement and calculating the amount of pressure through that movement.

Using an existing Xsensor mapping product—a 36-inch by 36-inch square grid that looks similar to a checkerboard and has a sensor in each square—Billington collects
Alicia Billington’s work crosses disciplines to offer healing solutions for patients living with limited mobility.
data about a patient’s movement and pressure areas. She feeds the data into an Excel spreadsheet and then, using a computer program she designed, produces two hemi-ellipsoid shapes that move over time to help predict where the sores may form.

Billington’s statistical approach to diagnosis allows physicians to understand how a person with full mobility moves when they are seated and compare that data to a paraplegic’s movement. This information could allow for the development of pressure relief techniques to mimic individuals who are fully mobile and could lead to new protocols to help prevent pressure sores from forming.

“If we can figure out how a person can adjust themselves to prevent these sores, that is going to change their life,” Billington says.

Surgery to fix the sores is complex and involves specialized techniques such as creating a flap by rotating skin and muscle with a blood flow to close the wound. Billington’s research in plastic surgery will advance treatment options and offer hope for new methodologies.

“We often treat patients with pressure sores by rotating skin and muscle to help cover the wounds, which can allow them to go from being bed-bound to being able to move around in a wheelchair again,” Billington says.

In the future, Billington’s innovative algorithm and mapping technology could help to monitor movement and detect the problematic sores before they form.

Billington’s mission to improve patient care has grown out of a deep understanding of both medicine and engineering. Her new approach using analytical and mathematical techniques allows for research breakthroughs.

“I think that math has always been a true passion of mine. It’s something that I really enjoy; it makes me really happy,” says Billington. “The possibility of combining that with my love of medicine is something that I couldn’t turn down—taking patients and helping them get better through engineering.”

Though Billington always wanted to practice medicine, she initially followed her passion for solving mathematical equations to earn bachelor’s and master’s degrees in biomedical engineering from Cornell University. She then decided to return home to the Tampa Bay area and enrolled at the USF Health Morsani College of Medicine.
“Of course I want to help people, but you can help people in a variety of different ways. My dad is a police officer; he helps people. My mom is a teacher; she helps people,” Billington says.

“But I think the reason that I was so drawn to medicine is because the human body is very much like a machine, just like in engineering. I was drawn to the mathematics of medicine and I think that there is a lot related between the two fields.”

In the spring, just before receiving her medical degree, Billington was selected for residency at the USF Health Morsani College of Medicine. The match was ideal, allowing her to continue her research in the plastic surgery field and develop healing techniques.

“One of the things that I really like about plastic surgery is that it’s tangible; you can see your work immediately. It’s the only area of surgery where you get to see your results,” Billington says. She sees incredible potential in the reconstructive aspect of treating pressure sores.

“I think that the majority of what you spend your time doing in the third year of medical school is problem solving, and that goes hand in hand with what an engineer does. You approach a problem—you try to figure out all of the parameters involved and different solutions. Sometimes it’s not the easiest path; you have to think outside the box. To me, the two fields blend together very nicely.”

Billington will be in residency for the next six years, continuing her research and work with pressure sores as she rotates through five Bay Area hospitals.

Billington’s leadership is not limited to her groundbreaking research. In 2012, she received the Leadership Award for Excellence in Medicine from the American Medical Association for her work on graduate medical education advocacy. She was one of only 30 students, medical residents, fellows and young physicians across the country to receive the honor.

“Continuing her advocacy on behalf of graduate medical students, Billington traveled to Washington, D.C., in 2013 to speak to Congress, requesting that the number of student residency positions reflects the number of physicians needed in an impending doctor shortage nationally, especially in the state of Florida.

In August, Billington will receive her doctorate in engineering, completing both of her degree tracks. As she begins the next chapter of her career as a resident in plastic surgery, Billington has no plans to slow down.

“The research started as an interesting question I wanted to answer,” Billington says. “Since then, a family member and close friend have been diagnosed with neurological disorders. Now I see my work as a lifelong passion.”

Billington intends to continue her research in pressure sore mapping, collaborating with medical students at USF to build on the algorithm and previous studies, as well as her efforts to help future medical students to secure a residency position.

“The community of USF and Tampa Bay really supported my research efforts and are a large contributor to why I ranked USF number one on my residency match list,” says Billington. “Wherever life takes me, I’ll always be a USF Bull.”

“Math has always been a true passion of mine. The possibility of combining that with my love of medicine is something that I couldn’t turn down—taking patients and helping them get better through engineering.”

– ALICIA BILLINGTON
A Legacy of Love

“Laurie was an exceptional child from the day she was born. She really loved her sister, Cathy, who had autism and was developmentally delayed,” Jack Richardson says, his wife, Alice, by his side. “They had a special bond.”

The bond was so strong it inspired Laurie a desire to teach and care for children like Cathy—children with special needs.

But just as she was about to graduate in 1984, at the top of her class with a degree in special education from the USF College of Education, Laurie died tragically in a car accident.

“You never get over it, but you do try to make it mean something,” Jack says. And they have.

Months after Laurie’s death, Alice and Jack, teachers themselves, established the Laurie Ann Richardson Memorial Scholarship—one of four scholarship programs they would establish at USF to support special education students at the undergraduate, masters and doctoral levels.

“People are beginning to realize you have to have good teachers teaching autistic children,” says Jack, a USF College of Education alumnus. “The right teacher can make a world of difference.”

Alice and Jack were keenly aware of the unique needs of developmentally-delayed children. Cathy’s experiences in a group home and with special care professionals inspired their advocacy on behalf of all special needs children in Hillsborough County. In 1996, they established a second scholarship program in Cathy’s honor, underscoring the need to maintain high standards of professional preparation for people working in the field of special education.

“Cathy was a special child. When she would reach out to you it just felt good,” Jack says of his eldest daughter, who
passed away in 2012. “She was autistic, yes, but she lived 52 years. She was a beautiful girl; she was the type of person who really affected you when you were around her.”

Today, the Richardson Family Scholarships include the Alice C. Richardson Endowed Scholarship for Undergraduate Students in Special Education; the Laurie Ann Richardson Endowed Memorial Scholarship for Master’s Degree Candidates in Special Education; the Cathy Lynne Richardson Endowed Scholarship for Doctoral Degree Candidates in Special Education; and most recently, the Jack B. Richardson Endowed Scholarship for Autism Spectrum Disorders in Special Education, part of the USF: Unstoppable Campaign.

Since they established the first scholarship in 1985, the Richardsons’ generosity has benefited more than 125 special education students. Scholarship recipients are presented their awards at the annual Richardson Scholarship Society Showcase luncheon at USF—with Jack and Alice always in the room. In their home, the names of each scholarship recipient, photographs and letters of gratitude fill the pages of albums.

“For years, Alice and Jack have been on the front lines helping children with special needs in Hillsborough County,” says USF College of Education Dean Vasti Torres. “In their darkest hours, they made a decision to launch a program that would improve life for tens of thousands of special needs children—one USF student at a time. We are forever grateful.”

“It’s really a labor of love,” says Jack. “It makes us feel honored to know these scholarships will go on in the future.”

ANN CARNEY | USF News

Jack Richardson, an active-duty Air Force airman stationed at MacDill Air Force Base in Tampa, holds daughter Cathy in April 1965, as he prepares to return to Vietnam. Alice Richardson holds the couple’s younger daughter, Laurie.
New Leaders

Two new leading men at USF Athletics are looking to help the program reach new heights.

USF System President Judy Genshaft named Mark Harlan USF Director of Athletics on March 11. Harlan previously served as Senior Associate Director for External Relations at UCLA since 2010.

Harlan, 44, is responsible for a USF Athletic Department that includes 19 men’s and women’s American Athletic Conference teams with more than 450 student-athletes and an annual budget of approximately $44 million. Prior to his time at UCLA, Harlan was the Senior Vice President for Central Development at the University of Arizona Foundation and helped the Foundation achieve two record years in dollars raised and number of gifts on behalf of the university.

Harlan, an Arizona graduate, also has served in associate athletic director roles at San Jose State and Northern Colorado.

“My family and I are honored to join the USF Athletics family and I am grateful to President Genshaft, the Board of Trustees and the Search Advisory Committee for placing their trust and confidence in me,” Harlan says.

Less than three weeks later, Harlan hired a new men’s basketball coach who was named the top assistant in the nation under 40 by ESPN.com in 2012.

Orlando Antigua, a two-time team captain as a player at Pitt, headed to USF after helping Kentucky make three NCAA Final Four appearances in his five seasons with the Wildcats.

Orlando Antigua will lead USF Men’s Basketball.

Antigua earned a spot on the Yahoo! Sports list of the top 10 college
basketball recruiters in 2010, and played a big part in Kentucky assembling five consecutive top-ranked recruiting classes in the nation.

Antigua worked as an assistant under head coach John Calipari for six seasons at Kentucky and Memphis, and he also spent five seasons serving on Jamie Dixon’s staff at Pittsburgh. Antigua has been a part of teams that have made 10 NCAA tournament appearances and reached the Sweet Sixteen seven times. A former Harlem Globetrotter, Antigua is also the head coach of the Dominican Republic national team.

“I can tell you we have made the right choice,” Genshaft says. “We’re so excited to start this new era for our university and I know that USF students, faculty, staff, alumni and fans join me in wishing them all the best.”

Tennis Wins

USF Tennis took the American Athletic Conference by storm in April.

The No. 33 USF women’s team rallied back to beat top-seeded Houston, 4-2, in the American championship match on April 20 at the USF Varsity Courts. Just hours later, the No. 24 USF men’s team was declared the American Athletic Conference champion in Memphis after defeating the top seed and host Tigers, 4-3, at The Racquet Club of Memphis.

Head coach Agustin Moreno’s women’s team advanced to the NCAA tournament for the 11th time in program history and had its USF record 15-match winning streak snapped by Oklahoma State on May 9. American Player of the Year Loreto Alonso-Martinez, a senior, earned a spot in the NCAA Singles Championship.

American Coach of the Year Matt Hill’s men’s squad defeated Florida State, 4-2, in the first round of the NCAA tournament. The Bulls’ memorable season ended with a loss to Florida in the second round on May 11. American Player of the Year Roberto Cid, a sophomore, continued his season in the NCAA Singles Championship.
Brian Andres

Fossil Hunter

For USF paleontologist Brian Andres, a fossil find in northwest China in 2001 was the first step in rewriting pterosaur history.

In April, Andres, part of an international research team, announced the discovery of the earliest and most primitive member of a group of flying reptiles, called pterodactyloids, that would become the largest flying creatures of all time. The new species, *Kryptodrakon progenitor*, dates back about 163 million years, extending the fossil record of the winged beasts by at least five million years.

*Kryptodrakon* isn’t the first new species of pterosaur named by Andres, a world expert in pterosaur evolutionary relationships and a visiting assistant professor in the USF School of Geosciences. Earlier this year Andres named two new species of pterosaurs from his home state of Texas.

Paleontology, he says, “is one big treasure hunt with no Xs.”

How did you become interested in paleontology?
I chose my current career path when I was 3. That’s early, even for a paleontologist. My brother had just been born and my mother needed a break, so she enrolled me in a summer class in paleontology and dinosaurs. I was hooked. I don’t really remember it, but that’s when it started.

Why study pterosaurs?
Pterosaurs have so much of their own unique history and leave no relatives. There’s so much left to find out and recreate; there are so many questions to ask. Figuring out the evolutionary relationships is really quite tricky, but vital.

How does a single fossil lead to the discovery of a new species?
If a fossil has a unique combination of characteristics that we can use to diagnose it and nothing else has them, that can be erected as a new species. That’s the simplest part; it’s just the beginning.

Past or present: Past
Your hero: Charles Darwin
Biology or geology: Paleontologists don’t have to choose
Greatest fossil discovery: *Quetzalcoatlus*, the largest flying organism, and like me, a native Texan
You in a word: Systematic
Why is this latest discovery so important?
This guy, he’s a rather unimposing creature, but he’s the earliest of the group that takes over the skies and becomes the largest flying animals of all times. Where he is on the Tree of Life, when he lived and what is going on in his body can help us determine what made this group become so successful.

What’s the ultimate find?
The *Archaeopteryx* equivalent of pterosaurs—something that is half pterosaur and half transitionary form between non-flying reptiles and pterosaurs.

Why do prehistoric species continue to fascinate us?
We all like origin stories and this is our own. It’s our history—it’s true what they say, everything that ever lived or ever will live is a cousin of ours.

What’s next?
I have some really interesting projects on the horizon. Currently, I am constructing a Tree of Life for all pterosaur species and a giant database with all the information I have collected. I want to put it out there, online, so people can use it and a lot more research can be done on pterosaurs.

Paleontologist Brian Andres has traveled the world. Black push pins on the map above indicate places he has lived; red pins indicate places he has conducted field work; and white pins identify cities where he has traveled to study pterosaurs.

ANN CARNEY | USF News
Spring Game

Nearly 2,000 fans flocked to Corbett Stadium on campus to watch the Bulls in action during the annual spring game on March 29. Quarterback Steven Bench threw for 317 yards and three scores as the White Team handed the Green Team a 35-3 loss at the home of the USF men’s and women’s soccer teams.