

WINTER 2008 | VOL 50 NO 1

USE

MAGAZINE



**International Study Could
Eradicate Juvenile Diabetes**

SCENE ON CAMPUS



USF students used canned goods to create unique sculptures during the sixth annual Charit-a-Bull, held just before Homecoming kickoff on Martin Luther King Jr. Plaza. Students, faculty and staff donated about 12,000 pounds of food to Metropolitan Ministries to help the area's hungry and homeless.

USF

M A G A Z I N E



JOSEPH GAMBLE

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GIVING VOICE

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A data center, led by USF Health's Jeffrey Krischer, is at the heart of a \$169 million international study to understand the triggers of juvenile diabetes. Researchers at the center and around the globe hope to explain why some children get the disease that is one of the most common and serious long-term diseases in children.

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USF's Bulls celebrate an historic season that takes the team to an early number two spot in the BCS rankings. Sold-out games and a trip to the Sun Bowl are among the season's highlights.

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PETE TURNER/GETTY IMAGES

USF ocean scientists discuss global climate change. Story page 28.

COVER: PHOTO ILLUSTRATION BY JOSEPH GAMBLE
SCENE ON CAMPUS: JOSEPH GAMBLE

AFTER AN EXCITING and accomplishment-filled 2007, the new year is off to a busy and productive start at USF. Bold new initiatives and life-changing research are under way, moving us closer to our goal of becoming a member of the prestigious Association of American Universities (AAU).

Leading the charge is Ralph Wilcox, a remarkably gifted educator and researcher who stepped into the provost position in January. Dr. Wilcox fills the vacancy left by Renu Khator, who leaves the university after 22 years to assume the presidency at the University of Houston.

In this issue you will read about a major international research study led by USF Health's Dr. Jeffrey Krischer. Funded by a \$169 million grant from the National Institutes of Health, the study could lead to the eradication of type I diabetes for the next generation.

You also will read about research under way in the College of Marine Science to study the effects and reality of climate change. And you will learn about the work of Dr. Emanuel Donchin and his colleagues to provide a voice to individuals who cannot speak or move.

USF's research efforts will be the focus of Karen Holbrook, our new vice president of Research and Innovation. We are so fortunate to have someone of Dr. Holbrook's caliber to oversee the continued growth of this critical facet of our university.

This issue would not be complete without a look back on the most exciting football season in Bulls history.



JOSEPH GAMBLE

From sellout crowds and a Sun Bowl appearance, USF took charge, gaining national attention for the most dramatic rise in college football history.

As one of only 38 universities in the country to offer ROTC training in all four military branches, it was with a tremendous sense of pride that we cut the ribbon on C. W. Bill Young Hall in November. The new building, named in honor of the congressman who helped secure its funding, will be a training site for our nation's future military leaders.

Fascinating people who have helped shape the university are featured in this issue as well. Our profile on USF Foundation Trustee Richard Gonzmart gives just a glimpse into the life of a remarkable man who has made tremendous contributions to the university, the state and the Tampa Bay community.

I hope you will enjoy reading the pages that follow. Contained within them is the story of a university on a remarkable path of success.

Judy Genshaft
JUDY GENSHAFT, PRESIDENT

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USF UNIVERSITY OF SOUTH FLORIDA

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A Legacy of Leadership

Ralph Wilcox steps into the provost position, as Renu Khator takes the helm at the University of Houston.

AS RENU KHATOR CLOSED THE CHAPTER on a remarkable career in academia and administration at USF, Ralph Wilcox was appointed to step into the provost position. Khator, who had served as provost and senior vice president of the university since 2003, was unanimously appointed president of the University of Houston and chancellor of the UH System late last year.

Wilcox, who served as professor and vice provost since 2003, has been the university's principal liaison to the Florida Board of Governors. He has provided oversight for institution-wide strategic planning, enrollment planning and legislative budget matters.

"We are fortunate to have someone of Dr. Wilcox's caliber at USF who can step into the provost position," said USF President Judy Genshaft. "He is an exceptionally talented academic leader, researcher and educator. The office will be in very capable hands."

Since joining the provost's office in 2003, Wilcox worked closely with Khator to position USF as one of the nation's premier research universities. Now, as chief academic officer, Wilcox will oversee the university's ambitious plan to join the ranks of the Association of American Universities, an invitation-only group of research-intensive universities.

His predecessor, Khator, leaves USF after 22 years. One of the first Indian Americans to become provost at a comprehensive research university, she began her career at USF with a tem-



porary teaching position. Over time she climbed the academic ranks, eventually becoming director of the Environmental Science and Policy Program and dean of the College of Arts and Sciences. She has published five books, numerous book chapters and articles in leading national and international journals.

"It has been my honor to work with Dr. Khator," said Genshaft. "She is a talented educational administrator and a respected scholar who has brought this university to new heights."

Wilcox, who officially stepped into his new post as provost and senior vice president for Academic Affairs in January, holds a PhD from the University of Alberta, Canada; an MSc degree from Washington State University; and a baccalaureate degree from the University of Exeter, United Kingdom. Wilcox's scholarly expertise is in cultural studies and globalization. He has presented his work extensively and published two books, together with numerous articles in leading national and international journals. He has received upward of \$10 million in research contracts and grants.

"I thank President Genshaft—and others—for the confidence they have shown in my ability to provide the highest level of academic leadership at USF," says Wilcox. "While faced with significant budget challenges, we have a bold vision and an excellent faculty with whom I look forward to working as, together, we set priorities and continue USF's emergence as one of this nation's top public research universities."

– Ann Carney

Best in Business

USF Entrepreneurship Program named among the best in the U.S.

USF HAS EARNED ANOTHER national ranking, this time being named the nation's ninth best graduate entrepreneurship program by the *Princeton Review* and *Entrepreneur* magazine. The interdisciplinary program was included in *Entrepreneur's* November 2007 issue ranking top programs. The ranking criteria included mentoring, experiential learning and specific course offerings to alumni success and career prospects of current students.

USF's graduate program in entrepreneurship was ranked number four among public universities in the U.S.; USF is the only Florida university to be included in the rankings.

"Our vision has been to create an internationally recognized center of excellence for interdisciplinary entrepreneurship, fostering entrepreneurship education, training, and research to develop leaders," says Michael Fountain, director of the Center for Entrepreneurship. "To be recognized as one of the best graduate entrepreneurship programs in the nation confirms we are well on our way."

Graduates of the program have gone to work for venture capital firms, started new ventures, or created and grown new businesses. These ventures bolster and create new business areas of concentration, creating jobs locally and reducing the outflow of highly trained graduates to other parts of the nation. Graduates and faculty affiliated with USF's program have facilitated the creation of at least 29 high-technology ventures.

"We're thrilled to be recognized as one of the best in the nation by the *Princeton Review* and *Entrepreneur* magazine," says USF President Judy Genshaft. "But it isn't just this ranking that's so exciting; it's the knowledge of what we can achieve when we work in an interdisciplinary way. The Entrepreneurship program is part of the College of Business, and it's a collaborative effort with the Colleges of Engineering and Medicine. This type of collaboration is the way of the future, and it's what we're trying to achieve throughout USF."

Despite the program's youth, the United States Association for Small Business and Entrepreneurship (USASBE) has lauded the Center for three consecutive years, most recently in January 2006.

—Lorie Briggs

Scholarly Ranking

Department of Criminology 7th in the nation

THE NOVEMBER 16th ISSUE of the *Chronicle of Higher Education* includes the 2007 list of criminology programs ranked by the Faculty-Productivity Index. USF's Department of Criminology ranked seventh in the U.S. The index is calculated by a formulaic inclusion of scholarly publications, citation counts, and research and grant productivity. The list is compiled by the State University of New York, Stony Brook.

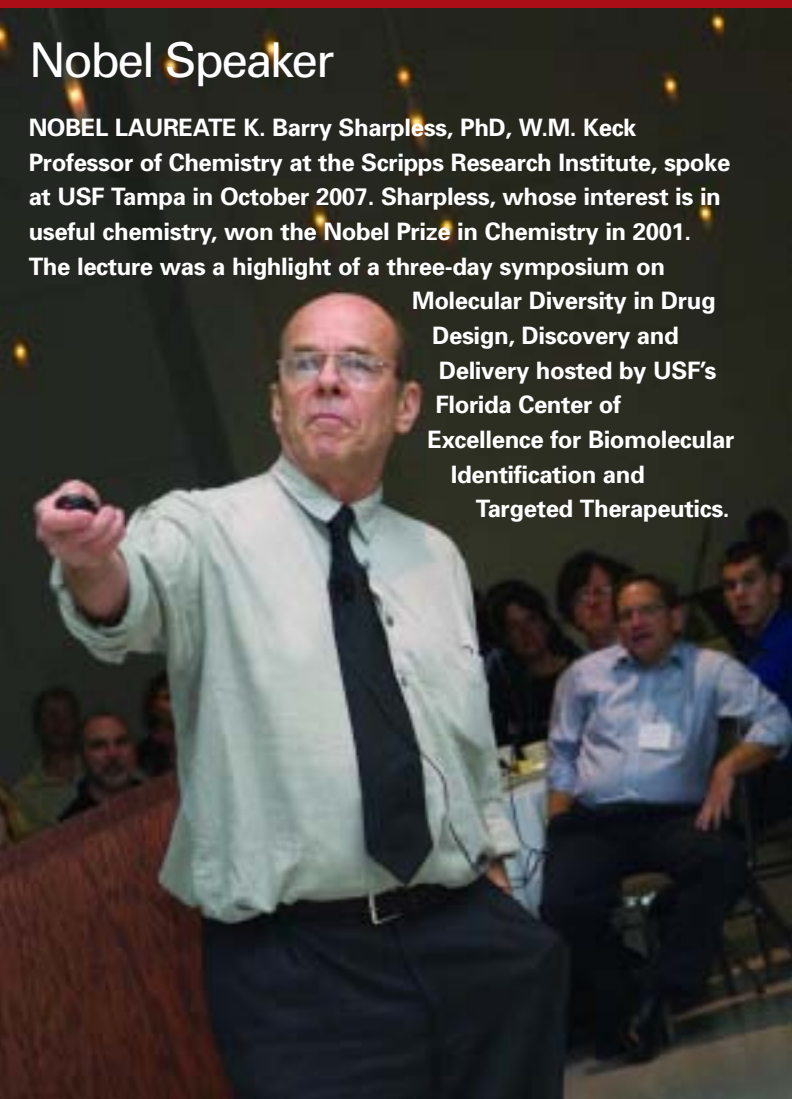
The 10 highest ranking departments are:

- | | |
|---------------------------------|--|
| 1. U. of Pennsylvania | 6. Temple U. |
| 2. U. of Maryland, College Park | 7. USF |
| 3. New York U. | 8. Penn State U. at University Park/City U. of New York system (tie) |
| 4. U. of California, Berkeley | 10. U. of Delaware |
| 5. U. of Florida | |

Nobel Speaker

NOBEL LAUREATE K. Barry Sharpless, PhD, W.M. Keck Professor of Chemistry at the Scripps Research Institute, spoke at USF Tampa in October 2007. Sharpless, whose interest is in useful chemistry, won the Nobel Prize in Chemistry in 2001.

The lecture was a highlight of a three-day symposium on Molecular Diversity in Drug Design, Discovery and Delivery hosted by USF's Florida Center of Excellence for Biomolecular Identification and Targeted Therapeutics.



JOSEPH GAMBLE



Fitting Honor

First chairman to be honored on campus.

REAL ESTATE DEVELOPER
Richard A. "Dick" Beard III, first chairman of the USF Board of Trustees, will forever have a name on campus.

In recognition of Beard's service, dedication and continued commitment to the university, Garage IV will be formally re-named the Richard A. Beard Parking Facility and USF Walnut Drive will be re-named USF Richard A. Beard Drive.

"Over the years Dick has been an incredible leader and has steered us toward many significant accomplishments as a university," says USF President Judy Genshaft. "To recognize him in this way is certainly a fitting honor."

Under Beard's leadership, USF was the first Florida university to implement a functional accounting system. And, he was instrumental in helping the board and the university smoothly transition through two governance and board structures. In 2007, Beard was officially named chair emeritus by the USF Board of Trustees.



International Connection

U.S. Ambassador to South Africa visits USF Tampa.

AN OPEN FORUM WITH students and faculty was one of several activities during an

October 2007 visit from U.S. Ambassador to South Africa Eric M. Bost. A USF alumnus, Bost earned a master's degree in special education from the College of Education. He spent the day at USF as a guest of International Affairs Dean María de los Angeles Crummett and College of Education Dean Colleen S. Kennedy, who co-hosted a reception in his honor.

News & Notes



President Judy Genshaft

assumed the role of Chair of the Board for the Greater Tampa Chamber of Commerce December 13, 2007. During her year-long term, the President will oversee a board of more than 75 business leaders. In addition, Diane Egner, con-

tent director for WUSF, will serve on the Chamber's Board of Directors.



Karen Holbrook, former

Ohio State University president, has been named vice president of research and innovation. She brings to the university an extensive resumé and background in research. From 2005 to 2007, Holbrook was a member of the Executive

Committee of the American Association of Universities (AAU). She is a former vice president of research at the University of Florida and provost at the University of Georgia.

Gene Engle, a prominent Lakeland developer, has been appointed to the USF Board of Trustees following a unanimous vote by the Florida Board of Governors. Engle has been a strong advocate for the university's Lakeland campus and is a member of the USF Foundation. He is well known for his interest and leadership in economic development for Polk County.

Dr. William T. Hogarth has been named Interim Dean of the College of Marine Science. Hogarth comes to USF from the National Oceanic and Atmospheric Administration (NOAA) where he served as assistant administrator for Fisheries at the National Marine Fisheries Service since 2001. Hogarth is an accomplished researcher whose background has focused on a wide range of environmental, scientific and marine policy issues.



ELLEN LEEDY/SPRINT MULTIMEDIA

First Lady

She was months shy of 100 years, but left a legacy that takes hundreds to achieve. Grace Allen, First Lady of the University of South Florida, passed away on December 16th, 2007.

THE WIFE OF USF'S FIRST president, John Allen, Grace watched with pride as the university grew from a 1,700-acre parcel of barren land, to a top-tier metropolitan research and teaching university. She will be remembered as the university's chief ambassador.

"USF's heart is broken because we have lost a woman who has been at the core of the founding of this university," said USF President Judy Genshaft, reacting to the news of Allen's death. "Grace was a model first lady and she remained connected to USF. She was as much a part of the

university's development as her husband, John."

Grace and John Allen came to USF in 1957, one year before the university had a name and three years before the first classes. In July 1960, she invited every USF wife and female staff member to her home. Together they established the USF Women's Club, which continues to this day as a social, cultural and charitable volunteer organization.

Speaking about the Women's Club during a 2006 interview Grace said, "Right from the beginning we set up as an organization to help students. We worked to establish scholarships."

In 1994, the club raised money to endow the Grace Allen Scholarship, and to date has awarded 133 scholarships totalling \$173,308. In addition, the club created an endowment to provide funding for the university's library.

Grace stood by her husband's side until his retirement in July 1970. The Board of Regents named USF's administration

building after the couple in recognition of their tireless efforts for the university. John Allen passed away in December 1982. In 1996, Grace was awarded an honorary doctorate.

Tampa Congressman Sam Gibbons called her "Amazing Grace." And Betty Castor, former USF president, said Grace helped lay the foundation for USF, adding, "USF has lost a guiding spirit and champion."

The legacy of John and Grace Allen will endure in the institution they guided through the countless scholarships that bear their name. Donations may be made in Grace Allen's name to the John and Grace Allen Scholarship Fund at the USF Foundation, 4202 East Fowler Avenue, ALC 100, Tampa, FL 33620.

— Ann Carney

A memorial service celebrating Grace Allen's life will be held in Traditions Hall at USF's Gibbons Alumni Center on March 7, 2008, at 10 a.m.

Contemplating Mailer

A new journal devoted to Norman Mailer's life and work is the first of its kind to be centered on the Pulitzer Prize-winning author.

WITH THE DEATH OF NORMAN MAILER in November 2007, the world lost one of the last, if not the last, of the great writers of the 20th Century—a writer who, over the course of nearly six decades, developed into a two-time Pulitzer Prize winning novelist, a renowned journalist, playwright, screenwriter, poet and film director. Just in time to receive his blessing, USF's English department launched its inaugural issue of an original literary journal devoted to the prolific literary legend, in conjunction with the Norman Mailer Society. The first issue of *The Mailer Review*, devoted to his life and work, was shown to him just weeks before he died. Word came back to the journal's editor, USF English Professor Phillip Sipiora, that Mailer had seen the journal and enjoyed it.

This is the first publication of its kind dedicated to Mailer. The inaugural issue includes previously unpublished work by Mailer; an essay by novelist William Kennedy, who discusses Mailer's place in contemporary American literature; an interview with author Lawrence Schiller, Mailer's collaborator on *The Executioner's Song*; four review essays on his latest novel, *The Castle in the Forest*; and much more.

One of the highlights of the publication is a collection of items from The Ransom Center Archive with rarely seen and never before seen correspondence, notes and photographs of the acclaimed writer.

"Norman Mailer is the last

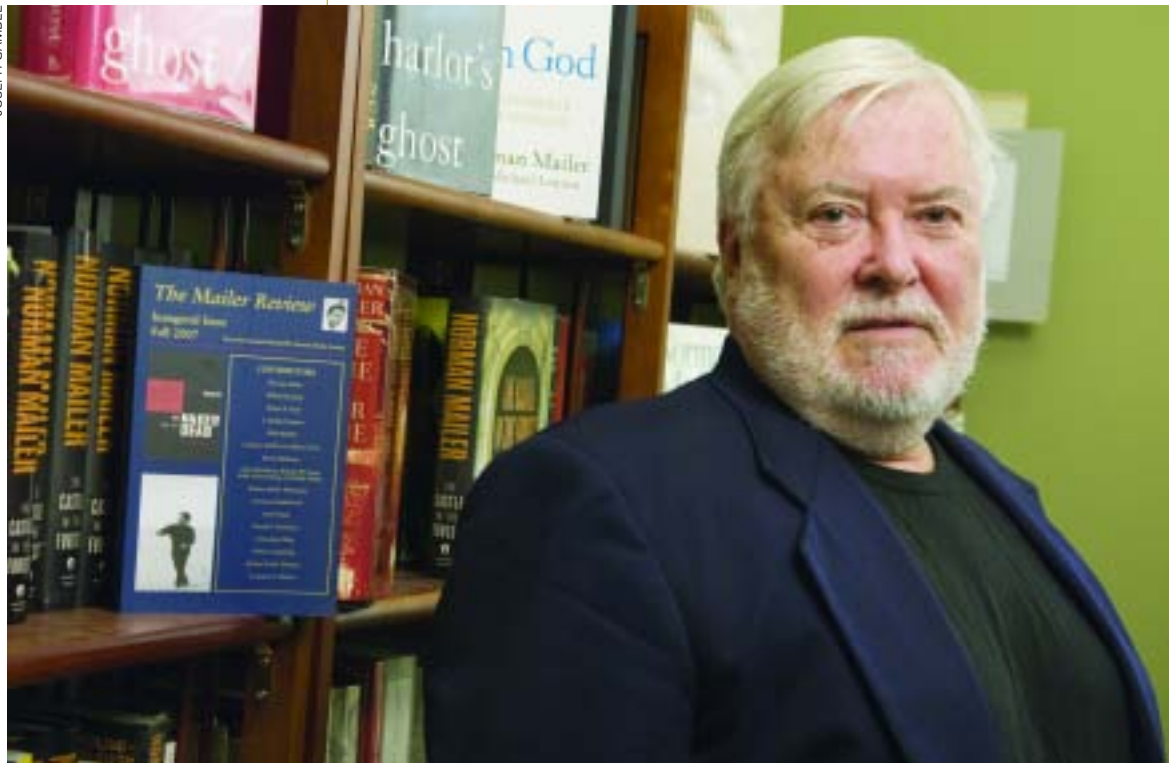
of the major fiction writers to have served in World War II and his legacy of fiction and creative non-fiction has inspired at least two generations of writers. He has published more than 40 books, hundreds of essays and has been interviewed perhaps a thousand times over the past 60 years. His presence on the East Coast Literary Scene has been ubiquitous and powerful over these many decades, particularly in New York City," says Sipiora. "He was one of America's most prodigious and prestigious writers and thinkers. There is no one to take his place."

The next issue of *The Mailer Review* will appear in late summer, 2008. Beginning in 2009, *The Mailer Review* will be published twice a year. "It promises to be an exciting issue," says Sipiora, himself the author or editor of three books and more than two dozen scholarly articles. "It will include an unpublished contribution by Norman Mailer. It will also include a number of memoirs about him, as well as several scholarly essays. I am truly grateful he had a chance to see the journal take shape in his lifetime."

For information on how to subscribe to and purchase *The Mailer Review*, visit http://www.normanmailersociety.com/mailer_review.htm or call (813) 974-9488.

— Barbara Perkins

JOSEPH GAMBLE



Call to Duty

C.W. Bill Young Hall, USF's Joint Military Leadership Center, opened in November. USF is one of only 38 universities in America to offer ROTC in all four military branches.

AMIDST AN AUDIENCE OF COMMUNITY, university and armed services leaders, USF President Judy Genshaft, Congressman C.W. Bill Young and Brigadier General Luis Visot cut the ribbon on a new building where the nation's future military leaders will be trained. The building's name was a surprise to the congressman who has always been a leading supporter of USF.

C.W. Bill Young Hall, named in honor of the sponsor of the federal grant that helped provide funding for the center, will house the Joint Military Leadership Center (JMLC) and USF's ROTC programs.

The four-story, 53,000 square-foot, state-of-the-art facility is the university's most technologically advanced educational facility. Leading from the street to the building's main entrance is a brick pathway to "selfless service," symbolically representing what the ROTC program instills in the hearts and minds of students. In addition to military leadership training, the building's first floor will offer space for general academic classes, helping to address the university's need for classroom space.



Executive Director Brigadier General Luis Visot

Inside the building, several 9/11 artifacts, including a square of steel recovered from the World Trade Center; soil from the Shanksville, PA crash site of United Airlines Flight 93; and pieces of limestone from the Pentagon debris field will be on display. A future memorial is planned to honor USF alumni and Tampa Bay area residents who have been wounded or made the ultimate sacrifice defending and supporting our nation.

Visot, the center's executive director, says the new building represents "the value and importance USF places on the development and education of future Armed Services officers who have answered the call to duty." Visot returned from a deployment in the Middle East to attend the ceremony.

The JMLC provides ROTC cadets, midshipmen and officer candidates with unique core competencies and skills in leadership development, global understanding and military/national defense strategies. USF is one of only 38 campuses in the nation that have ROTC programs from all of the nation's Armed Services.

— Ann Carney



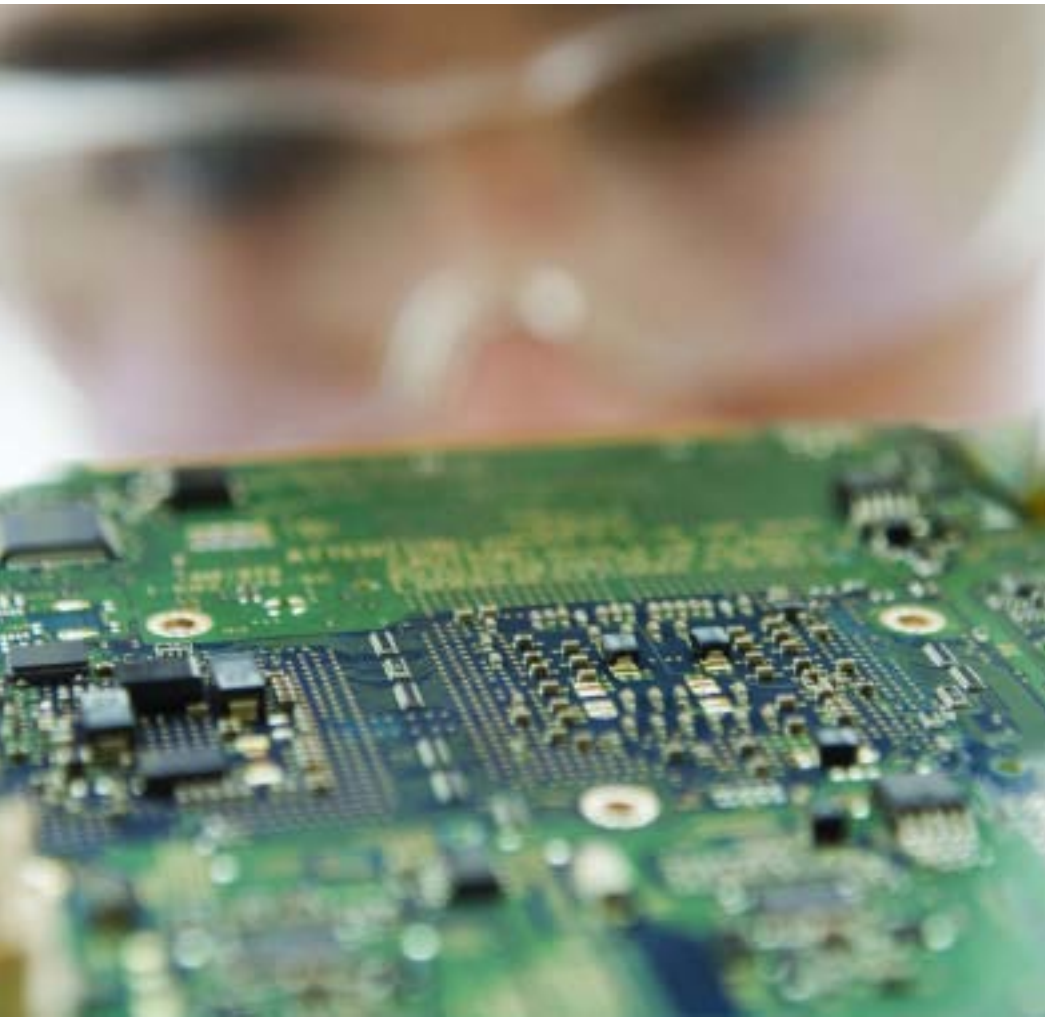
PHOTOS: JOSEPH GAMBLE

ROTC students attended the opening ceremonies at C.W. Bill Young Hall.

USF President Judy Genshaft, Young and USF Board of Trustees Chair Rhea Law spoke at the opening ceremony.

U.S. Congressman C.W. Bill Young





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\$20 Million for USF Lakeland

\$10 million in gifts for new campus in Lakeland is eligible for state match.

SINCE HIS ARRIVAL, USF LAKELAND CEO Marshall Goodman's tagline has been "Dream no small dreams." Lakeland and Polk County listened and responded.

President Judy Genshaft recently accepted two gifts totaling \$10 million, given to support the construction of USF's new campus in Lakeland. Two of the region's premiere economic development organizations, the Central Florida Development Council (CFDC) and the Lakeland Economic Development Council (LEDC), each

gave \$5 million to construct the campus along I-4 in the heart of Florida's High Tech Corridor.

Both gifts are eligible for a 100 percent match through the State's Courtelis Matching Gift Fund for academic facilities.

"These gifts are further evidence of the incredible generosity of our friends in Polk County and affirm the university's role in our region's economic vitality," says Genshaft. "Both gifts further strengthen our partnership with these organizations and the communities they represent."

State Senator J.D. Alexander, a longtime supporter of USF and champion of the new campus, was pleased with the announcement: "These gifts from within the region are very helpful as we move forward in Tallahassee with the campaign to make this polytechnic campus a reality."

CFDC's executive director, Tom Patton, expressed high hopes for USF's presence in central Florida. "We see the campus as a magnet for the kind of high-skills, high-wage jobs that our

communities want, and we can't think of a better way to invest our economic development resources than in making USF's vision a reality."

Goodman described the gifts as "critical" to the University. "The magnitude of this generosity is tremendous. But what these gifts mean for us is even more inspiring. We have seen the communities we serve step up to the plate and say 'Yes, USF is our university.' That support is both humbling and exhilarating."

Steve Scruggs, LEDC's executive director, positioned the gifts in historic context: "Few of us will ever have a chance in our lifetimes to be a part of something as important for our communities as this project. We couldn't waste time. We've got to get this done now."

- David Steele

Talking Policy

Public policy and leadership issues discussed at USF Sarasota-Manatee.

THIS JANUARY, THOUSANDS of Floridians went to the polls to vote on the Save Our Homes Property Tax, but not before they got a chance to discuss the implications at USF Sarasota-Manatee.

On January 17, 12 days before the primary in Florida, USF Sarasota-Manatee's Institute for Public Policy and Leadership (IPPL) hosted a property tax panel discussion on campus. The panel featured representatives from the Florida Association of Counties and state and local elected officials, who provided an open forum for community members to share and gather ideas.

The institute is an asset to the Sarasota-Manatee community, providing an opportunity for area leaders, politicians and residents to come together and discuss local issues in a university setting. Lectures, workshops and forums on topics such as growth in the local economy, planning for natural disasters, ethics in government, taxes and immigration provide a means of open communication on important public policy and leadership issues.

IPPL was established in 2002 by former Congressman Dan Miller of Bradenton when he retired as the representative from District 13 in Congress. It recently welcomed a new director, David Klement, long-time editorial page editor of the *Bradenton Herald*. Under Klement, IPPL has already begun to expand its public policy issues of concern to Manatee and Sarasota counties as well as the larger Tampa Bay region.

The overall mission of IPPL is to be a convener of community conversations and a center of research, study, teaching, training and leadership development. Its focus in the new year will be on health care, civility and the economic impact of a slowdown in growth and development.

"There has been a seismic shift in the marketplace and in the public attitude toward growth in general," says Klement. "A big part of our focus in the coming year will be on the impact of that shift on the local



IS/GETTY IMAGES

economy and how to approach growth in an era of economic devolution. We also know that health care is in the midst of a crisis.

And during this presidential election year we plan to do a major series of workshops on civility in public life."

– Crystal S. Rothhaar

Student Advisers

USF students offer marketing advice to Chevrolet.

FIVE USF COLLEGE OF BUSINESS STUDENTS headed to Atlanta in December for a meeting with managers at Chevrolet's southeast regional office. The marketing students, part of a larger team, offered their advice on how to market Chevys to Generation Y consumers.

One of just two college teams nationwide asked to bring their marketing campaign to General Motors leaders, the students earned the opportunity to present their ideas as part of the Chevrolet Marketing Internship Program Scholastic Achievement competition, sponsored by GM in collaboration with Edventure Partners.

Students conducted research on Chevrolet and its competitors, investigated the consumer market and created an advertising agency called Bulls Revolution Promotions. Working with Tom Moore Chevrolet in Tampa, and using a budget of \$2,500, the students created a campaign titled "Experience the Revolution." The campaign was designed to increase interest in and awareness of the Chevy Cobalt and Chevy Aveo on the USF campus.

The competition gives marketing students an unusual opportunity to gain real-world experience complementing lessons learned in the business-school classroom, says Kareema Aaronson, who acted as CEO of the agency and leader of the team.

The USF campaign was lauded for its use of a video contest to create interest in the Chevy products. Students challenged their peers to create promotional videos for Cobalt or Aveo and post the clips to Flix55 and Youtube. Chevy products previously were not featured on those video channels popular with the target market.

– Philip Booth

Bridging the Gap

Student-run clinic brings health and social services to the uninsured.

WHEN SYLVIA MARTINEZ HAD her blood pressure checked at a community health fair, she knew it was high. But Martinez, who does not have medical insurance, was pleasantly surprised when she was directed to a place where she could actually get examined and treated for free.

Martinez was among the first patients seen at the BRIDGE Healthcare Clinic when it opened in October 2007. The BRIDGE, which stands for Building Relationships and Initiatives Dedicated to Gaining Equality, is the university's student-run clinic offering free primary care, social services and physical therapy to uninsured adults living in the university area. The clinic builds upon a grant obtained by another group of medical students in 2004 to bring health education and screenings to the low-income neighborhood just west of the USF Tampa campus. It was the brainchild of Sam Crane and fellow USF senior medical students Waldo Guerrero, Omar Hammad and Shelby Kent.

"We have a community practically across the street from the medical school that can really use our help," says Crane, a former Peace Corps worker. "If someone's blood pressure was high at one of our health screenings, the best we could do before was send them home with a brochure and limited counseling. Now, if they qualify, we can refer them to the BRIDGE clinic."

The four founding directors began pushing their cause more than a year ago, studying models of other student-run free clinics and attending a national conference about such clinics in New York City. They assembled a core group of 30 student volunteers. They pitched their project to professors, administrators and lawyers, navigated insurance and legal challenges, and lined up sponsors. USF Health donated \$10,000 for the clinic, Quest Diagnostics agreed to



process lab tests free, and University Diagnostic Institute and Tower Diagnostic Center provided free imaging for the clinic's patients. Dr. Douglas Holt, medical director of the Hillsborough County Health Department, offered to let the students use space and supplies in the county's University Area Community Health Center on Tuesday evenings.

"Big changes start with little actions," says Holt. "This group of students set up a legacy that will last beyond their medical school class. They persevered and made the idea for this clinic happen, coming up with solutions for each obstacle along the way."

To qualify, patients must be below 200 percent of the poverty level and have no medical insurance or assistance



BRIDGE HEALTHCARE CLINIC

Hours: 5:30 to 8:30 p.m.,
Tuesdays

Location: University Area
Community Health Center,
13601 N. 22nd St., Tampa

Service Area: Serves uninsured
adults, by appointment only, liv-
ing in the area bounded by Bearss
Ave, Fowler Ave, Bruce B. Downs
Blvd, and Florida Ave.

Sponsors: USF Health, Florida
Department of Health, Allscripts,
Quest Diagnostics, Tower
Diagnostic Center, University
Diagnostic Institute

Needs: Tax-deductible donations
for clinic operation, medical sup-
plies and equipment

For information or to donate: Visit
www.bridgehealthcareclinic.org or
call (813) 307-8037



such as Medicaid. Each patient is seen by a team comprised of a patient care coordinator, a student social worker, a third or fourth-year medical student, a first or second-year medical student, and a USF or community physician who supervises all care. Physical therapy students recently began volunteering at the clinic, and the directors expect to include public health and nursing students in the future.

“We are one of a few student-run clinics in the country that brings virtually all the health professions together in one location,” Crane says, adding that students are getting the chance to learn first-hand how a real clinic operates while giving back to the community.

Many coming to the clinic have been referred for high

blood pressure, diabetes and/or high cholesterol. The students hope that early diagnosis and treatment will hold off long-term health complications. “These are underserved people who, for whatever reason, have fallen through the safety nets out there,” says Crane. “Our goal is to try to help people manage these chronic illnesses before they become much worse.”

Following a comprehensive medical history, exam, and counseling about diet and exercise, Martinez was given a gift card to cover the cost of blood pressure medication and an appointment for a follow-up visit. “I never had anyone help me like this before,” she says.

— Anne DeLotto Baier



Confronting HIV

NIH grant focuses on controlling the spread of AIDS among adolescents in India.



Dr. Patricia Emmanuel, principal investigator.

USF's GLOBAL HEALTH INITIATIVE to help India build an infrastructure to fight AIDS was strengthened over the summer with a \$1.36-million research training grant from the National Institutes of Health (NIH).

USF Health received the five-year grant from the NIH's Fogarty International Center to create an interdisciplinary training program focused on the biomedical, behavioral, cultural and ethical aspects of detecting, treating and preventing HIV/AIDS among adolescents in India. USF will partner with Vadodara Medical College in Gujarat, India, to teach Indian physicians, scientists, nurses and other health professionals how to conduct and evaluate community-based HIV clinical studies for this vulnerable population.

"This program represents another exciting opportunity for USF to shine in the international health arena and to broaden the scope of our HIV research and training partnerships in India," says USF pediatrician Dr. Patricia Emmanuel, principal investigator for the project. "It will enhance new knowledge in the area of adolescent health and benefit USF and the local communities in India."

India ranks second worldwide, following South Africa, in the number of HIV and AIDS cases. In some places in India, half of all new HIV infections occur in adolescents and young adults. Young people are at greater risk for HIV for several reasons, including girls' increased biological sus-



ceptibility and a tendency for risky behaviors like unprotected sex and IV drug use, Emmanuel says.

In recent years India has made some significant inroads in committing resources to the pressing public health problem of AIDS. But, a recent article in the *New England Journal of Medicine* reports that to curb the spread of the HIV epidemic, the developing nation must meet several challenges, including increasing the number of patients treated, improving the monitoring of therapy, caring for patients with tuberculosis coinfection, and reducing the stigma and discrimination associated with AIDS.

“We expect to train more home-grown investigators who can confront these barriers by addressing research questions specific to the HIV epidemic in India,” Emmanuel says.

The new grant—the latest of three NIH Fogarty International awards to USF faculty—was spearheaded by USF Health’s Signature Interdisciplinary Program in Allergy, Immunology and Infectious Disease (SPAIID) and the USF-India Center for Health, HIV/AIDS Research and Training (CHART-India). Emmanuel will work with co-principal investigators Dr. Shyam Mohapatra and Dr. Eknath Naik.

The grant will expand the existing HIV infrastructure built by CHART-India. Since 1999, USF medical and public health faculty have established several CHART centers across India to care for people with HIV/AIDS, train staff and conduct research.

The Fogarty project will draw upon the expertise of USF’s nationally-recognized Tampa Bay Adolescent

“This program represents another opportunity for USF to shine in the international health arena and to broaden the scope of our HIV research and training partnerships in India.” – Dr. Patricia Emmanuel

Medicine Trials Unit. The unit, directed by Emmanuel, is one of 15 NIH-funded clinical sites across the country providing comprehensive services to HIV-infected adolescents. Emmanuel oversees a large team of researchers and clinicians who work with both adolescents and children—educating youth at high risk for HIV in an effort to prevent AIDS, offering new treatments, and evaluating barriers to clinical trial enrollment and retention.

“USF Health has undertaken strategic efforts to enhance translational and clinical research in the greater Tampa Bay area and has created an effective network for its globalization,” says Dr. Abdul S. Rao, senior associate vice president, USF Health. “The award of this prestigious grant is a national recognition of our efforts. It also underscores the efforts of our interdisciplinary signature program in allergy, immunology and infectious diseases, which was established last year to facilitate such activities.”

—Anne DeLotto Baier

Rising in the Ranks

USF Ranked 63rd among nation's research universities.

USF IS RISING IN THE RANKS of the nation's top research universities. That's according to the National Science Foundation's survey of federally financed research and development expenditures at universities and colleges for 2006. The survey puts USF at number 63—the second highest-ranking university in Florida.

The university's climb in the rankings has been nothing less than dramatic. In 1992, USF ranked 130th. Seven years later, when Judy Genshaft became president, USF ranked at 107.

"From day one I saw USF as a top research university," she says. "We've made remarkable breakthroughs in medicine, biotechnology, engineering, the environment and other fields that have a positive impact on the lives of people around the world."

The 2006 NSF survey puts USF's federal R&D funding in science and engineering higher than the University of Buffalo, Stony Brook and Rutgers. And, for the first time, USF is ranked higher than the University of Miami, which was ranked at 66.

How Florida Universities Rank* Federal R&D Expenditures in Science and Engineering

Institution	2006 Ranking	Expenditures
University of Florida	39	\$248,322,000
University of South Florida	63	\$153,737,000
University of Miami	66	\$150,408,000
Florida State University	89	\$110,358,000
Florida International University	136	\$45,894,000
University of Central Florida	152	\$37,974,000

*according to the 2006 NSF Survey

Combating Cancer

New test to detect early-stage ovarian cancer could save lives.

AN AGGRESSIVE, SILENT KILLER of women could soon be caught and identified much faster thanks to new technology developed at USF.

The USF Division of Patents & Licensing recently entered into a strategic partnership with Largo, Fla.-based GeoPharma, Inc. to advance a critical development in the area of women's health. In December 2007, GeoPharma signed an agreement with the USF Research Foundation to acquire worldwide patent-rights of a test for early detection of ovarian cancer using a patient's urine sample. Valerie McDevitt, director of the Division of Patents and Licensing for the USF Research Park, says she looks forward to partnering with GeoPharma.

"We're very excited," McDevitt says. "It's a local company so we're hoping for good things. We want to support local businesses. This could help large numbers of women and it is part of USF President Judy Genshaft's mission to promote biotech at USF."

Kotha Sekharam, president of GeoPharma, says he enjoys dealing with USF and that they "came very fast" to an agreement on licensing the test.

Sekharam said that ovarian cancer is often called a "silent killer" because of vague symptoms that are unnoticed until the disease has progressed to an advanced stage. The most deadly of all gynecological cancers, ovarian cancer is also the most curable with early detection.

"An ovarian cancer diagnostic test with (a) high reliability, (b) ease of use and (c) detection at an early stage could save thousands of women from untimely deaths. Our technology could offer significant help in this direction" he says.

With a five-year survival rate of only about 35 percent, the National Cancer Institute estimated 15,280 women in the U.S. would die from ovarian cancer in 2007.

When ovarian cancer spreads from the pelvis, less



Dr. Patricia Kruk, an affiliate at H. Lee Moffitt Cancer Center, developed the test at USF.

than 30 percent of patients survive long-term. When cancer is limited to the ovaries, 90 percent of patients can be cured. Currently early-stage diagnosis occurs in only 20 percent of the ovarian cancer cases.

Dr. Patricia Kruk, who developed the test at USF and is an affiliate at H. Lee Moffitt Cancer Center, has long wanted to find a way to catch the disease in its early stages.

“My interest has always been to identify some of the early changes to ovarian epithelial cells that cause them to become malignant,” Kruk says.

Ovarian cancer “doesn’t get nearly as much press as other women’s cancers, but it is the most lethal gynecological cancer,” she adds. “Unfortunately, there are almost no symptoms and there is no screening test for it. If it is detected before the disease spreads beyond the ovary, you could remove the ovary and significantly improve patient survival.”

Currently, there is no approved test for early detec-

tion of ovarian cancer. The only ovarian cancer diagnostic test is the CA-125 blood test that is approved by FDA to monitor progression of the disease. For best accuracy, the CA-125 test is done with other physical tests like transvaginal sonography and pelvic examination.

Preliminary clinical studies have been conducted at USF and further studies are underway. GeoPharma will initiate necessary steps for FDA approval.

– Sean Ledig

To Market

USF FACULTY ACHIEVED a major milestone in licensing revenue in Fiscal Year 2006-07. For the first time in USF history, revenue generated from licenses of USF faculty intellectual property to private businesses exceeded \$2 million. The milestone places USF second only to the University of Florida in technology commercialization in the Florida State University System.

Forty-five percent of the revenue generated is returned directly to the faculty inventors. The performance milestone represents a doubling of licensing revenue since 2003.

Here Comes the Sun

USF Professor has decades-long collaboration with sunlight.

FOR YOGI GOSWAMI, John and Naida Ramil professor in the USF College of Engineering, there is always something new under the sun. Whether he is enlisting the power of the sun to clean air or discovering new and better ways to harness solar power to heat and cool homes—when the morning sun rises, so does Goswami’s curiosity about how to better use its power.

“We are always looking for ways to reduce the cost of solar energy,” says Goswami, who works with other USF scientists in the USF Clean Energy Research Center (CERC) discovering new and better alternative forms of energy. “One road to success in solving the looming energy crisis is to make solar energy more efficient and making it cheaper. The expense currently associated with solar power comes with the cost of solar collectors. If we can use cheaper solar collectors, we can reduce the cost of solar energy by one-third.”

Accordingly, he’s trying to come up with better ways to collect solar energy and use it in innovative ways. That means going back to basics. Back to simplicity.

“All of my inventions are simple,” he says with a smile. “It just takes a while to come up with something simple.”

One of his “simple” inventions found a way to use light to oxidize and destroy hazardous molecules and microbes in the air, thereby disinfecting air. In a current project that could make a big difference in our ability to harness solar energy

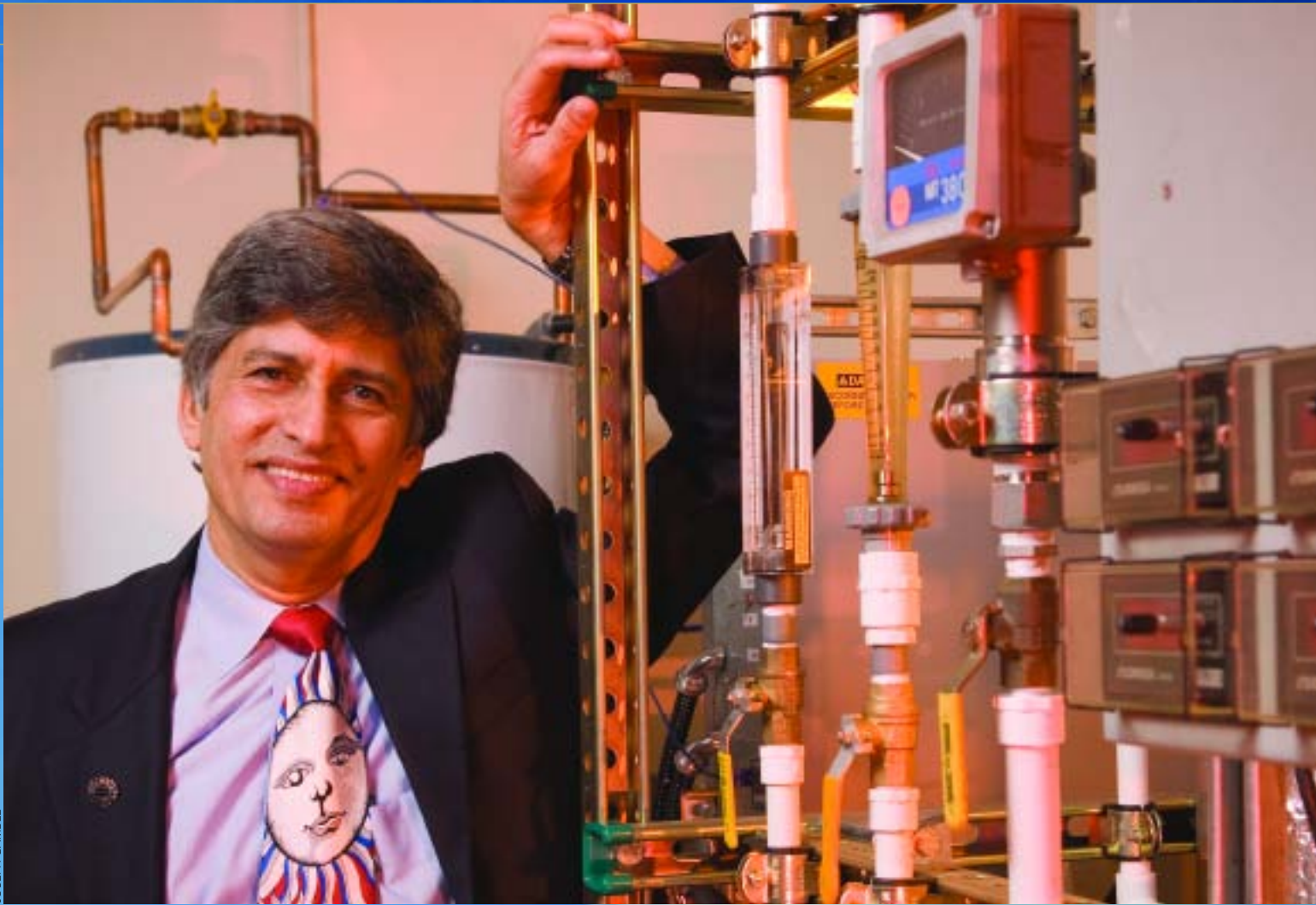
more efficiently, Goswami and colleagues have invented a new thermodynamic cycle to produce electric power and both heat and cool air. While generating heat has been the normally desirable output of solar energy, coming up with a way to generate cool air as a by-product of solar energy has been a challenge.

According to Goswami, the secret to this project’s success lies in two innovations—developing a turbine unlike those in current use and finding the right liquid to absorb the gas coming out of the turbine after energy production. The experimental turbine being developed works at a low—rather than high—temperature cycle. Developing one that works at a low temperature has been crucial.

So that students can learn from it and improve it, the experimental turbine (and its associated parts) now have a home in the classroom where Goswami teaches “Principles of Solar Energy.”

Goswami—who has met with and advised many world leaders on energy issues, particularly in China and India—wonders that government officials worldwide don’t appreciate the depth and immediacy of the energy problem.

He also worries about the worldwide growth in the rate of energy consumption and its polluting consequences and is equally concerned about a lack of attention to finding renewable energy sources. He expresses that and other worries regularly to his students, but recently also voiced the same con-



JOSEPH GAMBLE

cerns to delegates at the International Solar Energy Society (ISES) World Congress 2007 held in Beijing, China, in September. A plenary speaker, Goswami spoke about the future of solar energy and also gave a running evaluation of the prospects for using nuclear power, wind power and biomass (ethanol and biodiesel) fuels as well.

“World oil production may have already peaked,” says Goswami. “With energy costs skyrocketing, alternative fuels must be made available. The last five years have shown a resurgence of interest in solar energy and a number of solar thermal power plants are under construction around the world.”

The vast majority of the world’s solar photovoltaic collectors are now used in Germany and other European countries, explains Goswami, and 70 percent of the world’s solar thermal collectors are being manufactured in China. But, as China and India are experiencing record growth, and coal is still the fuel of choice in China, even more effort in developing renewable energy sources is necessary.

“There is a movement toward renewable energy in

China and India,” he says. “But neither country recognizes the depth of the problem.”

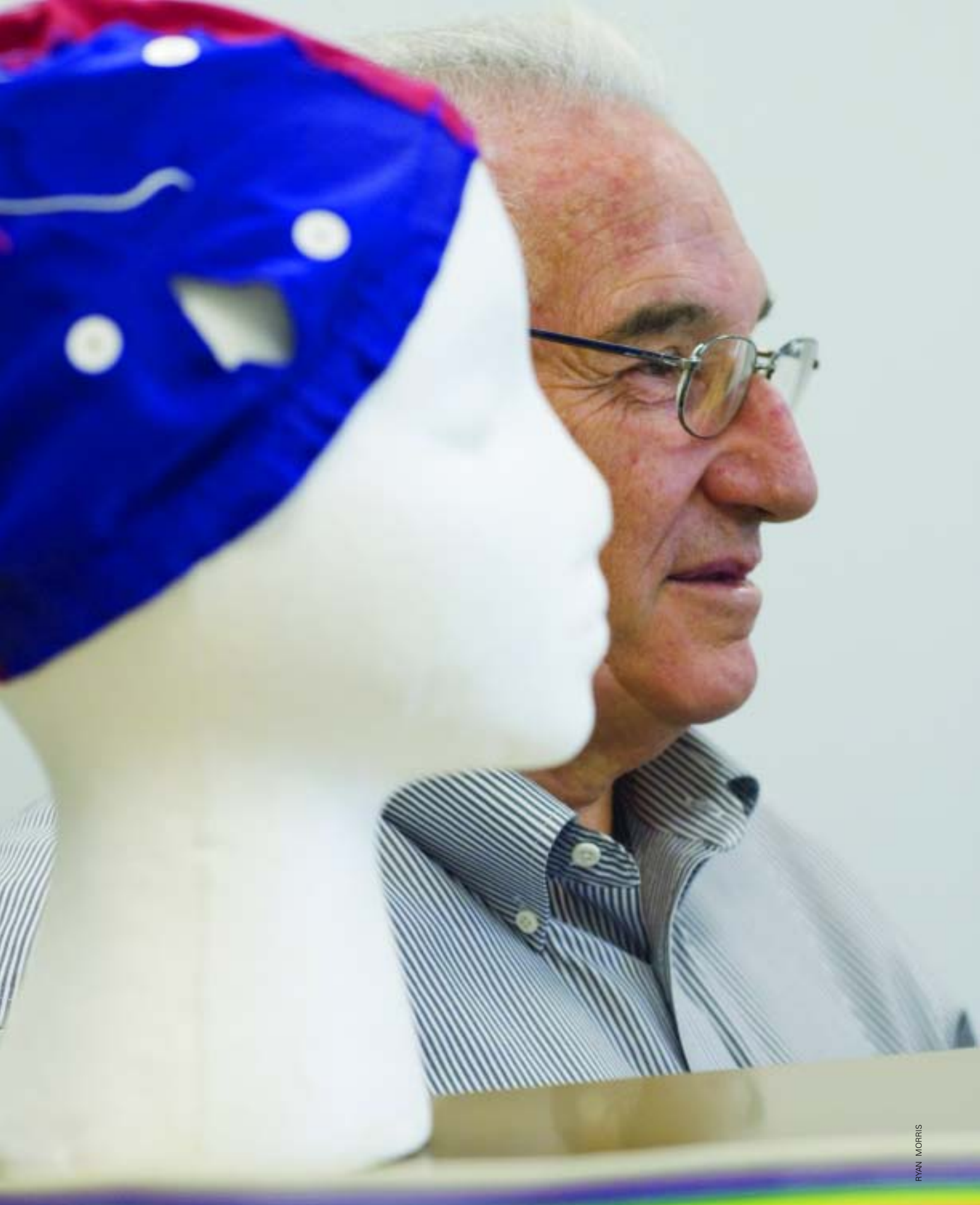
Goswami is also suspicious of the excitement surrounding ethanol being made from corn in the U.S.

“We should not have solutions that make us choose between food and fuel,” he says.

At the 2007 ISES World Congress, Goswami was awarded the society’s Farrington Daniels Award for outstanding contributions in science, technology or engineering of social energy applications leading toward ameliorating the conditions of humanity. Last year he received the American Society of Mechanical Engineering’s Frank Kreith Energy Award for significant contributions to a secure energy future through research, education and societal contributions in the field of solar energy. He also published four text books in 2007.

“It was a very busy year,” says Goswami.

—Randolph Fillmore



RYAN MORRIS

Giving Voice

A USF psychologist and his colleagues are harnessing brain waves to help individuals who cannot move or speak.

TO WRITE HIS 1997 AUTOBIOGRAPHY, *The Diving-Bell and the Butterfly*, Jean-Dominique Bauby blinked his eyes. He blinked 200,000 times. Bauby was afflicted with a rare condition called “locked-in syndrome” that, after a brain stem stroke, or as a consequence of Lou Gehrig’s disease (ALS), leaves victims conscious, intellectually intact, yet unable to move. Blinking was the only way Bauby could communicate words—letter by letter—to a writer sitting by his hospital bed.

Research carried out at USF by psychologist Emanuel Donchin and his colleagues may eventually help those afflicted with locked-in syndrome by harnessing a brain wave response called P-300. That response can, in turn, be linked to a brain-computer interface (BCI). When it captures the P-300 response, the BCI can be used to help communicate the thoughts and desires of those who cannot move or speak. The system can “write” by harnessing brain waves.

“We study P-300 and other brain responses because we are interested in the way the brain handles deviant events,” explains Donchin. “While fully understanding

BY RANDOLPH FILLMORE

the P-300 response is still a challenge, we know how to elicit the response, and this allowed development of the BCI to harness it.”

The P-300 response, discovered in 1965 by Samuel Sutton and his colleagues, focused Donchin’s research for the next 40 plus years, 32 of which he was at the University of Illinois in Urbana-Champaign. Donchin’s work has resulted in more than 180 publications, some 10 of which focus on BCI systems.

“I found my niche,” says Donchin with a smile. “We began with very basic research that provided the understanding and knowledge of the P-300 response.”

After coming to USF in 2001, Donchin and his colleagues, particularly Eric Sellers, who earned his doctorate at USF while working with Donchin, have been testing the P-300/BCI with ALS patients. Patients are given the opportunity to communicate using a P-300 Speller which allows the user to type on a virtual keyboard with the P-300 response serving as the virtual finger. Users can essentially “hunt and peck” on the keyboard by using the power of their brain. Dr. Yael Arbel, also a Donchin student and currently a research associate in Donchin’s lab, is a key collaborator in the



Yael Arbel, a key research collaborator, demonstrates the BCI.



current BCI studies at USF.

“Our research continues to deal with various aspects of the P-300 and many other brain responses,” says Donchin. “The P-300/BCI research is just one application of this very large body of continuing research on P-300.”

Other researchers have used a “joystick” rather than a keyboard, but Donchin prefers the keyboard because it does not require extensive pre-training for users.

“There is a general consensus in the field that the P-300/BCI is ready for use by locked-in patients,” explains Donchin, who has been chair of the USF Department of Psychology since 2001. “The current challenge is to increase BCI response speed and contin-

The P-300 Speller allows the user to type on a virtual keyboard with the P-300 response serving as the virtual finger.

ue the development of a home version of the P-300/BCI. We have recently begun to explore the degree to which the P300/BCI can be used to allow the control of a robotic arm.”

Finding ways to speed up the P-300/BCI is currently a joint endeavor with the USF Pattern Recognition



Center of Excellence, where researchers in Donchin's lab, primarily Arbel, are collaborating with Sudeep Sarkar and colleagues in the College of Engineering's Department of Computer Science. Arbel and Donchin also are collaborating with Rajiv Dubey, chair of the Department of Mechanical Engineering and director of the Rehabilitation Engineering and Technology Program. Dubey and his colleagues have developed both a robotic arm and a specialized chair to be used by quadriplegic patients. Donchin's lab is developing a P-300 based system that allows a user to control the robotic arm.

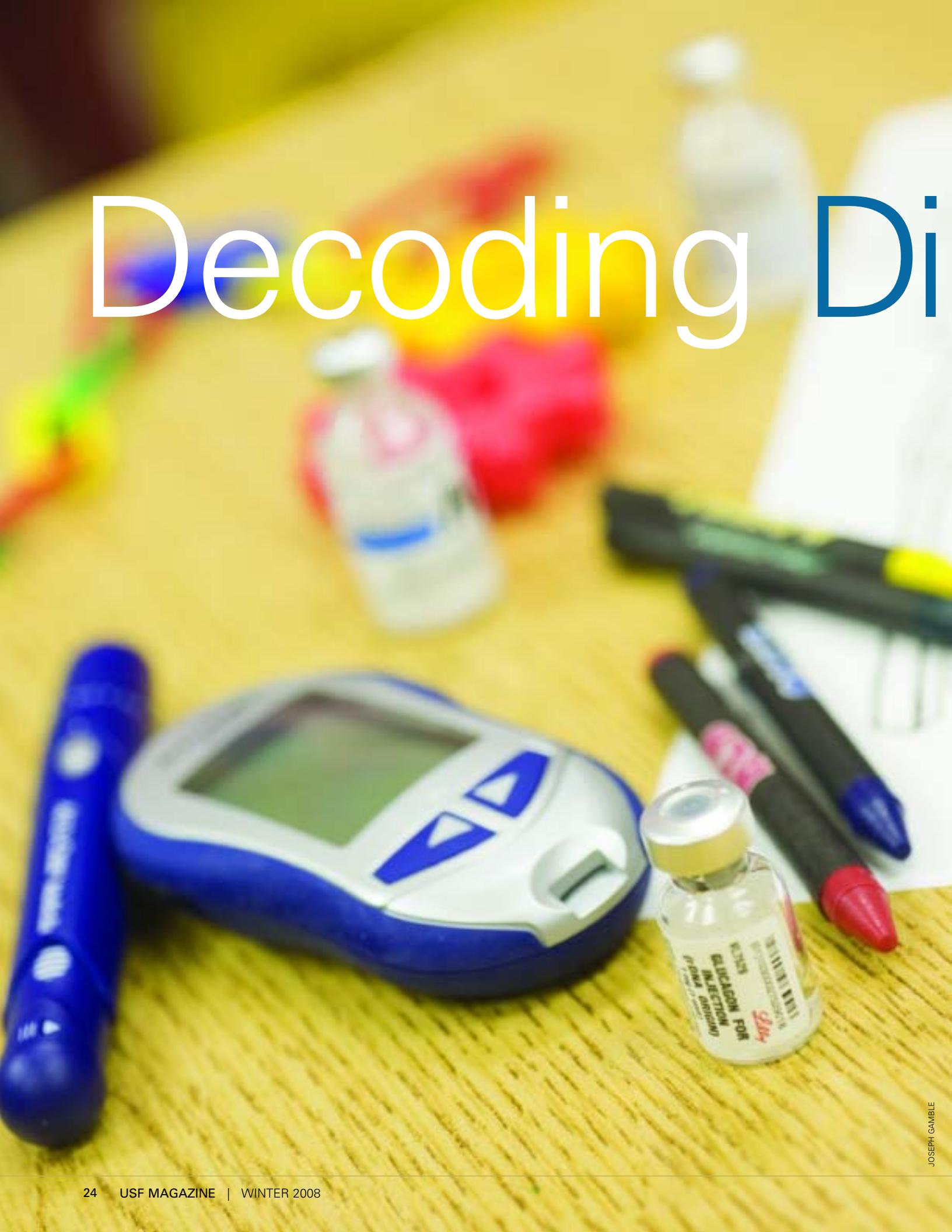
Although the technology is sound and on track for development for home use, there are commercial considerations to tackle before the technology becomes an

everyday, practical reality.

"A home-based version of the BCI must be cost-effective to manufacture, market and sell," points out Donchin. "Also, there will be a training period for users."

While locked-in syndrome is relatively rare, says Donchin, there are, at any time, several thousand locked-in ALS patients in the U.S. With many different labs worldwide examining different BCI systems, Donchin hopes that a home version of the P-300/BCI will soon be ready to provide these individuals with a voice.

Decoding Di



abetes

BY ANN CARNEY

SOMEHOW, WHEN YOU WALK into the Pediatric Epidemiology Center at USF, you expect to see babies and building blocks, stimulating colors and neatly pressed lab coats. After all, the National Institutes of Health just awarded the center a \$169 million grant—the largest in USF history—to study the triggers of juvenile diabetes.

But it's a different kind of work that goes on here.

The center, led by USF Health Professor Jeffrey Krischer, was tapped to coordinate and analyze the results of an international study known as “TEDDY” (The Environmental Determinants of Diabetes in the Young). The study will follow more than 7,800 newborns genetically at risk for type 1 diabetes to understand the infectious agents, dietary factors or other environmental exposures that are associated with the disease. That means eventually recording and tracking more than one million samples.

“We want to know why the incidence of diabetes in the very young has doubled since the 1980s,” explains Krischer, co-chair of the study and principal investigator of the coordinating center. And the team hopes to explain why some children get the disease.

Type 1 diabetes, also known as juvenile diabetes, is one of the most common and serious long-term diseases in children. Affecting one out of every 300 children, it is a disease in which the body's immune sys-

A data center, led by USF Health's Jeffrey Krischer, is at the heart of a \$169 million international study to understand the triggers of juvenile diabetes.

tem attacks the cells that make insulin—a hormone that keeps blood sugar levels stable. Children with the disease must take insulin shots and monitor their blood sugar levels constantly to stay alive and healthy.

“We know that some children have a greater genetic risk of diabetes, but only 10 percent of those children eventually develop the disease by 10 years of age,” says Krischer. “This study gives us a large enough group of newborns to analyze genetic risk factors and factors in their lifestyle, diet or environment that may trigger the illness.”

Until now, none of the studies of the environmental factors involved in the development of type 1 diabetes have had the statistical power to advance researchers' understanding of the disease.

“Here we can look at not only individual environmental exposures that others have examined, but also the combinations of various exposures,” says Krischer. “And we can examine and compare differences across cultures.”



Impact on Families

The Brown Family Denver, Colorado

SINCE MY HUSBAND HAS DIABETES, we knew that there was a chance that we would have a child or children who would either be a carrier or would actually develop diabetes,” says Sonja Brown, who lives with her husband Chris, one-and-a-half-year-old son Keller, and two chocolate Labradors, in the Denver area. As it turns out, Keller does have a genetic profile that puts him at increased risk for type 1 diabetes. “Keller’s pediatrician suggested that we go and have Keller tested for diabetes-related genes. That’s how we found out that, lo and behold, Keller does have high-risk genes,” Brown says. She and Chris decided to enroll Keller in TEDDY not only to help the cause of diabetes research but also to have Keller closely monitored for development of the disease.

The TEDDY consortium, comprising Krischer’s data coordinating center and six clinical sites located in Seattle, Washington; Denver, Colorado; Augusta, Georgia; Turku, Finland; Malmo, Sweden; and Munich, Germany, will allow for a coordinated, multidisciplinary approach to the complex disease. Information and samples will be collected in a standardized manner, yielding significant statistical power. And, a central repository of data and biologic samples will be established in Germantown, Maryland, allowing for further hypothesis-based investigations.

“I believe we have the right combination of science and strategy that we might be able to eliminate type 1 diabetes for the next generation,” says Krischer.

To date, the TEDDY study has enrolled more than 4,000 participants. Krischer and his colleagues expect to reach their target enrollment of 7,800 newborns by late 2009. In all, about 360,000 babies will be screened to reach the enrollment figure.

Over a 15-year period, the diet, illnesses, allergies and other life experiences of study participants will be tracked and recorded. Blood samples will be analyzed every three months for the first four years, and every six months thereafter.

“The families are to be commended more than any of us,” says Susan Smith, TEDDY study research administrator and USF alumna. “This is a difficult study to be involved in. There is a lot of responsibility.”

Last year, Krischer was awarded a \$20.1 million NIH grant to study the disease. The new grant continues that research for the next decade.

“Dr. Krischer’s team is the focal point for virtually every major study of type 1 diabetes prevention in the world,” says Stephen Klasko, vice president for USF Health and dean of the College of Medicine. “He has created the premier center for unlocking auto-immune diseases of which juvenile diabetes is one of the most common and most serious.”

Krischer and his team, which includes epidemiologists, statisticians, data managers, computer programmers, nutritionists and coordinators, are aided

by the resources of a sophisticated data center. The center includes a server farm of more than 40 multi-processor and highly redundant servers, backed up nightly and maintained in a secure location. The system provides a highly scalable environment for growth and can react quickly to changes in demand for storage.

While the TEDDY study is the largest study under way at the center, it is certainly not the only one. Krischer and his team are currently working on more than 10 independent initiatives, providing the technical means to advance knowledge and improve research on many different types of diseases.

The latest award has catapulted USF's Department of Pediatrics ranking to number three in the nation.



Facts About Juvenile Diabetes*

5%-10%

Only five to ten percent of individuals who are genetically susceptible to type 1 diabetes develop the disease.

90%

About 90 percent of children who are diagnosed with type 1 diabetes have no family history of the disease.

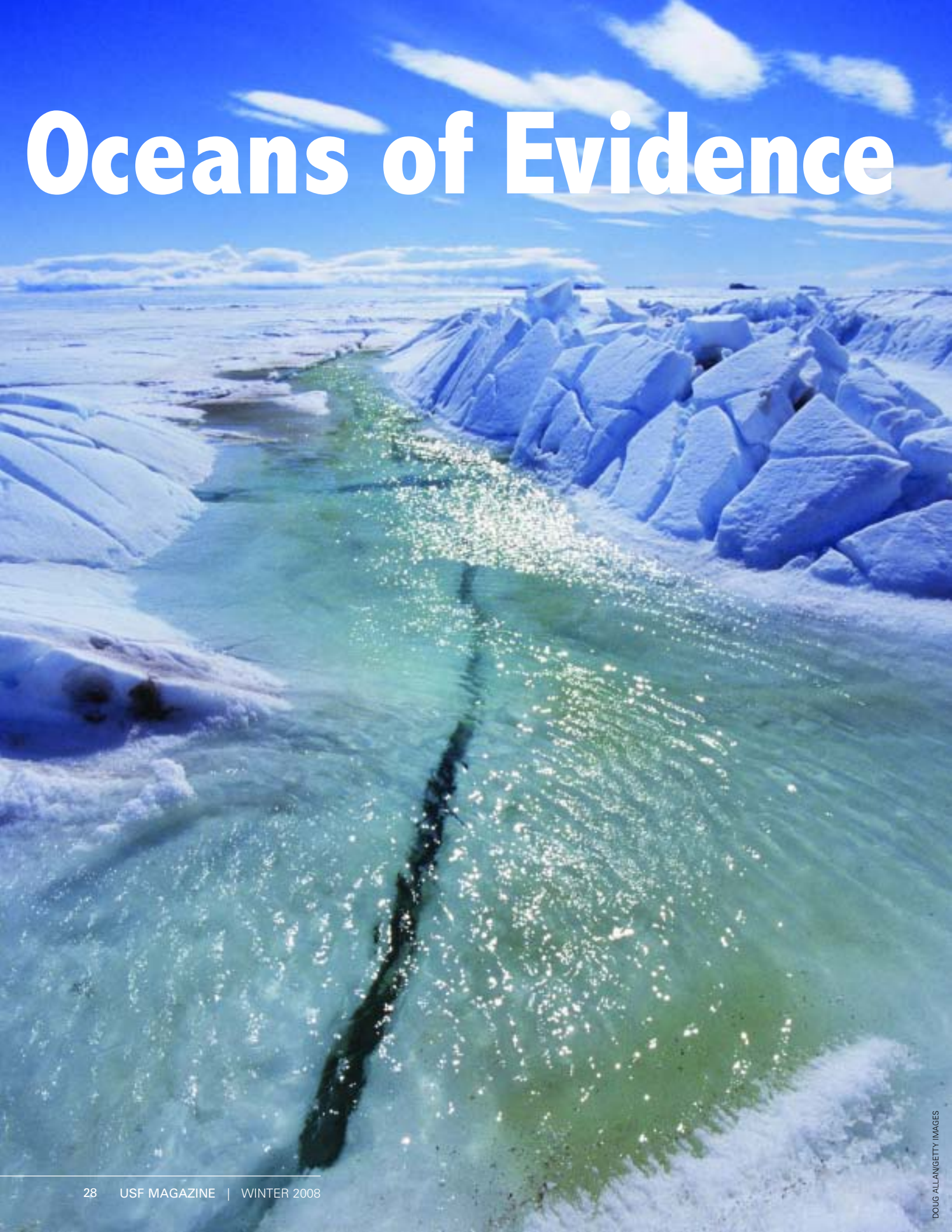
X2

The incidence of type 1 diabetes has been doubling worldwide every 20 years, so the incidence of the disease is twice as high as it was in the mid-1980s.

*Facts and Brown family story excerpts from the *Juvenile Diabetes Research Foundation International Countdown to a Cure*, Fall 2006

“I believe we have the right combination of science and strategy that we might be able to eliminate type 1 diabetes for the next generation.” - Dr. Jeffrey Krischer

Oceans of Evidence



USF ocean scientists weigh in on global warming.

CLIMATE CHANGE IS nothing new. Mother Earth has been through some drastic changes in her 4.6 billion-year history. In the late stages of the pre-Cambrian era, about 1.6 billion years ago, the sun was not as strong as it is now and the atmosphere contained more carbon dioxide than present. Oxygen in the atmosphere was “toxic.”

Much more recently, thanks to climate change, the semi-tropical forests where dinosaurs roamed 200 million years ago are today’s rocky deserts. Significant climate fluctuations, long and short term, have killed off species and helped foster new ones, including *Homo sapiens*. Us.

Paleoanthropologists say that five or six million years ago, when a tropical ecosystem slowly became a grassland in Africa, the change contributed to the development of bi-pedalism—walking on two legs—among some primates way down our family tree.

Sea levels have fluctuated wildly over the millennia. Ice Ages have repeatedly come and gone over the past three million years, paced by regularly occurring Earth orbit changes. Only about 12,000 years ago did the modern climate stabilize and warm enough to foster the beginnings of plant domestication and agriculture in some locations. Then, about 300 years ago, the “Little Ice Age” made people miserable for several generations.

Now, scientists, environmentalists, politicians, elementary school students, former Vice President Al Gore, you and I, know that the climate is warming further because of carbon emissions, green house gasses. Carbon dioxide is streaking into the atmosphere in explosive quantities

BY RANDOLPH FILLMORE

and trapping heat. And, most agree, for the first time the climate is changing because of us. The carbon dioxide generated by human activities is junking up the atmosphere and threatening life as we know it.

CO₂ and you

“With each breath, we inhale 25 percent more CO₂ than our great grandparents did,” says Pam Hallock, a marine biologist at the USF College of Marine Science. “The atmospheric preindustrial level of CO₂ was about 280 parts per million. By the 1950s the CO₂ levels were at 315 parts per million. Now, it’s at 380 parts per million.”

Most scientists agree that a CO₂ atmospheric score of 450 would be calamitous for the atmosphere and us. Talked about less, however, is the effect carbon dioxide has as it enters into the oceans.

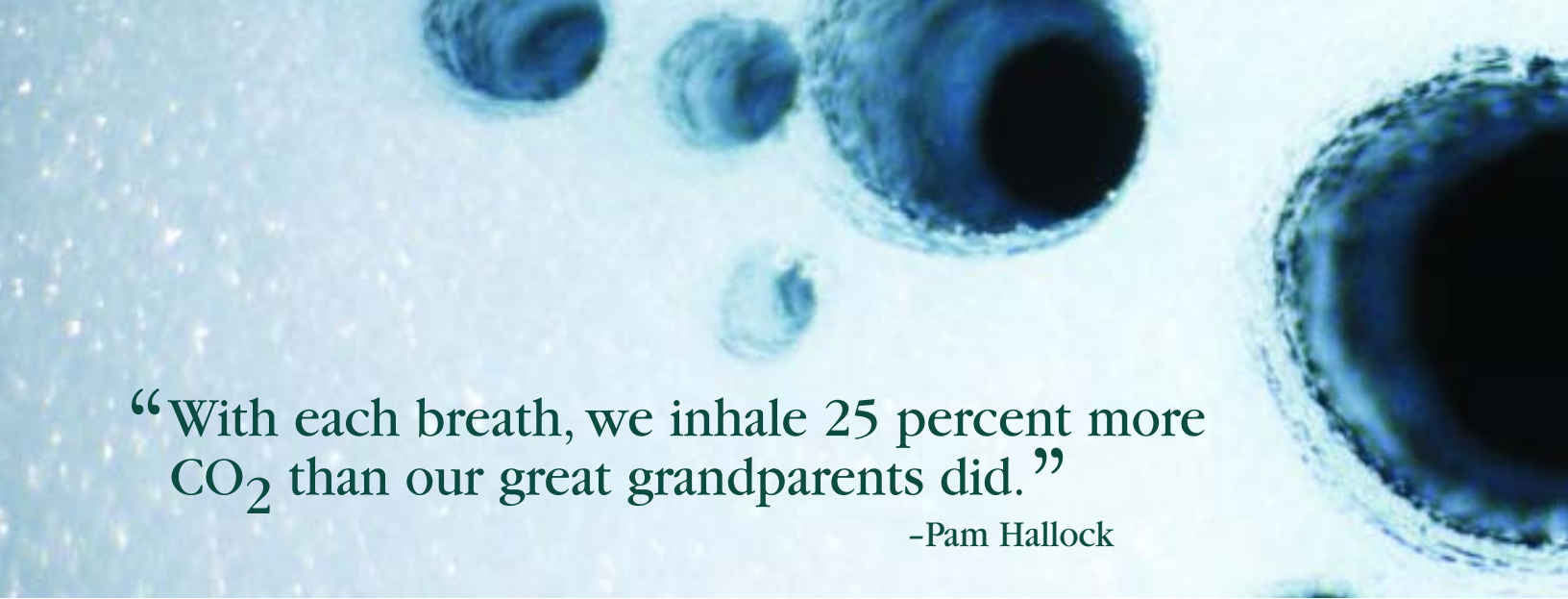
“Increasing concentration of atmospheric CO₂ entering into the oceans is already changing the pH balance significantly,” says Hallock.

She is quick to point out that the balance between acid and base (pH measured as 0-14 with 7.0 neutral) in the oceans is tilted more to the acidic than it was just a generation ago.

“As the pH lowers toward acidic, all organisms will have difficulty,” says Hallock.

One serious effect is already documented. As the oceans become more acidic, shellfish are not forming their shells properly. Calcium carbonate, used by shellfish to manufacture their shells, does not form as readily in a more acidic environment. Acidification of the oceans also means that coral reef formation will be retarded.

“Human activities that produce green house gasses are seriously impacting coral reefs—physically, biologically and chemically,” she says.



“With each breath, we inhale 25 percent more CO₂ than our great grandparents did.”

-Pam Hallock

For decades, measuring acidification in the oceans has been a focus for USF chemical oceanographer Bob Byrne. Recent work conducted by his research group in the North Pacific Ocean shows that a huge patch of the Pacific, between Hawaii and Alaska, has had up to a six percent rise in acidity in just 15 years.

“There are big changes in the upper parts of the ocean where CO₂ has entered the water,” says Byrne. “Organisms are already under stress, and this means a major impact for fisheries.”

Byrne points out that when CO₂ in the atmosphere enters the oceans it endangers not only shellfish, but also affects organisms such as pteropods, food items for fish. It’s not just a theoretical issue, he says; this may have a big impact on what is not on your future dinner plate.

“Loading up the atmosphere with CO₂ results in a significant penetration of CO₂ into the Pacific in the upper 200 meters,” says Byrne. “On the one hand, it’s good that the oceans can absorb some of the anthropogenic CO₂; but on the other hand, it’s very bad for some important organisms in the oceans.”

Bigger, badder storms?

Then there is the issue of whether global warming due to the greenhouse effect is churning up more disastrous weather patterns that will create bigger, badder hurricanes, beefed up on warming oceans. According to USF geological oceanographer Ben Flower, this question must be answered taking into account natural hurricane patterns and the Atlantic multidecadal oscillation (AMO) where North Atlantic sea temperatures fluctuate from high to low and back on the multidecadal scale. Records on AMO fluctuations date back to 1860, when atmospheric carbon levels had not yet spiked because of industry.

“Natural changes in the AMO should be included in

models of climate change,” insists Flower, who has generated AMO proxy data from deep-sea sediment cores in the Gulf of Mexico. “We found significant oscillations throughout the past 3,000 years, including during the Little Ice Age. In addition, the amplitude (or temperature range) of the AMO appears to increase during warm intervals.”

USF College of Marine Science graduate student Julie Richey, lead author on a recent paper that looks at 1,400 years of climate variation in the Northern Gulf of Mexico using ocean sediment cores, found that sea surface temperatures (SSTs) between 1,000 and 1,400 years ago were as warm or warmer than modern SSTs and 2-3°C lower during the Little Ice Age. (Interestingly, that range falls into line with predictions for global warming’s effect on global surface temperatures.)

While that was a natural cycle, a fear is that anthropogenic global warming could amplify the effects of natural variability, inflicting unnatural climate change as a nightmare scenario.

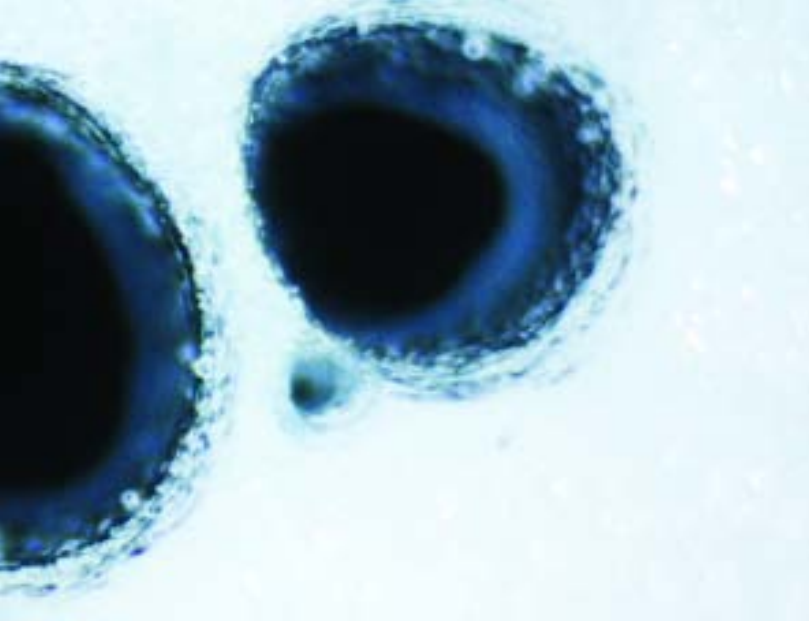
A period of tranquility?

If global warming is going to create more killer hurricanes in the North Atlantic and Gulf of Mexico, why have we had two years of relatively light activity in 2006-2007 after two years of being battered in 2004-2005?

USF physical oceanographers Robert Weisberg and Jyotika Virmani looked at the devastating 2004-2005 hurricane seasons in the Atlantic and Gulf and found them “odd but explainable.”

“The seasonally warm SSTs that developed in the Atlantic Ocean through the fall of 2004 did not decrease as much as usual the next winter,” says Weisberg. “So, SSTs were higher than normal going into the spring of 2005.”

Warmer than normal SSTs have had an impact before. “Stronger and more frequent hurricanes have been



IPCC in a nutshell

In its 2007 report, the Intergovernmental Panel on Climate Change (IPCC) said that:

- Temperatures at the top of the permafrost layer in the Arctic have increased since the 1980s.
- Increasing atmospheric CO₂ concentrations will acidify the oceans.
- Snow cover will contract, sea ice and ground ice will shrink.
- Future tropical storms will likely be more intense.
- Average atmospheric water vapor content has increased since the 1980s.
- Hot days and hot nights have become more frequent.

spawned by warmer SSTs in 1958, 1969, 1980, 1995 and 1998,” says Virmani.

“Hurricane frequency is generally greater when the AMO is in its positive stage,” explains Virmani. “But you can get devastating hurricane years in the negative stage as well.

According to Weisberg, anthropogenic greenhouse gasses such as CO₂ are not the only condition that can stoke a warming atmosphere. Atmospheric water vapor is actually the Earth’s primary greenhouse gas, and just how water vapor distributions are modified by warming due to increasing CO₂ is the unknown issue.

“An increasing temperature trend through global warming and the warm AMO were not necessarily the drivers of the unusually active 2004-2005 hurricane season,” Weisberg says. “The controls on sea surface temperature and atmospheric moisture distributions are much more complicated than that.”

And what contributed to the quieter 2006-2007 hurricane seasons if global warming may be a factor in brewing bigger storms? Local conditions trump the global warming card, Weisberg and Virmani agree.

“In 2006, the winds were stronger, leading to cooler SSTs,” explains Virmani. “But, SSTs are just part of the story, along with greater wind shear.”

The global warming story is not just a natural story, nor is it a story only humans are writing.

“Because of subtle trade-offs between naturally occurring and man-induced changes, coupled with the complexity of hurricane generation and intensification, further research is needed to understand and predict these processes of great societal importance,” Weisberg explains.

Sea levels on the rise

Sea-level rise because of global warming may be a disaster in the making.

“Measurements of sea-level rise are consistent with the data on global warming,” says USF physical oceanographer Gary Mitchum. “We’re running out of other explanations.”

According to Mitchum, we need to fear two things—ice melting on Greenland and Antarctica (ground ice melt) and the increase in water volume as waters warm and their density decreases.

“Coastal flooding, flooded sewers, salt water intrusion into aquifers are all consequences,” says Mitchum. “We already see these problems in some developing countries.”

To gauge the progression and impact of global warming, Mitchum recommends looking to the oceans rather than the atmosphere.

“The atmosphere is not a good system for inquiry,” says Mitchum. “There is too much noise. The oceans are quieter and have better memories.”

Likely the oceans are today thinking back to better times.

A Season to Remember

A record 67,012 fans filled Raymond James Stadium September 28th to witness USF's upset over No. 5 ranked West Virginia.





JOSEPH GAMBLE

Capping a rise that was both swift and awe-inspiring, the never before ranked Bulls earn an early No. 2 spot in the nation, and finish their historical season at the 74th annual Brut Sun Bowl in El Paso, Texas.

2



1



JOSEPH GAMBLE

1. The Bulls topple West Virginia before the first sellout crowd in USF history.
2. At the end of the year, Matt Grothe's production on the ground and in the air was only topped by one quarterback—2007 Heisman winner Tim Tebow.
3. Jessie Hester caught the 14-yard game winner in the first overtime of USF's 26-23 defeat of 13th-ranked Auburn.
4. Spirits soar as fans bathe Ray Jay, and the region, in Green and Gold.
5. More than 5,000 fans showed their Bull pride, traveling to El Paso, Texas for the 74th annual Brut Sun Bowl.

IN JUST THEIR ELEVENTH SEASON playing football, the USF Bulls won the attention of the nation, reaching the No. 2 spot in the BCS poll. With only seven seasons as full-time members of Division I-A (the Bowl Subdivision), the Bulls' rise to national recognition was lauded the second-fastest in college football history.

Coached by USF's only head coach, Jim Leavitt, the Bulls' remarkable season included early wins against No. 13 ranked Auburn in overtime, and No. 5 ranked Big East Champion West Virginia. In fact, the Bulls won their first six games before falling short to Rutgers, 30-27.

Fans had plenty to cheer about. Led by sophomore quarterback Matt Grothe, the Bulls catapulted from virtual unknown to national title contender in just weeks, and the region gained new respect for the Green and Gold. For the first time in USF history, the Bulls were playing to sellout crowds. By regular season's end, the Bulls were named the second-highest ranked team in the BIG EAST Conference.

The Bulls closed out the season with three straight wins before heading to El Paso for the Brut Sun Bowl on December 31st. Despite a disappointing day in the Sun, the team ended the year with one thing certain—big things are ahead for the Bulls in 2008.



AP PHOTO/DAVE MARTIN

3



USF ATHLETICS PHOTOS



Founding Father

USF mourns the passing of its first athletic director.

THE UNIVERSITY'S FIRST ATHLETIC director—the man credited with helping USF become involved in intercollegiate sports—passed away in November 2007. Faculty and staff who knew Richard T. “Dick” Bowers remember him as a “great guy” who was deeply involved in the community.



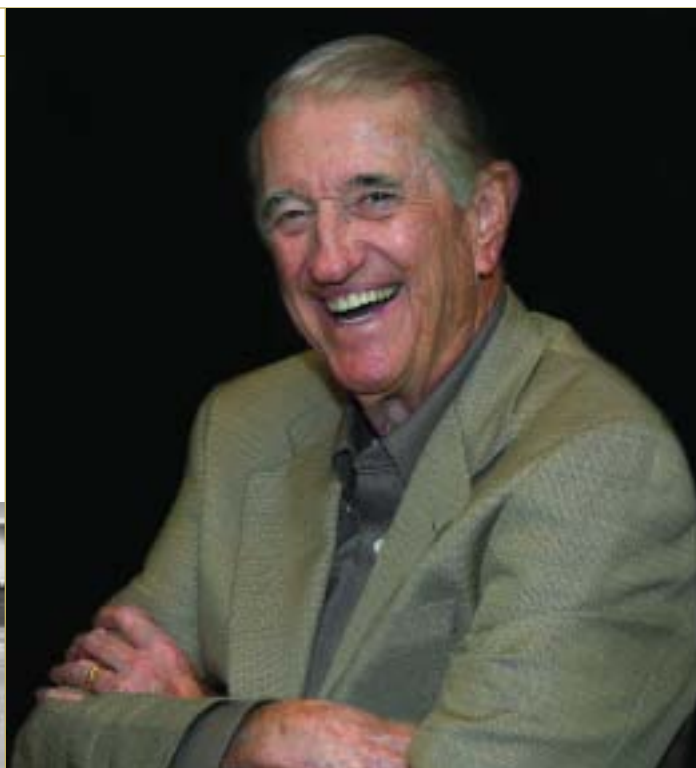
Joe Tomaino, assistant development director for University Advancement, worked with Bowers for decades. “Dick Bowers was the hero that took USF from absolutely nowhere in the community to prominence,” Tomaino says. “He’s the bridge we ran across from the mid-sixties into the seventies.”

In 1963, Bowers joined the physical education staff, eventually becoming executive director of the Athletic Association. He was largely responsible for most of the university’s early intercollegiate athletic teams, and introduced soccer as the university’s first sport.

Bowers spearheaded the campaign for USF’s baseball field, its golf course and the Sun Dome. He also helped form the SunBelt Conference, and in 1982, was honored for his contributions.

In 1983, Bowers joined the College of Business as director of development. By 1992, he was additionally named associate dean and professor, positions he held until his retirement in 2003.

Robert Forsythe, dean of the College of Business, was saddened by the news of Bowers’ passing. “Dick Bowers has been a very dear friend to the College of Business and we are quite saddened by his passing. He served this col-



Dick Bowers, Coach Lee Rose and President John Lott Brown.

lege and the university for many, many years, both as an employee and as a friend. We will miss him.”

Bowers also served in leadership roles in numerous community organizations including the United Way, National Youth Sports Program, Tampa Chapter National Football Foundation, Hall of Fame Bowl Selection Committee, Northside Bank Board, Florida State Department of Education Task Force in Physical Education, American Heart Association, American Cancer Society, Tampa Sports Club, Gold Shield Foundation, Tampa Chamber of Commerce, Florida Highway Patrol Advisory Committee and Hispanic Business Institute.

Bowers is survived by his wife, Madge; son, Rick, a graduate of the College of Engineering; and daughter, Delisa.

– Ann Carney



USF ATHLETICS

Shawn Sanford

Major League Challenge

USF Bulls to face the NY Yankees in February.

IN THEIR SECOND YEAR UNDER head coach Lelo Prado, the USF baseball team will take the field against the New York Yankees at Legends Field in Tampa on Feb. 29 at 1:15 p.m.

“This is going to be a great opportunity for every young man on our team,” says Prado. “They’ll get an opportunity to play against the New York Yankees, and they are going to have that the rest of their lives. That is going to be a great experience for the team and a great showcase for our university.”

The NCAA-MLB matchup will be the Yankees’ first spring training game of the year, and the Bulls’ fifth game of the 2008 season.

“The New York Yankees are excited to open our 2008 Spring Training season against the University of South Florida Bulls,” says Hank Steinbrenner, New York Yankees senior vice president. “Being a community-minded organization, we see this as an opportunity to promote and support a great institution and a budding athletic program.”

The Bulls previously played the Yankees in exhibition action in 1982, a 9-1 victory for the team from New York.

“It is going to be special to play at Legends Field,” continues Prado. “We have played in a lot of minor league parks, but it is not like playing against the New York

Yankees. It is going to be a fun day for USF baseball.”

Sophomore right-handed pitcher Shawn Sanford, who has been listed on the Preseason Watch List for the 2008 Brooks Wallace Player of the Year Award, echoes Prado’s anticipation about the upcoming game.

“Being able to compete in the greatest game, with the greatest players, is something special for us,” he says. “Growing up we idolized these guys—Derek

Jeter, Alex Rodriguez, Andy Pettitte, the list goes on and on. This is an unreal experience for us as college athletes because there are two main goals for us: one, winning a national championship and two, becoming a pro. This just gives us a little taste and that drives us to want it even more.”

The last time the Bulls played an exhibition game against a professional club was in 2000, when USF faced off with the Tampa Bay Devil Rays (L, 13-0), and in 1999 the Bulls traveled to Clearwater to play the Philadelphia Phillies (L, 13-2).

“We really appreciate the Yankee organization for doing this for us and helping us in the process of building the best program in America,” Sanford adds. “I hope that the whole USF community can come out and enjoy it as much as us on the field, because it is just as much about them, too, the whole USF family.”

USF opens the 2008 season with a three-game set against Indiana State Feb. 22-24 at Red McEwen Field in Tampa. USF’s 56-game schedule spans 21 teams from nine conferences, with 44 games played in the state of Florida and 35 at USF’s Red McEwen Field in Tampa. For a complete schedule, go to www.GoUSFBulls.com.

Former New York Yankee Tino Martinez is in his second season as a volunteer assistant coach for the Bulls, and in November 2007, former USF pitcher Dave Eiland (1986-87) was named the pitching coach for the Yankees.

—Amy Woodruff

Iron Bull

Richard Gonzmart exudes passion for USF.

“LOVE THIS ROOM,” says Richard Gonzmart, co-owner of the world-famous Columbia Restaurant in Tampa’s historic Ybor City. “That table there,” he points out, “is where I fell in love with my wife.” In fact, every table in the room has special meaning for the fourth-generation caretaker of the oldest restaurant in Florida.

Gonzmart’s great-grandfather, Casimiro Hernandez Sr., founded the Columbia in 1905 to feed cigar factory workers. Today it is the largest Spanish restaurant in the world, and the flagship of the Columbia Restaurant Group, which includes seven Columbia restaurants and two tropical bar and grill concepts called Cha Cha Coconuts. Gonzmart is president.

Gonzmart was born into the food industry. His father, Cesar Gonzmart, a former concert violinist, and Adela, Hernandez’s granddaughter and a Juilliard-trained concert pianist, are third-generation owners. His parents, he says, were very influential in his life.

“They are the ones who made me understand the importance of USF,” he says. “My Mom set the example. I think you have to do that for your children.”

Gonzmart’s children, Lauren Schellman and Andrea Gonzmart, are both USF graduates.

Schellman, who graduated in 1999 with a bachelor’s degree in interdisciplinary social sciences, joined the family business in 1996. Her sister, Andrea (B.A. Business Administration, 2001), joined in 2001.

Today, Gonzmart is a Trustee for the USF Foundation; he is a member of the USF Athletic Task force, a Life Member of the USF John and Grace Allen Giving Society and a Life Member of the Alumni Association.

“My desire is actually to be more involved with USF,” he says. “I feel I’m part of something more important than anything—helping young people achieve a dream.”

Gonzmart says he has been generously repaid with the heartfelt thanks of countless students who would not have attended college without the scholarships that bear the Gonzmart family name—like the brother and sister who both earned engineering degrees at USF after their father, a migrant worker, was killed in the fields. “The boy came to my office to thank me for the opportunity,” Gonzmart recalls. “He said, ‘I was wondering what field I would work in, but you changed all that.’”

The Gonzmart family established the Adela and Cesar Gonzmart Endowed Memorial and the Columbia Restaurant Centenario Endowment through the USF Latino

Scholarship Program to assist local talented students with financial need.

Gonzmart’s office is a tribute to his family—and to USF.

Prominently displayed among

yellowing photographs, handwritten notes and treasures from his past is the Class of 1956 Award he received in 2004. The award is the highest honor given to a non-graduate of the university and, Gonzmart says, the most important award he has received, along with the 2007 USF Celebration of Free Enterprise Award.

“I love USF,” he says. “You go to my home and I’ve got more bulls everywhere...”

Gonzmart’s office also shows traces of a hobby he has been passionate about for 14 years—breeding, training and showing world-class German Shepherds. He currently has more than 20 dogs with his partner in Lutz and three at home.

Gonzmart began his formal education at the University of Denver School of Hotel and Restaurant Management, and received his degree from the University of Madrid, Escuela de Hosteleria.

Even so, he says, “I feel like an alumnus of USF. This

“I feel I’m part of something more important than anything—helping young people achieve a dream.”

– Richard Gonzmart



JOSEPH GAMBLE

is my home; this is my family.”

As passionate as he is about USF, Gonzmart is equally passionate about cancer research. He cites the date of his father’s death from cancer to the minute: “December 9th, 1992, 9:42 p.m.”

In his father’s memory, Gonzmart established the Richard & Melanie Gonzmart Endowment for Research at the Moffitt Cancer Center and created “Richard’s Run for Life,” an annual 5K race through Ybor City, dedicated to raising funds for pediatric cancer research.

In 2005, Gonzmart, a marathon runner, traveled to Pamplona, Spain, running with the bulls and raising \$150,000 for cancer research. Last year, he traveled to Pamplona for a second run—this time with a group of 34 USF Athletics donors known as the Iron Bulls. Returning with red sashes from Spain, Gonzmart began a new tradition at USF home football games, with students, dressed in white shirts, red scarves and red sashes, lead-

ing the USF Bulls onto the field.

Gonzmart’s impact on the community is palpable. In 2006, he was appointed by Governor Jeb Bush to the Florida Commission on Tourism. He currently serves on the Board of Directors of the Tampa Bay Community Foundation and the Greater Tampa Chamber of Commerce, Moffitt Cancer Center’s Foundation Board of Trustees, the Florida Highway Patrol Advisory Council Executive Board, the Hillsborough County Commission Tourist Development Council and the Florida Restaurant Association Board of Directors. In addition, Gonzmart is a past chairman of the Tampa Bay Convention & Visitors Bureau. He has received countless honors and awards over the years.

“I was blessed to be born into a wonderful family,” he says. “My goal is not to be recognized or receive awards. I just want to help.”

– Ann Carney

Bill J. Baker

Researcher studies the chemical diversities in marine life for resources that may save lives.

FOR CHEMISTRY PROFESSOR BILL BAKER, the new year began at the bottom of the world, thousands of miles from home in the greatest laboratory on earth—Antarctica. It's his 10th trip to the icy continent over the past 15 years. Baker, a natural products chemist, studies the chemical ecology of marine invertebrates, like sponges and tunicates (sea squirts), which use chemistry as part of their strategy for survival.

"These are organisms that can't get up and run when a predator comes after them," he explains. "Their survival is dynamic and ever-changing, a combination of physical and chemical defenses." Understanding those processes, Baker believes, is key to the discovery of new drugs with lifesaving potential for humans.

Already Baker's work has led to the isolation of a chemical compound produced by tunicates that may be a potent treatment for cancer. Testing the compound

against 60 different cancer cell lines, the National Cancer Institute concluded the compound inhibited melanoma, the deadliest form of skin cancer.

Baker joined USF in 2001 from the Florida Institute of Technology. He completed his doctoral studies at the University of Hawaii, and postdoctoral studies at Rice and Stanford Universities.

USF: How did you first become interested in marine chemistry?

Baker: Probably I was inspired by my first chemistry teacher. In college, I took a class in marine natural products, a field in its infancy that the professor brought to our attention. And, I had another professor who did work with the father of marine natural products chemistry.

USF: Can you tell me about your research in Antarctica?

Baker: My interest is in chemical ecology—studying sponges, coral and tunicates in Antarctica that use chemistry as part of their strategy for survival. These organisms make toxins to keep fish from eating them. We study how they use chemistry for their survival.

USF: What's involved in preparing for an expedition?

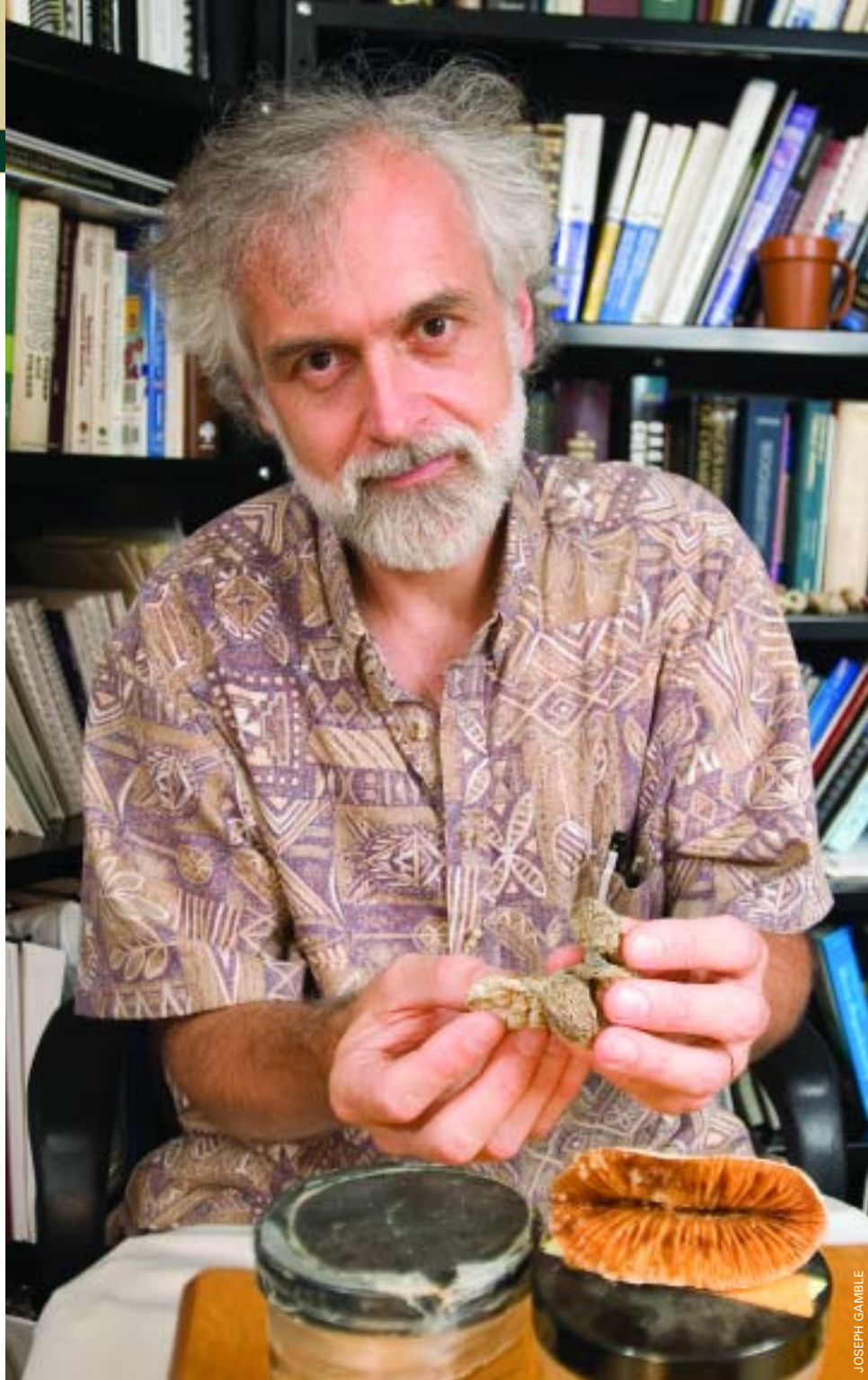
Baker: There is an amazing amount of organization, from the perpetual list of chemicals to personal items. We're down there for about eight weeks. I collaborate with two biologists from the University of Alabama at Birmingham. They do the ecology; I do the chemistry. There are about eight or nine of us on our team. I took my first undergraduate last year.

USF: Why study marine invertebrates for pharmacology purposes?

Baker: Drug discovery is very closely related to natural products. Sponges, corals and tunicates make chemicals to be physiologically active. The molecules made by these organisms have been designed through natural selection. What better beginning to drug discovery could there be than something that has already been designed



Baker and his research colleagues at Palmer Station in Antarctica.



JOSEPH GAMBLE

through natural selection?

USF: You've also studied tunicates closer to home—in Florida.

Baker: There are several tunicate species in Florida that make compounds that are physiologically active. Two of them make anti-cancer compounds and one makes antiviral compounds. I find the type of compounds they make, called alkaloids, very interesting. If you know how they make these compounds, you can search for the genetic basis of those compounds.

Quick Takes

By land or by sea: By sea

Your hero: R.B. Woodward, the consummate natural products chemist

Greatest undersea discovery: Marine microbial diversity

Most fascinating marine invertebrate: Tunicate

USF: Why is that important?

Baker: There are limitations to natural products research. If you find something that cures cancer, for example, it is difficult to go back to the natural source and create enough supply for the clinic. So the idea is to take the genetic material out of the tunicate and grow it in the lab.

USF: Describe your teaching style.

Baker: I divide my time between laboratory science and teaching. My role in all this is to stimulate students—to guide them toward their own interests in chemistry. If they're not aware of their interests, chemistry is a difficult subject to learn.

USF: What is the greatest promise your research holds?

Baker: Ultimately, a cure for cancer. As scientists, most of us spend all our career and we never come up with the cure we're looking for. My lab has a couple of things in the works right now that are pretty exciting and have a lot of potential.

– Ann Carney



JOSEPH GAMBLE

USF's Herd of Thunder (H.O.T.) band acquired new uniforms in October 2007. The uniforms, one for each of the 290-member band, display USF's colors and Bulls' symbol with pride. The marching band, managed by the College of Visual and Performing Arts and comprised primarily of USF music students, plays at football and basketball games throughout the season and also at university and public events. The band is seeking sponsorships to help fund the program. Go to <http://band.arts.usf.edu> for more information.



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