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A second chance – worth a smile
Dentists use stem cells to regenerate tissue in children’s teeth

A small bump and a blow to his mouth left 12-year-old Cody Nelson with a fractured front tooth and little hope to restore the damaged tissue deep inside. But dentists at The University of Texas Health Science Center at San Antonio used stem cells to regrow the pulp, giving Cody a second chance at a healthy smile.

Cover photo by Lester Rosebrock, Multimedia Services
A Message from the President

Advancing laboratory discoveries to the patient’s side has but one purpose: to make lives better

At the recent luncheon of the President’s Council – at which we annually honor and thank our donors – guests at every table were engaged in conversation by our brightest and most committed researchers about their ongoing work in science and health care.

We are most grateful for the support we receive from these – and all – donors, as it is essential in enabling these investigators – across our five schools, on eight campuses, in four cities – to conduct intensive research that is not only innovative and imaginative, but highly relevant and life changing.

Additionally, gifts made by members of the President’s Council this year are funding the recruitment of outstanding new scientists to our Health Science Center; scholarships for deserving students; professorships for remarkably accomplished members of our faculty; and, for the next three years, the Voelcker Biomedical Research Academy, attended by promising and motivated high school students.

By the end of the President’s Council luncheon, the large and enthusiastic audience was vividly reminded of the undeniable necessity for research in the basic sciences and that such research is the very foundation of clinical treatments that save lives and change the world forever.

Here, at the UT Health Science Center San Antonio, we pledge our fullest energies and endeavor to translating discoveries in science into the most competent and compassionate of clinical care. This issue of Mission describes several specific and successful examples of taking basic science discovery to the bedside.

Ours is a setting in which basic-science researchers push the new frontier of epigenetics by understanding how interactions between genes and the environment turn genetic products on and off.

The Health Science Center is also the place where something as unusual as the bark of the Amur cork tree, long used in Chinese herbal medicine, is studied for its powers to sensitize cancer cells to the point where they succumb more completely to radiation, offering hope and life to prostate cancer patients.

Benchmark technology is a hero in the story of how our UT Medicine San Antonio cardiothoracic surgeons, plastic surgeons and radiologists have pioneered an innovative reconstruction technique that resolves chronic pain and disconcerting movements for patients living with unstable breastbones.

And, finally, we look to our cover story to define translational science at its best. It describes how – for the first time ever in a clinical setting – researchers in our Department of Endodontics have found that stem cells, abundant in the soft tissue surrounding children’s teeth, can be used to regenerate the tooth’s own tissue and cells. Today, our 12-year-old cover subject can again chew gum, eat apples and do what he most enjoys – ride his bike. Now that’s certainly worth a smile.

I thank you for all you do that supports our Health Science Center. Your partnership ennobles our work every day. You are the reason we can continue to make lives better.

Sincerely,

William L. Henrich, M.D., MACP
President
Professor of Medicine
UT Health Science Center at San Antonio
Regional Academic Health Center celebrates 10 years of making lives better for South Texas

The Regional Academic Health Center (RAHC) is celebrating 10 years of making lives better for South Texas and the Lower Rio Grande Valley.

Join faculty, staff, students and the community for a special anniversary celebration at 6:30 p.m. on Thursday, June 14, in the courtyard of the RAHC campus, 2102 Treasure Hills Blvd. in Harlingen.

Since 2002, more than 1,000 medical students have completed rotations at the RAHC and nearly half of its residents have remained in the Lower Rio Grande Valley to practice medicine and care for the region's diverse citizenry.

“The RAHC has played an instrumental role in training young doctors both from South Texas and beyond,” said Roberto J. Hernandez, M.D., former resident. “The presence of medical students and residents may spark an interest in health care-related jobs in the community.”

Community partnerships have been key in the success of the RAHC.

Through the generosity of the Robert J. Kleberg, Jr. and Helen C. Kleberg Foundation, residents can take part in the Kleberg Medical Scholars Program. Donors such as the Raul J. Tijerina, Jr. Foundation, allow students to study health problems affecting the Texas-Mexico border population.

“In areas where doctors, and particularly primary care physicians and various specialists, are lacking, the RAHC has been a catalyst for closing the gaps,” said Leonel Vela, M.D., M.P.H., regional dean of the RAHC. “Great strides have been made during the past decade with the help of our community, and we look forward to expanding our education and research programs in the future.”

See page 26 for related story about the RAHC’s first academic endowment named for the late Col. William “Bill” Card Jr.
$3.7 million NIH program targets Hispanics with bipolar disorder

Mental health professionals with UT Medicine San Antonio and collaborating institutions are designing bipolar disorder treatments that will be relevant and culturally sensitive to Hispanics, thanks to a $3.7 million grant from the National Institutes of Health. “We will test for specific cultural factors that affect the response and engagement of Hispanics who have bipolar disorder,” said Charles L. Bowden, M.D., principal investigator of the study. Dr. Bowden leads a large group of experienced psychiatrists, psychologists and other scientists who will conduct the comprehensive program of research during the next five years.

New Doctor of Nursing Practice degree offered

Nurses in South Texas will have the opportunity to earn a Doctor of Nursing Practice (DNP) degree at the Health Science Center beginning in fall 2012. The Texas Higher Education Coordinating Board approved the new degree this year. “The purpose of the DNP program is to prepare nurse practitioners, nurse executives and public health nurse leaders to provide health care at the highest level of their specialty,” said Eileen Breslin, Ph.D., dean. “Our graduates will have specialized knowledge to address the needs of our populations for the 21st century.”

For more information, contact the School of Nursing admissions office at sonadmission@uthscsa.edu, 210-567-5805 or (toll free) 877-235-0341.
$7.7 million awarded from CPRIT

Seven researchers in the School of Medicine were awarded grants from the Cancer Prevention & Research Institute of Texas (CPRIT).

Gail Tomlinson, M.D., Ph.D., interim director of the Greehey Children’s Cancer Research Institute and professor of pediatrics, received $2.7 million to help health care providers map out their patients’ cancer risks, and to share information with the community about the importance of understanding family history. The grant also will support screening services for people at high risk who might not otherwise have access.

Cynthia Mojica, Ph.D., assistant professor of epidemiology and biostatistics at the Institute for Health Promotion Research, received $2 million to partner with community organizations to offer breast, cervical and colorectal cancer screenings to San Antonio residents unable to afford them.

Andrew Hinck, Ph.D., professor of biochemistry, was awarded $1 million to fund instrumentation that will help researchers develop new cancer-fighting drugs and take screening capabilities to a new level.

LuZhe Sun, Ph.D., professor of cellular & structural biology and urology, received $875,252 for his work targeting the hedgehog pathway in prostate cancer. Brad H. Pollock, M.P.H., Ph.D., professor and chairman of epidemiology and biostatistics, was awarded $767,107 to investigate environmental influences in hepatocellular liver cancer in South Texas. Ricardo Aguiar, M.D., Ph.D., associate professor of hematology and medical oncology, was awarded $200,000 for a next-generation sequencing strategy in B-cell malignancies, and Sunil Sudarshan, M.D., assistant professor of urology, received $199,902 for the study of oncometabolites in renal cancer.

Department of Physical Therapy reaccredited for 10 years

The Department of Physical Therapy has been reaccredited for 10 years - the maximum number of years possible - by the Commission on Accreditation of Physical Therapy Education. Reaccreditation reviewers noted strong community support for the department’s programs and the quality of its graduates, as well as a commitment by faculty and students to community service, which often is continued by students after graduation. The report also mentioned that the department has had an increasing number of Hispanic students, and that the graduates are staying in Central and South Texas, which includes the Health Science Center’s 38-county service area of South Texas.

New Ph.D. in translational science offered

The UT Health Science Center, UT San Antonio (UTSA), UT Austin College of Pharmacy and UT School of Public Health (San Antonio Regional Campus), announced the establishment of a Ph.D. degree program in translational science.

Michael Lichtenstein, M.D., M.Sc., said the program is propelled by a Clinical and Translational Science Award (CTSA). “The goal of the CTSA is to transform academic health centers so they will accelerate the pace and application of discovery, resulting in improved health for the public,” he said. Dr. Lichtenstein is professor of medicine and director of research education, training and career development for the Institute for Integration of Medicine and Science. Coursework will begin in the fall.

For more information about the program, visit uthscsa.edu/shp/pt, or call Dr. Ortega, at 210-567-8750.
Teens get hands-on introduction to health and science careers at annual expo

More than 1,500 college and high school students from throughout South Texas learned how to intubate manikins, start an intravenous (IV) line, immobilize a patient as paramedics do, administer visual acuity and respiratory function tests and much more at the 2011 Health Professions Fair & Science Expo held this past fall on the UT Health Science Center San Antonio campus. Through these hands-on experiences, students were exposed to a wide range of health-related and biomedical professions. “I thought it was a great way to expose a lot of students at once to everything the Health Science Center offers,” said Irene Chapa, Ph.D., director of the Office of Recruitment and Science Outreach. “It was also a great opportunity for our Health Science Center students to really put their knowledge into practice by teaching.” Faculty and students from all five schools at the Health Science Center participated.

Researchers co-author book on nanoparticle imaging

Researchers in the School of Medicine co-authored a new book on the imaging of nanoparticles – tiny particles that in the future may prove to be eminently useful for drug delivery in humans. “Although there has been a lot of hype about nanoparticle technology, and some things don’t work or are clearly impractical, I predict this technology will be a major force in clinical care,” said nuclear medicine physician William T. Phillips, M.D., co-author and co-editor of “Nanoimaging,” published by Pan Stanford Publishing. “Some practical ways will include delivering increased amounts of therapeutic agents to infections, lymph nodes, bone marrow and tumors.” Dr. Phillips and biochemist Beth A. Goins, Ph.D., both in the Department of Radiology, lead a team that is pioneering research of nanoparticle technology, particularly the imaging of these tiny particles. “We have some promising ideas for projects and products utilizing nanoparticles, but those require investment and company generation,” said Dr. Goins, co-author and co-editor of the book.

Researchers co-author book on nanoparticle imaging

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Pediatricians design child abuse identification tool

A computer program developed by child abuse experts Nancy Kellogg, M.D., chief of the Division of Child Abuse Pediatrics and medical director of the CHRISTUS Santa Rosa Children’s Hospital Center for Miracles, and James Anderst, M.D., of Children’s Mercy Hospital in Kansas City, Mo., is bridging the gap between the professionals on the scene of a child injury case and child abuse pediatricians. “What happens is we get a child in a medical setting and are left with trying to find out what happened when the injury occurred,” Dr. Kellogg said. “Often the best information comes from law enforcement and CPS investigators, but because they aren’t physicians and don’t know the mechanisms of injury, they often don’t know what information is important to us to make a determination of abuse or neglect.” The program is available via smart phone and uses animation sequences, text, radiographs, CT scans and MRI scans to assist workers in the field.
Neonatal and pediatric respiratory therapists

fly into action

By Rosanne Fohn

When the phone rings in pediatric and neonatal transport units of San Antonio area hospitals, chances are good that a UT Health Science Center respiratory care alumnus will be called upon to help save a life.

Respiratory therapists work as part of a hospital’s medical team, providing care during transport for critically ill or injured children from throughout South Texas. Therapists travel to the patient by ambulance, helicopter, propeller plane or jet to provide assistance with respiratory issues.
Lori Craft, B.S.R.C., RRT, a graduate of the inaugural UT Health Science Center respiratory care program in 1996, is a senior member of the pediatric transport team at CHRISTUS Santa Rosa Children’s Hospital. Alumni Mayra Fernandez, B.S.R.C., RRT, a 2006 graduate, and Chris Tolentino, B.S.R.C., RRT, who graduated in 2009, also work there.

Craft recalled a recent incident when she was called on to fly to El Paso in a twin-engine airplane retrofitted with medical equipment. She only knew that she would be providing care for a very sick child on a ventilator.

An hour later at the border city hospital, Craft examined the 3-year-old’s X-rays. The School of Health Professions graduate knew this was a very serious case. The little girl had necrotizing pneumonia, flesh-eating bacteria in the lungs.

Her job – along with her teammates – a critical care nurse and physician – was to stabilize the patient by providing intensive-care during transport until the child could receive care at the hospital.

“We provide care for children who are just a few days old to age 18 with any type of medical problem. They could have complex medical issues, critical care issues, trauma or congenital heart issues,” she said.

Another alumna, Melissa Treviño-Alvarez, M.S., RRT-NPS, (class of 2001) is a member of the University Health System transport team that includes graduates Mandy Livingston, B.S.R.C., RRT, (class of 2000) and Andy Rodriguez, RRT, a 2007 graduate. At Methodist Children’s Hospital, Ali Soujoudi, B.S.R.C., RRT, a 1999 graduate, serves on the pediatric transport team.

Treviño-Alvarez already had a degree in chemistry and was working as a pharmacy technician when she learned of the respiratory care program at the Health Science Center. “I became interested in respiratory care when I realized that my grandfather had died from an occupational illness called silicosis,” she said. The disease is caused by longtime exposure to silica dust and is sometimes called stonemason’s disease. “I wanted to know more about how to prevent such illnesses and how to treat the patients who suffer from them,” she said, “but as soon as I began my neonatal/pediatric class, I was hooked. I knew that I wanted to work in the Neonatal Intensive Care Unit after graduation.

“Neonatal respiratory therapists are responsible for all infants who are receiving any type of oxygen therapy, whether it is through a device as simple as a nasal cannula (an oxygen
delivery system) or as complex as a ventilator,” said Treviño-Alvarez, who has worked at University Health System for 11 years. She was the lead respiratory therapist in the Neonatal Intensive Care Unit before becoming senior educator for the Department of Respiratory Care.

“We attend all high-risk deliveries, and most of our therapists are certified for transport. Our neonatal transport team at University Hospital is composed of a nurse, respiratory therapist and either a physician or neonatal nurse practitioner. We can be called to pick up babies as close as across town or as far away as McAllen,” she said.

Donna “De De” Gardner, M.S.H.P., chair and associate professor of respiratory care at the Health Science Center, noted that respiratory therapists are integral members of the medical team and work directly with the physician regarding the cardiopulmonary health care of patients. “They are experts at managing patients receiving mechanical ventilation in intensive care units,” she explained.

A unique neonatal and pediatric specialty area where respiratory therapists utilize their skills is with extra corporeal membrane oxygenation (ECMO), a machine that helps oxygenate the blood while giving the lungs a rest. In fact, Health Science Center alumna Casey Howard, B.S.R.C., RRT, a 2002 graduate, is the first respiratory therapist in San Antonio to become an ECMO coordinator, Gardner said. “He also was the first respiratory therapist in San Antonio to join the ECMO team at Santa Rosa. He received the 2010 Alumni Award for his leadership in the city and the excellent care he provides,” Gardner said.

Respiratory therapists also work with children who have been involved in motor vehicle accidents or other trauma involving lung injury, she said.

Speaking of the Health Science Center’s program, Gardner said, “The first-attempt exam pass rate for 2011 graduates on the entry level examination — the CRT (certified respiratory therapy exam) — was 100 percent, and the overall pass rates on the advanced practitioner examination — the RRT (Registered Respiratory Therapy examination) — was also 100 percent,” Gardner said. “Over the last 12 years, our graduates are employed before they graduate due to the quality of the program and credentials they obtain prior to graduation,” she said.

At the UT Health Science Center San Antonio, bachelor’s degree completion program is available to registered respiratory therapists with an associate’s degree from a regionally accredited program. “Affiliations are in place with St. Philip’s College, Howard College, South Texas College and Fort Sam Houston’s associate degree program for graduates who have earned their RRT credential. This means that students are able to earn their bachelor’s degree in respiratory therapy after they obtain an associate’s degree,” Gardner explained.

As part of the program, prior to graduation, respiratory care students can enter internships in settings throughout the U.S. Recent students have had internships in top medical centers in Texas and throughout the country including Massachusetts General Hospital in Boston, Texas Children’s Hospital in Dallas and Johns Hopkins University in Baltimore.

For Lori Craft, who completed the program 15 years ago and has become an expert in pediatric critical respiratory care, the profession offers an adrenalin rush that frequently has a happy ending. “I like critical care and pediatric critical care. It’s very challenging and it tests a lot of my abilities,” she said. “It keeps me on my toes. For anyone who is interested in a job that is never the same, day to day, this is the job for you.”

Third-year respiratory therapy student Sharon San Juan (right) demonstrates to a mom and her son how to use a spacer and metered dose inhaler. The device and medication are given to children with asthma. The device helps disperse the medication in tiny particles so it reaches small airways in the lungs.
“The genome era is over. We are now in the epigenome era, when it will be important to consider gene-environment interactions – not the gene alone – as the basis of health.”

So says Peter Nathanielsz, M.D., Ph.D., who knows well The Eagle pub in Cambridge, England, where the genome era began. There, on Feb. 28, 1953, Francis Crick strode in at lunchtime, declaring that he and James Watson had “found the secret of life.” They had identified DNA’s double-helix structure.

That was followed by efforts to understand how DNA is encoded and sequence entire genetic codes – or genomes – of living creatures. By 2003, the 50th anniversary of Watson and Crick’s discovery, the full human genome was sequenced.

“Conceptually, we’ve passed the genome era,” Dr. Nathanielsz declares. “We are now in the post-genome era, when we need to understand how the environment modifies – switches on and off – genes.”

The new frontier, called epigenetics, is the study of lasting change in how genes are expressed without alteration to DNA’s underlying sequence. In many cases, these new traits can be passed to future generations. Although the term was coined in 1942, epigenetics has attracted intense scientific interest only in the last decade.

Dr. Nathanielsz and his collaborators at the Center for Pregnancy and Newborn Research, in the Department of Obstetrics and Gynecology in the School of Medicine of the UT Health Science Center, are well positioned to contribute to this emerging field.

For decades, they have studied how conditions in the womb and immediately after birth impact health and susceptibility to disease throughout life and across successive generations. This is called “developmental programming” or “fetal origins of disease.” Compelling evidence suggests these phenomena have an epigenetic basis.

“You are born with a deck of cards from your mother and father,” Dr. Nathanielsz says, “then, from the moment the sperm hits the egg, that deck of cards is modified.

Environmental influences such as poor maternal nutrition instruct your genome, telling you that you can’t play the ace of spades – because it has been suppressed by environmental influences. That gene is just not going to work, or at least it’ll work much less. Another gene may be switched on too much.
“It is the gene-environment interactions that are fundamental.”

Dr. Nathanielsz’s personal story intertwines with the emergence of epigenetics. He studied at Cambridge University, where Sir Joseph Barcroft realized decades earlier that a fetus is not merely a small adult but lives by a distinct set of rules. Cambridge, as a result, was the birthplace of fetal physiology, a precursor to developmental programming.

Immersed in this tradition, Dr. Nathanielsz earned his Ph.D. studying fetal sheep. He left Cambridge for the UCLA and then Cornell, where he met three members of the current team: Thomas McDonald, Ph.D.; Cun Li, M.D., Ph.D.; and Mark Nijland, Ph.D.

No one grasped how significant such research would become. “We were just doing pure basic science,” Dr. Nathanielsz said. “There’s a real lesson here. Pure basic science is incredibly important.”

Then British physician David Barker showed that low birth rate raises heart disease risk – termed “the Barker hypothesis” by the British Medical Journal in 1995. The idea that challenges faced in the womb could have lifelong effects was greeted with skepticism but now has widespread acceptance.

Dr. Nathanielsz was at the forefront, authoring a book for general audiences, “Life in the Womb: The Origin of Health and Disease,” in 1999. After a stint at New York University, he arrived in 2004 at the UT Health Science Center, where he led a team with a nearly unparalleled ability to study developmental programming across species: rats, sheep, non-human primates and, in translational research, humans.

At the Health Science Center, Dr. Nathanielsz works with Drs. McDonald, Li and Nijland, as well as Leslie Myatt, Ph.D.; Thomas B. Jansson, M.D., Ph.D.; Alina Maloyan, Ph.D.; and Theresa Powell, Ph.D. They collaborate with others, including Laura Cox, Ph.D., at the Southwest National Primate Research Center in San Antonio; Elena Zambrano, Ph.D., of the National Institute of Nutrition, Mexico; Matthias Schwab, M.D., Ph.D., of Friedrich Schiller University, Germany; and Stephen Ford, Ph.D., of the University of Wyoming.

This spring, Dr. Nathanielsz will receive the top honor of the leading organization in his field, the Society for Gynecologic Investigation. He stepped down as director of the Center for Pregnancy and Newborn Research on Jan. 1, handing the reins to Dr. Myatt, but has no intention of leaving research: “This is too important, and too exciting an area to leave.”
Bark takes bite out of cancer
After Dr. Kumar published a paper examining some of the differences in Asian and Western diets, a provider of extract from the bark of the Amur cork tree (Phellodendron amurense) told him that some men who took it reported that their PSA levels dropped.

Native to the Amur River watershed in northeastern China and far western Russia, the cork tree has a bark that has long been used in Chinese herbal medicine as an anti-inflammatory and treatment for digestive problems. PSA, or prostate-specific antigen, is secreted by the prostate gland, and elevated levels of it have been linked to the presence of prostate cancer, although it is not considered a definitive test.

Dr. Kumar was intrigued enough by the possibility of a link to start a laboratory study of the substance. He wanted to see if an extract of the cork tree’s bark killed prostate cancer cells in tissue samples, and then in animal models. The studies, supported by grants from the National Cancer Institute and the U.S. Department of Veterans Affairs, were successful.

Building on that success, Dr. Kumar launched a limited clinical trial for men who were patients at the South Texas Veterans Health Care System. As co-leader of the Cancer Prevention and Population Science program at the Health Science Center’s Cancer Therapy & Research Center (CTRC), he was able to network with clinicians who could oversee the patient arms of the study.

The study for VA patients with prostate cancer is divided into two sections: those who receive surgery and those who receive radiation therapy.

The men in the radiation arm, like Joe Covert, take the drug each day throughout the course of their therapy. Covert, a patient at the CTRC, said he had to get used to taking the required thrice-daily dose, but that it hasn’t caused him any trouble. Covert also said he doesn’t expect a miracle — he decided to participate in the early-stage study out of a wish to help other men with prostate cancer in the future.

But unlike in the case of many drugs that are first being tested on humans, researchers are not worried that the cork tree bark will have toxic side effects in study participants, since it has been used as a medicine for hundreds of years.

“It’s never been toxic, so we would be incredibly surprised if there was an interaction,” said William “Trey” Jones, M.D., assistant professor of radiation oncology at the UT Health Science Center, who is leading the radiation therapy arm of the study.

What they are hoping to find from this first small study is that the drug works in humans the way it worked in the lab: sensitizing cancer cells to the point that they succumb more completely to radiation.

“We’re hoping to find that it provides much higher levels of cell kill,” Dr. Jones said.

That could lead to using lower levels of radiation in therapy, said Joseph W. Basler, M.D., Ph.D., professor of urology at the UT Health Science Center.

“There are still significant side effects to radiation therapy,” Basler said, “so if you have a medicine that can sensitize the tumor, you can reduce the amount of radiation given to the patient.”

Even better, and eventually, “Our hope is to find a drug that could treat small tumors and maybe avoid surgery or radiation in the future.”

Dr. Basler’s patients in the surgery arm take the bark extract, which comes in small yellow capsules, for 30 to 80 days before their operations. The tissue that is removed during the operation can then be examined for tumor markers and compared to the initial biopsy tissue.

Dr. Basler noted that the way Dr. Kumar coordinated with physicians to move the study of the bark extract from the lab to the clinic happened in a relatively brief time period compared to other medical research studies.

“It’s a good example of translational medicine,” Dr. Basler said.

Dr. Basler has his eye on the next step.

“If the patients even moderately respond, we will try to take the study to other cancers,” he said, adding that he has already talked with CTRC specialists in the areas of bladder cancer, pancreatic cancer and melanoma.
A second chance –
worth a smile!

By Natalie Gutierrez

The X-ray revealed a black void. What was once colonized by lively cells, tissue and nerves was vacant and still. The pulp tissue (nerves) inside 12-year-old Cody Nelson’s tooth was dead – the result of a biking accident. He’d been speeding down a hill when his tire hit a bump, sending the handlebars into his face.

“I touched my mouth and saw this white stuff. Then, I felt my front tooth and half of it was gone,” he said. He’d fractured his right permanent front tooth, a central incisor that assists in chewing and is one of the most visible in the mouth.

Accidents like Cody’s are common. The American Dental Association estimates that one-third of all dental injuries are related to sports or recreational activities. In addition, other sources indicate that more than 7.3 percent of U.S. children, by age 17, have lost at least one permanent tooth to decay.

Normally, a child might live with an injured or infected tooth. Even if a dentist rebuilds the missing portion of a chipped tooth, using a tooth-colored resin, the interior of the tooth’s root remains lifeless and vulnerable to infection. Root canal therapy would be the only option, but this treatment means that the root of the tooth will no longer develop, and will be at risk for further fractures for the remainder of the patient’s life.

Researchers in the Dental School at the UT Health Science Center at San Antonio are helping to solve the problem. For the first time ever in a clinical setting, researchers in the Department of Endodontics, have proven that stem cells, abundant in the soft tissue surrounding children’s teeth, can be used in an endodontic procedure to regenerate the teeth’s own tissue and cells.

Cody Nelson was one of 12 patients ages 7 to 16 who participated in the study led by Anibal Diogenes, D.D.S., M.S., Ph.D., assistant professor in the Department of Endodontics at the Health Science Center.

When a child loses a portion of tooth to a cavity, or as in Cody Nelson’s case, to an injury, inflammation and bacteria can be present. The first step in the Health Science Center study was to disinfect the tooth canal and administer antibiotics.

Cody returned to the Dental Clinic in a month where clinicians flushed and cleaned the tooth canal. After applying an anesthetic, dentists used a special technique to evoke bleeding in the apical papilla, which is the soft tissue surrounding the end of the root in developing permanent teeth. The apical papilla is the precursor tissue to the pulp of adult teeth. Unlike the pulp in adult teeth that may undergo necrosis due to infection, the apical papilla resists advanced infections.

Thus, stem cells can be released from this structure and brought into the interior of a tooth to re-populate and restore the damaged tissue.

Standard blood samples were also drawn from each study participant. “We needed to answer several questions,” Dr. Diogenes said. “If we caused blood cells from within the apical papilla to emerge, would they carry with them stem cells? And could those stem cells stimulate the regeneration of dead tissues in a tooth? We compared the blood samples from the teeth with the standard blood samples drawn from each patient.”

What they discovered was exciting. After one month of treatment, blood carried from the apical papilla into the tooth had a concentration of stem cells up to 700 times higher than in the systemic blood samples.

“We found that by causing bleeding in the apical papilla, we were able to release stem cells resulting in their delivery to the tooth canal. In addition, we demonstrated that the cells originated from the apical papilla and that they did not come from anywhere else in the body.”

Dr. Diogenes said the process...
provides the ideal environment for regeneration or restoring vitality to the tooth pulp. “All of the elements of bioengineering are present,” he said. “Bleeding is provoked, which brings the stem cells into the tooth canal. The blood clots, naturally forming a fibrin scaffold (a network of proteins that preserve living tissue). Platelets and the tooth structures provide the growth factors needed. Finally, the stem cells stimulate the regeneration of tissues, which are then supported by the scaffold and the growth factors.”

What was once dead tissue is brought back to life. More importantly, Dr. Diogenes said the tooth is immunocompetent, meaning it can defend itself from infection.

“The further development seen means a stronger reliable tooth that functions as an uninjured tooth,” Dr. Diogenes said. “The process takes several months, but positive vital responses have been seen in as little as six months.”

The study was funded by the American Association of Endodontists Foundation and by the Department of Endodontics at the UT Health Science Center and was published in the Journal of Endodontists. The American Dental Association is creating treatment codes for this new procedure that Dr. Diogenes hopes will become widely used in dental clinics across the country.

Co-investigators on the study from the Department of Endodontics at the Health Science Center were Kenneth Hargreaves, D.D.S., Ph.D., Michael Henry, D.D.S., Ph.D., and Tyler Lovelace, D.D.S.

Dr. Diogenes and his team are now studying the same process in adult patients. “We are excited about these findings because not every child is a
candidate for a root canal,” he said. “If an affected tooth is not fully formed, further development is not viable after conventional root canal therapy. During a root canal, dentists fill a tooth with an inert material. Therefore, the tooth can no longer develop,” Dr. Diogenes said. “Only regenerative endodontics can restore vitality in the tooth. Instead of having to live with tooth loss and limited therapy options, we may now be able to offer this minimally invasive procedure, which costs about one-quarter of root canal surgery.”

Kenneth Hargreaves, D.D.S., Ph.D., professor and chair of the Department of Endodontology at the Health Science Center, said Dr. Diogenes’ research represents translational science at its best.

“Anibal and his team are the first to demonstrate a clinical procedure that delivers a high concentration of mesenchymal stem cells into the root canals of disinfected teeth that literally regenerate tissue in actual patients,” Dr. Hargreaves said. “These findings provide a foundation that will be incredibly important in guiding the translation of tissue engineering from the bench to the chair side. He and his team are among the leaders in this effort.”

Laura Nelson, mother of study participant, Cody Nelson, said she was glad her son was among the first to benefit from this procedure.

“It’s amazing what the dentists at the Health Science Center’s Dental Clinic can do,” Mrs. Nelson said. “We are lucky this research and these specialists are here in San Antonio. Cody can chew gum and eat apples just like before. He recently got braces too.”

Cody said he thinks it’s “pretty cool,” especially since he’s back to being an active 12-year-old and doing what he loves to do best – riding his bike.

To become a patient in the UT Health Science Center Dental Clinic, call 210-567-3217 or visit www.dentalscreening.com.
Breastbone
Mechanics

BY WILL SANSON

Using a “mixed tool bag of techniques,” including a ratchet mechanism, UT Medicine San Antonio physicians in three disciplines — cardiothoracic surgery, radiology and plastic surgery — provide a new breakthrough for patients with unstable breastbones.

Leroy Lorenz’s breastbone failed to heal back together after a coronary artery bypass operation. Donna Lea Anderson’s breastbone was eaten away by a staph infection, a complication of aortic valve surgery. Both lived with chronic pain and disconcerting internal movement for months. Then they discovered an innovative breastbone reconstruction technique performed by specialists from UT Medicine San Antonio. UT Medicine is the clinical practice of the School of Medicine at the UT Health Science Center.

Leroy Lorenz and Donna Lea Anderson are among the estimated 400,000 people a year who undergo surgery to bypass arteries, repair heart valves and correct other problems. These surgeries require dividing the breastbone, which afterward is commonly repaired with stainless steel wire. Healing is normal in most cases, but in up to 3 percent of patients (12,000 a year) the breastbone comes apart. Morbid obesity, poorly controlled diabetes, chronic coughing and vitamin D deficiency often related to osteoporosis increase the risk of this serious complication.

The breastbone, or sternum, anchors the rib cage protecting the heart and lungs. Cardiothoracic surgeons, plastic surgeons and radiologists from UT Medicine pioneered a corrective surgery that employs three technologies to help these patients.

Cardiothoracic surgeons ensure the heart is not nicked, as its proximity to the breastbone is razor thin. John Calhoon M.D., professor and chair of the Department of Cardiothoracic Surgery in the School of Medicine, leads members of a team that work on these high-risk cases. “It is usually quite uncomfortable for a person to not have a solid breastbone,” Dr. Calhoon said. “The grating movement of an incompletely healed sternum can cause chronic pain and lead to anxiety and depression. These patients are often led to believe nothing can be done.”

Lorenz, a truck driver from Seguin, underwent reconstruction in May 2011 at CHRISTUS Santa Rosa Hospital - New.
Braunfels. His breastbone was divided in a bypass operation in 2009. After the surgery, when it was expected to have healed, he felt a gap inside and shared this with his wife, Leigh Ann. “You could actually put your hand on the bone and move it around and feel all my innards moving,” he said. A chest X-ray confirmed that the breastbone had separated and the wires were broken into several pieces.

Anderson, a writer/lyricist from San Antonio, underwent reconstruction in April 2011 at University Hospital in San Antonio. A staph infection destroyed her sternum after her second heart valve operation, causing the top four-fifths of the sternum to be removed. “For a year and a half, my ribs rubbed together and I heard popping whenever I moved,” she said.

**How the surgery is done**

Carlos Restrepo, M.D., a chest radiologist with UT Medicine, uses advanced CT imaging to confirm the separation of the sternum. Because every patient is different, it is important to visualize the exact anatomic details surgery will correct. “CT images also show infection, if it is present, which is a common explanation for why the surgical wound is opening instead of healing,” Dr. Restrepo said.

Aided by digital imaging, a cardiothoracic surgeon lifts the sternum off the heart and removes scar tissue on it. A UT Medicine plastic surgeon on the case, either Howard Wang, M.D., or Luis Jaramillo, M.D., dissects muscle away from the breastbone. With the breastbone exposed, the cardiothoracic surgical team reassembles the pieces like a puzzle, using a mixed “tool bag of techniques” sometimes including Sternal Talons® to fix the breastbone in place. A ratchet mechanism is used to pull the sides together.

The cardiothoracic surgeon may also utilize orthopedic

**Bone bonding breakthrough**

In surgeries such as artery bypass and heart valve repair, the breastbone is divided and afterward is commonly repaired with stainless steel wire (inset). In a small percentage of cases, the breastbone comes apart and the wires can break. UT Medicine San Antonio physicians are using several techniques, including Sternal Talons® illustrated below, to fix the breastbone in place and correct the problem.

Illustration by Sam Newman, Multimedia Services
plating techniques to stabilize the sternum. Because the two sides of the fracture are jagged and leave gaps when drawn tight, the surgeon may also employ Kryptonite™ Bone Cement, which provides a bridge for bone cells to migrate across, filling the gaps. Full healing can then take place. Afterward, a plastic surgeon inserts muscle or fat from the chest or other parts of the body to fill the chest space with strong tissue that brings good circulation. This provides protection, blood supply, healing and the ability to deliver antibiotics. “Bone, tendon and vital organs must be covered quickly to prevent dangerous infection,” Dr. Wang said.

Preventing problems

For high-risk patients such as diabetics who undergo chest surgery, a number of sternal closure methods such as those described above may be considered. “At the end of the day, what matters most is creating a solid breastbone again as safely as possible,” Dr. Calhoon said.

“I put up with it (the unnatural feeling in his chest) for a year and a half, but since the operation I’ve been able to do more stuff around home than I have the last two years,” Lorenz said.

Anderson’s surgery also involved implantation of synthetic bone to replace the large amount of sternum that deteriorated by infection. “I can move now without hearing the snap, crackle and pop,” Anderson said. “I know my sternum is stabilized and mentally that does so much for me.”

For information about this type of surgery, call UT Medicine San Antonio Cardiothoracic Surgery at 210-358-8001 or visit www.utmedicine.org/utmed01.cfm?pageID=1030310.

Physician Assistant Studies celebrates 10th anniversary
Mangelsdorff establishes program’s first endowed professorship

By Rosanne Fohn

When McAllen native Darrell Alviar was leaving the military, he drew on his background as a Navy corpsman to seek his civilian profession. “It was a natural progression. I had already been seeing patients and dispensing medications,” he said, in a Marine Corps Infantry Unit in Iraq and Afghanistan.

Alviar will be entering the Physician Assistant Studies (PAS) program in the School of Health Professions this fall as part of the first class to complete the master’s degree in two years instead of three. The recent changes also expand the class size from 30 students to 40, so additional graduates can move more quickly into the workforce.

“I liked the idea that several of the faculty members are former military and that San Antonio is so military friendly. I thought I would fit right in,” Alviar said.

As the PAS program celebrates its 10th anniversary in 2012 — ranked 18th nationally by U.S. News & World Report — it’s appropriate to look at its beginnings, which coincidentally began with the military.

“During the Vietnam War, there were few doctors on the battlefield,” explained J. Glenn Forister, M.S., M.P.A.S., PA-C, interim chair of the Department of PAS and an Army Reserve veteran. “Medics were the closest you’d come to having a doctor.”

In 1965, Duke University started the first civilian PAS program. Many of the students in the early days of the profession were former medics, including Dennis Blessing, Ph.D., PA-C, who served as a surgical technician in Vietnam and later became a founding faculty member of the Health Science Center program. He now is a professor and associate dean of the School of Health Professions.

After the success of a pilot program that placed civilian students in unfilled slots in an Army PAS program at Fort Sam Houston, the School of Health Professions received approval from the Texas Higher Education Coordinating Board in 2000 to start its own bachelor’s degree program. This quickly developed into a three-year master’s degree in 2003. And by extending rotations throughout South and Central Texas, the program has become well known for its emphasis on primary care and providing culturally competent health care services to underserved populations, Forister said.

10 YEARS OF EXCELLENCE

1995
School of Health Professions (SHP) begins participating in a collaborative Physician Assistant Studies (PAS) program with the U.S. Army at Fort Sam Houston in San Antonio. Students receive classroom instruction through the Army and complete clinical rotations through the SHP. They graduate with a certificate of completion from the Army and a bachelor’s degree in PAS from the UT Health Science Center.

2000
SHP initiates its own PAS program with 20 students.

2002
First class of physician assistant students graduates from the UT Health Science Center.
Since our students are often in rural settings, we challenge them to become independent thinkers and active contributors to the health care team. This comes from our origins as a military program where service to others is paramount,” Forister explained. The changes to the program in January, which streamline the classroom portion of the programs will help bring more PAs into communities throughout the state.

Julie Dylla, PA-C, was president of the first PAS class. Looking back on her studies, she recalled: “The didactics (classroom portion) were very intense. They told us that we were going to learn three-fourths of what a medical student would learn in half the time. I don’t know if that was actually true, but I can tell you that it sure felt like it!”

After graduation, Dylla entered the neurosurgery specialty at Audie L. Murphy Veterans Hospital. She compares her career to that of a medical resident. “I am the first line of contact with the patient,” she said. “I see them in the exam room, in the emergency room and in the operating room. The only thing I don’t do is perform surgery, but I do assist,” she said. “It’s a very satisfying career.”

The military initially drew psychologist and PAS donor A. David Mangelsdorf, Ph.D., M.P.H., to the UT Health Science Center. While planning a conference to be held on campus he became reacquainted with one of his former students, Judy Colver, who was a PAS faculty member at that time.

In 2005, Dr. Mangelsdorf established the first endowed professorship for the PAS program as part of a charitable remainder trust. The retired colonel, who has four degrees including three master’s degrees and a doctorate, has dedicated much of his life to education, and despite his military retirement he continues as a professor and civilian health psychologist with the Army-Baylor University Graduate Program in Health and Business Administration at the Academy of Health Sciences at Fort Sam Houston.

“The School of Health Professions mission overlapped with my philanthropic interests in support of multidisciplinary educational programs and in support of community preparedness and homeland defense,” Dr. Mangelsdorff said.

He also has given smaller gifts to the PAS and Clinical Laboratory Sciences (CLS) programs including a gift to support an exchange program for CLS students with the renowned Karolinska Institutet in Stockholm, Sweden.

“I was fortunate to study abroad as a student at Oxford University and later in Germany on a faculty Fulbright scholarship. Being exposed to different cultures and educational systems broadened my perspectives,” he said.

Linda Smith, Ph.D., chair of Clinical Laboratory Sciences, said: “The exchange program has been an exceptional learning experience for everyone concerned. Our students who go to Karolinska Institutet experience firsthand a different system of health care and health care education. And for our students here who host the Swedish students, it provides an opportunity to get to know their global counterparts in a very personal way.”

As intertwined as the PAS program has been with the military, it serves the civilian population well and the student body is well diversified, with 50 percent of incoming students of Hispanic, African American and Asian descent. “One of our goals is to provide ‘culturally competent care.’ We want our PAs to understand and be familiar with the culture of those they serve,” Forister said.

Looking to the future, Forister added: “We plan to grow our program over time to better serve our expanding service area in South Central Texas. Although we have had cutbacks in state funding, being a state institution also has advantages. Our students benefit from more affordable tuition and many of them take advantage of government loan repayment programs by following our vision of working in health profession shortage areas such as South Texas.”

That is what entering student Darrell Alviar plans to do.

A. David Mangelsdorff, Ph.D.
The nursing profession is one of the most critical and respected professions in the health care industry. Today, the nurse’s role is more important than ever, particularly because of the increase in the aging population and the health care needs the elderly require. By 2030, persons 65 and older will number more than 72 million, which is twice their number in 2000. As a result, the shortage of and demand for nurses in the United States is expected to increase.

In addition, with the national move toward health care reform, nursing schools across the country, according to the American Association of Colleges of Nursing, are struggling to expand educational programs and training to meet the rising demand for top-notch professionals.

Thanks to the leadership of Eileen Breslin, Ph.D., RN, FAAN, School of Nursing dean, with support from the School of Nursing Advisory Council (NAC), the UT Health Science Center’s School of Nursing is excelling at a rapid pace in preparing nurses for the changing landscape and future of health care.

In 2009, Dean Breslin began a bold $15 million initiative “Transforming the Future of Nursing Care” focused on the school’s unique missions of education, research community service and clinical care, with the following goals:

- Increase enrollment of outstanding students;
- Recruit, retain and educate distinguished faculty
- Expand nursing research excellence;
- Broaden nursing curriculum and innovative teaching approaches; and
- Update the academic environment, including facilities, technology and laboratories.

“The Nursing Advisory Council members (pictured above) are the bridge-builders who go out into our community, spread the word and draw attention and much-needed support for our vital missions. We would not be where we are today if it were not for their leadership and advocacy.”

– Eileen Breslin, Ph.D., RN, FAAN, School of Nursing dean
NAC member since 2003 and member of the NAC Development Committee

Established with eight members in 1983, the NAC has grown to more than 50 active members who are distinguished leaders from throughout San Antonio and the South Texas community. Their focus is to promote excellence in educational and nursing care programs through fundraising activities and by establishing partnerships with local organizations toward increased community visibility for the School of Nursing.

Every member of the NAC plays an integral role in the success of the School of Nursing. One of the hardest-working members of the NAC is Betty Halff.

In 2010, the Halff family made a personal commitment of $100,000 to establish the Howard and Betty Halff Endowed Professorship in Nursing Excellence for Patient Care through the estate of Betty’s late husband, Howard. An additional gift of more than $44,000 was made to fund scholarships for faculty in the School of Nursing to pursue a doctorate in nursing degree. The Halffs have also funded numerous scholarships for nursing students through the establishment of a living endowment.

Betty Halff was also instrumental in establishing a long-standing partnership between the School of Nursing and Methodist Healthcare Ministries of South Texas Inc. (MHM). In 2010, MHM awarded $3.9 million to the School of Nursing for technology enhancements and student and faculty support.

“Betty Halff is one of our most steadfast supporters,” Dean Breslin said. “Being a former nurse herself, Betty personally understands the importance of educating and training future nurses. She is a passionate and generous visionary who is making it possible for us to further educate nurses in our graduate programs so we can accommodate more students in our undergraduate programs.”

Mickey Parsons, Ph.D., RN, is the holder of the Howard and Betty Halff Endowed Professorship in Nursing Excellence for Patient Care. She is a faculty member in the Graduate Administration Program in the Department of Health Restoration and Care Systems Management, and coordinator of the Doctor of Nurse Practitioner Organizational Systems for Executive Nurse Leaders program.

“I am honored and indebted to the Halffs for their dedication to the future of nursing leadership, education and patient care,” Dr. Parsons said. “Because of their support, I am able to focus my career in academia on the development of future nursing leaders who are ready to lead within the complex, oftentimes tumultuous and ever-changing health care environment locally, regionally and nationally.”
Ten years ago on June 28, the Regional Academic Health Center (RAHC) officially opened its doors in Harlingen, thanks to the tireless efforts of many community leaders and UT Health Science Center faculty, staff, students, and administrators.

One of the hardest-working and tenacious advocates for a medical school in Harlingen was the city's own mayor, the late Colonel H. William “Bill” Card Jr. Col. Card was known as “one of the greatest mayors in Harlingen’s history” who had a passion for the city and its people. His friends and colleagues called him a “great mediator and a true hero to his country and the city.” He was among the city's longest-serving mayors, in office from 1987 to 1998.

A born leader, Col. Card retired as a decorated veteran after 29 years of military service that included action aboard the USS Pennsylvania where he participated in the defense of Pearl Harbor on Dec. 7, 1941; the Roi-Namur Islands Operation of the Marshall Islands campaign in 1944; the Saipan Island campaign and Tinian Island, Mariana Islands and Iwo Jima. During the Korean War, he took part in the landing at Inchon and fought in the liberation of Seoul. After making the landing at Wonson, he participated in the fight north to the Chosin Reservoir.

After retirement from the U.S. Marine Corps, Col. Card was named commandant of the Marine Military Academy and in 1975 began his career as a banker, eventually becoming president of First National Bank of Harlingen. He is remembered as a dynamic individual who “never retired from making Harlingen a better city.”

Leonel Vela, M.D., M.P.H., regional dean of the RAHC, knew Col. Card well and worked with him closely.

“With the RAHC’s 10th anniversary observances approaching this summer, we saw this as the perfect opportunity to pay tribute to our dear friend and advocate Col. Card and permanently recognize his role in the establishment of the RAHC,” Dr. Vela said. “I look forward to celebrating the creation of the RAHC’s very first academic endowment – The Colonel H. William Card, Jr. Endowed Professorship.”

Dr. Vela is leading the fundraising campaign that will ensure Col. Card’s legacy of advocacy for education and support of health care for the citizens of the Rio Grande Valley.

“Because of Col. Card’s leadership, the landscape of medical education and health care in the Lower Rio Grande Valley is changed for the better forever.”

Dr. Vela and his wife, Alicia, initiated the campaign with a personal leadership gift and are encouraging RAHC faculty to match the gift. Members of the greater Harlingen community, friends of Col. Card and the entire community are invited to participate.

The campaign completion date is scheduled for June 2012.

For more information or to make a gift to the campaign, contact Kim Warshauer at 210-567-0242 or e-mail Warshauer@uthscsa.edu. To donate online, visit makelivesbetter.uthscsa.edu/rahc.
Usatine, student-run clinics honored by class of 2011

A gift of $11,000 from Alumni of the School of Medicine class of 2011, along with other generous donors, has established the School of Medicine Class of 2011 Student Service Learning Endowment in honor of Richard Usatine, M.D. Kyle Kalkwarf, M.D., a 2011 graduate, said the class chose to pay tribute to Dr. Usatine for his spirit of humanism and example of ethics through mentorship of students in the Student-Run Free Clinics. “Dr. Usatine is a perfect representative of the values our class wanted to honor through this endowment. He was instrumental in establishing the clinics and vital to ensuring their success,” Dr. Kalkwarf said. “We believe it is fitting to show our appreciation for these programs by establishing an endowment that will ensure similar opportunities for future students. We also hope to emulate Dr. Usatine’s selfless service and dedication to our community and his patients as we begin our careers as physicians.”

Dr. Kalkwarf also recognized Fred G. Corley, M.D., of the Department of Orthopaedic Surgery, for helping the class create the endowment. Offered through the Center for Medical Humanities & Ethics at the Health Science Center, the clinics allow students to care for underserved populations. “The clinics inspire our students to provide compassionate health care to people with the greatest need. It brings out the best in students as they learn to give openly with their hearts and minds,” Dr. Usatine said. Dr. Usatine who has been a faculty member at the UT Health Science Center for nine years is assistant director of humanities education in the Center for Medical Humanities & Ethics.

Endowment named for Winakur

A gift of $30,000 from an anonymous donor has established the Jerald Winakur, M.D. Endowment for Humanities & Ethics in honor of Jerald Winakur, M.D., who is a clinical professor of medicine in the School of Medicine and an associate faculty member in the Center for Medical Humanities & Ethics at the Health Science Center. Dr. Winakur has practiced internal and geriatric medicine for more than 30 years. After listening to patients’ concerns about the deteriorating health of loved ones in old age, he found himself in the same situation when his father experienced a long decline and death from Alzheimer’s disease. In 2009 he wrote “Memory Lessons: A Doctor’s Story,” which led to a syndicated newspaper column, as well as numerous television and radio talk show interviews. The endowment honors Dr. Winakur’s compassion for his patients, as well as his selfless dedication to students. For more information about the endowment, contact Sonia Vasquez at 210-567-0028 or e-mail Vasquezsg@uthscsa.edu.

Briscoe creates legacy for future of education

Anne Briscoe, M.S., RN, a 1987 graduate of the School of Nursing, and former employee in the UT Health Science Center’s Division of Cardiology, has established the Anne Fishburne Briscoe, M.S., RN, B.S.N., B.S., ADN, AA, CCRN/Anne Pickens Fishburne, RN, Endowed Scholarship in Nursing Education. The endowment will honor her and her grandmother’s service to the nursing profession. Briscoe’s grandmother was a graduate of the Johns Hopkins School of Nursing in 1918. “I decided to help those students going back to school at the UT Health Science Center to get a second degree in nursing and to encourage the non-traditional, second-degree program that is now in place in the School of Nursing,” Briscoe said. This year, Briscoe decided to add to the endowment through an estate gift. “I hope others reflect on the health services they’ve benefited from over years and consider creating their own legacy of support,” she said. “It will have an important impact.”

HSC Champions

Every donor makes a difference. The following are just a few of the many gifts that enable the university to make lives better in San Antonio, South Texas and the world.
Eileen T. Breslin, Ph.D., RN, FAAN, dean of the School of Nursing, has been chosen president-elect of the American Association of Colleges of Nursing (AACN). She will serve as president from 2014 to 2016. The AACN is the national voice for university and four-year college education programs in nursing, representing more than 690 member nursing schools at public and private institutions. Her longtime service on the AACN Board of Directors includes the role of treasurer (2005-2009), member-at-large (2001-2005), and member of the Government Affairs Committee (1994-1998). She also represented the AACN at the American Nurses Association Congress on Nursing Practice and Economics and as a member of the AACN/Department of Veterans Affairs Liaison Committee. Her most recent honors include the President’s Award from the National Association of Hispanic Nurses and the Sigma Theta Tau Image Maker Award. Dean Breslin is a fellow of the American Academy of Nursing and the American Academy of Nurse Practitioners. She also is a Distinguished Practitioner in Nursing of the National Academies of Practice.

Lily T. Garcia, D.D.S., M.S., professor and director of the Division of Advanced Education and External Affairs in the Department of Comprehensive Dentistry, was named president of the American College of Prosthodontists (ACP) during the College’s 41st Annual Session in Scottsdale, Ariz. Dr. Garcia is an accomplished author, having published numerous articles and abstracts. She has edited several dental textbooks, served as a reviewer and editorial board member for several scientific journals, and co-authored the text “Osseointegration and Occlusal Rehabilitation.” Dr. Garcia is a diplomate and fellow of the ACP.

Kenneth Kalkwarf, D.D.S., M.S., dean of the Dental School, was named vice president of the American College of Dentists (ACD). The ACD is the oldest national honorary organization for dentists and selects less than 3 percent of U.S. dentists to be part of its fellowship, one of the profession’s highest honors. Dr. Kalkwarf is one of 26 UT Health Science Center Dental School faculty members who are fellows of the ACD. “Over the past few years, the ACD has developed a great program to allow health professionals to assess the ethical and professional challenges that face us in today’s complex environment,” Dr. Kalkwarf said. “My goal is to move this program and the discussions it stimulates into the grassroots of our profession – and into our educational programs.”

David Katerndahl, M.D., professor of family and community medicine who is the Dr. Mario M. Ramirez Distinguished Professor of Family & Community Medicine, received a lifetime achievement award for his outstanding contributions to primary care research. The 2011 Maurice Wood Award was presented to Dr. Katerndahl at the annual meeting of the North American Primary Care Research Group in Banff, Alberta, Canada. Dr. Katerndahl has published 200 research papers and book chapters during his 30-year career. Many of those publications focus on identifying and managing panic and anxiety disorders within primary care clinics, rather than in specialty mental health settings. Recently, Dr. Katerndahl has found innovative ways to apply complexity theory to primary care. This has allowed him to study nonlinear patterns in domestic violence, aided by consecutive grants from the National Science Foundation, and to compare the complexity of primary care patient visits with specialist visits.

Robert Quinn, M.D., from the University of New Mexico, has been named chairman of the UT Health Science Center’s Department of Orthopaedics in the School of Medicine. A native of Bryn Mawr, Pa., Dr. Quinn obtained his M.D. degree at Hahnemann University School of Medicine in Philadelphia, completed an orthopaedic residency at the University of Connecticut School of Medicine, and a fellowship in orthopaedic oncology at Massachusetts General Hospital/Harvard Medical School. An internationally renowned musculoskeletal tumor specialist, he is a fellow of the American Academy of Orthopaedic Surgeons and member of several multidisciplinary research groups, including the Children’s Oncology Group, Southwest Oncology Group, Radiation Oncology Group, American College of Surgeons Oncology Group, and International Ewing’s Sarcoma Research Forum. In addition to orthopaedic surgery, Dr. Quinn is actively involved in the specialty of wilderness medicine.

Robert S. Schenken, M.D., professor and chair of obstetrics and gynecology and the Humana Foundation Distinguished Chair in Obstetrics and Gynecology, was recognized by U.S. News & World Report as one of the top reproductive endocrinologists in the country. Selected by a peer-nomination process, Dr. Schenken is in the top 1 percent of his specialty in the nation. He practices with UT Medicine San Antonio, the clinical practice of the School of Medicine.

Kathleen R. Stevens, Ed.D., RN, ANEF, FAAN, professor in the Department of Health Restoration and Care Systems Management in the School of Nursing, received one of the nursing profession’s most prestigious research honors – the Episteme Award. The award, presented biennially by the Sigma Theta Tau International Honor Society of Nursing, acknowledges a major breakthrough in the development of nursing knowledge that has resulted in a significant and recognizable benefit to the public. Dr. Stevens is director of the Academic Center for Evidence-Based Practice (ACE), a School of Nursing center of excellence that she founded in 2000. Through ACE, Dr. Stevens improves patient care through her efforts to build a workforce and work environments that move research quickly into high-quality care. To accomplish this, Dr. Stevens developed theories of evidence-based practice, established a national consensus on new skills needed in clinical care, and initiated a series of professional development conferences for clinicians, scientists and hospital leaders.
Employees honored at Presidential Awards

Faculty and staff members who exemplify exceptional leadership in their fields were recognized at the 2012 Presidential Awards ceremony. The Health Science Center’s highest honor, the Presidential Distinguished Scholar award, was presented to Joel B. Baseman, Ph.D., chair of the Department of Microbiology and Immunology in the School of Medicine. The other award winners are:

**Presidential Distinguished Scholar**
- Joel B. Baseman, Ph.D., Microbiology and Immunology

**Junior Research Scholar Award**
- Salvatore Oddo, Ph.D., Physiology

**Teaching Excellence Award**
- Constance L. Fry, M.D., Ophthalmology
- Margit B. Gerardi, Ph.D., RN, Family & Community Health Systems and Infectious Diseases
- Linda M. McManus, Ph.D., Pathology and Periodontics
- Kathleen A. Reeves, M.S.N., RN, Health Restoration & Care Systems Management
- Nhung Tran, M.D., Pediatrics
- Blane Trautwein, Ed.D., Deaf Education and Hearing Science Program and Otolaryngology – Head and Neck Surgery

**Clinical Excellence Award**
- Luis F. Angel, M.D., Pulmonary and Critical Care Medicine/UT Medicine San Antonio
- Carlayne E. Jackson, M.D., Neurology and Otolaryngology/UT Medicine San Antonio
- Martha P. Schatz, M.D., Ophthalmology/UT Medicine San Antonio

**Employee Excellence Award**
- Teresita D. Carrillo, Ophthalmology
- JoAnn Lieberman, Pediatrics
- Lupita Martinez, LMSW, Cancer Therapy & Research Center
- John R. Ramos, Lab Animal Resources
- Janice L. Smith, Graduate School of Biomedical Sciences

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Branch named Dentist of the Year

Warren B. Branch, D.D.S., was named the 2011 Dentist of the Year by the Texas Academy of General Dentistry, one of the most prestigious honors a Texas dentist can earn. Dr. Branch is a 1981 graduate of the Dental School and has maintained a practice in San Antonio for more than 30 years. Since 1999, he has been selected by Texas Monthly magazine as a “Top Dentist” in the state. Outside of his practice he has served as a faculty member at the UT Health Science Center and on the university’s Dean’s Leadership Council and President’s Advisory Council. Dr. Branch remains active with the San Antonio Christian Dental Clinic and Big Brothers, Big Sisters of San Antonio and regularly participates in mission trips to Mexico, Guyana and Haiti to provide dental care to underserved populations.
Alumni develop extraordinary clinical software

By Tina Luther

After graduating from Dental School at the UT Health Science Center in 1979, Tom Cockerell Jr., D.D.S., established his practice in 1980. Eventually his experiences providing dental care to medically compromised patients led to his conception of “Dental Symphony” software.

Dental Symphony is a set of Internet-based software modules that dentists use alongside their existing practice management applications. The ePatient Module is one of five modules and aids in moving patients into care. The application enables patient assessment as it is designed to answer questions that dentists confront in the clinic.

Dr. Cockerell is the primary designer of Dental Symphony and serves as the moderator for its nationally renowned clinical team. A key member of the team is David Brown, D.D.S., who is one of Dr. Cockerell’s fellow Dental School graduates of the class of 1979. Dr. Brown practices in Bedford, Texas, as a general dentist focusing on implant prosthetics and complex rehabilitations.

“Dentists have a lot of clinical science to keep up with, so with that in mind, the system was designed to make even the most difficult patient management easier,” Dr. Cockerell said. “The goal of the team was to think for the dentist regarding what they want to know about any disease or pharmacology profile, and provide the answers even before the patient arrives at the office.”

Through a link on the dental practice website, the module registers patients and develops medical histories using follow-up questions. The responses induce specially created summarized medical information, which attaches to the submitted information and can be immediately used by the staff. The profile triggers alerts for medical risks. Pertinent drug descriptions and interaction warnings are also given.

“We chose the name Dental Symphony because we wanted to suggest something extraordinary,” Dr. Cockerell said. “Great orchestras adhere to rules and note structure to produce transcending experiences. Such transcendence might not be realistic for a clinical software application, but why not aim for it anyway? That’s where we started and keep in front of us even now.”

For more information, visit www.dentalsymphony.com.
Choose life over cancer.

With the summer months just around the corner, CTRC reminds you to protect your skin from the intense Texas sun by applying sunscreen that has a sun protection factor (SPF) of 30 or higher. It is also important to avoid sunbathing and wear sunglasses to protect your eyes. The best way to detect skin cancer early is to recognize changes in skin growths or the appearance of new growths. Most skin cancers can be cured if the cancer is detected and treated early, so report any changes in your skin to your doctor.
Ours is a story of hope. Compassion and joy. Commitment, vision and inspiration. We engage our minds and talents, and give from our hearts, to help and heal. We touch the lives of thousands, to serve those in need, here and around the world. And, through it all, we work to make lives better.

Thank you for all you do to make our story so remarkable. You're the reason we're able to write the next chapter.