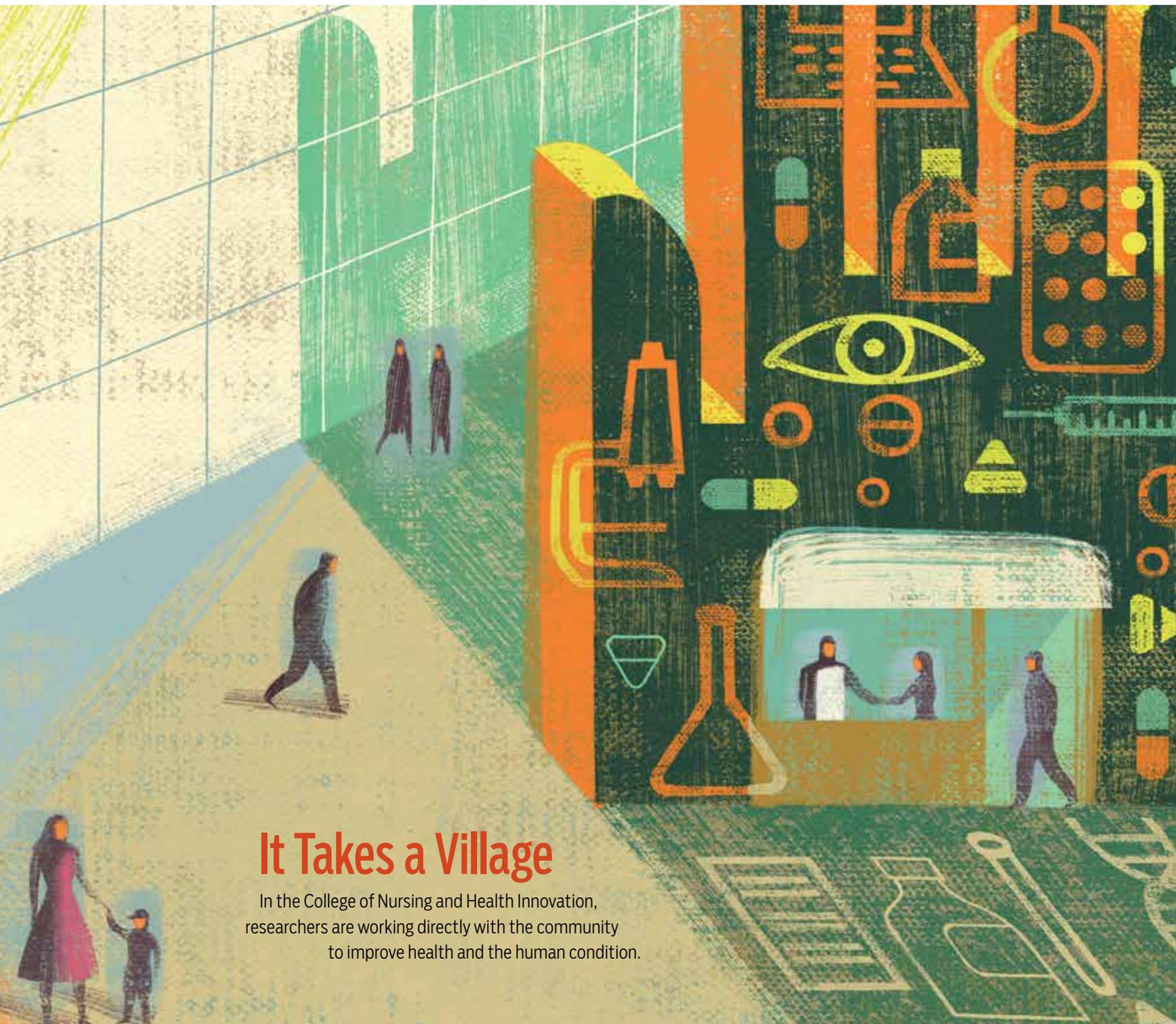


UT ARLINGTON

# Health

THE UNIVERSITY OF TEXAS AT ARLINGTON • COLLEGE OF NURSING AND HEALTH INNOVATION • 2018



## It Takes a Village

In the College of Nursing and Health Innovation, researchers are working directly with the community to improve health and the human condition.



# Caring.

Susie Chung, a graduate assistant in the Applied Physiology and Applied Imaging Laboratory, takes William McNeill's blood pressure. Chung is one of several graduate students who work with community members under the auspices of lab director Michael Nelson, assistant professor of kinesiology, to study how the heart and blood vessels respond to physiological stress.

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*“We defined a future that is robust both in academic programs and innovative research discovery.”*

**I**N THE LAST DECADE, enrollment in UTA’s College of Nursing and Health Innovation has more than doubled, earning the College a well-deserved reputation as a national leader in expanding access for aspiring health care workers. More recently, the College has also experienced extraordinary growth in research, rapidly earning recognition as a leading center for health care research activity.

In the last three years, the College has attracted some of the nation’s leading scholars in areas as diverse as esophageal cancer, bone density, neural cardiovascular control, and patient safety. These scholars have consistently produced research that is sophisticated, relevant, and critical to advancing health and the human condition. Their groundbreaking research has appeared in many of the world’s leading journals, and peers have taken note. In this past year, one of our younger faculty members received the New Investigator Review Award from the *American Journal of Physiology (Regulatory, Integrative, and Comparative Physiology)*. Two faculty members received the inaugural Best Paper Award from the *Journal of Perinatal and Neonatal Nursing*. Top grant providers are taking note, too. In 2016-17, active research funding rose by 45 percent.

I am proud of what we’ve accomplished in the research space in the last three years. I am proud of the fact that our scholars produce a prodigious amount of work even though the College—unlike most comprehensive centers of health care researchers—is not tied to a medical school. I am proud of the fact that in our quest to advance health and the human condition, our definition of community is more than just the city of Arlington and its surrounding suburbs—it’s the whole world. That’s why we are willing to go wherever our scientific inquiry takes us to pursue knowledge.

I will retire in the summer of 2018. At UTA, all the various aspects of my career have come together as we created and accelerated the momentum of exceptional faculty and staff. We defined a future that is robust both in academic programs and innovative research discovery. I know the future will bring tremendous innovation in each and every aspect of this outstanding college.

**Anne R. Bavier, Ph.D., RN, FAAN**  
Dean, College of Nursing and Health Innovation



## Record growth reflects excellence

**T**he College of Nursing and Health Innovation continues to take big steps toward easing the shortage of health care workers in Texas and the United States. Propelled in large part by a reputation for excellence, access, and affordability, enrollment in the College has surged dramatically in recent years, rising to nearly 25,000 students. More than 20,000 are nursing students.

That steady growth was reflected in the College’s 2016-17 graduation numbers. The College graduated 4,562 bachelor’s, master’s, and doctoral students, 20 percent more than the previous year and the largest in College history.

The numbers mirror those of UTA, which has also experienced immense growth in recent years and charted record graduation numbers last year. The College is the biggest driver of the University’s growth. UTA’s largest academic unit, it accounts for nearly 40 percent of the University’s enrollment and is projected to continue to grow.

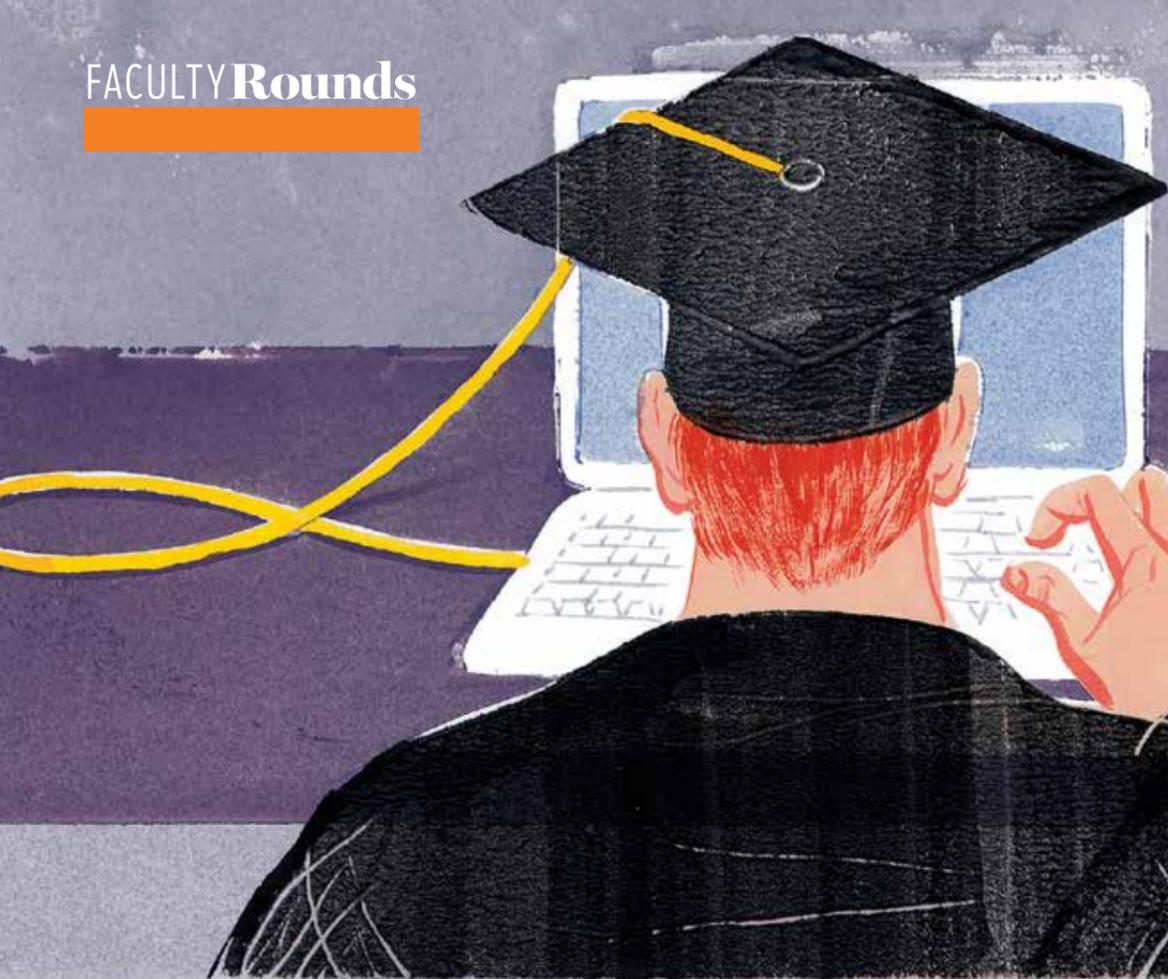
“At the rate at which we are growing, there is a strong possibility that in the next decade we could make up 50 or 55 percent of the University’s enrollment,” says Anne Bavier, dean of the College. “It’s true that students come here because of our high pass rates on professional exams and also because we are affordable. But students are also attracted to this College because they know that this is a very nurturing environment, that our faculty members go out of their way to help students succeed.”

That warmth is precisely what attracted Peter Deng to UTA.

“It’s a very welcoming community,” says Deng, a native of South Sudan who immigrated to the United States in 2004, graduated with his bachelor’s degree in nursing in May 2017, and now works as an RN at HealthSouth. “I had very nice professors. Everybody was supportive. Even during my low points, they supported me. When I was doing great, they praised me and motivated me to finish. They were like my family.”

rounds

Research and academic insights



## Increasing Access

*Online graduate program helps fill nursing need in Texas*

Larry Gomez was an emergency room nurse for 14 years and a firefighter and paramedic for 21 years. The Houston-area husband and father had always dreamed of going back to school to become a nurse practitioner. But with two full-time jobs and a family, he knew he just couldn't do it.

Then Gomez came across information about UTA's online graduate nursing program.

"It was a perfect fit," he says. "I liked the fact that I could access my courses, lectures, and content at my convenience."

Gomez, who graduated last December with an MSN and family nurse practitioner specialty, is the kind of student the College had in mind when it expanded its graduate nursing program online in early 2017.

The program offers advanced practice registered nurse subspecialties, including pediatric primary care, pediatric acute care, adult gerontology acute care, and adult gerontology primary care—all high-demand

areas in the health care field, particularly in Texas.

"This move will significantly heighten opportunities for registered nurses to enhance their careers," says Judy LeFlore, associate dean of graduate nursing programs.

With multiple start dates per year and mentoring opportunities by nursing faculty, the program combines world-renowned excellence in higher education with convenience and access—a clear draw for busy, working nurses like Gomez.

"Making these degrees available online gives expanded access to experienced nurses looking to enhance their careers with a quality, flexible, and affordable education from one of the nation's leading nursing programs," Dr. LeFlore says. "The expansion of these nursing programs is a reaffirmation of our commitment to improving health and the human condition throughout the state and the entire country."

## Value of cross-disciplinary research

Kathryn Daniel, associate professor and director of the Adult Gerontology Primary Care Nurse Practitioner Program, was chosen last May to join UTA's inaugural class of Presidential Fellows.

In an effort to promote cross-disciplinary scholarship to better enhance local communities, the University recently established the two-year fellowship program, which awards \$20,000 stipends to up to five selected faculty members at a time.

In her work with intelligent care technologies, Dr. Daniel has collaborated with two UTA professors from the Department of Computer Science and Engineering to design a smart apartment at a senior living community in Fort Worth. Each square foot of the apartment floor is embedded with sensors to track the activity of its elderly residents. If the sensors identify a potential problem or if a resident exhibits unusual activity in gait, the sensors trigger a warning alert that is received by a caregiver.

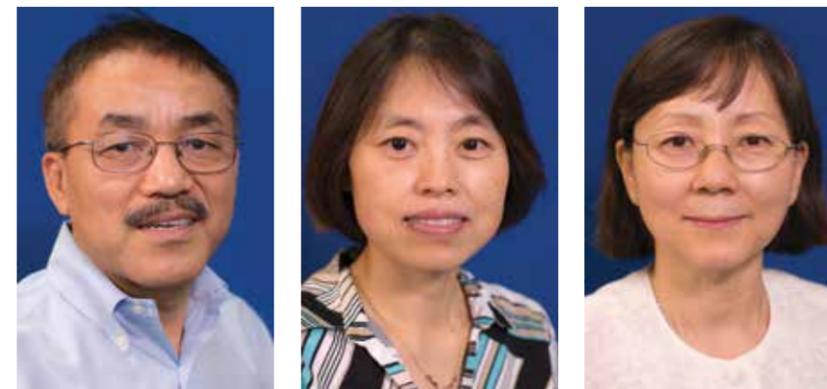
"We want to detect changes in gait and balance early enough to prevent a fall," Daniel says. "When many older adults fall, they have a fracture and never really return to the same level of health. It's psychologically devastating because they become afraid of falling again and are self-limiting in what they do."

UTA is actively seeking to promote collaborative work across disciplines as it tackles the goals outlined in its Strategic Plan 2020 Bold Solutions | Global Impact and evolves into one of the nation's premier research universities.

ALEX NABAUM

## Stellar Additions

*New faculty bring increased depth to the College*



From left to right: Yan Xiao, Jing Wang, and Yaewon Seo

The College of Nursing and Health Innovation continues to intensify its efforts to become a leading health care research center by expanding its roster of world-class faculty members.

Three renowned health care experts joined the College at the beginning of the 2017-18 academic year: nursing Professor Yan Xiao, a patient safety expert; nursing Associate Professor Jing Wang, a biostatistician; and nursing Assistant Professor Yaewon Seo, a heart health expert.

Dr. Xiao comes to the College from Baylor, Scott & White Health, where he was director of human factors and patient safety science. Prior to that, he was a tenured professor of anesthesiology at the University of Maryland School of Medicine. In his career as a health care researcher and an engineer, he has authored or co-authored more than 70 scholarly articles and attracted \$28 million in research grants.

Before coming to UTA, Dr. Wang was a tenured associate professor in statistics at St. Louis University. She has published more than 60 papers in statistics, public health, and agriculture.

Dr. Seo joined the College from the University of Nebraska Medical Center College of Nursing. She is the author of a large number of scholarly journal articles and has given dozens of presentations on cardiovascular disease.

The trio is part of a growing number of respected health care researchers who have joined the College in the last three years. Other notable additions include Professor Marco Brotto, an expert in bone density; Professor Mark Haykowsky, an expert in exercise and heart health; and Associate Professor Zui Pan, an esophageal cancer researcher.

The three new faculty members say the College's rising stature as a research institution, coupled with its location in a bustling metro area with several medical research facilities, made this move attractive to them.

Xiao says working at UTA will afford him the opportunity to further his passion for patient-centered care research. Wang says she plans to collaborate with researchers across disciplines at UTA and other local research institutions. Seo says she will seek opportunities to collaborate with colleagues in the College of Engineering on the development of an app. She is also looking forward to working with diverse populations for her research.

"In Nebraska, the population was more than 90 percent white," she says. "Here, the population is more diverse. That greater diversity will allow us as researchers to delve into the diversity of our population as a whole and produce research that can improve the future for us all."



## Health programs empower youth

Studies show that a growing number of young people experience poverty or homelessness, putting them at risk for mental health issues or physical danger. But Larry Nelson, associate professor of kinesiology, is striving to do something about the problem.

Last summer, Dr. Nelson and two UTA collaborators were awarded a \$20,000 grant by the University's Interdisciplinary Research Program to pilot a community garden and outdoor engagement project that aims to reduce health disparities among homeless youth. The team hopes to ultimately expand to and share the program with other communities.

"Engaging in physical activity while being exposed to nature has a positive effect on self-esteem and mood," says Nelson, who will work on the project with Courtney Cronley, associate professor in the School of Social Work, and David Hopman, associate professor in the College of Architecture, Planning, and Public Affairs. "Our hope for this project is to bring exposure, access, and opportunity to young adults who need health education the most.

This population is short on resources, education, and health care services and can't afford even an instance of disease in their lives."



## Simulation leadership

Beth Mancini, senior associate dean for education innovation, has earned a reputation as a leader in the field of medical simulation. Her expertise has taken her around the world—and for a recent visiting professorship, the destination was Canada.

Dr. Mancini was invited to share her knowledge and work in September 2017 at the McGill University Faculty of Medicine in Montreal. As the 13<sup>th</sup> Flanders Family Visiting Professor in Medical Simulation, she was the first nurse to receive the honor from the world-renowned school.

In addition to participating in several workshops, Mancini spoke at the combined surgical and anesthesia grand rounds at Montreal General Hospital. She shared her expertise in both immersive and screen-based simulation and how simulation improves efficacy, efficiency, and outcomes in medical education.

“McGill is a groundbreaking institution in terms of medical and nursing education,” Mancini says. “It was a privilege to be there and engage with members of their faculty and community to discuss how we can use simulation to enhance health education.”

The first nurse to serve as president of the Society for Simulation in Healthcare, Mancini currently works closely with the World Health Organization and the National Academy of Medicine, among other groups.

# Public Health Program Soars

*The initiative addresses a nationwide growing need*

In less than two years, the College of Nursing and Health Innovation’s public health program has evolved from an undergraduate track that offered only a smattering of classes to a full-fledged degree program educating scores of students. These graduates will go on to elevate public health in the area and well beyond.

The introduction of the bachelor’s in public health launched a robust program that now includes a graduate certificate in public health practice. The College plans to expand the graduate certificate into a master’s degree in public health this fall.

More than 200 students have already taken public health courses, and the program now includes several new full- and part-time faculty members.

Unlike many public health programs in Texas, UTA’s has an urban focus, one designed to produce a public health workforce that mirrors the state’s demographics. The vast resources available at the University and in the Dallas-Fort Worth area enhance students’ classroom experiences and boost

their competitiveness in the job market.

“Texas is one of the most ethnically diverse states in the country, and the DFW Metroplex is one of the most diverse metro areas in the country,” says David Keller, associate dean and chair of the Department of Kinesiology, which offers the public health program. “Those facts alone will benefit our students immensely. By combining experiential learning with cultural competence, we are instilling in our students the kind of experience that will serve them well in their careers.”

The public health program is part of the College’s long-term strategy to become an even more comprehensive teaching and research health care institution that offers a variety of programs aimed at improving health and the human condition.

The U.S. Census Bureau reports that public health is one of the 10 fastest-growing professions in the country, and the United States is projected to have 250,000 job openings for public health professionals by 2020.



# Combatting Bone Loss

*Researcher’s innovative device could stimulate bone growth*



The U.S. Census Bureau projects that by 2060, Americans ages 65 and older will make up nearly 25 percent of the population. That means more people will develop osteopenia and osteoporosis, conditions characterized by varying degrees of bone loss, says Rhonda Prisby, an associate professor of kinesiology who studies blood vessels in bone.

“The problem isn’t just that people develop frail bones,” Dr. Prisby says. “The problem is that bone loss leads to fracture, which leads to bed rest, then poor circulation and a host of other complications that only accelerate a decline in that person’s physiological condition.”

Prisby is taking steps to mitigate these conditions in older people.

Last fall, she received a three-year, \$250,000 grant from the National Science Foundation (NSF) to design a device that can stimulate bone growth and ultimately be used to combat bone loss and fracture. She is working closely with Jeong-Bong Lee, a professor of electrical engineering at the University

of Texas at Dallas, who also received a \$250,000 NSF grant for the same project.

As they conceptualize the device, the researchers have to start small—really small.

“The device will be designed to work inside the bone of a rat, so it will be similar in size to a needle tip,” Prisby says. “With bone loss, the cells that build bone, osteoblasts, can’t keep pace with the cells that degrade bone, osteoclasts. We’re hopeful that this device will stimulate osteoblast activity.”

Prisby welcomes this opportunity for interdisciplinary discovery with Dr. Lee.

“I think if there were more interaction like this, it could lead to a lot of different advancements,” she says. “Scientists tend to get caught up in what is going on within our departments, but when you bring in someone from outside your discipline, like an engineer, they’ve been trained to think a different way and have a different perspective. When you begin talking, you find out there is a lot you could accomplish together.”

## Ahead of the pack

A few years ago, prompted by a December 2013 study, the National Athletic Trainers’ Association mandated that professional education in athletic training be offered only at the graduate level and all bachelor’s degree programs be abolished by 2022.

But the College of Nursing and Health Innovation was already several steps ahead. In June 2013, the Department of Kinesiology launched its Master of Science in Athletic Training program. The bachelor’s program has since been phased out in response to increasing demand for graduate-level preparation in athletic training.

While a bachelor’s degree may well prepare students to pass state licensing and national certification exams, employers of athletic trainers prefer the maturity and advanced academic and clinical preparation provided by the master’s degree. The interdisciplinary learning that comes with a graduate degree is also a benefit.

“Often, athletic trainers are referring patients to other medical specialists, so they must have a thorough understanding of what neurologists, nurse practitioners, orthopedic surgeons, and so forth do,” says Paul Krawietz, associate clinical professor of kinesiology and director of the athletic training program. “That interdisciplinary training at the graduate level is critical to patient outcomes.”





## Through the Storm

*Conroe Cats stay strong during Hurricane Harvey*

They were the largest group within the College's accelerated online BSN cohort in the Houston area. They embraced teamwork, studied together, shared tips, celebrated their individual and group successes, and supported each other during tough times.

The group of about 14 grew to be really close, almost like a family—a fact that attracted the attention of their instructors as well as administrators at the College. They named themselves the Conroe Cats because they all had their clinicals at Conroe Regional Medical Center in Houston, and because they shared a running joke about negative experiences some of them had with cats.

Hurricane Harvey, which devastated much of Houston and Southwest Texas, tested and ultimately strengthened the group's tight bond.

"We were updating each other the whole time," says Rachael Fraser.

As Harvey made its way to Houston, messages flew within the group, offering members directly affected by Harvey a place to stay. Most of the Cats were involved in their communities, serving in shelters and churches, assisting with rescues, and volunteering at food banks.

"Even after the rain stopped, we were still checking in with each other," says Shannon McNeese.

Clinical Instructor Pam White, who also manages undergraduate clinical facilities coordination for the non-Metroplex AO-BSN program, stayed in touch with each of the Conroe Cats, calling them to assess their needs during the unprecedented event.

"UTA was amazingly accommodating to those of us in Houston. Two of our classes started right after Harvey," Fraser says. "They changed our exam schedule to accommodate travel and allowed us to take weekly quizzes instead of going to a testing site."



## Advocate for holistic mental health care

At one point in her nursing career, Carrie Deer considered leaving the profession to work as a counselor or case manager in the mental health space. Deer, a psychiatric nurse practitioner at a community mental health clinic near Tyler, Texas, wanted to be able to more holistically and robustly meet the needs of mental health patients.

She realized eventually that as an advanced practice nurse with a license to prescribe medications, she could do precisely that—so Deer enrolled in the College of Nursing and Health Innovation's DNP program. She's now in her final year of study, and her passion for nursing has never burned brighter.

In 2017, she was named a recipient of the Nurses Educational Funds scholarship, a coveted award given to a small group of nurses nationwide. The scholarship helps support her scholarship project, which focuses on better assessment of trauma and substance abuse at her clinic.

"The DNP program has made me look at what I do and ask how I can improve my practice," Deer says. "Through the DNP program, I've learned about leadership, evaluation, and policy and how they shape health care. It's given me more tools to use and apply."

JING JING TSONG

## Athletic Ambitions

*Former athlete prepares to shape the next generation*

As an offensive lineman at Southern Methodist University, Christian Chamagua lettered three years in a row and made academic all conference three times.

But he was also realistic about his chances of going pro.

"I think everybody going into college football has ambitions of going into the NFL," he says. "But you have to be honest with yourself about your talents and start thinking about life after football."

But leaving football as a player doesn't mean you have to leave sports behind altogether. Chamagua knew he wanted his life after football to be in sports, and he wanted it to have a medical connection. He received encouragement from his team's athletic trainers at SMU.

"They told me that UTA has a great athletic program," he says. "UTA sends students to SMU to do rotations there. I got to talk to a couple of those students who came there, and they gave me the low-down of what the program is and what it entails."

He liked what he heard, so he enrolled in the

College's graduate athletic program. Now in his second year of study, he's thrilled with his decision.

Chamagua's clinical rotations have included stints with UTA's men's basketball program and an area high school. He says these clinicals, combined with his classroom experiences, have more than prepared him for his career ambitions.

"Our professors do an amazing job presenting materials," he says. "I like how intertwined our professors are with the real world." Some of those real-world experiences have included attending the Southwest Athletic Trainers Association Conference and the National Athletic Trainers Association Conference.

After graduation, Chamagua plans to work at a high school and ultimately become a school district's athletic director.

"An athletic trainer will impact more people in one day than one person normally can in a lifetime," he says. "It's a good way to pay it forward and help the next generation grow."



Christian Chamagua helps keep Maverick athletes healthy.



## Blending nursing and research

Efret Ghirmazion, a junior nursing student, was interested in exploring two of her passions: nursing and research. As a McNair Scholar, she was given the opportunity to do so.

For her research project, Ghirmazion compared the health habits of working nurses with those of nursing students. After surveying more than 500 participants about their sleep patterns, diet, and exercise, she found that though many of the nurses in the study worked 40 hours a week and were also enrolled in graduate school, they had healthier diets than the students.

She presented her research at the Undergraduate Research Showcase at UTA as well as the National McNair Conference in Schaumburg, Illinois. The research experiences and the opportunities she's had through the McNair Scholars Program—which includes taking GRE prep courses and attending professional nursing conferences—have only heightened what has been a great experience at UTA.

"I love the diversity on campus. The nursing program is amazing," she says. "The teachers are fantastic. And the people are wonderful. It's really helped me grow not only in furthering my education, but also in helping me become independent."

# *It Takes a* *Village*

The College of Nursing and Health Innovation's 12 laboratories promote wellness and work toward promising solutions for a broad range of health challenges.



ANNA & ELENA BALBUSSO

A+E=B+L+B+V+S+Q



George Hendricks (far left) and many other kids have been helped through the Little Mavs Movement Academy.

**W**hen her son was completing first grade, Alicia Hendricks was approached by his teacher with some sobering news: George appeared to suffer from dysgraphia, a learning disability that impairs writing ability.

“His handwriting was illegible, and he could not spell the words he was able to read,” Hendricks recalls.

After his teacher suggested testing, Hendricks and her husband talked to a pediatrician who recommended a few centers, some of them located at large hospitals in the Dallas-Fort Worth Metroplex. However, the prices were prohibitive.

The couple was still trying to figure out their next steps when they ran across a Facebook ad from the College of Nursing and Health Innovation’s Little Mavs Movement Academy. The motor-skills intervention program, out of the Developmental Motor Cognition Laboratory, was seeking subjects for developmental coordination disorder testing—and it was free.

Following a battery of tests, George joined the dozens of children who visit the lab each week to work on their motor skills under the guidance of a kinesiology professor and several students.

“When kids have motor problems, parents ask what they can do, but there’s no good therapy for them,” says Priscila Caçola, assistant professor of kinesiology and director of the lab. “That’s why I started the program at UTA.”

Dr. Caçola’s laboratory is just one of 12 at the College. Three of the labs are part of the nursing division while the other nine fall under kinesiology, but together, they seek solutions to a broad spectrum of challenging health issues.

“Our array of laboratories helps us fulfill our research, teaching, and service objectives in meaningful ways.”

## A Magnet for Research

But the College’s labs are more than just isolated ivory-tower facilities. They are places where research, instruction, and service to the community intersect, often providing solutions to nagging and sometimes deadly health problems.

“In addition to creating the next generation of health care workers, one of our principal goals as a College is to improve the health and well-being of people in the myriad communities we serve,” says Anne Bavier, dean of the College of Nursing and Health Innovation. “By marshaling the enormous talents of our faculty and students to tackle health problems, our array of laboratories helps us fulfill our research, teaching, and service objectives in meaningful ways.”

The vital work taking place in these labs is reflective of a trend happening all across the University. The Carnegie Classification of Institutions of Higher Education now ranks UTA as a member of the elite group of doctoral universities with “highest research activity,” a designation also bestowed on leading lights like Harvard University, Yale University, and the Massachusetts Institute of Technology. UTA has seen a significant increase in its research activity, as well as its research funding.

Over the last several years, as UTA has steadily transitioned into a major research university, it has become a draw for some of the world’s leading researchers in science, technology, and health. Likewise, the College has become increasingly competitive in attracting world-class scholars, making it a destination for some of the nation’s top health care researchers.

## Community Hub

A major focus of the University’s research activity is improving health and the human condition, one of the four pillars of UTA’s Strategic Plan 2020 Bold Solutions | Global Impact. To meet that mission, the College’s own strategic plan includes objectives to prioritize research and scholarship, from foundational science to health outcomes, while preparing students to engage in critical scientific thinking and high-quality work.

Such an approach to instruction and scholarship translates to a win-win for faculty and students, not to mention members of UTA’s surrounding communities.

A couple of times each week, several cancer patients make their way to a lab at the Maverick Activities Center on campus. There, graduate students and a professor work closely with them on a variety of exercises designed to help them get their strength back. This program, known as FitSTEPS for Life, is a customized nutri-





Ryan Rosenberry (left) and Michael Nelson (right) work with Sylvia Allenbach.

## “I learned that growing older does not mean I must be complacent with my health.”

tion and exercise regimen that helps cancer patients increase endurance and mobility while overcoming the debilitating effects of chemotherapy treatment. The first of its kind in the Fort Worth-Arlington area, FitSTEPS is overseen by Mark Haykowsky, a professor of nursing, renowned cardio-oncology expert, and director of the College’s Integrated Cardiovascular Exercise Physiology and Rehabilitation, or iCARE, Laboratory.

On another part of campus, Michael Nelson, assistant professor of kinesiology and director of the Applied Physiology and Advanced Imaging Laboratory, employs advanced imaging techniques to investigate heart function and skeletal muscle blood flow regulation. Using magnetic resonance imaging, Doppler ultrasound, and near-infrared spectroscopy, Dr. Nelson and his small team of graduate students—Jake Samuel, Ryan Rosenberry, and Susie Chung—measure how the heart and blood vessels respond to physiological stress like exercise.

Community members from the local area play an important role in helping the lab accomplish its research goals.

“We are so fortunate to have a great community of volunteers surrounding UTA who are willing and

interested to participate in clinical research,” Nelson says.

It’s a relationship that is often mutually beneficial.

Arlington resident Sylvia Allenbach participated in one of Nelson’s studies on skeletal muscle blood flow regulation and says she became more conscious of her health and wellness as a result.

“I learned [...] that growing older does not mean I must be complacent with my health,” says Allenbach, a retired passenger service agent who worked at American Airlines. “In my youth, I was much more aware of my health and took active steps to lead a healthy lifestyle. However, once I retired, I forgot—or didn’t want—to do those things, and my health started to reflect that.”

Allenbach says that after the study, she was inspired to join a state-of-the-art senior center, where she swims laps and attends an exercise class multiple times a week.

“I’ve learned through this study that as a senior, it is perhaps even more important to lead a healthy lifestyle,” she says.

Interactions with members of the public span the spectrum. At the Integrative Vascular Physiology

Laboratory, Matthew Brothers, associate professor of kinesiology, studies the mechanisms of impaired autonomic and vascular function in some diseased or at-risk populations. Unlike the Little Mavs Movement Academy and some of the other College laboratories, Dr. Brothers’ facility does not offer specific services to members of the community. However, community members play an important part in the research conducted there.

“We recruit research participants from the general community,” Brothers says. “It helps us as researchers, but we can provide general physiological information to the participants if they are interested in that information.”

### Strengthening the Community

Each spring, Brad Heddins, clinical assistant professor of kinesiology, tests fire and police department personnel from the town of Pantego, which lies to the west of campus. At the UTA Exercise Science Labs, he and a contingent of students conduct screenings of these firefighters and police officers, drawing blood to test for cholesterol and diabetes, performing ECG graded exercise tests, and checking their hearing, vision, and pulmonary function. The researchers also put them through a battery of muscle fitness tests, including pushups and stomach crunches.

Dr. Heddins says that this is done to help meet the requirements of firefighters’ and police officers’ annual physical exam.

“The benefit to us is that we’re getting a review of our status as far as fitness conditioning and health,”

says Lt. Roy de Leon of the Pantego Fire Department.

At her Therapeutic Interventions Research Laboratory, Cynthia Trowbridge, an associate professor of kinesiology and respected researcher on concussions in youth athletes, has found that many parents and caregivers are not aware that children can suffer concussions playing most sports.

Dr. Trowbridge’s research has shown that parents often can’t identify concussion symptoms or their severity, and that when they did correctly diagnose the issue, the parents didn’t know where to take their child for appropriate care. According to Trowbridge, an evangelist for safety in sports, emergency room physicians or pediatricians tend to be the go-to doctors for families, even though they rarely or never have expertise in this area.

That’s why Trowbridge, a certified athletic trainer for more than 25 years whose counsel is often sought by parents and school districts, is studying which messages are most effective at improving caregivers’ understanding of concussions. In the coming years, she plans to develop an educational program about concussions in young athletes. She wants to create pamphlets and educational materials that will be distributed to caregivers and athletics groups to help disseminate the information throughout the community.

### A Lasting Impact

Hendricks says the value of these labs and the College’s work with community members is incalculable.

For the last two years, his family has watched George blossom at school, where he now finishes his work in record time, and on the baseball field, where he’s been known to hit the ball out of the park.

“Being able to use labs you have at UTA is such a godsend,” Hendricks says.

She notes that the College’s facilities provide affordable resources to parents who might not otherwise have access to treatment.

In the case of the Little Mavs Movement Academy, Hendricks says the program makes a great impression on the participating children, all of whom work with college students.

“These children will grow up and see them as role models,” she says. “Now my son wants to go to UTA. He’s sold.” 🇺🇸

*Additional reporting by Ashley Festa*



A student in Brad Heddins’ Exercise Science Lab guides a Pantego firefighter through a series of screenings.

# MINING

Biostatistics plays an increasingly integral role in the College's groundbreaking health care research. BY SARAH BAHARI

**A**t the College of Nursing and Health Innovation, a trio of professors is studying the educational progress of nursing students who are veterans and have military health care training.

In a project funded by the Health Resources and Services Administration, the team—composed of Beth Mancini, senior associate dean for education innovation; Jeanean Boyd, chair for undergraduate nursing; and Daisha CIPHER, associate director of the Center for Research and Scholarship—will employ biostatistics to help identify how UTA and other universities can best individualize the educations of former servicemen and women to maximize their learning experiences and expedite their paths to becoming licensed registered nurses.

In another project, Priscila Caçola, assistant professor of kinesiology and director of the Developmental Motor Cognition Laboratory, is using biostatistics to study the connection between the cognitive and motor behaviors of school-age children with developmental coordination disorder, a chronic neurological

impairment that affects movement. Many children with this disorder have poor handwriting, struggle to tie their shoes and navigate stairs, and frequently bump into things like furniture and walls. Dr. Caçola says that “biostatistics is at the heart of what we do” and notes that her team relies on such data to gain essential information about children whose daily lives are affected by the disorder.

Meanwhile, Dr. Mancini is serving on the scientific advisory board of a cardiac arrest registry that is examining some 700,000 patients who have gone into cardiac arrest in hospital settings. The registry collects data that enables health care professionals to identify factors associated with in-hospital cardiac arrest—data that can ultimately help prevent these incidents from happening or improve outcomes when they do occur.

JON KRAUSE

# FOR

# DATA

These diverse projects illustrate the potential and importance of biostatistics, a thriving field that employs statistical methods to help scientists unearth solutions to pressing real-world questions in nursing medicine, biology, and public health.

Biostatistics has long played a critical role in health-related research, but the field is evolving with the emergence of “big data,” or the ability to store, handle, and process enormous volumes of digital information. Because the data sets are so large, statisticians are developing special algorithms to process the information, enabling more robust analyses than ever before.

At UTA, the role of biostatistics in data-driven research is becoming more prominent as the College continues its transformation into a leading center for health care research.

The power of biostatistics is far-reaching, says Dr. Ciper, a trained biostatistician who helps her fellow professors design studies and provides frequent analysis.

“Fundamentally, statistics answer questions. As health care professionals, we pose the questions that need answers,” Ciper says. “Biostatistics can address the prevalence of a disease, efficacy of a treatment, risk factors of an outcome, ways to improve the quality of health care delivery, and how to best educate and train the next generation of health care professionals.”

#### EVIDENCE-BASED HEALTH CARE

Consider research being conducted by Mancini, Ciper, and Judy LeFlore, associate dean for simulation and technology, who are using biostatistics to study what role simulation could play in clinical rotations in the BSN program and whether simulation could replace some traditional clinical rotation hours. The project could lead to improvements in the education of nursing students.

“By leveraging the power of analytics, we can answer important questions that affect education and our institutions of learning, as well as individual patient health and wellness,” Mancini says. “Previously, we would extrapolate answers from very small sample sizes. But today, we have access to a great wealth of information and can obtain much more accurate answers with the analysis of biostatistics.”

Working with three other universities, the researchers have collected data on more than 800 student nurses. Over the duration of the two-year project, this has translated to hundreds of thousands of data points that include student demographics, scores on entrance exams, clinical assessments, grades, and post-graduation details. Evaluating the

data collected during this \$1.8 million study, funded by the Texas Higher Education Coordinating Board, requires sophisticated data analysis techniques. These techniques require the expertise of biostatisticians like Ciper to ensure that the study’s findings and subsequent recommendations are accurate reflections of the original data.

“Biostatistics are an essential part of every research project,” Dr. LeFlore says. “For our research to be statistically relevant, you need a biostatistician to be involved from the very beginning.”

Nationally, biostatistics has pushed evidence-based health care to the forefront of the industry, Ciper says. That means the delivery of health care should be based on data-driven outcomes, rather than history or intuition.

#### THE FUTURE OF HEALTH CARE

In the coming years, researchers say, the role of biostatistics will continue to grow at UTA and elsewhere.

“The College of Nursing and Health Innovation is embracing the future of biostatistics and wants to be a leader in this field,” Mancini says. “We understand not only the importance of having highly trained biostatisticians on our team but also training our students to understand how to apply biostatistics to their own work.”

With more faculty members delving into projects that use biostatistics, the College hired a second biostatistician at the beginning of the school year to work alongside those professors to analyze and manage data. Jing Wang comes to UTA from Saint Louis University’s College for Public Health and Social Justice, where she was a tenured associate professor of statistics.

Dr. Wang, now an associate professor of nursing here at UTA, says she hopes to provide a much-needed connection between scientists and statisticians. For data to be relevant to public health, she adds, it must be studied and analyzed, and statisticians must work across disciplines.

“Hospitals have a wealth of data, and health care professionals might know something based on what they see day to day,” Wang says. “But they need statistical evidence to tell that story and make decisions. Biostatisticians are the interpreters and analysts of that data. We can help them tell their story and influence the decision-making processes and action plan.”

Wang says that biostatisticians can play a key role in answering a fundamental question: “How can we improve health?”

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#### IMPROVED HEALTH CARE

For Cheryl Anderson, associate professor of nursing, biostatistics has provided a valuable window into the study of psychological birth trauma, particularly among childbearing adolescents. Psychological birth trauma is a form of mental or emotional distress suffered by some mothers following childbirth and can materialize as depression or post-traumatic stress disorder.

Working with a Fort Worth hospital, Dr. Anderson and her colleagues have interviewed hundreds of women between the ages of 13 and 19. Their research shows that young women are particularly susceptible to fear of dying, loss of control, pain, and limited support, all of which are associated with symptoms of traumatic stress.

While mining the results of the large longitudinal study, Anderson noted that nearly three-fourths of the young mothers were Hispanic. Researchers assessed a small subsample of Hispanic mothers and found that more recent immigrants had a higher likelihood of experiencing symptoms related to birth trauma, which was possibly enhanced by a lack of support or the language barrier.

“Biostatistics played a critical role in our study of psychological birth trauma,” Anderson says. “Through our interviews and data, we were able to show the vulnerability of adolescents to suffer a traumatic birth experience and the need for health care providers to monitor for symptoms immediately as well as several months after birth.”

Caçola says biostatistical analysis is enabling scientists to make connections that could alter treatments for certain conditions. In her work evaluating how delayed motor skills

affect other areas of development, she has found connections between severe coordination problems and academic achievement.

“Data are becoming very complex. Analysis can help us pinpoint commonalities and uncover answers,” Caçola says. “Without this, we would never understand how one variable relates to another. Statistics help us establish those critical relationships.”



Through data-driven discovery, researchers are finding ways to address birth trauma in adolescent mothers.

# Tragedy inspires a nursing career

Kristen Cook graduated from UTA with a mechanical engineering degree in 1996, and for the next 12 years, she had a thriving career with a large auto manufacturer. But a series of encounters with caring, skilled nurses when she and her family members most needed their support inspired her to consider a career change. Deep down, she knew she wanted to be a nurse.

Initially, she was inspired by the way nurses took care of her mother during her bout with breast cancer. But nothing influenced her more than her younger daughter Hannah's lengthy experience at Cook Children's Medical Center. Hannah was born in March 2014 with Trisomy 18, an often-fatal chromosomal genetic condition. Hannah lived for nine months.

"I was surrounded by so much love at Cook Children's," says Cook, who graduated with her BSN in December.

She says her experience there also inspired her to help other families who have children with life-limiting diagnoses. Because of her experience with the condition,

Cook was invited to participate on an expert panel at a pediatric health care conference at the hospital. She also runs and moderates a trisomy Facebook page.

And when the time came to do her pediatric rotation, Cook told her instructors she only wanted to be at one hospital.

"Kristen thrived in that rotation at Cook Children's and was one of the very few students given the honor of completing her capstone rotation there by our program managers," says Elizabeth Webb, coordinator of the College's accelerated online BSN program. "She is an incredibly inspiring individual. She emerged as a student leader. She was the peer mentor for critical care last fall. She was a bit of a mom to her fellow students and had a way of bringing the group together."

Cook, who has also been selected to do her residency at Cook Children's, says the hospital feels like home to her and that she'd like to end up there as a nurse.

"That's where Hannah died," she says. "There's something sacred about that space."



Kristen Cook's nursing career has helped her maintain a connection to her daughter who died at just nine months old.



## A passion for neural cardiovascular research

Seth Holwerda is destined for big things. In his brief career as a scholar, he has penned at least 18 scholarly journal articles and brought in more than \$100,000 in research grants, including one from the American Heart Association.

Holwerda credits UTA, where he received his master's degree in kinesiology, with giving him his start as a researcher. He came to UTA because he wanted to study neural cardiovascular control under Associate Dean David Keller, a renowned expert in that area.

"UTA was a natural fit for me," says Holwerda, a Plano native.

The focus of his research at UTA was baroreflex function in African-Americans. The baroreflex is an important neural mechanism the body uses to maintain blood pressure at constant or near-constant levels.

"We were looking to see if that function was impaired in African-Americans," he says. "We published a couple of papers on the subject. I got three first-author publications."

Now a postdoctoral research fellow in the University of Iowa's Department of Health and Human Physiology, Holwerda juggles several projects centered on sympathetic nerve activity. He plans to stay on as a research fellow before seeking a tenure-track faculty position.

"I love teaching," says Holwerda, who was a graduate teaching assistant during his two years at UTA. "As a postdoc I just focus on research. I'm looking forward to teaching again while continuing my research."

## Holistic Health

*Using Eastern medicine to fill the gaps*

A few years into ReNee Greenberg's career as a registered nurse, a combination of stress, shift work, and a poor diet had left her feeling burnt out.

So Greenberg, a traveling nurse who worked in neonatal intensive care units, set about exploring more tools for self-care. She discovered various forms of Eastern medicine, including acupuncture.

She also learned that the key to recovery was better mind-body balance. After incorporating some of these ancient healing tools into her lifestyle, Greenberg's health improved dramatically. That led to more curiosity about Eastern healing methods and Chinese medicine, so she decided to forge a new career path. Now armed with a master's degree in traditional oriental medicine, she is the proprietor of The Life Well, a San Diego-based natural healing clinic that bridges Western and Eastern medicine.

"It's a holistic health care model," says Greenberg, who received her BSN from UTA in 1990. "As an

RN, I always have what is happening physically to the patient in the back of my mind. Then I can treat it with herbs and mind-body techniques."

Greenberg focuses specifically on women's health, helping women with chronic digestive problems, nutrition deficiencies, and autoimmune diseases, among other issues. She uses targeted herbal and vitamin supplements to address the source of the illness. While she says she can't cure diseases, she can help her patients feel better. Her goal is to empower women by providing mind-body tools so they can be a partner in their own health care.

That outlook is part of what she learned as a nursing student at UTA.

"ReNee understood traditional medicine approaches and how some other disciplines offer alternatives without taking people out of a regular care network," says Anne Bavier, dean of the College of Nursing and Health Innovation.



## Funding a New Generation of Nurses

*Scholarships help the College fill the nursing gap in Texas*

Elizabeth Babalola, a DNP student who lives in the Houston area, works in family practice in rural southwest Texas and has a keen interest in individualized and culturally sensitive care. She also helps older Hispanic women manage diabetes.

After graduation, Babalola, a nurse practitioner, plans to continue working with ethnic minorities, helping them vanquish chronic diseases like Type 2 diabetes.

Babalola was one of 10 nursing students who received a scholarship through a Communities Foundation grant awarded to the College of Nursing and Health Innovation in 2017. The \$20,000 grant was given to 12 nursing students. Ten undergraduate students received \$1,000 each for one semester, one undergraduate received \$6,000 for three semesters, and a doctoral student—Babalola—was awarded \$4,000 for a year.

“Thanks to the scholarship, I will be able to continue a hassle-free educational experience toward becoming a nurse leader,” says Babalola, a native of Nigeria. “It is my goal to pass on the mantle of nursing excellence to the next generation of nurses through

teaching and mentorship. This scholarship will help me achieve that goal.”

Babalola and these 11 other students were among hundreds from the College who were given scholarships last year. The scholarships come from a wide variety of sources, including large health systems, friends of the College, and the Good Samaritan Foundation, which last year awarded \$15,000 each to four students.

With the rising costs of higher education in the United States, the College is focused on keeping excellent education at UTA affordable through scholarship assistance. Late in 2017, the College launched a \$500,000 fundraising campaign to create more scholarships for deserving students, and there are plans to make the fundraising effort an annual event.

“The steadily rising cost of an education in the health care field places a heavy burden on students while they are in school and also after graduation,” says Anne Bavier, dean of the College. “By helping offset this burden, we are helping end the nursing shortage crisis in Texas one student at a time.”

## All Heart

Halfway through college, Antay Parker learned she had a heart abnormality when her heart stopped suddenly. She was just 19. During weeks in the intensive care unit, where she had a permanent pacemaker implanted, she came to respect and admire the nurses who cared for her. It was the beginning of her love for nursing.

She enrolled at UTA in one of the College’s first accelerated online nursing programs and graduated with a BSN in 2011. She credits her UTA faculty with shaping her as a registered nurse, molding her into a great thinker, and further stoking her passion for nursing. Since graduating from UTA, Parker, who kicked off her career as a cardiovascular ICU nurse and perioperative nurse, has garnered one accomplishment after another.

The 30-year-old has earned two master’s degrees in nursing, become a women’s health nurse practitioner, and earned multiple additional certifications. In addition to working in private practice in Fort Worth and serving as a clinical adjunct instructor at the College, she is pursuing her doctorate of nursing practice and expects to graduate in May 2018.

“The day you stop learning is the day you need to quit,” says Parker, who intends to stay on at the College after graduation. “I’m not one to back down from a challenge, and I don’t take ‘no’ or ‘you can’t’ as an answer, because I know I can. Sometimes I just have to prove I can.”



MICHAEL AUSTIN



**1974**

**Lillie Biggins** (BSN) retired as president of Texas Harris Health Methodist Fort Worth in January. Biggins was appointed hospital president in 2012. She is the past chair of the Dallas-Fort Worth Hospital Council and a member of the Dallas-Fort Worth International Airport Board and its former chair.

**1982**

**Tobi Jackson** (BA, Physical Education) was elected president of the Fort Worth Independent School District Board of Education. She has served on the board since 2010.

**1984**

**Catherine D. Van Zandt** (BSN) has earned the designation of Certified Nurse Educator. She is a professor with Navarro College’s associate degree nursing program.

**1985**

**Judy Back** (BSN), co-founder of Innovative Infusions LLC, co-wrote an article in *Becker’s Hospital Review* about considerations for opening an in-office infusion center.

**1989**

**Doris Jackson** (BSN) is included in the International Nurses Association’s *Worldwide Leaders in Healthcare* publication. A registered nurse with more than 27 years of experience, she is a specialist ICU nurse and cardiac nurse. She is also a legal nurse consultant for Jackson & Associates in Missouri City, Texas.

**1990**

**Theresa Kyzar** (BSN) a Northwestern State University assistant professor of nursing, has been re-elected North America Regional Coordinator for Sigma Theta Tau International, the world’s second-largest nursing organization.

**2004**

**Calandra Eddington** (BSN) has been admitted to the International Nurses Association. She is a case manager at the Medical Center of Arlington and is an on-call nurse at Tarrant County College.

**2010**

**Byron Montgomery** (MSN), Mainline Health Systems’ assistant clinical director and provider at Star City, has been elected to the Arkansas Nurse Practitioner Association Board of Directors, representing District 2.

**2013**

**Paul Mundt** (BSN) has joined Ascension St. Clare Hospital in Weston, Wisconsin, as a cardiology family nurse practitioner.

**Chad Trahan** (BSN) has been named vice president of clinical services at LifeShare Transplant Donor Services of Oklahoma.

**2014**

**Brian Holland** (PhD, Nursing) assistant dean of undergraduate studies at Texas A&M University’s College of Nursing, was one of seven distinguished alumni honored by Columbus State University in Georgia.

**2015**

**Lindsay McGlinch** (BSN) is a school nurse in the Dayton, Ohio, metro area. As a UTA student, she was a member of the Movin’ Mavs.

**Irene Okoronkwo-Obika** (DNP) has written *Chisom the Champ*, a children’s book about childhood bullying.

**2016**

**Leann Denney** (BSN) was profiled in the May 16 issue of *Oklahoma Nursing Times*. She is a chemotherapy nurse navigator at the VA Hospital in Oklahoma City.

**Toni Green** (BSN) won Northwest Texas Healthcare System’s Clinical Excellence Award, which is given to the system’s acute and critical care surgery department staffers.

**Christie Gutierrez** (BSN) has been named vice president of quality for Medical City McKinney.

**Lori Hanke** (BSN) received Northwest Texas Health Care System’s Clinical Excellence Surgical Services award. She has worked with NWTHS for 18 years.

**Mercy Mumba** (PhD, Nursing) has been appointed assistant professor at the University of Alabama’s Capstone College of Nursing.

**2017**

**Kylie Culp** (BSN) earned the Northwest Texas Health Care System Surgery Department Clinical Excellence Award. She has been at the hospital for two years.

**Caitlin Branham** (MSN) has joined Mind Springs Health, a mental health services provider in Grand Junction, Colorado, as an advanced psychiatrist nurse practitioner.

class notes

**WHAT’S NEW?**

We love to hear about the achievements of our amazing alumni. Send all your latest and greatest career news to [classnotes@uta.edu](mailto:classnotes@uta.edu).



Judy Wilson (left) and Sara Hermansen measure the oxygen consumption of a Movin' Mavs athlete.

# Measuring student-athlete fitness

For several years, athletes from UTA's basketball teams have trooped to Judy Wilson's lab for a series of tests.

One at a time, members of the Movin' Mavs and the Lady Movin' Mavs wheelchair basketball teams get on a large, elevated treadmill that is wide enough for a wheelchair. Cables attached to the treadmill's rails keep the wheelchair from rolling backward, while the athlete wears a facemask to secure his or her head and a heart rate monitor around the chest.

Once the athlete is secured, the treadmill's speed is increased to a comfortable rate, between 3 to 5 miles per hour. Its elevation is increased every two minutes until the athlete reaches exhaustion.

The purpose of the exercise is to measure the athlete's oxygen consumption, which provides information about his or her fitness.

"The more oxygen they consume, the more aerobically fit they are," says Dr. Wilson, an associate professor of kinesiology and director of the Disability Sports Laboratory. "By measuring their fitness levels at the beginning of the season and again in the spring, we will be able to determine the effects of their training programs."

Wilson also assesses the fitness of players from the men's and women's running basketball teams by measuring oxygen consumption, body composition, and bone density.

"By providing the players information about their bone density, we are letting them know if they are at risk for osteoporosis," Wilson says. "The oxygen consumption values let the players know how they match up with published data regarding other college teams and if there is room for improvement."

Wilson's work is part of a cross-disciplinary project with a colleague from UTA's Department of Psychology who is focusing on stress management and the academic performance of college athletes. To date, Wilson and her team have presented a couple of abstracts and are working on a scholarly article that evaluates the intensity levels reached by athletes playing basketball, whether they're pushing a wheelchair or running down the court.

"The information from Dr. Wilson's study has given us feedback on the effectiveness of our training," says Doug Garner, Movin' Mavs head coach. "It helps us manage our time better. It's a very good assessment of where we are and want to be."

YOUR ANNUAL GIFTS SHAPE THE FUTURE OF UTA STUDENTS

# CHANGE A LIFE

## YOUR SUPPORT FUELS SUCCESS IN THE COLLEGE OF NURSING AND HEALTH INNOVATION

UTA boasts some of the nation's brightest and hardest-working students. These high-achieving scholars consistently receive national recognition for academic excellence and find time to volunteer hundreds of thousands of hours in the community each year. Your annual gifts help future leaders like Jaeca Flanagan, College of Nursing and Health Innovation graduate, fulfill her potential and discover her passion. Make a gift online today at [giving.uta.edu](http://giving.uta.edu) or call the Office of Development and Alumni Relations at 817-272-2584.

**JAECA FLANAGAN** has big plans. First, a master's degree in nursing. Then, a job as a nurse practitioner. She says it wouldn't be possible without the support she received from a Dream Makers Scholarship as an undergraduate. "My scholarship has helped

me bridge the financial gap between school and family," she says. "It has allowed me to devote my full attention to being a student without having to get a job. It's important to invest in the future. We are the nurses of the future, and scholarships like these help make our dreams a reality."



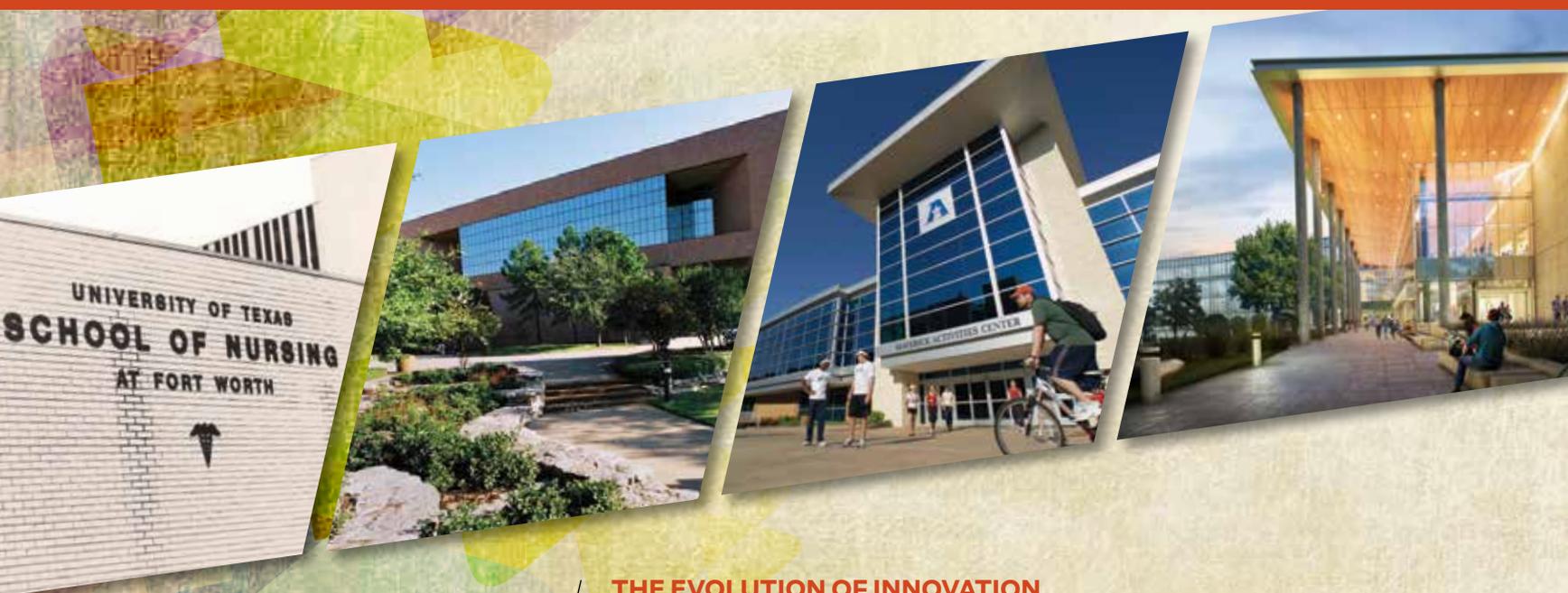


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# Past, Present, Future



## **THE EVOLUTION OF INNOVATION**

*The growth of the College of Nursing and Health Innovation can be charted by its changing addresses. From its early days in Fort Worth to several buildings on campus today—including Pickard Hall and the Maverick Activities Center—the College is a major force in health care education and research. Later this year, the College's reach will be extended when the Science & Engineering Innovation & Research Building opens in fall 2018.*