

UT ARLINGTON

Health

THE UNIVERSITY OF TEXAS AT ARLINGTON • COLLEGE OF NURSING AND HEALTH INNOVATION • 2019



Structural Integrity

UTA's new Bone-Muscle Collaborative Sciences Group is tackling musculoskeletal conditions.



Elizabeth Merwin, new dean of the College of Nursing Health Innovation, comes to UTA from Duke University, where she served as executive vice dean of Duke University's School of Nursing, the school's Ann Henshaw Gardiner Professor of Nursing, and as a professor of psychiatry and behavioral sciences in the School of Medicine.

I AM DELIGHTED TO SERVE AS DEAN of UTA's College of Nursing and Health Innovation, a College with a well-deserved national reputation as a leading center for health care education and an unstinting commitment to excellence in teaching and research.

This is an exciting time for CONHI and for health care in the United States. The state's demographics are changing rapidly and the nation's population is aging, triggering a need for more well-prepared health care workers. In recent years, the College has steadily expanded its graduate and undergraduate offerings in nursing, kinesiology and public health. CONHI has also taken aggressive steps to grow our research capacity in order to help tackle major health care challenges through its myriad of labs and a growing roster of talented research faculty who specialize in areas as varied as heart disease, exercise physiology, esophageal cancer, osteoporosis, quality of life and health outcomes.

Research grants from organizations such as the National Institutes of Health and the American Heart Association balloon each year. The hard work of our faculty, staff, and administrators continues to pay off with our high licensure pass rates in nursing and athletic training. Evaluators consistently rank our programs among the nation's best.

I look forward to forming close relationships with our faculty, staff, students, alumni, other UTA schools and departments, community leaders and other friends of CONHI as we strive to build on this impressive foundation. I look forward to supporting members of the CONHI family in reaching their professional goals while collectively meeting high and ever growing aspirations for the College within an inclusive, diverse, respectful and collaborative environment.

I am excited about the interprofessional environment at CONHI and the prospects for interdisciplinary education and research. I am committed to working with my colleagues to strengthen these scholarly ties. I see many opportunities to expand close relationships with the world-class medical facilities in the Dallas-Fort Worth Metroplex.

Working closely with these local community partners and key institutions throughout the region, state and country, will further help advance health and the human condition.

Elizabeth Merwin, Ph.D., RN, FAAN
Dean, College of Nursing and Health Innovation



New home for life and health science

UTA's \$125 million Science & Engineering Innovation & Research (SEIR) building, which opened in fall 2018, promises to transform research in the College of Nursing and Health Innovation (CONHI) and UTA as a whole.

"It is a very exciting time for research at UTA," says Paul Fadel, associate dean for research and professor of kinesiology. "SEIR will provide a platform for many of our researchers to extend collaborative efforts within and across disciplines."

The sustainable, 229,000-square-foot building brings together top researchers and faculty members from CONHI and the Colleges of Engineering and Science.

The facility will focus on interdisciplinary research around 12 health science "neighborhood" areas, such as cancer, cardiovascular and brain health, healthy aging, and rehabilitative medicine.

"Every day I pass through the building, the energy of the young students passes

through me," says Jingsong Zhou, professor of kinesiology and associate director of CONHI's new Bone-Muscle Collaborative Sciences Group, which recently moved to SEIR's second floor.

In the last four years, CONHI has invested heavily in new labs, research fellows, postdoctoral trainees, and students. The college introduced a doctoral program in kinesiology in 2016 and is strengthening its doctoral program in nursing with greater emphasis on clinical research. Eleven of its research labs have relocated to the SEIR building.

"The beauty of the SEIR is that many of our researchers are working side by side now," says Dr. Fadel. "This puts our human clinical basic science researchers and their trainees in close proximity to our animal and molecular basic scientists, facilitating daily interactions and fostering collaborative efforts that will drive our research programs to new heights."

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Research and academic insights



Model educator recognized

Regina Urban, assistant professor of nursing, goes the extra mile to partner with students in their successes, working diligently to simplify complex concepts.

"It is about meeting the learners where they are," says Dr. Urban, a nurse with over 20 years' experience. "It's about respecting the learner, providing learning through multiple platforms, and understanding this generation of students."

Such an approach to teaching has made her one of the most popular faculty members in the college and one of the most decorated within the University of Texas System. In 2018, Urban received the Regents Outstanding Teaching award. The award, which recognizes commitment to teaching through the delivery of the highest quality undergraduate instruction, is given to a select few faculty members in the UT System. It was the second consecutive year she'd been honored for her teaching; in 2017, she received the Provost's Award and the College of Nursing and Health Innovation's teaching award.

In her career as a nurse, Urban has worked in a variety of areas, including acute care, nursing staff development, and nursing education. She teaches undergraduate courses in pathophysiology and nursing research. Both courses are grounded in two of her passions: critical thinking and research.

"If you don't understand the 'why' behind what is happening with your patient, then you are not thinking critically," she says. "The public counts on us to recognize when something is not right, to take action, and to alert the team."

Postpartum Improvement

Student fights health care disparities for new moms

When Ashlee Hansen-Bell returned to working in labor and delivery units a couple of years ago, she noticed a disturbing trend in mothers: higher rates of chronic diseases such as obesity and high blood pressure and more readmissions with serious complications.

"We certainly had sick patients years ago, but those were outliers," says Hansen-Bell, an MSN in nursing education student.

She attributes the rise in postpartum morbidity to a growing number of older women getting pregnant, lack of access to health care, and huge health care disparities between African-American mothers and other ethnicities.

Hansen-Bell has made it her mission to fight maternal morbidity and mortality. In 2018, she was selected as one of 12 Dallas-Fort Worth area Albert Schweitzer Fellows.

As part of her project, "Expectant Self-Care to Thrive: Educating and Empowering Moms (ESTEEM)," she has been holding workshops covering several areas of interest to mothers, including expectations in the immediate postpartum period, self-care at home, and potential complications that new mothers may experience.

In these workshops, she strives to raise awareness about pregnancy complications and improve health outcomes in underserved populations.

"I'm focusing on the postpartum period because 60 percent of deaths occur after moms have gone home," she says. "They need to recognize signs and symptoms of complications that can occur. I want to teach them how to advocate for themselves and approach providers if they know something is wrong."

Safer Discharges

Professor works to improve home health care

Often missing in health care delivery is a strategy for keeping patients safe and healthy after they are discharged from the hospital. Approximately 20 percent of patients experience adverse events in the first three weeks after discharge; 61 percent of those events are considered preventable or ameliorable.

Many patients and their caregivers struggle with managing medication and following discharge instructions, says Yan Xiao, professor of nursing and patient safety specialist. Patients with a clear understanding of post-discharge instructions are 30 percent less likely to be readmitted or visit the emergency department.

Dr. Xiao and his fellow researchers are working to design a system that enhances post-hospital patient safety. For the last several years, he and his team have been visiting patients after hospital stays and interviewing doctors and nurses.

Some health care professionals take the inability of patients to recall the name of their medication or

follow discharge instructions as a sign of a lack of commitment to their own care, he says.

"But a patient has a drug that is five syllables long," says Xiao. "That's one of the human limitations we do not take into account. Human limitations cannot be overcome by teaching everybody to remember these names without cognitive support. Many nurses and doctors can't spell some of the medication names, either."

He and his team are working to develop intervention strategies to support patients, such as learning new skills or habits. Take congestive heart failure, for example.

"One intervention would be to have patients weigh themselves at the hospital or report their weight daily," he says. "This way, the patient knows that weighing is an important part of the care. We would also ask them to note the difference in weight between days. Then we would have them practice that skill and connect it with self-care."



Emerging educator empowers

At the beginning of each semester, Laura Kunkel, associate clinical professor of kinesiology and a certified athletic trainer, shares the same message with her students.

"I always tell them the bar is set very high," she says. "But I will be your biggest cheerleader."

Last summer, Dr. Kunkel received the national Emerging Educator Award from the National Athletic Trainers' Association (NATA). Kunkel, who joined UTA in fall 2017, was the sole recipient of the coveted award. The award honors up-and-coming athletic training educators with a track record of excellence in teaching as well as delivering and promoting athletic training education in various forms at the local and regional levels.

NATA is the professional membership association for certified athletic trainers and others who support the athletic training profession. The 68-year-old organization has more than 45,000 members around the world.

"Laura is an incredible academic who excels at teaching, scholarship, and service," says David Keller, associate dean of the College of Nursing and Health Innovation and chair of the Department of Kinesiology. "This Emerging Educator Award is a tribute to her work and gives her peers a glimpse of what to expect from her in the coming years."



Triumph through tragedy

Whitley Dean was pregnant and wrapping up a clinical rotation when the pains began. She called her brother to take her to another hospital, where she had an emergency C-section.

"The cord was wrapped around the neck and body twice," Dean recalls of the birth of her daughter.

Childbirth delayed her graduation, pushing it from December 2018 to May 2019.

"I dropped critical care and missed the state's requirement for clinical by four hours," she says.

It wasn't the first time Dean's education had been interrupted. In 2011, as a student at another university, the driver of an oncoming vehicle fell asleep and crashed into her car. The accident shattered her right femur, split her left femur, broke her jaw and destroyed the entire right side of her face.

Her experience with an ICU nurse during recovery inspired her to go into nursing.

"He was always explaining things," she says. "He was really good about explaining everything to my parents before he did it. He always came back to ask my parents if everything was OK."

After graduation, she'd like to work in an ICU and then become a nurse practitioner and earn a doctorate.

"I'd like to stay in patient contact," she says. "I love talking to patients and caring for them."

Athletic Ambitions

Undergraduate sets his sights on helping others

Kinesiology major Britton Woolsey, who is on track to graduate in May 2019, says his kinesiology courses have broadened his knowledge about the human body and science in general.

"Kinesiology has allowed me to explore areas of science I didn't know about," he says. "I have learned a lot about the human body and how it works and adapts to changes during exercise."

Woolsey, who serves as president of the Society of Kinesiology Scholars, sees kinesiology as an avenue for helping others. He also relishes the fact that a kinesiology degree could lead to several health-related career paths, including rehabilitation, coaching injured people back to health, and physical fitness. He plans to go to graduate school but is torn between a career in athletic training and research.

In addition to serving as president of the undergraduate kinesiology group, Woolsey is vice president of the Maverick Veterans and vice presi-

dent of the Health Innovation Constituency Council, an umbrella organization of the College's student leaders.

Woolsey didn't start out wanting a career in kinesiology. Following a six-year stint in the Coast Guard, he enrolled at UTA with plans to study engineering. But then he decided that he wanted to do something more active and more physically demanding.

He says being at UTA has been productive and fulfilling. One aspect he finds particularly appealing is research. In 2017, he worked with Cynthia Trowbridge, associate professor of kinesiology, who was testing a novel heating therapy product that helps patients heal.

"I was able to test heating modalities between conventional techniques and new technological advances," Woolsey says. "UTA offers a lot of research, and I really enjoy being part of that."



Immune System Impacts

New faculty member advances immunology

Daniel Trott, assistant professor of kinesiology, has a passion for studying the interaction of the aging immune system with blood vessels.

His passion began when he was a doctoral student at Texas A&M University, where he studied aging and vascular function. He nurtured that interest through his postdoctoral work at Vanderbilt University and the University of Utah.

Dr. Trott says his research thus far suggests that an aging immune system can produce effects throughout the body.

"So far I'm focused on the arteries, but these are open questions about the immune system and other parts of the body," he explains. "I'm interested in the effects of the immune system everywhere."

Trott, who joined UTA in 2018, runs UTA's Integrative Immunology Laboratory, which is focused on research that explores how the immune system

interacts with other tissues to regulate cardiovascular and metabolic function. The lab also considers how lifestyle interventions like exercise might prevent or even reverse age-related pathologies like cardiovascular disease and Type 2 diabetes.

"UTA is tremendously invested in research enterprise right now," he says. "When I came and was interviewed, I saw that there were a lot of new vascular people in kinesiology, and I knew all these people. I was impressed by all the investment."

He's looking forward to collaborating with members of his research group, which includes working with the Bone-Muscle Collaborative Sciences Group.

"I'm very excited because I'm brand new," he says. "One of the big advantages for me will be getting feedback and learning from more senior people. Even in my short time here, everyone has been very helpful. It's a very collegial atmosphere."

Ten Years of Nursing Excellence

When Minaz Dungor, a Houston-area registered nurse, was looking for a school for her BSN, she was looking for flexibility and a reputation for excellence. UTA's RN-to-BSN program stood out.

"The program is good, the instructors are amazing, and the College listens to student feedback," says Dungor.

She is one of more than 20,000 students who have enrolled in the program since it began ten years ago. Its birth was spurred by a national initiative to ensure that 80 percent of the nation's nurses have bachelor's degrees by 2020. Studies show a noticeable increase in patient outcomes at hospitals with a higher percentage of nurses with BSN degrees.

"UTA was very forward thinking and was a frontrunner among nursing schools in developing the program," says Pamela White, a manager of the Accelerated Online program and a clinical assistant professor of nursing.

The creation of the RN-to-BSN program transformed the College into the state's biggest producer of bachelor's-prepared nurses and the nation's largest nursing school at a public university. Valuecolleges.com ranked the program the sixth-best RN-to-BSN program in the country.





Prepped beyond the test

College works to address the practice gap

The College of Nursing and Health Innovation (CONHI) and the National League for Nursing (NLN) have teamed up to address a critical problem in the field of nursing: What's known in academic circles as the practice gap, which can occur when nursing programs focus too heavily on licensure exam pass rates at the expense of practice readiness.

It's a reason why one in three new nurses leaves their job within the first two years, says Meagan Rogers, a clinical assistant professor of nursing. In turn, excessive turnover rates negatively affect the cost and quality of health care, along with efforts to produce a more qualified workforce.

To address this problem, NLN developed a program, Accelerating to Practice, in 2013. In 2017, they asked CONHI to join the effort as its sole academic site.

The pilot involved 20 students in their final senior-level course. The students

were exposed to innovative technology, and throughout, they tallied 100 hours of clinical experience with a preceptor who could tailor their learning experience based on scenario feedback.

"It's a unique element of our program, especially as it relates to practice preparation," Dr. Rogers says. "Most health professions are looking at taking a more outcomes-based approach to education, which focuses more on what learners can demonstrate rather than solely on what is taught. In the current model, we deliver content and hope it sticks."

The pilot project wrapped in spring 2018, although collaboration with specific practice partners continue.

"We want to know if the transition to practice actually improved," she says. "The pilot certainly has the potential to set a new standard for entry-level practice expectations."



Exercising Solutions

In a little more than two years as a doctoral student in the College of Nursing and Health Innovation's PhD in kinesiology program, Rhys Beaudry has published or co-published articles in high-profile academic journals such as *Clinical Sciences* and the *Journal of Applied Physiology*.

In addition, Beaudry oversees the College's FitSTEPS for Life program, which helps cancer patients increase mobility and boost endurance while undergoing treatment. The individualized program includes aerobic exercise, strength training, and stretching techniques. It is designed to mitigate the debilitating effects of chemotherapy and radiation and is the only one of its kind in the Arlington area.

Beaudry's work with FitSteps ties in well with his research interests. His doctoral dissertation examines exercise limitations in breast cancer.

"Cardiovascular disease is the leading cause of death in older longterm survivors of breast cancer," explains Beaudry. "We're trying to find out who's at risk and why, and if we can do anything about it."

Beaudry hopes to become a professor after completing his doctorate.

"I have an interest in translating research into public health," he says. "UTA has provided me the training ground for an academic career."

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Next-Level Nursing

Innovative program brings in high-achieving scholars

Last fall, the College of Nursing and Health Innovation (CONHI) launched a pilot program called Freshman Nursing Scholars. Through the program, promising students take introductory nursing courses and meet regularly with nursing advisors. Upon completion of the program—which requires students to complete 30 hours and maintain a 3.0 grade point average—students are guaranteed a spot in CONHI's competitive nursing program.

Each year, nursing schools throughout the United States turn away about 60,000 applicants due to a shortage of seats. The college averages about 1,100 applications for its undergraduate upper division nursing program annually. Fewer than 20 percent, or about 180 applicants are accepted. For CONHI, this program is an opportunity to recruit

and retain more high-achieving students.

"It's obviously a very stressful process, turning away transfer as well as our own students," says Leslie Jennings, clinical assistant professor and program coordinator. "So we're only taking the cream of the crop here. But we will consider students in this program part of our college, and they'll be guaranteed admission."

Briar Gosvenor, who was in the first group of 81 scholars in the program, says she loves the concept of having all the students in the program take the introductory classes together.

"We get to hang out and build a community," says Gosvenor, a high school honors graduate. "It's great to have a support system when going through something like this."



Student conducts cessation evaluation

A federal employee benefits survey showed that approximately 60 percent of federal employees who smoke expressed an interest in kicking the habit. Such a move would save the government approximately \$758 million each year. Since 2009, the Federal Occupational Health Service has had a smoking cessation program in place. It has also been collecting smoking cessation data.

But it's unclear if the smoking cessation program is effective or even working, says Brenda Ross, regional clinical manager at the Federal Occupational Health Service in Dallas and a PhD nursing student at UTA.

"No one has looked at the data to assess the effectiveness of the program or employee quit rates," adds Ross, one of three UTA doctoral nursing students named a Jonas scholar at the beginning of the 2018-19 academic year.

So for her doctoral dissertation, she will review the data on the government's smoking cessation efforts. She will also examine data regarding cost effectiveness of the program.

Ross, who holds the rank of captain in the United States Public Health Service, is on track to graduate in May 2020. She is also a recipient of the Lynn Edwards Research Scholarship.

Ultimately, Ross hopes to seek a postdoctoral fellowship through the American Nurses Association's Substance Abuse and Mental Health Service Administration Minority Fellowship Program.

"I would like to continue my research on smoking cessation and addictive behaviors after graduation."



Bone treatments

Severe cranium injuries often have difficulty healing due to the large size of the missing bone volume. Implants can take a relatively long time to be tailored to fit and support bone fixation, which can lead to more surgeries if the defect doesn't properly heal.

Venu Varanasi, associate professor of nursing, and his team are working to revolutionize this form of bone treatment.

They have developed a method for live 3D printing of osteogenic scaffolds that are grafted to the bone defect in real time and in situ. This treatment method reduces the time it takes to implant scaffolds. The implanted scaffolds then foster tissue regeneration and growth.

"The transformative aspect is not waiting for materials to integrate," Dr. Varanasi says. "The scaffold can be consumed by the body. It's like a sandwich for the bone, and the bone is very hungry."

Ultimately, he wants to be able to treat certain bone defects as if they are dental fillings, with outpatient procedures.

He believes in addition to having shorter healing times, his technology will be more affordable for patients.

"I can tell them I'll take a \$50,000 bone procedure and reduce costs by a tenth, and they can wear a bandage for a short time and heal at home with family," says Varanasi, who also holds a dual appointment in the College of Engineering.

Muscular Research

Renowned scholar helps lead Bone and Muscle Group

For nearly 30 years, Jingsong Zhou has studied muscle physiology and neuromuscular diseases. The last 12 of those years have been devoted to researching Lou Gehrig's disease, also called amyotrophic lateral sclerosis (ALS).

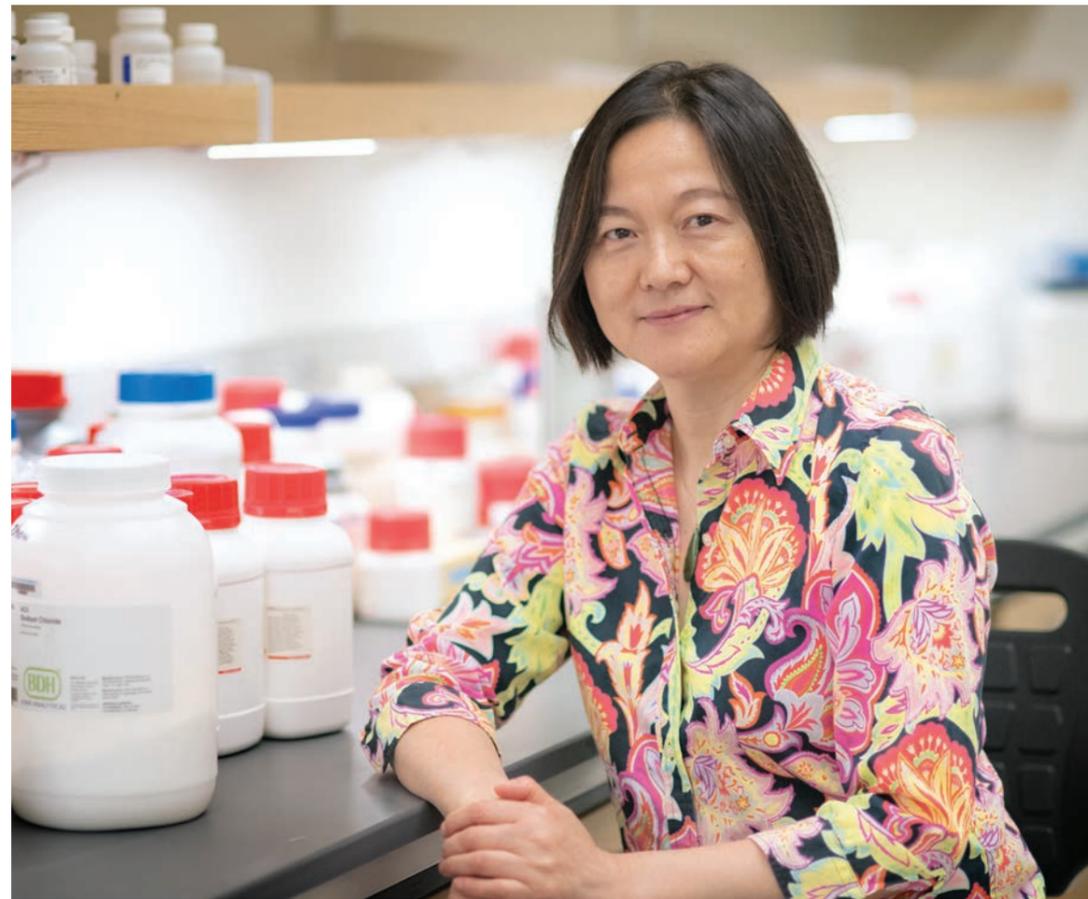
A respected leader in her field, Dr. Zhou has published more than 70 peer-reviewed articles in journals like *Nature Cell Biology*, *Cell Report*, and the *American Journal of Physiology*. She has given more than 50 presentations about her work at academic conferences around the world. In the last 10 years, she has received approximately \$4 million in grants, including a \$2.7 million award in February 2018.

In 2018, she signed on as a professor of kinesiology in the College of Nursing and Health Innovation and as associate director of the College's Bone-Muscle Collaborative Sciences Group. She says she was attracted to UTA in part because of its burgeoning research culture, especially within UTA's Science & Engineering Innovation & Research building.

"The SEIR building provides a unique opportunity for developing collaborative research in the muscle-bone field," she says. "The excellent research management and leadership also attracted me to UTA."

Her vast academic experience gives a significant boost to the University's efforts to advance health and the human condition, as outlined in its Strategic Plan 2020: Bold Solutions | Global Impact. Her team is conducting cutting-edge research to understand the mechanism underlying dysregulated intracellular calcium signaling and mitochondrial dysfunction observed in human diseases, in addition to exploring how crosstalk between multiple organs affects the onset and progression of ALS. The goal is to develop potential therapies for ALS and ultimately improve the lives of patients.

"A lack of freedom can tie up the soul and creativity of the scientist," she says. "I like what I sense here."



follow up

Accomplished alumni



Lifelong Sports Supporter

Alumna takes her expertise to the Ivy League

Karlie O'Reilly ('16 MS, Athletic Training) has always had a passion for sports. The Kenosha, Wisconsin, native is a lifelong fan of the Chicago Bears and the Chicago Blackhawks. As a child, she harbored ambitions of playing sports.

"But I was not good enough to play competitively," O'Reilly says. "So instead of being on the team, I chose to be on the team behind the team."

In search of a university that would support her career goals, she found UTA and the College of Nursing and Health Innovation.

"I absolutely loved the program," she says. "I didn't know how well-respected UTA professors were in the athletic training world until I got there. I was able to head the athletic training student association, as well as be a student representative on a district and national level. I loved it."

Following her graduation from UTA, O'Reilly did a two-year residency at the University of Con-

necticut, working with the women's ice hockey, men and women's tennis, and football teams. Early in August 2018, she began working at Princeton University as an athletic trainer assigned to the women's ice hockey, rugby, and golf teams.

"I do a lot of rehab and exercise with them," she says. "I'm also trained in emergency care before the ambulance gets there. I work with these teams mainly on injury prevention, treatment, and rehabilitation."

O'Reilly says she enjoys building relationships with athletes, coaches, team physicians, orthopedic surgeons, and others. She credits her mentors at UTA with helping her get this far.

"UTA gave me a well-rounded experience in the classroom and clinical sites, and I was able to do leadership work," she says. "My professors and others were very supportive of me. I wouldn't be where I am without their help."

Focused on care

Stacy Howland started out wanting to be an EMT. While holding down a job as a teller at a bank, she worked weekend shifts as a community volunteer at the Community Fire Department with the goal of becoming a full-time employee at the Houston Fire Department.

Then her mom was hospitalized during a battle with cancer.

"She didn't have a good experience with the nurses," Howland says. "They weren't doing what was best for her. I don't think anybody's family should go through that. I became a nurse so others wouldn't be treated that way."

Six months after graduating from UTA's highly ranked accelerated online program, Howland took a job at Methodist Willowbrook Hospital in Houston. She works in endoscopy, where she does colon cancer screenings, among other things.

Howland loves her job and is pursuing her interest in research. She recently completed an Institutional Review Board-approved research study evaluating the adequacy of bowel prep at Methodist Willowbrook.

She plans to submit an abstract to the *Society of Gastroenterology* magazine to gauge interest in publishing the study.

"I love research," she says.





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The Musculoskeletal Crew

The College of Nursing and Health Innovation's Bone-Muscle Collaborative Sciences Group, with its coterie of world-class scientists, is poised to become a force on the health care front.

BY MARY CHAPMAN

More than 1.7 billion globally and 54 percent nationally suffer from a musculoskeletal (MSK) condition, which can include such common disorders as carpal tunnel syndrome and tendinitis, to more severe conditions like rheumatoid arthritis and Lou Gehrig's disease.

In 2015, The University of Texas at Arlington launched the Bone-Muscle Collaborative Sciences Group (often abbreviated as the Bone and Muscle Group) to combine complementary approaches in this area of health care in order to gain insights into diseases and to find new diagnostic tools and treatments. Each of the group's six faculty members is a nationally renowned researcher.

“This group exemplifies research into health and the human condition...”



The Bone-Muscle Collaborative Science Group, pictured clockwise, from top:

- Director Marco Brotto
- Daniel Trott
- Jingsong Zhou
- Venu Varanas
- Zui Pan
- Rhonda Prisby



Together, they receive about \$3 million annually in grants. “This group exemplifies research into health and the human condition,” says Paul Fadel, the College’s associate dean for research, referencing a pillar of UTA’s Strategic Plan 2020. “They are coming at problems from a variety of perspectives that covers the gamut, from bench to bedside.”

All Together Now

The Bone and Muscle Group is led by Marco Brotto, George W. and Hazel M. Jay Professor, whose expertise includes bone and muscle physiology and sarcopenia. Dr. Brotto, who last fall received two major grants totaling \$2.2 million from the National Institute on Aging (a division of the National Institutes of Health) for his aging muscle studies, is also studying an emerging area of bone-muscle crosstalk with investigators from the University of Missouri-Kansas City and Indiana University. He holds a joint appointment with UT Southwestern.

UTA’s investment in research was draw for Daniel Trott, one of the newest members of the bone and muscle group. Dr. Trott, assistant professor of kinesiology, came to UTA in January 2018. Like many of the other members of the group, he is a decorated scholar; last year, he was named a National Institute on Aging Butler-Williams Scholar. Trott is researching the contribution of the aging immune system to the risk of vascular disease. He’s also studying the extent to which diet and exercise can reverse deleterious changes with aging. Other members of the group include its associate director, Professor Jingsong Zhou, as well as Associate Professors Venu Varanasi, Zui Pan, and Rhonda Prisby.

Brotto is the veteran of the group. Most of the others came on board within the last two years, a testament to the College’s commitment to investing in research and improving health.

“What was really amazing was I could go to the dean and say, ‘this is someone I’d like to recruit,’” says Brotto. “The top, best science is not cheap, but we are very lucky, very fortunate.”

With the right people, Brotto thought, the group could grow, then become a center and ultimately an institute.

It appears to be on its way. Brotto believes that working together this group can make a huge impact on musculoskeletal health care research.

“Everything is so interconnected,” says Brotto. “And if we’re a Center, it’s much easier to solve problems than as individuals.”

That’s a sentiment echoed by Dr. Zhou. An accomplished investigator, over the last 30 years, she has made important discoveries related to signaling and function in neuromuscular health and disease. For the last 12 years, she has devoted herself to finding treatments to help ALS patients live longer and have better quality of life.

“I don’t think a single lab can be successful in a field,” says

MUSCULOSKELETAL CONDITIONS
Impact and considerations

- An estimated **126.6 million Americans** (1 in 2 adults) are affected by a musculoskeletal condition, costing an estimated **\$213 billion** in annual treatment, care, and lost wages
- **Arthritis** is the most common cause of disability—**51.8 million** adults age 65 or older suffer from the disease. That number is projected to increase to **67 million** by 2030.
- Among children and adolescents, **musculoskeletal conditions** are surpassed only by respiratory infections as a **cause of missed school days**.

Zhou. “Diversity gives life to research, when people have different areas of expertise but share common interests.”

Funding Solutions

In addition to facilitating collaboration, the group format can also lead to increased funding—which in turn leads to better research.

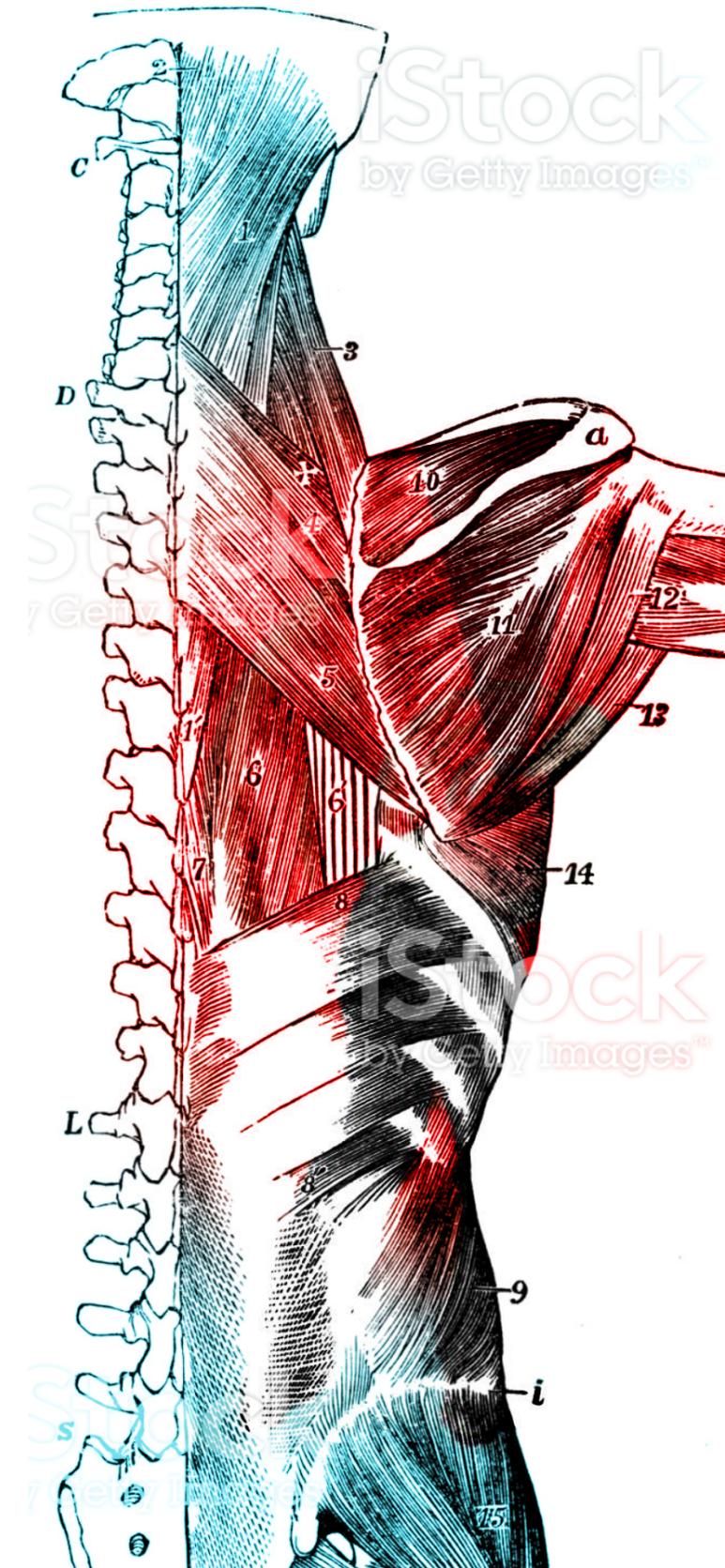
“It definitely sets up a good platform to encourage young investigators to grow up and be more competitive for federal funding,” says Dr. Pan, who is perhaps best known for her groundbreaking work in esophageal cancer research. Her plans in the new SEIR building include studying dysregulated Ca²⁺ signaling in aged skeletal and cardiac muscles. The longterm goal is to evaluate whether certain genes can serve as novel biomarkers in the early detection and prognoses of esophageal cancer.

Dr. Varanasi, who holds a dual appointment in UTA’s Department of Materials Science and Engineering, is making quite a splash. Varanasi, who joined UTA in April 2018, has helped develop a new technology that could revolutionize bone treatment. Known as 3-D live printing, it integrates bioactive polymers with bioceramic materials and prints them. Then it forms the scaffolding around which new bone grows.

The hope is that the current use of plastic or metal implants to heal cranial injuries can be replaced. Ultimately, he and his team hope to help heal bone defects and fractures in record time, and then branch out into arms, legs, and hips.

Dr. Prisby, who returned to UTA following a four-year stint at the University of Delaware, has a relatively rare research focus.

“It’s an integrative approach to the problem, how dysfunc-





The Science & Engineering Innovation & Research building is UTA's new center for life and health science research.

“One of the strengths of UTA is the richness of diversity among our schools and the ability to collaborate, as our group does, with other colleges and universities.”

THE BONE-MUSCLE COLLABORATIVE RESEARCH CENTER

Bringing together complementary research in bone, muscle, neuronal, and vascular biology to develop highly innovative, integrative, and transdisciplinary approaches to find new cures for musculoskeletal conditions and promote longer and healthier living.

MEMBER LABORATORIES

- Marco Brotto Laboratory
- Bone Vascular and Microcirculation Laboratory (Rhonda Prisby)
- Integrative Immunology Laboratory (Daniel Trott)
- Zui Pan Laboratory
- Venu Varanasi Laboratory
- Jingsong Zhou Laboratory

COLLABORATING LABORATORIES

- Applied Physiology and Advanced Imaging Laboratory (Mike Nelson)
- Human Neural Cardiovascular Control Laboratory (Paul Fadel)
- iCARE Laboratory (Mark Haykowsky)
- Integrative Vascular Physiology Laboratory (Matt Brothers)



tion in one system can affect another system,” says Prisby, director of the Bone Vascular and Microcirculation lab. “Very few people think in those terms. I see both sides of the same coin, how the vascular system can influence bone tissue, and how bone tissue can affect the vascular system.”

Age-related declines in blood vessel function can lead to declines in skeletal blood flow, which affects the health of the bone, she says. “If you have a fracture and a poor vascular supply, that can affect healing,” adds Prisby.

A Culture of Research

The emergence of the Bone and Muscle group coincides with the most intense period of research activity in UTA’s history. In 2016, the Carnegie Foundation designated UTA as R-1: “highest research activity.” Research expenditures for 2017 totaled \$94 million, up 11 percent from the previous year. The University has invested heavily in new facilities, such as the Science & Engineering Innovation & Research (SEIR) building, as well as the recruitment of renowned research faculty. Several UTA faculty are members of the National Academy of Inventors, and many have been granted patents.

In accordance with UTA’s Strategic Plan 2020: Bold Solutions | Global Impact, UTA has also made health care

research a priority. And the College of Nursing and Health Innovation has vastly expanded its research profile. In just the last year alone, research faculty at the College received more than \$7 million in grants.

The gleaming new SEIR building had been a plus for new recruits, says Brotto. Prior to the opening of the SEIR building, the labs headed by members of the bone and muscle collaborative were scattered across the campus. Now they are concentrated on the second floor in an expansive open space.

Brotto says this physical closeness fosters collaboration and benefits both faculty and students. “They’re not going to have access to just two machines, but 10 or 20, and to a lot of good brains.”

He is confident that this new concentration of labs and increased ability to team up with scientists from other colleges throughout the university will make UTA more competitive and even more attractive to international students.

“One of the strengths of UTA is the richness of diversity among our schools and the ability to collaborate, as our group does, with other colleges and universities,” Brotto says.

Zhou says that in the end it’s not as much about a new building as it is a nurturing research culture.

“We have the human support,” she says. “That’s important. I feel a freedom to think and play.”

The group’s presence in a single building coupled with its steady growth is also a boon for the research ambitions of graduate students who will go on to make their own impact on the field of musculoskeletal research.

DonnaLee Pollack, a PhD nursing student and nurse practitioner at the Central Texas Veterans Health Care System in Temple, where she runs the wound clinic, says her research focus is on biomarkers of ulcer pressure wounds. Brotto and his team have done important work on biomarkers, particularly regarding muscle strength in older adults. Brotto is her advisor and she calls him “a perfect match” for her professionally.

“I came into the program saying I know my interest is in wound care,” Pollack says. “Then to have the opportunity to go into the lab, they have just been terrific about including me in what they’re doing and explaining how the lab works and what the possibilities are. I’m extraordinarily lucky to combine my work at the clinic with my work at the lab. I feel very supported by both.”

ALL for Health & Health for ALL

BY TONI COLEMAN

The College of Nursing and Health Innovation's burgeoning public health program is preparing a new generation of public health care workers to provide a healthier, brighter future for us all.

In the wake of the devastating 9/11 terrorist attacks, the nation found itself grappling with a horrific aftermath. It was an unimaginable tragedy that has paused longterm challenges in a variety of areas, including that of public health—and in particular, public health preparedness.

"As a nation, we were woefully underprepared for a disaster like that," says Erin Carlson, associate clinical professor and co-director of the College of Nursing and Health Innovation's public health program. "9/11 made us realize we were vulnerable."

Recognizing the need for preparedness, the government invested in public health programs. The American Public Health Association warned

that federal, state and local public health agencies could lose up to half of their staff to retirement or attrition. It noted a shortage of "highly skilled" professionals, due in part to the fact that four out of five people who work in public health lack formal public health training. The association proffered a few solutions, including beefed up efforts in recruitment, retention, and diversity.

Today, we've reached a time when the need for trained public health care workers has never been higher. The U.S. Census Bureau lists public health as one of the 10 fastest growing professions in the country. The United States is projected to have 250,000 job openings for public health professionals by 2020.

Seeing the need, UTA stepped up. The College of Nursing and Health Innovation (CONHI) is a groundbreaking center of research and teaching. It's the leading producer of baccalaureate-degreed nurses in Texas. In fall 2017, the College began offering a bachelor's degree and postgraduate certificate in public health. Demand was high: more than 260 undergraduates list public health as their major. Twenty students are pursuing a public health certificate, and another 50 are waiting to earn a master's degree in public health (MPH). A graduate program is in the works; officials are now awaiting state approval for the addition.

The addition of UTA's urban-focused public health program aligns well with UTA's Strategic Plan: Bold Solutions | Global Impact, which

includes a focus on health and the human condition.

"We were doing a good job of training health care workers at UTA," says Dr. Carlson, "But where's public health? A patient can receive medical care and still not get well. Once you address the physical aspects, you have to look at social determinants that affect your health."

A Wide-Open Field

Public health is a broad field that includes community and behavioral health, health management and policy, epidemiology, and environmental health. Public health workers study and help address social determinants on health, such as housing conditions, transportation, and access





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“The exciting thing is, even if we have students who aren’t public health majors, these students will come out of the course and be more aware of the vulnerable populations in their community,”

to healthy foods. Job options are widely varied, from the hyperlocal (infection prevention specialist at a nearby hospital) to something more far-reaching (president of a national health-focused nonprofit, like the American Cancer Society). In essence, public health workers promote and protect the health of whole populations.

UTA aims to prepare its graduates for any job option. Public health programs like UTA’s cover public policy, transportation, political science, and urban planning, says Peace Ossom Williamson, director of Research Data Services at UTA Libraries, who also teaches public health informatics.

That’s why the location of this interdisciplinary program is critical. Being on an undergraduate campus as opposed to a health science branch means public health can draw on resources from social work, business, public policy, and others. Such partnerships allow the program to offer classes like public health communications, public policy, and public

administration to prepare students for the range of responsibilities in the field.

The broad influence of public health is reflected in the recent decision to include the “Introduction to Public Health” course among the social and behavioral sciences courses that satisfy general education core requirements.

“The exciting thing is, even if we have students who aren’t public health majors, these students will come out of the course and be more aware of the vulnerable populations in their community,” says Assistant Professor Becky Garner, who oversees the bachelor’s program.

Reflecting the Community

UTA is working on exposing more students to public health so that they’re not just stumbling into the field. For some students, it’s a hard sell.

“My students talk about how their parents or grandparents are afraid to see health care professionals and receive treatment. Many times, when they do go, language, health literacy, or insurance are barriers,” Dr. Garner says. “They see that if they can help their family and the folks in their community get access to healthcare services, their quality of life and health status can be so much better.”

UTA’s goal was to create a program that helped the public health field match the diversity of the community. The APHA reported that just 10 percent of the public health workforce was minority.

“Having a diverse workforce is important,” Garner says. “It allows for decisions to be made about health care that will reflect the values and beliefs of the entire population and heighten the cultural sensitivity of services delivered.”

A diverse public health workforce can lead to better health outcomes by breaking down barriers to help and informing the approach. “People who are from your ethnic background, religious background, they’re going to be more informed about that background and how to speak,” Dr. Williamson says.

The culture at UTA makes the public health program uniquely positioned to have an impact.

“In Arlington, there’s a mindset about meeting community need. That’s one of the reasons I came here,” Carlson says. “I was amazed at the desire of the UTA student population to help their community. That is the ideal student population you dream of working with in public health.”

Experiential Learning

An emphasis of the program is producing field-ready graduates by providing a solid education and marketable experiences.

“Many classes are designated as service learning classes. Students take what they’re learning and put it into practice in the real world,” Garner says. “We heard over and over that student were graduating from different programs at other schools, they had the knowledge but they hadn’t been

exposed to the practice part.”

In Williamson’s informatics class, students research a public health topic and produce a web resource for their intended audience. The websites remain live after the conclusion of class so that students can show prospective employers that they possess the skills needed to do effective public health outreach.

One such website, *Talking Diabetes*, teaches elderly and low-income diabetics on how to eat healthily when they lack the means. The site includes quizzes, such as “How do I know if I live in a food desert?” and offers advice on how to cope, such as rinsing sodium out of canned vegetables or starting a garden.

“I used to be one of those people who thought, why are people who are on food stamps so unhealthy?” says site co-creator Brandie Dawkins, a senior double majoring in public health and nursing. “When I did research, I realized they don’t have a choice. Dollar stores and fast food restaurants are their only food choices. When you go to Dollar Store, you can buy cheap foods, stocking up on high-sodium ramen noodles. Families need to stretch that dollar.”

In an undergraduate class taught by Laura Phipps, adjunct assistant professor in the College, students create their own nongovernmental organization (NGO) designed to address an environmental issue for a population in need and write a grant funding proposal to support the NGO. They also create a one-minute elevator pitch for funding.

Students in Dr. Phipps’ graduate class write a policy paper on an environmental issue affecting a population and prepare congressional testimony. One group is looking at advocating for migrant workers at meat processing plants while another is researching rooftop gardens and how to educate people on creating one.

Focused Outreach

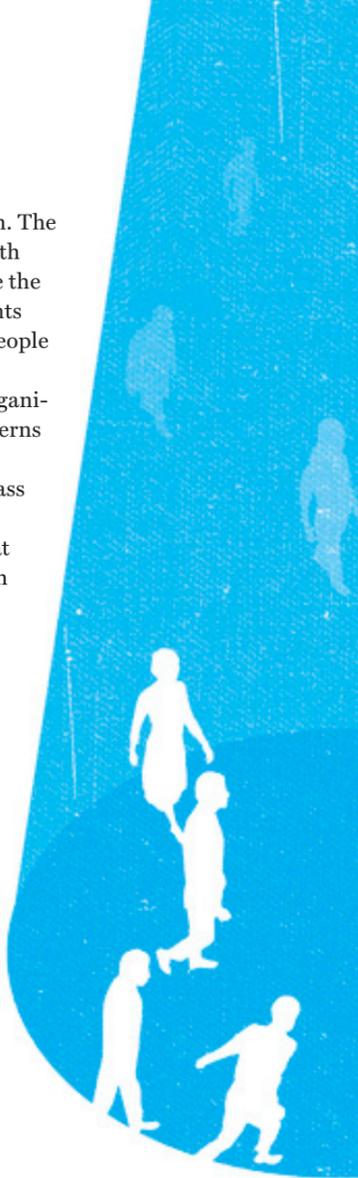
These experiences are not limited to the classroom. The public health program has also hosted public health events on campus as a way for students to practice the work they’ll be doing after graduation. The students held a diabetes campaign, resulting in over 600 people on campus completing a diabetes screening.

UTA has numerous partnerships with local organizations, including the City of Arlington, where interns work on a program to reduce mosquito-borne illnesses. Plans are underway for a food handlers’ class to be taught in English, Spanish, and Vietnamese. Certificate students are involved in clinical trials at UT Southwestern Medical Center and at Arlington Urban Ministries, where students volunteered with a mobile food bank and do semester long internship on how to work with clients who are underserved.

“UTA’s College of Nursing and Health Innovation is making a significant contribution to wellness and disease prevention in the DFW metroplex and throughout the state by investing in an ambitious public health program,” says Lillie Biggins, who recently retired as president of Texas Health Harris Methodist Fort Worth. She’s also a member of the DFW Airport Board of Directors, and a UTA alumna. “The introduction of this health care program confirms UTA’s stature as a leader in health care education in both the region and the state.”



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Dream Makers Gala marks a new beginning for scholarship fundraising

Traditional event supports educating aspiring health care workers

Through Dream Makers, a scholarship program for deserving students, the College of Nursing and Health Innovation has provided financial assistance to hundreds of students, helping them complete their education.

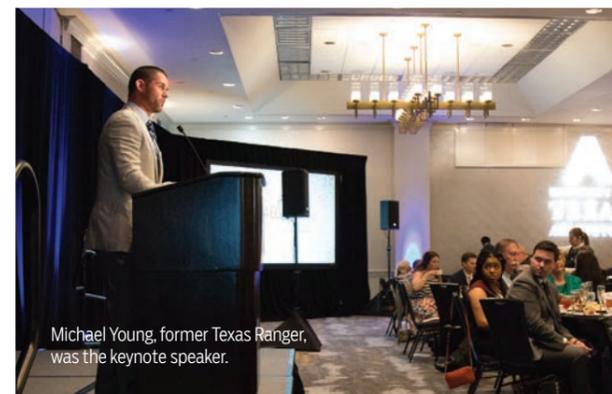
Many of the recipients of these scholarships have gone on to enriching careers in nursing practice, athletic training, and academia.

For the first 16 years of its existence, the College celebrated donors and scholarship recipients at a Dream Makers spring luncheon.

Last year the College decided to replace the luncheon with a gala. More than 300 guests attended the March 2018 inaugural event, a glittering evening that doubled as a fundraiser and a salute to excellence. The gala attracted several corporate sponsors, including title sponsor Academic Partnerships, a big supporter of Dream Makers since its inception; as well as Scottish Rite; Baylor Orthopedic and

Spine Hospital at Arlington; Texas Health Resources; UT Southwestern Medical Center; and Children's Health.

The money raised will make it possible to help more students and to award larger scholarships.



Michael Young, former Texas Ranger, was the keynote speaker.

1995

Karla Ramberger (BSN) was named chief nursing officer of Las Vegas' Sunrise Hospital and Health Care. She was previously chief nursing officer at Methodist Dallas Medical Center.

1996

Texas Gov. Greg Abbott has reappointed **Karen Pickard** (BSN) to the Advisory Council on Emergency Medical Services. She is a registered nurse, paramedic, and faculty member for the EMS program at Navarro College in Waxahachie, Texas.

2010

Ugochi Banogu (BSN; '16 MSN, Family Nurse Practitioner) is working as a nurse practitioner in the Dallas-Fort Worth Metroplex.

Roger Sancho (BS, Athletic Training) is an assistant athletic trainer for the Golden State Warriors.

2011

Michaela "Mickie" Watson (BSN) was named a 2017 Each Moment Matters Honoree by the Presbyterian Communities and Service Foundation in Dallas, Texas. The awards program supports the Faith Presbyterian Hospice program in Dallas. Watson is the trauma program manager at Texas Health Resources.

2013

Brittni McGill (MS, Nursing Administration) has been appointed chief nursing officer for the Norman Regional Health System in Oklahoma. She is a nationally certified critical care nurse.

Rachel Prewitt (MSN) is an acute care nurse practitioner at the Dallas Limb Restoration Center.



2014

Dorothy Osborne (BSN) has earned a master's degree in nursing at UTA.

2015

Tracy Casey (MSN, Family Nurse Practitioner) has joined Christus Trinity Clinic-Gladewater.

Kyle Kratzenberg (MS, Kinesiology) has joined Cornerstone, a private school in San Antonio, as head athletic trainer.

Tonychris Nnaka (BSN) is a critical care registered nurse at Parkland Hospital in Dallas, Texas.

2016

Rodney Caffey (MS, Athletic Training) is a master trainer and performance specialist at AOA Performance Institute in Mansfield, Texas.

Jalissa Harkins (MS, Athletic Training) is working as a safety and injury prevention specialist at Daifuku Elite Line Services in Carrollton, Texas.

2017

Corinne del Perugia-Stoddart (MSN), an advanced practice registered nurse, has joined the family medicine team of Cheshire Medical Center in Keene, New Hampshire.

Bryan Orona (BSN) joined Texas Health Resources as a registered nurse in neurosurgical intensive care.

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.



Kinesiology doctorate program sets high bar for excellence

The College of Nursing and Health Innovation's doctorate in kinesiology program has had 21 students since it was launched in fall 2016. Collectively the students have published numerous papers in peer reviewed journals, presented their work at local, national, and international conferences, and won several awards. Early in 2018, the American Heart Association awarded one student a predoctoral fellowship, a coveted award that recognizes outstanding graduate students with promising careers in biomedical-related research.

To date, three students have graduated and 18 are currently enrolled in the program, a number that far surpasses initial enrollment projections, says Matthew Brothers, associate professor of kinesiology and associate chair of graduate programs in exercise science.

"When the program was being developed, we had projected we would have 12 students enrolled by the start of our third year," says Brothers. "Our longterm goals are to train

and graduate the best PhD students. And we aim to be the number one kinesiology program in the country."

The students work closely with the department's internationally renowned faculty, exploring research interests such as exercise physiology, neural cardiovascular control, cardiovascular physiology, bone and vascular health, calcium signaling, and biomechanics.

This intense focus on research is what brought Brandi Stephens to UTA and to the program.

"I was attracted to kinesiology because I am interested in the cardiovascular system and its role in both health and disease," says Stephens, who holds a bachelor's degree in research psychology and a master's in kinesiology from UTA. She aspires to run her own lab as a research professor.

"There are lots of opportunities for collaboration," she says. "It's very research-heavy here. And there are opportunities to collaborate outside of the lab. I'm really grateful to be a part of UTA."



MAVERICKS Care

BE A MAVERICK.

UTA is proud to celebrate our students and alumni who are first responders, working at the frontlines of crises to provide help wherever it is needed.

SHALAH PUCKETT, BSN student
Transport Team Paramedic
Children's Health Hospital in Dallas



uta.edu/discover

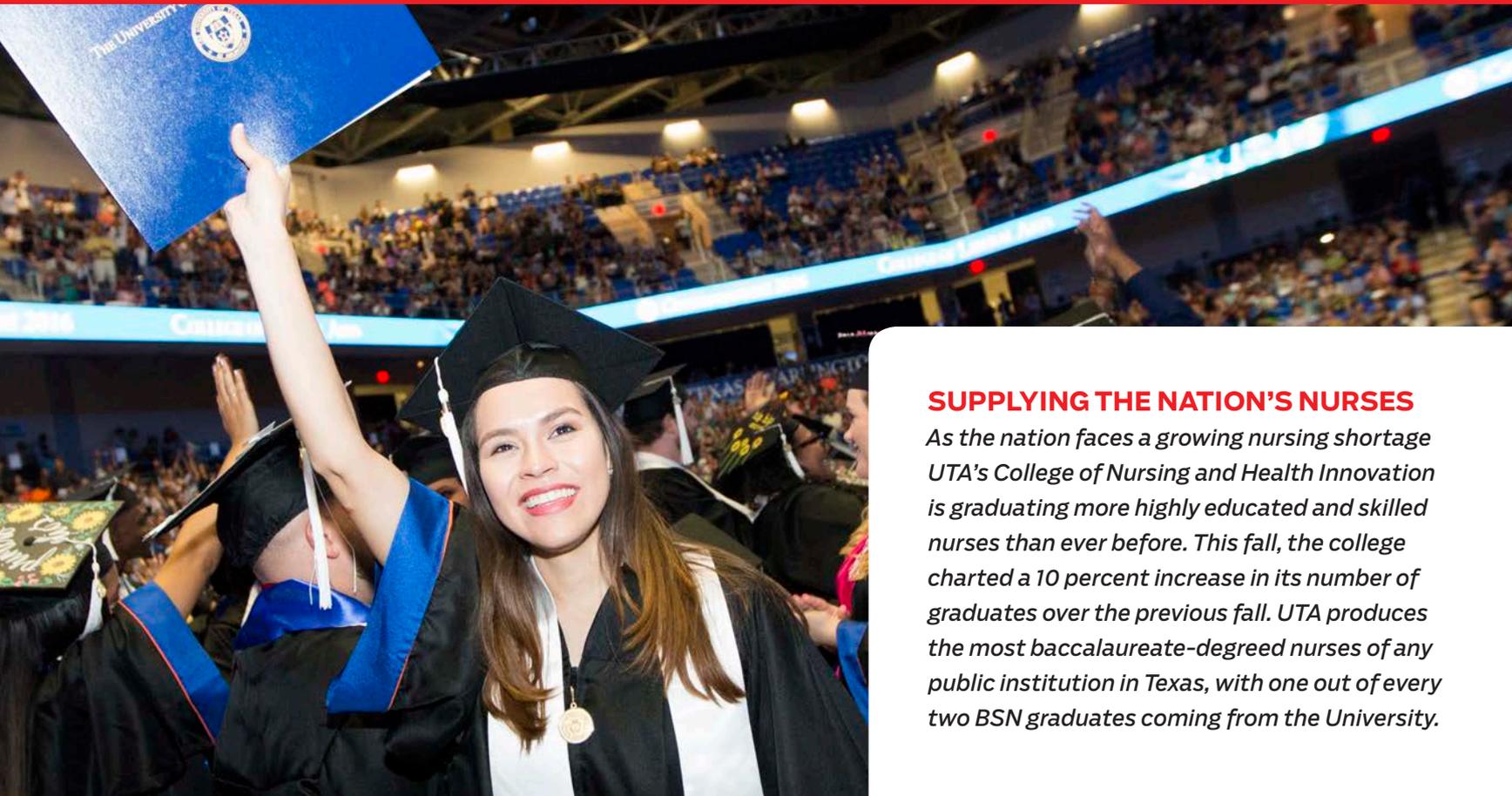


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The future of health care



SUPPLYING THE NATION'S NURSES

As the nation faces a growing nursing shortage UTA's College of Nursing and Health Innovation is graduating more highly educated and skilled nurses than ever before. This fall, the college charted a 10 percent increase in its number of graduates over the previous fall. UTA produces the most baccalaureate-degreed nurses of any public institution in Texas, with one out of every two BSN graduates coming from the University.