


Discoveries

RESEARCH
& SCHOLARLY
ACTIVITY



A wireless device, small enough to fit in the palm of your hand, may hold the key to understanding risk factors that contribute to falls in vulnerable populations. To get the study underway, the team of multidisciplinary researchers have enlisted the assistance of another group of experts.

Research Assistant

Institute provides support services that help clinical faculty with investigations

Tam Nguyen, M.D., assistant professor of head and neck surgery in the School of Medicine, and Steve Zupancic, Au.D., Ph.D., ('03, '07) assistant professor of speech-language and hearing sciences in the School of Allied Health Sciences



NEAL HINKLE

BY DANETTE BAKER

The wireless device Steve Zupancic, Au.D., Ph.D., (SOAHS '03, '07) holds in his hand may hold the key to identifying why some people fall. The highly innovative device — developed by a team of multidisciplinary researchers — combines the capabilities of a gyroscope and an accelerometer, but is small enough to be easily worn by a human volunteer. It will be used as part of a new study to gather data that can help identify risk factors that contribute to falls in patients with compromised balance.

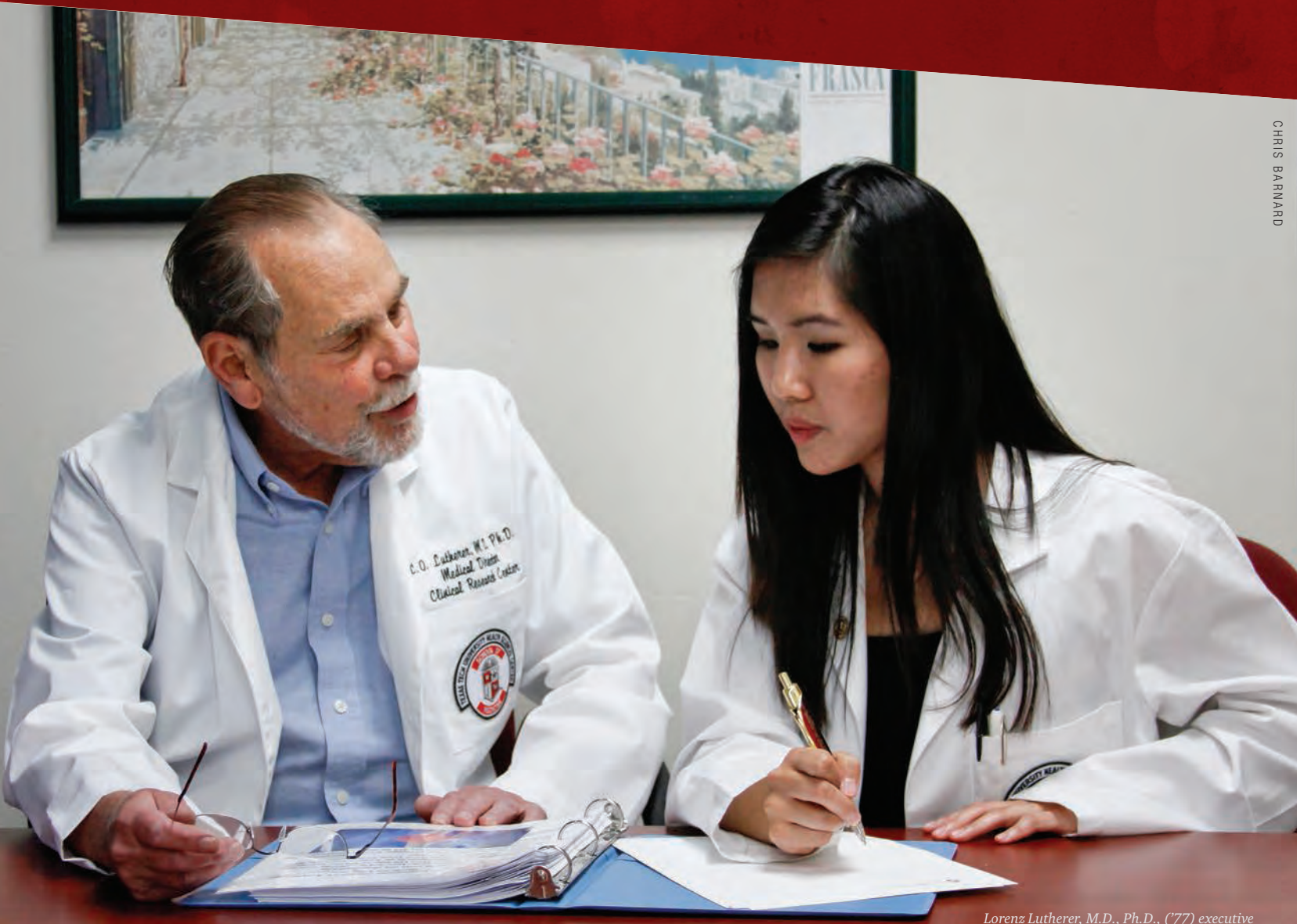
The research team is comprised of Zupancic, assistant professor of speech-language and hearing sciences in the TTUHSC School of Allied Health Sciences; Tam Nguyen, M.D., assistant professor of head and neck surgery in the TTUHSC School of Medicine; and Donald Lie, Ph.D., Keh-Shew Lu Regents Chair and associate professor of electrical engineering at the TTU Whitacre College of Engineering.

Ready to begin their study, the trio turned to the experts in the Clinical Research Institute for assistance in obtaining approval from the Institutional Review Board. All studies involving humans must have approval from the IRB, a board whose sole job is to protect humans who take part in research. Securing approval is not a complicated process but can postpone the start of a study if the researcher is not familiar with such applications, said Catherine Lovett, M.S.N., R.N., CCRC, (SON '08) managing director of the Clinical Research Institute.

“The purpose of the IRB application is to clearly explain to the IRB your study plan, also known as your protocol. You are answering questions using information from your study protocol. If the answer isn't in your protocol then you know you need to insert it. So the key is having a well-written protocol. That is actually the true challenge; developing a scientifically sound protocol.”

The institute provides resources to TTUHSC faculty beginning with pre-study activities and study conduct, through study completion, including publication and/or preparation for conference presentation. In addition, the office actively markets the institution's clinical trial capabilities and networks with all TTUHSC campuses to facilitate cross-campus collaboration on potential clinical trials.

The concept of support for clinical faculty dates back to 2001 when the TTUHSC Division of Clinical Research was established to assist clinical faculty interested in conducting research with industry-sponsored drug trials. In 2009, School of Medicine Dean Steven L. Berk, M.D., converted that office into the Clinical Research Center within the school. The center's primary mission was supporting the clinical faculty to conduct investigator-initiated research, important for continuing approval of residency programs, faculty promotion and recognition of the school. In 2010, TTUHSC President Tedd L. Mitchell, M.D., elevated the center to an institute, emphasizing the need for an increase in research activity from all schools and to facilitate interdisciplinary studies.



CHRIS BARNARD

Lorenz Lutherer, M.D., Ph.D., ('77) executive director of the Clinical Research Institute, and Helen Wang, second-year medical student



Susan Doctero, B.S.N., C.C.R.N.,
 coordinator for the Clinical Research Institute

“Historically the mission of this institution was, and still is, education; but there is a perception that is all we are, despite the fact that we’ve had pockets of very successful research,” Mitchell said. “We need to change that perception so that we are seen as strong in research as we are in education.

“To do that, we need more of our faculty doing the research and publishing in peer-reviewed journals and presenting at national and international conferences to develop that reputation.

“Yet, we can’t ask our faculty to do that without the right support.”

Balancing research studies and clinical obligations can create a perfect storm in an academic health institution. Time constraints are one of the greatest challenges, said Lorenz Lutherer, M.D., Ph.D., (SOM ’77), executive director of the Clinical Research Institute and a long-time School of Medicine faculty member in the Department of Cell Physiology and Molecular Biophysics. Clinical faculty carry a full-time load — seeing patients and teaching — leaving little time to do research. Additionally, most were only trained to become practitioners and have minimal background in research, making it seem somewhat overwhelming on several levels, he said.

“The availability of the Clinical Research Institute and its staff to help in the design and conduct of studies provides an opportunity that was not present before for many faculty to do research,” Lutherer said.

For those like Zupancic and colleagues who are experienced researchers, the institute becomes ancillary staff. Zupancic and Nguyen routinely see patients in clinic who have compromised balance, which can become a health hazard especially among the aging population. Falls often result in hip fractures that can in turn further exacerbate risk factors for falling. Teaming up with Lie, who also is an adjunct professor in the School of Medicine’s Department of Surgery, the trio determined that by monitoring these patients that are at greatest risk for falls, they can identify ways to help prevent them and/or teach their patients ways to fall safely to minimize serious injuries.

They developed the monitoring device to be worn by the patient, but when it came time to submit the IRB application, consulting the experts just made sense, Zupancic said. “Doing this on our own would be a less efficient use of time. We all have done research, and we could do the legwork but because they deal with these on a daily basis, they are able to review the proposal and look for points of contention that we can correct before ever submitting it to the IRB.”

Once their study is complete, Zupancic said the group plans also to utilize the statistical consultants available through the institute for data analysis in order to expedite presentation or publication of the data. Having such assistance is helpful to an independent researcher, Zupancic said, because the time it requires to compile and do the appropriate data analysis is not always available.



Their study is one of 24 to have assistance from the institute in the past year; a number of others are in the planning stages, Lutherer said. Additionally, the institute continues to work on the studies initiated before the transition. In total, there are almost 100 studies in various stages of the research process. These studies involve clinical faculty, graduate faculty, residents and students, Lutherer said.

Already, there is a great deal of variety among the studies being conducted, including research on sinus node dysfunction, sleep apnea, therapeutic hypothermia and influenza. The institute is also assisting with 10 studies in the Timothy J. Harnar Burn Center at UMC Health System in Lubbock. These studies involve faculty from the School of Medicine Department of Surgery and from the School of Nursing as well as nursing staff employed by the hospital. One study, Lutherer cited, is a FDA Phase 2 clinical trial sponsored in part by the Department of Defense that is testing the development of a novel way to promote growth of new skin over a burned area. As an unplanned extension of the study, co-investigators John Griswold, M.D., professor and chairman, and Sharmila Dissanaikie, M.D., assistant professor, both in the Department of Surgery, received through the institute FDA-approval for compassionate use of the skin growth technique on a premature infant, being treated in UMC's Pediatric Intensive Care Unit.

"Thus far, the number of studies being done with support from the Clinical Research Institute has far exceeded expectations, and the number continues to grow," Lutherer said. "Importantly, progress is being made not only in increasing the number and variety of studies being done in each school but also in fostering cooperative studies between faculty of different schools and multiple campuses.

"In conjunction with its support role, the institute has developed a number of educational programs for students, which soon will be available in all schools on all campuses."

Eventually the institute will expand and have offices on multiple TTUHSC campuses, Mitchell said, adding that Amarillo will more than likely be the first step in expansion as the School of Medicine there began a similar initiative in 2006 (featured in the Winter 2007 issue of Pulse). The addition of biomedical sciences to the Paul L. Foster School of Medicine at El Paso will make a seamless transition to that campus as well, Mitchell added.

Another piece to enhancing the institution's research presence began this year with implementation of the new Department of Public Health in the School of Medicine at Lubbock. (See story page 11.) The first students could be admitted to the program in fall 2012, and within the next five to 10 years the department will become a School of Public Health. The Clinical Research Institute will play a major role in facilitating and supporting research in that school.

"We have a natural strength in our physical location to really impact population studies, particularly those unique to rural West Texas," Mitchell said. "Having not only the location, but multiple disciplines and now the research support and focus on public health really opens some doors for the future."