



## Center for Remote Healthcare Technology – Extension in Qatar

ENGINEERING AN IMPROVED QUALITY OF LIFE “HEALTH CARE”



### Texas A&M TEES Center for Remote Healthcare Technology Tasked With Advancing Remote Healthcare Technologies And Healthcare Systems

Texas A&M's Engineering Experiment Station (TEES) — the engineering research agency of the State of Texas, and part of The Texas A&M University System, has established a new Center for Remote Healthcare Technology (CRHT) tasked with advancing remote healthcare technologies and remote healthcare systems so that people anywhere can be linked to healthcare providers and receive timely, effective and personalized care.

[A TEES release](#) notes that while significant advances have been made in health care globally, more than one billion individuals worldwide still lack access to health care systems, and many of those who are receiving medical care could benefit from improved and more adequate treatment through accurate and frequent monitoring of their conditions.



“With the advancement in both technologies for personalized medicine and wireless communications, I believe this new Center for Remote Healthcare Technologies will provide a focal point for the Texas A&M Engineering Experiment Station and the Texas A&M University System to make huge advances in these areas,” comments [Dr. Gerard L. Coté](#), the new center's interim director. Today's health challenges include chronic medical conditions such as diabetes, and cancer; infectious diseases like HIV, and conditions closely associated with poverty such as malnutrition. There is also critical need for health status monitoring for the elderly, athletes, astronauts and field-deployed military personnel.

The CHRT aims to help fulfill this mission by promoting fundamental research in medical devices and information systems that can efficiently and reliably gather, process and convey medical and diagnostic data to physicians anywhere so they are able to provide care at a distance. Toward these objectives, the center will not only perform fundamental research in both biomedical sensors and wireless systems to reliably and efficiently communicate information, but also develop prototype systems that incorporate the results of research and will engage medical device industry, state and federal agencies, and the medical community, in the design, development, testing and deployment of those systems.

“The vision of this new center is focused on not only producing the fundamental discoveries that will advance remote healthcare, but also translating those discoveries in partnership with government agencies and industry into practical systems for deployment in a variety of remote settings,” says Dr. Coté, who is also Head of the Department of Biomedical Engineering, and holds the Charles H. and Bettye Barclay Professorship in Engineering at Texas A&M University. Dr. Coté is a Fellow of the Institute of Electrical and Electronics Engineers, the Biomedical Engineering Society, and the American Institute for Medical and Biological Engineering. His primary research interests include the use of optics for medical diagnostics and biomedical sensing, and he directs the Optical Biosensing Laboratory whose focus is design, development, theoretical modeling and analysis of optical sensors for biomedical measurements. Research within the laboratory is multidisciplinary and involves several investigators from around the world including medical

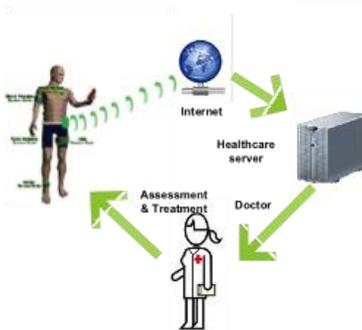
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including medical doctors, life science faculty, and faculty from other engineering disciplines, national laboratory staff and industry personnel.

Established in 1914, the [Texas A&M Engineering Experiment Station](#) provides quality research and practical engineering answers to critical state and national needs. The agency partners with academic institutions, industries, and communities to solve problems and help improve quality of life, promote economic development, and enhance the educational systems of Texas.

With headquarters in College Station, the agency's contributions are made in every region of Texas through its divisions and affiliations with 16 Texas universities, six community colleges, and 35 multidisciplinary research centers. TEES serves as a catalyst for collaborations that position Texas to be especially competitive for federal funding, and plays a major role in strengthening research leadership across the state. Since the agency's inception its purpose has been to conduct research to produce answers to urban difficulties and thus enhance the quality of life in Texas and the nation. The A&M System brings over \$730 million to the state's economy annually. TEES alone \$120 million.



As part of the A&M System, Texas A&M Engineering Experiment Station provides clients with access to the full expertise of the university's 900 research scientists, engineers, and professional staff. An additional benefit to clients is that with low cost research support from Texas A&M graduate and post doctoral students. TEES' mission is to identify and conduct research in areas critical to the state's economic development and quality of life; to promote new technology and entrepreneurship; to leverage and network human, physical, and financial resources; and to enhance and strengthen education in Texas, addressing specific technological problems society currently faces and will be challenged with in the future.

#### CRHT- Extension in Qatar



Dr. Khalid Qaraqe said, "Developing new mobile sensors and imaging techniques for screening, diagnosis, and health management, as well as other related new initiatives such as micro/nanotechnology for biomedical and wireless sensors, health care information databases, cloud computing, security and encryption will save millions of lives and billions of dollars."

The vision of the CRHT extension at Qatar is to be a leader in delivering healthcare anytime anywhere by innovative engineering solutions that utilize state-of-the art informatics systems, genomics, diagnostic, and micro/nano sensing technologies to improve the medical outcomes of people, when a healthcare provider's physical presence is not possible. Technology can be used to advance health at a large scale and in an efficient, reliable, and affordable manner. Non-communicable diseases are major health burden and will disproportionately impact the region, and have long-term impact that can be prevented.

The overall mission of the CRHT extension at Qatar is to perform fundamental and translational research and development toward making innovative advances in healthcare technology and its delivery. Our goals are to (i) promote fundamental research in design of medical devices and information systems that efficiently and reliably gather, process and convey medical and diagnostic data to patients and/or healthcare providers such as physicians or nurses at a distance; (ii) promote translational research in the development of prototype medical devices and information systems that incorporate the results of the research; (iii) engage the patients, medical, and remote communities in testing and deploying these systems and (iv) build bridge and collaborate on fundamental and translational research with QF, QBRI, QNRF, Sidra, HMC, Aspire zone etc., in addition to governmental organizations, medical device and communications industries.

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