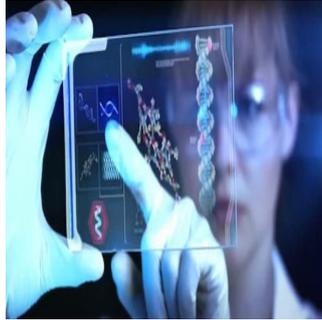## XPRIZE Competition Seeks Real-World Tricorders For Innovative Diagnostics

UC San Diego's Clinical and Translational Research Institute (CTRI) has been named the official testing site for Qualcomm Foundation's Tricorder XPRIZE. Beginning in early summer, CTRI physicians, technicians and staff will manage logistics and personnel, including the recruitment of nearly 500 volunteers to serve as consumer-testers of the candidate devices which aim to offer self-diagnosis to users in the future.

The Qualcomm Tricorder XPRIZE is a worldwide competition. Teams compete in the development of innovative and consumer-friendly devices that are able to capture vital health metrics and diagnose a set of 15 physiological conditions. Through imagination and the integration of technology, participating teams aspire to deliver a portable, non-invasive tool which will reliably diagnose users' health through sensors and imaging technologies. The winning teams will be awarded $10 million: $7 million for first prize, $2 million for second prize and $1 million for third prize.

Inspired by Star Trek's Tricorder

The testing will take place at UC San Diego's CTRI, UC San Diego Medical Center's Hillcrest location, and at various primary care and specialty clinics within the UC San Diego Health System. Final results will not be announced until 2016, which coincides with the 50th anniversary of the debut of the tricorder medical device in the original Star Trek television series.

"Of course, the tricorder in *Star Trek* was originally fantasy, a wonderful bit of science fiction," said Gary S. Firestein, MD, the director of CTRI and dean and associate vice chancellor of translational medicine at UC San Diego. "But the idea – and this XPRIZE competition – symbolises a very real vision of how we can shape a healthier future with creative use of cutting edge discoveries. It's emblematic of our focus on 'disruptive innovation' to improve human health. We are looking forward to working with XPRIZE in the quest to seek out new technologies."

"Disruptive Innovation"

Devices included in the competition must be able to capture health metrics including blood pressure, temperature and respiratory rate in real time. They must also accurately diagnose a set of common physiological conditions including atrial fibrillation, chronic obstructive pulmonary disease, diabetes, hepatitis A, pneumonia, stroke and tuberculosis.

"A tricorder could empower patients to capture reliable diagnostic data that will help them self-evaluate symptoms they are having and better prepare them for discussing their symptoms with their health care team," according to Gene "Rusty" Kallenberg, MD, professor and vice-chair, Department of Family Medicine and Public Health at UC San Diego School of Medicine.

Qualcomm Institute Participation

The XPRIZE competition oversight team will include technical support staff from the Qualcomm Institute at UCSD. They will be tasked with capturing participants' data within the test setting, which consists of the tricorder, the consumer-tester, the on-site technician and monitoring tools. Data will be moved to a central repository for analysis and scoring based on the metrics captured by the candidate devices.

Tricorder testers will provide consent and receive instruction in the use of the devices. They will be identified by a database programmer who will produce reports pinpointing potential consumer-testers according to location, department or disease condition. The testing experience will be overseen by coordinators who have been trained in the management of clinical trials, and follow-up surveys will be conducted.

In 2014, the 10 finalist teams represented academic and private organisations from Canada, India, Slovenia, Taiwan, the United Kingdom and the United States.

Source: UC San Diego Health System

Image Credit: Google Images

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