TXMRC ANNOUNCES 2011 RESEARCH AWARDS

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A medical technology consortium focused on moving innovation to the marketplace has announced $400,000 in a second round of grants to Dallas-Fort Worth area researchers in critical health care fields.

The four awards from Texas Medical Research Collaborative carry $100,000 each and will propel research in the areas of digestive disorders, prevention of diabetic ulcers, non-invasive blood sugar readings and early diagnosis of childhood autism.

TxMRC was founded in 2009 as a collaborative research partnership among The University of Texas at Arlington, The University of Texas at Dallas, Texas Instruments, Texas Health Research & Education Institute, the research and medical education arm of Texas Health Resources, and the University of North Texas Health Science Center. The Arlington Chamber of Commerce’s Center for Innovation manages the partnership.

The annual grants are intended jumpstart research that can solve real-world problems and develop new technologies in a relatively short time frame. Grant recipients work with representatives of the consortium’s academic, industry and health care partners to develop pilot programs aimed at attracting sustained funding from external sources, such as federal, state or private agencies.

Clinical work on the projects generally takes place at Texas Health hospitals and other facilities, including the Texas Health Minimally Invasive Technology Center on the campus of Texas Health Presbyterian Hospital Dallas.

“These are technologies that can drive better health care with lower costs,” said Ron Elsenbaumer, UT Arlington vice president for research and federal relations. “Seeing innovation develop through collaborative efforts like this is a core strength of the alliance.”

Shekar Rao, the executive director of TxMRC, and vice president and Chief Technology Officer at the Center for Innovation, said at the end of one year, researchers must show that their project can deliver results.

“Early stage funding of university innovation is critical,” Rao said. “These projects are selected on the basis of their relevance to market needs. Since they have to deliver a working prototype, the deals are de-risked for the next level of funding from angel investors and venture capitalists.”

Rao added that the collaboration among various entities in the DFW area will spur growth in the North Texas medical device industry.

Allen Bowling, manager of research & consortia for the Analog Technology Development group at Texas Instruments, said the consortium affords Texas Instruments an opportunity to collaborate with engineering research professors and medical clinicians on applications of electronics to key medical-care needs.

“The cross-collaboration of professors from the two engineering schools at UT Arlington and UT Dallas, who have knowledge of engineering solutions, coupled with medical-care physicians, who have knowledge of high-impact medical-care needs, has made this a unique and outstanding interaction with great opportunities for commercialization,” Bowling said.

“This collaboration brings top minds in medicine, engineering, computer technology and research together,” said Marsha Brown, director of research development at Texas Health Research & Education Institute. “It helps prepare researchers for applying for the next level of national funding. The end result should be clinical applications that bring technology to the bedside faster.”

The 2011 research award recipients are:
J.-C. Chiao, UT Arlington electrical engineering associate professor and principal investigator, for “A Wireless Micro Gastro-Stimulator for Treatment of Severe Gastric Dysmotility.” Chiao’s team will determine whether tiny electrical stimulations can enable cancer patients who are undergoing chemotherapy treatments to more easily digest food.

Dereje Agonafer, a professor in mechanical and aerospace engineering, is the co-principal investigator. Hoi Lee and Jin Liu from UT Dallas also are co-PIs as well. The team includes Dr. Rajeev Jain of Presbyterian Hospital, a part of the medical staff of Texas Health Dallas.

Haiying Huang, associate professor of mechanical and aerospace engineering, for “Embedding Passive Wireless Shear/Pressure Sensors in Shoes for Diabetic Foot Diagnostic and Ulcer prevention.” Huang’s co-principal investigator is Bhaskar Banerjee from UT Dallas. The team includes Dr. Matthew Pompeo of the medical staff of Texas Health Dallas and Dr. Travis Motley of the University of North Texas Health Science Center.

The team proposed to customize shoes with a passive wireless sensor array that measures shear and pressure forces simultaneously at the same location. The aim is to pinpoint where foot ulcers begin for diabetic patients and to stop them before they progress to the point where amputation is indicated.

Walter Hu, UT Dallas associate prof of electrical engineering, for “Non-Invasive Salivary Diagnostics of Diabetes Using Sensitive Nanoelectric Biosensor Strips.” Hu’s team includes UNTHSC researchers Paul Bowman, Nusrath Habiba and Kimberly Fulda. The project aims to develop a reliable system that diabetics can use to test their blood sugar with a lick of a strip. Now, diabetics must prick fingers and collect blood sample for an accurate reading.

Dan Popa, UT Arlington associate professor of electrical engineering, and Nicoleta Bugnariu, a UNTHSC associate professor, for creating a human robot interaction system, which will be used for early diagnosis and treatment for children suffering from autism spectrum disorders.

Visit http://www.uta.edu/research/UTA-UTD-TI-THRE-jointprogram.htm to find out more about the Texas Medical Research Collaborative.

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