

Distributed Health Technologies

In the era of “targeted therapies” and “personalized medicine”, not only it is essential to develop the technologies that are point-of-care but it is equally important to bring these advanced health technologies out of academic institutions to the patient’s bedside and/or into their homes. Hence, the idea of “Distributed Health Technologies” (DHT) that will design, develop, and test technologies that, at their foundation, are compatible with large-scale distribution to the general community. DHT will incorporate technology efforts characterized as "point-of-care" or "personalized medicine" into an integrated research and development structure. The goal of DHT is to develop the technologies that will deliver the health care to the general population in large numbers. DHT will not only enable the delivery of personalized medicine but will also help to discover the therapeutic biomarkers for targeted therapies. Implementation of DHT requires both deep knowledge in key fields and formation of new ideas across a broad range of disciplines to achieve success. This cluster of investigators will be trained and working at the cross roads of engineering, medicine and biology to push the horizons of deliverable health care technologies. The cluster faculty members will work across multiple disciplines (engineering and medical sciences, MEMS, clinical medicine, bioinformatics and computational biology, quantitative animal models, genetics, and molecular diagnostics) and will bring a “bias” towards fundamentally different approaches to problems (technology- driven, discovery-driven, and clinically-driven). The integration of these expert individuals into the ongoing efforts in life sciences and technology at UM will bridge the serious gap between bench-side and bedside. The cluster will accelerate the process of integrating engineering solutions into clinical medicine from the conception stage, which is the thrust of next generation of life sciences technologies.