HouseAggie: A Living Lab to Measure, Design, and Invent for Better Lives

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Participating Units: College of Engineering (ECE, CSE, ETID), HSC, Brain and Spine Institute, College of Architecture (ARCH, CS, LAUP, VIS), College of Liberal Arts (COMM, PHIL, PSYC), College of Science (MATH), College of Education and Human Development (TLC, EP, HK), College of Geosciences (GEOG), College of Nursing, School of Public Health, and others as they desire.
Amount Requested: $5M

Executive Summary:
Both Georgia Tech and MIT have on-campus smart homes/apartments for researchers to study and design for active living in real time. These homes are complete with hundreds of commercial and researcher-build sensors to record, monitor, and influence every moment of the inhabitant's lives. These sensors allow researchers to develop and test innovative new technologies to help people live better lives---mentally, physically, and sustainably. We propose to build a collection of four 2-bedroom apartments to enable researchers at Texas A&M University to develop life-enabling solutions across a variety of domains. Volunteer occupants will live in the home for varying periods of time, living as they do normally, with no contact from researchers, except that sensors will monitor nearly every aspect. Researchers will be able to test new innovations/interventions in real time with the occupants.

The extent of the impact across the many TAMU departments, campuses, and colleges will be vast. Many of the everyday activities that people perform are acted out in their homes, and as such, our home environment plays a large role in our general health and well-being. Given the increased ubiquity of smartphones and wearable technologies, and the rapidly developing “Internet of Things”, there are huge opportunities to study the home environment, gain insight into the field of ambient intelligence, and develop technologies that can improve the life of the general populace. A connected home environment would provide a flexible living space which could be adapted to monitor a variety of conditions and inhabitants.

Currently such an environment does not exist on the Texas A&M campus. Any research into these areas is done in lab environments or must be set up in a home, where it cannot offer the seamless integration that such a facility would provide. Such facilities do exist at competing universities such as Georgia Tech and MIT. The Georgia Tech Aware Home Research Initiative (AHRI) was started in 1998, and consists of the Aware Home, the Wesley Woods Towers Senior Living apartment, HomeLab, and the Child Study Lab. Central to this initiative is the Aware Home, a 3-story, 5040 sq. ft. facility that provides an authentic home environment for research into health and well-being. At MIT, the PlaceLab (a joint initiative with TIAX, LLC) is a residential one-bedroom condominium that allows researchers to study human interaction with new technologies in the home environment.

Georgia Tech: AHRI: http://www.awarehome.gatech.edu/drupal/?q=content/about-ahri
MIT: The PlaceLab: http://web.mit.edu/cron/group/house_n/placelab.html