



UTA researchers are answering the call to keep America's aging population safe, healthy, and thriving. UTA researchers are working to better understand the **aging process**, create more effective ways to **control pain**, employ **innovative uses of technology to enhance lives**, and **improve the human condition** for this growing demographic.

► **Enhancing quality of life**

- **Marco Brotto** (Nursing) is studying the molecular mechanisms of muscle aging that can lead to muscle loss and weakness
- To combat hearing loss in aging populations, **Sungyong Jung** (Electrical Engineering) is building more efficient integrated circuits to improve the quality of hearing aids
- **Julienne Greer** (Theatre Arts) is combining Shakespeare and social robotics with the goal of improving the psychological well-being of older adults, who often experience higher levels of loneliness, anxiety and depression
- **Mark Haykowsky** (Nursing) is leading a team of researchers in using a novel noninvasive technique to measure oxygen consumption in the legs of heart failure patients



► **Research Impact:**

UTA nursing and engineering researchers have partnered to create a **"Smart Care" apartment** at the Lakewood Village Senior Living Community in Fort Worth. The apartment is infused with intelligent care technology designed to reduce risks encountered by older adults who want to live independently in their own homes.

Features include floor sensors that can measure and evaluate changes in walking gaits and weight that might suggest illness or injury. The interdisciplinary research team includes **Kathryn Daniel** (Nursing) and **Manfred Huber** and **Gergely Zaruba** (Computer Science and Engineering).

► **Innovation for stroke victims:**

A new, soft robotic REHAB glove developed through the Texas Medical Research Collaborative at the **UTA Research Institute** can open and close a patient's hand, potentially bringing stroke victims relief using a lightweight device that is less expensive and more pliant than current exoskeleton technology. The soft robotic glove incorporates a hybrid soft-and-rigid pneumatic actuator, a design that offers a low operating pressure, easy fabrication, a lightweight structure and individual control of joints. The flexible nature of this glove allows it to be adapted to various medical conditions and anatomical features.

► **Serving the Community:**

Exercise programs offered through **UTA's Center for Healthy Living and Longevity** are drawing rave reviews from their target demographic: adults 65 and older. Participants in the studies cite improvements in cardiovascular fitness, decreases in blood pressure, and a more independent lifestyle.

