J.-C. Chiao stands apart from most of this year’s award recipients, but not for lack of accomplishments or acclaim.

Simply put: Chiao isn’t a doctor or a nurse, nor does he receive his paycheck from a hospital. What the electrical engineer shares with other recipients, however, is a health care professional’s vision to fight illness.

It’s exactly that vision that has helped Chiao emerge during the decade as one of the crown jewels in the University of Texas at Arlington’s research empire.

His work has gained him acclaim from both the health care and engineering fields, thanks largely to his trailblazing research into small implantable devices that employ radio frequency identifiers (RFIDs), or miniature battery-free gizmos, that send and receive information to monitor conditions such as acid reflux disease.

Chiao’s career path has twisted and turned from the private sector to academia. The Taiwan native with a doctorate from the California Institute of Technology taught at the University of Hawaii and worked as an engineer at several major technology firms before landing at UT-Arlington.

Chiao’s foray into biomedical engineering began with a 2003 lecture he attended about acid reflux, a surprisingly prevalent and devastating affliction in developed countries. Chiao later met with the lecturer, Shou Jiang Tang, a professor of internal medicine at the University of Texas Southwestern Medical Center, and began to hatch a plan to deploy RFIDs into the fight.

That was the first in what would become a string of bridges Chiao has built between engineering and medicine.

Shortly after Tang’s lecture, Chiao began attending medical seminars and visiting UT-Arlington’s nursing school frequently, learning as much about biology and medicine as he could absorb.

Soon, he said, word started to spread about his intent to apply his engineering acumen to medicine. Next thing he knew, the doctors were calling. Often.

Today he is flexing his engineering muscle toward cancer research. Chiao and a handful of colleagues at UT-Southwestern have set their sights on building a device that can detect and measure the spread of prostate cancer, a disease that killed his uncle several years ago.

Chiao hopes his work ultimately helps curb the staggering and, in his opinion, entirely unnecessary rise in the costs of health care. He’s obsessed with improving medicine’s efficiency to reduce its costs while improving accuracy. Like any technology, that’s the key to making medicine more affordable.

“If you look at the computer hard drive costs, 15 years ago you could buy a 1-gigabyte hard drive for $5,000,” he said, noting that today one can buy a 1-terabyte (about 1,000 gigabytes) hard drive for a small fraction of that price.

This year’s research award will join a slew of others already in his trophy case, but Chiao repeatedly demurred, saying, “I’m not a hero. I think the heroes out there are doctors and nurses. I have a lot of respect for the nurses who spend a lot of time sacrificing themselves. They are the true heroes. I’m just a person who does what I like to do.”

What drew you into the health care field?
That was my long-term passion. My grandfather died very young, and I saw my family suffer. He was in the military, but he also studied medicine himself. When my family cleaned out my grandfather’s books, there were quite a lot of medicine books. I’ve always had that voice in the back of my head telling me this was my grandfather’s passion, and I should follow in his footsteps.

— Matthew McGowan