MIT AgeLab prepares for an older tomorrow

Researchers explore science and technology to aid Baby Boomers.

By DAVID HO
Palm Beach Post-Cox News Service

CAMBRIDGE, Mass. — Joe Coughlin founded AgeLab to unravel a paradox: Humanity in the last century achieved the dream of much longer life but didn't plan for the effects on work, health and daily living.

"Our greatest success is now our greatest challenge," Coughlin says. "Where are you going to live? How are you going to get around? What are you going do in those 10, 20, 30, 40 years of extra time?"

The questions are becoming urgent as tens of millions of Baby Boomers approach their 60s with high expectations for a new version of old age. The AgeLab at the Massachusetts Institute of Technology is rushing to find some answers.

To explore how science and technology can help aging adults live well, the research center brings together experts in fields ranging from engineering and artificial intelligence to urban planning and women's studies. The lab partners with business and government to fund research and translate ideas into the real world.

Corporate partners have included Proctor & Gamble, Johnson & Johnson, Motorola, Healthways and the Hartford Financial Services Group.

Working with automakers such as Ford and BMW, the lab has created prototype cars to study aging drivers and test safety systems.

It also is deciphering how older adults plan for longevity and navigate often overwhelming amounts of information to make health and financial decisions.

The lab's dozens of projects include "empathy suits" that simulate arthritic hands and weakened vision, teaching companies and designers about what old age can feel like. Another effort draws on MIT research into a future Mars mission to create smart clothes that monitor chronic health conditions.

"I don't know of anyone else doing this kind of work," said Kevin Donnellan, an executive vice president with AARP, the group for people over age 50. With about 77 million Baby Boomers getting older, "there are potentially huge problems facing our country," Donnellan said.

AARP has partnered with the AgeLab on several projects, mainly involving the challenges when age makes driving difficult.

"We don't want to see people become isolated, prisoners in their homes," Donnellan said. He said addressing the issue with policies, technology and residential planning will take years, and "we can't wait until we're all there."

With 70 percent of Americans older than 50 living in suburbs or rural areas, driving is a lifeline, said Coughlin, who is 46.

"Even if you have your health, even if you have your 401(k), if you can't get there, you're not participating in life, and life is a lot more than going to the doctor or the grocery store," he said.

A centerpiece of the lab's work for the past year and a half has been the Aware Car, an SUV tricked out with technology to study its driver. As computers record speed, traffic, lane changes and car performance, sensors monitor the driver's heartbeat and breathing, while cameras track eye movement.

This happens as drivers face on-road challenges or potentially distracting in-car tasks, such as dealing with navigation systems, satellite radios or cellphones.

"We like to say we can put as much as we want in the closed confines of the car and the driver is capable of handling it," but there are limits, said AgeLab researcher Bryan Reimer, who studies how health and age affect driver behavior. "Attention is a sphere of some size that dwindles with age," he said.

He said age raises other questions, such as: Can older drivers twist around to back up a car or respond quickly enough to avoid an accident?

Cars already are getting smarter, with technology to warn about lane changes and help avoid collisions. The AgeLab sees the trend continuing, with future cars slowing themselves in an accident and becoming more aware of how drivers feel.

One lab project with a major car maker would create personalized dashboards that limit distractions by morphing to display only relevant data like a speedometer and gas gauge, Coughlin said.

Baby Boomers, who are wealthier, healthier and better educated than past generations, will demand such technologies, he said.

When an aging Boomer has an aching knee, popping a painkiller is not enough, Coughlin said. He said their response is: "Fix the knee. Replace the knee."

A variety of projects are on display at the lab, a warren of offices that opened in 2001 and is now dotted with data-filled computer screens and enthusiastic grad students.

Pill Pets, stuffed toys with LCD screens, simulate sickness and death if their owners fail to report they've taken their medications. The goal is to use emotion and fun to motivate people to better care for themselves.

The lab also envisions future homes with remote checkup stations, appliances that let people regularly monitor weight, blood pressure, blood sugar and other health statistics. The data would go to a Web site or doctors to head off heart attacks, strokes and other emergencies.

"With the Boomers, and in Western culture in general, technology is almost an act of faith," Coughlin said. "There's the belief that there's going to be a pill or product or hardware or software that's going to help me live better."

@dho@coxnews.com

MIT AgeLab photo

The Massachusetts Institute of Technology's AgeLab has developed Pill Pets, stuffed toys with LCD screens that simulate sickness and death if their owners fail to report they've taken their medication. The goal is to motivate people to take better care of themselves.

DAVID HO/The Associated Press

AgeLab Director Joe Coughlin sits next to "Miss Daisy," a car involved in a project to study aging drivers and test safety systems. Automakers have teamed up with the research lab in the effort.

On the Web

MIT AgeLab: web.mit.edu/agelab/
AARP: www.aarp.org