

# Inventing Tomorrow

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Duncan studied engineering at the University of Kentucky. “Like almost everybody else, I wanted to be in the space program,” she said. “I actually thought I would design the interiors of spacecraft.”

As it turned out, her career led her north. She was recruited by 3M to its surgical medical division. She worked as senior research engineer on projects such as silicone hydrocephalic shunts, intraocular lenses, and dental prosthetics. She passed up an opportunity to work in Cape Canaveral, in part because 3M and the University of Minnesota offered a unique partnership that allowed her to work full time while attending graduate school at the Institute of Technology. She earned a master’s degree in mechanical engineering with a biomedical minor. Duncan designed her own curriculum and enriched her engineering education with classes in the history of medicine and history of technology.

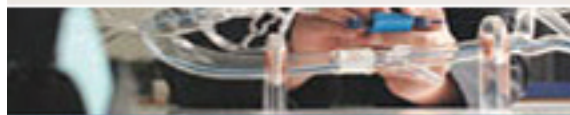
“They didn’t spoon feed the information to you—you worked,” she recalls. “The U of M gave me an independent and free-spirited place to learn. It seemed like a playground for the inquisitive mind.”

Then her curiosity was piqued by another opportunity. Dr. Robert Jarvik—who Duncan knew through her

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—ELAINE DUNCAN

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## LEFT TO THEIR OWN devices

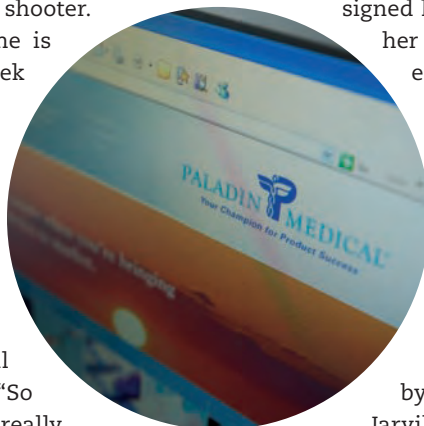
### HAVE EXPERTISE, WILL TRAVEL

Elaine Duncan (M.S. ME '81) loved the medical device industry, but she didn’t love the upheaval of small startups. So she designed the perfect niche for herself—as a consultant to medical device companies.

Duncan heads Paladin Medical, Inc., a consulting firm that specializes in regulatory and clinical strategies for the development of new medical technology. Her company’s name was inspired by the lead character in the 1950s TV show “Have Gun—Will Travel,” named Paladin, who tried to solve problems with his intellect before pulling his six shooter. Duncan said her company’s name is also derived from Pallas, the Greek goddess of wisdom.

Duncan draws on her University engineering education, which gave her an ability to solve problems from a systems perspective, an approach she uses “every single day.”

“You simply cannot learn all you need to know about medical devices in a lifetime,” she said. “So the problem solving is what you really



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Elaine Duncan designed the house she lives in today as part of a class she took at the University of Minnesota. The house has solar water heat, and Duncan plans to add photovoltaic panels to generate electricity.

work at 3M—offered her a job working for the Utah company that was developing the world’s first artificial heart. “This was like the equivalent of the space shuttle launch for biomedical engineers,” she said.

As it turned out, the heart wasn’t viable. In 1983, she returned to Minnesota and spent four years working as vice president of new ventures for Possis Medical, Inc., in Minneapolis.

In 1987, Duncan founded her own company. “It allowed me to work on medical device development without the feast or famine,” she said. Over the last two decades, Paladin has served more than 200 client companies that have developed devices such as portable defibrillators, disc replacements, and artificial knee ligaments.

Paladin’s offices are in Duncan’s home near the St. Croix River. The house is another testimony to her education at the Institute of Technology. She designed a solar house for a heat transfer class—and later decided to build the house. The house is bermed into a hillside with large windows facing south for passive solar heat. It also has solar water heat, and Duncan plans to add photovoltaic panels to generate electricity. It’s a house designed to take full advantage of its environment.

Similarly, Duncan has taken advantage of the business environment. Minnesota is one of the top medical device centers in the U.S., along with Boston, the Bay Area, and Southern California. She said the University plays a central role in that success.

“It’s been a reservoir of talent and indirect support to the industry,” Duncan said. “If you want to test your products, you can get world-class clinical support without leaving town. This synergy of engineering, clinical, and medical device companies exists in four or five places in the U.S. It’s not only enriched my career, but also enriched the medical device industry here in the Twin Cities.”