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Dartmouth professor honored with engineering award from Queen Elizabeth

By MEGHAN PIERCE
Union Leader Correspondent

HANOVER — The Queen of England is honoring Dartmouth engineering professor Eric Fossum for leading a team at NASA’s Jet Propulsion Laboratory in Pasadena, Calif., in the 1990s that created the ‘camera on a chip’ technology.

The prize winners were announced Feb. 1 at the Royal Academy of Engineering in London, Fossum said Wednesday.

Fossum said the announcement included "a lot of lords and sirs," and Princess Anne was present.

"The Queen will actually award the prize to us personally later in the year at Buckingham Palace, but the scheduling is up to the convenience of Buckingham Palace and the Queen of course," he said.

Fossum said the honor is "almost as good as a Super Bowl ring. I'm looking forward to it."

The prestigious Queen Elizabeth Prize for Engineering is a global prize that celebrates world-changing innovations in engineering.

Fossum was one of four engineers awarded the 2017 prize for creating digital imaging sensors, which revolutionized the way we capture and analyze visual information.

"I got a phone call about a week before in the morning informing me that I was going to be receiving the Queen Elizabeth Prize for Engineering, which I thought was a crank call at first," Fossum said, adding he's glad he didn't hang up.

Fossum will share the prize with Nobukazu Teranishi, a research professor at University of Hyogo and Shizuoka University, Japan, who developed the pinned photodiode, a device incorporated into most CMOS image sensors; and retired Bell Lab scientists Michael Tompsett and George Smith, who were among the inventors of the CCD image sensor that preceded CMOS, according to a press release from Dartmouth.

Fossum played his part by leading a team at in the early 1990s that developed the complementary metal oxide semiconductor (CMOS) image sensor, which allowed cameras to be made smaller, cheaper and with better battery life. It was intended for outer space.

"In order to try to build a smaller spacecraft we wanted to miniaturize those cameras to a much smaller size," Fossum said. "After we worked on that we realized it would be very useful here on earth for various applications."

After the invention he saw the commercial potential and tried to get a U.S. company to "pick up the torch," and develop it for market. Unable to find a willing company, in 1995 Fossum and his then-wife Dr. Sabrina Kemeny founded Photobit.

After selling the company in 2001, he decided to retire to New Hampshire where he settled in a lake house on Winnepesaukee.

Fossum, 59, is originally from Connecticut and enjoyed returning to New England. He briefly returned to California to run another company, but then retired again. Realizing he was not quite ready for retirement he looked for a way to give back to New Hampshire.

He reached out to Dartmouth College officials and became a part-time professor. These days he is very much a full-time professor of engineering at the Thayer School of Engineering at Dartmouth, he said.


Fossum and his wife, Susan Fossum, have a passion for drawing youth to the field of engineering through their support and work with Camp Invention. Camp Invention was created by the National Inventors Hall of Fame, of which Fossum is a member.

Fossum said the camp is "a program in the summer for students to spend a week taking things apart and creating things and basically exploring invention and the creative process."

Fossum will be honored with a trophy and a fourth of the prize money, which is 1 million pounds.

He said he intends to use the prize to give back, "most likely through the Camp Invention program," Fossum said. "I can guarantee that's what's going to happen. ... I feel pretty humbled by that prize, astonished and humbled at the same time, and I want to do good by it."

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