

Despite industry challenges, Penn State doubles down on nuclear energy program

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Penn State President Eric Barron meets with the PennLive/Patriot-News editorial board on March 20. The university is poised to significantly expand the size of its nuclear engineering program. Barron said Penn State's program is one of the nation's strongest. Dan Gleiter |

Kerri Smalec said a superhero movie helped inspire her career choice.

While watching “Iron Man,” she began thinking of what she wanted to do.

“I’m going to become a nuclear engineer,” she said with a laugh. “I’m going to make an Iron Man suit.”

A 22-year-old from Delaware County, she’s about to graduate in May with a nuclear engineering degree from Penn State University. She already has a position at Peach Bottom nuclear plant after she graduates.

The nuclear industry faces strong headwinds. Indeed, Three Mile Island is slated to shut down this year. Nonetheless, plenty of students at Penn State and across the country are showing an interest in nuclear engineering.

Penn State is doubling down on nuclear energy. A generous gift is spurring a major expansion of the nuclear engineering program, Penn State University [Eric Barron](#) said. (The university said the donors don't want the size of the gift disclosed.) "So many programs have collapsed across the country," Barron said. "You have a few strong programs left, of which Penn State is one."

Penn State is looking to nearly double the number of faculty in nuclear engineering from 8 to 15. Nuclear engineering, currently joined with the mechanical engineering program, will become its own department next fall.

"Students are very interested in the field," said Dr. Arthur Motta, chairman of the nuclear engineering program at Penn State. "And they're also getting jobs."

To be sure, the number of students pursuing nuclear engineering degrees nationwide remains below its peak in the late 1970s. Interest plunged after the Three Mile Island accident in 1979.

In 1978, 863 students graduated with bachelor degrees in nuclear engineering, according to data compiled by the Oak Ridge Institute for Science and Education. By 2001, that number fell to 120.

But over the last several years, more students are enrolling in nuclear engineering programs. In 2016, the most recent year data is available, 621 bachelors degrees were awarded in nuclear engineering, according to Oak Ridge. Penn State, by the way, led the nation in 2016 with 90.

Motta said more jobs are opening up as many nuclear engineers are nearing retirement.

"A lot of people in the nuclear community are like me," Motta said. "I'm in the latter part of my career."

Nuclear engineering jobs offer good salaries. The median salary of a nuclear engineer in 2017 topped \$105,000, according to the U.S. Bureau of Labor Statistics.

Motta said Penn State's expansion of the department is well-timed.

"We have much more research going into nuclear now than 20 years ago," he said. "I think it's a good time to make an investment and improve the experience of our students and provide them with the education they need."



Kerry Smalec, a Delaware County resident, is about to graduate from Penn State University with a degree in nuclear engineering. Penn State is preparing to expand its nuclear program as more students nationwide express an interest in the field. As she approaches graduation, Smalec said she wants more people to understand the importance of nuclear power. She's president of the Women in Nuclear group at Penn State, an organization with 30 members. The group focuses on professional development, networking and public education.

"We encourage women to excel in the field," she said. "This club is for anyone who wants to support women and support diversity in the nuclear field." And the club does have male members.

Smalec was born nearly two decades after the partial meltdown at Three Mile Island, so she's aware of the accident but it isn't a defining moment for her.

She said she's had relatives ask her about the dangers involved with radiation, but she aims to reassure them about the safeguards and strict regulations at nuclear plants.

"Nuclear power plants are probably one of the safest industries to work for in the entire world," she said.



Penn State University's Women in Nuclear group aims to support students in pursuing careers and visits schools to talk about nuclear energy.

Smalec is optimistic about her career choice and the ongoing viability of nuclear energy.

"Nuclear is a great low-carbon energy source and it needs to be in the mix for us to combat climate change," Smalec said. "I feel pretty safe going into the industry."

Motta said he would like to see nuclear plants qualify for subsidies just as other clean energy industries such as wind and solar.

Nuclear energy remains unpopular with large segments of the public, he acknowledged, but he said it should remain a part of America's energy portfolio.

“Eliminating essentially the biggest clean energy source is not a good move in my opinion,” he said.

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