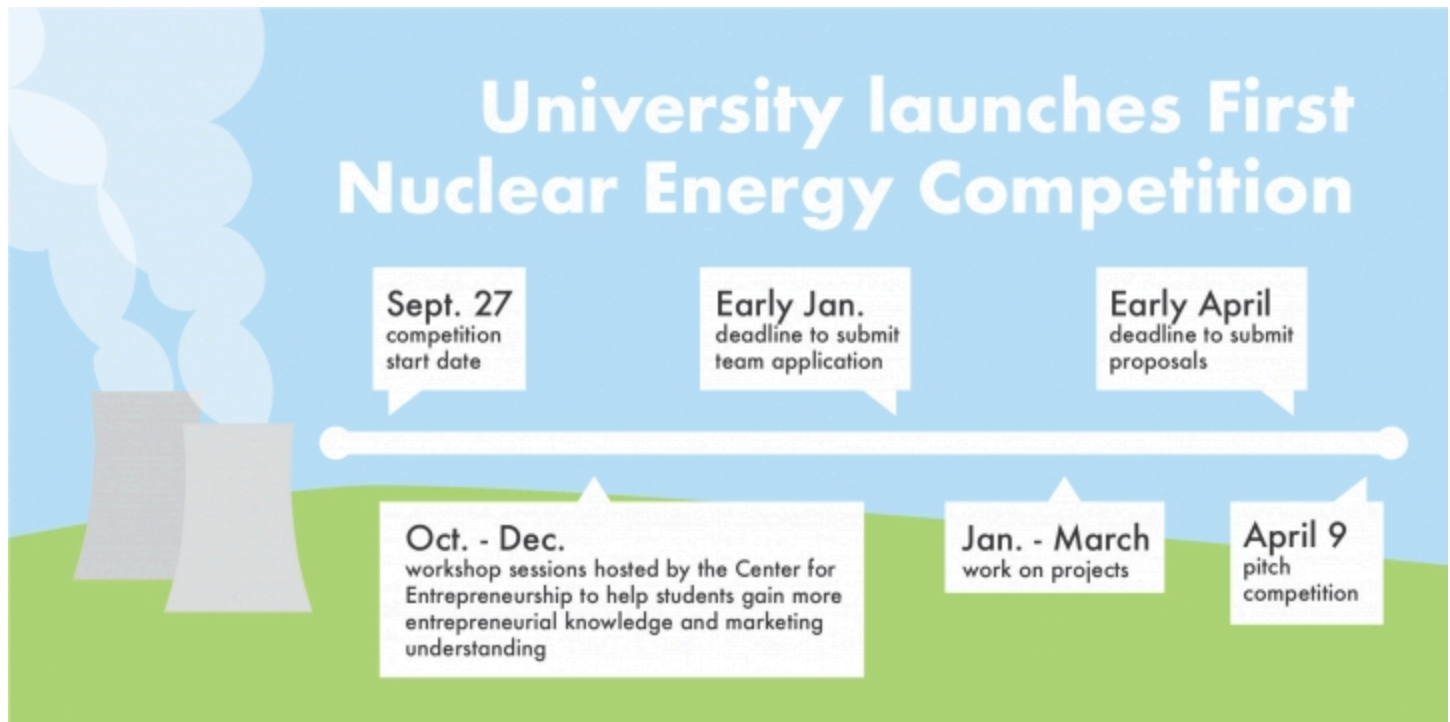
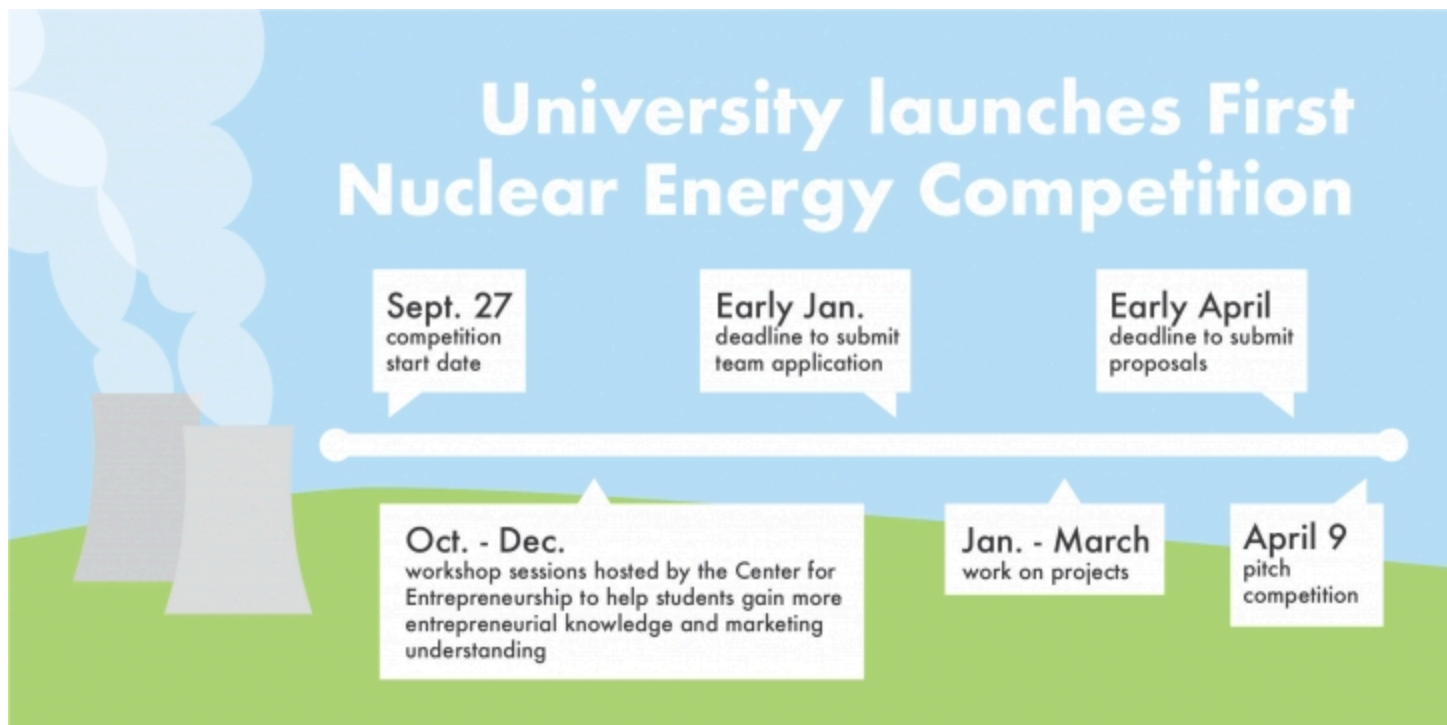


RESEARCH

## 'U' launches inaugural nuclear energy competition

by Michal Ruprecht  
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The University of Michigan's Department of Nuclear Engineering and Radiological Sciences and the Energy Institute partnered with a D.C.-based research institute, the [Energy Impact Center](#), to create the first inaugural energy competition.

The competition is called the [Nuclear Energy Grand Challenge](#) and is open to all students. Co-director Todd Allen, who is the chair and a professor in NERS, said one objective of the competition is to create a space for interdisciplinary learning.

"A lot of Engineering students work on their engineering degree and don't get enough interactions with people from the Business School or people from the School of Public Policy," Allen said. "I'm hoping that another thing we do is help with that connectivity in a way that it makes the students' educational experience impactful."

The competition began on Sept. 27 with a series of workshops hosted by the Center for Entrepreneurship. Allen said the optional workshops introduce the idea of nuclear waste, help students get a better understanding of entrepreneurship and foster interactions between possible teammates.

Engineering senior Mackenzie Warwick, a participant in the competition, said about 30 people are participating in the competition and about 10 people attend each workshop.

Warwick said she pitched the idea of a prize competition to Allen during the summer, which led Allen to collaborate with Energy Impact Center's Managing Director, Bret Kugelmass.

Warwick said her team is working on a project that uses radiation from used nuclear fuel to decompose plastics for hydrogen, alternative fuel production and hydrocarbon base chains.

“I’m so excited,” Warwick said. “Anything about nuclear excites me, and so I think it’s a cool way to kind of get everybody in the college thinking about things.”

Since an important aspect of the competition is interdisciplinary teamwork, Warwick said her team is made of a diverse group of students. However, she mentioned she’s the only NERS student in the group, which makes it frustrating to explain concepts at times. She said the competition provides a low stress environment that allows her to work on these skills.

“With a very specific set of people with the same mindset, being able to convey what you want and know technically to someone who has no experience is a challenge,” Warwick said. “It’s very helpful because now I have to see how other people are thinking about the competition and interpreting the information.”

Kugelmass said the most important aspect of the competition is to create a new narrative around nuclear waste.

“They are tasked with reimagining nuclear waste,” Kugelmass said. “The idea is to come up with ideas of how nuclear waste can productize so you change something that once was thought of as dangerous and a liability, and by giving it economic value, you change the perception.”

Allen agreed with Kugelmass saying this is an important opportunity to get people talking about nuclear waste and come up with a technological solution that changes the way people think about the issue.

“The most optimistic innovation would be we come up with something that actually changes the national narrative on nuclear waste,” Allen said.

Warwick said she got interested in nuclear energy after the Fukushima accident occurred in 2011. She said she hopes disasters like Fukushima and Chernobyl don’t happen again.

“I hope that these are some very good initial steps into getting the status quo of nuclear to be a more positive outlook,” Warwick said. “A lot of the people who refute nuclear use Chernobyl or Fukushima as examples.”

The organizers also formed a group of advisers who are experts in nuclear energy and entrepreneurship to help students develop their ideas. Allen said participants will have an opportunity to enroll in a Center for Entrepreneurship course to receive academic credit for their work.

The technological innovation portion of the competition will officially begin in the winter semester when the teams are finalized and will conclude with teams pitching their ideas to a panel of judges on April 9. The winning team will win \$17,000.

Kugelmass said the prize money will help incentivize students, and could be thought of as an investment in a future company that may be created out of the competition.

“We’re hoping that some of these students become very encouraged and really get the momentum going that they’ll turn their projects into real life products, perhaps through entrepreneurship,” Kugelmass said.

Kugelmass said the new innovations could lead to a more positive outlook on nuclear energy, which could be useful in reducing carbon emissions in the future.

“This is one step towards making nuclear more publicly favorable,” Kugelmass said. “Nuclear energy as a whole as it increases in share will have dramatic effects on reduction of carbon dioxide emissions. This is one way to popularize nuclear energy.”

Allen echoed this thought, saying the competition may provide initial steps to move toward zero carbon emissions.

“If our prize comes up with a different pathway that makes people more comfortable with nuclear technologies, that will be important for moving towards zero carbon,” Allen said. “I also think it helps more people understand just what nuclear waste means. I think that’s helpful, because it is informative and allows people to better understand the conversation.”

Kugelmass said he hopes to partner with more universities and organizations in the future.

“The University of Michigan is a real leader in a lot of areas,” Kugelmass said. “They’re definitely a pioneer with us in the first of these nuclear energy grand challenges, but there’ll be many more to come.”

Warwick said she hopes to participate in other prize competitions in the future and would like to see her project come to life one day. She hopes people become more informed through the project.

“I think it’s just a fear of the unknown and the fact that (nuclear energy) was originally used for war, and it wasn’t a peaceful application,” Warwick said. “I think if anybody is interested in nuclear, just look at the many options it could be used for.”

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