

## Energy Days electrifies students: Experts share opportunities available at INL

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*Daniel (left), a senior at Skyline High School, and a panel of high school and college students ask questions to John Wagner, Idaho National Laboratory director; Ty Blackford, Idaho Environmental Coalition president and project manager; Dana Kirkham, Idaho Environmental Coalition director of regulatory and strategic affairs; and John Revier, INL director of external engagement and communications. (David Pace, Post Register)*

**Editor's note:** This article is the second installment in a three-part series on the Leadership In Nuclear Energy Commission and Idaho National Laboratory.

Topics including nuclear fission, microreactors, hydrogen technologies, bioenergy and cybersecurity were featured at the inaugural Energy Days, hosted Thursday by Idaho National Laboratory and the College of Eastern Idaho.

The event brought together high school and college students, nuclear industry experts and legislators to learn about the future of energy technologies and opportunities in the field. It was held in conjunction with this week's meeting of the Leadership In Nuclear Energy Commission, whose members toured INL facilities Thursday.

"There is a lot going on locally, regionally and nationally around energy and energy transition," Idaho National Laboratory Director John Wagner said. "Countries around the world, our country, states, private companies and consumers — in varying demands, but generally speaking — are demanding clean energy, and at the same time, do not want to sacrifice reliability and resiliency of their energy."

Scientists discussed research breakthroughs and innovations being led by INL, including in microreactor technology.

“Microreactors are maybe some of the most exciting things in the advanced reactor world,” said Andrea Jokisaari, an irradiated fuels and materials computational scientist at INL. “... Microreactors generate power on the level of about 1 to 20 megawatts which means that they’re powering 1,000 to 20,000 homes. They are so small that they can be transportable. ... They are very, very safe. They have these self-regulating systems in them, and they can be run by simply one or two people.”

Idaho and the region are poised to play a leading role in the energy sector.

“Idaho is very blessed with all our strong energy resources, including the lead nuclear lab in our backyard,” said Bobbi-Jo Meuleman, deputy chief of staff-director of intergovernmental affairs to Gov. Brad Little. “You have a state and a governor who is very supportive of this industry.”

Governments, organizations, and individuals are interested in reducing their carbon footprint, and nuclear energy provides a sustainable, low-emissions energy source for diversifying away from oil, coal and natural gas. Thirty states have implemented requirements for clean or renewable energy portfolios, according to the National Conference of State Legislatures website. California, Washington, Oregon, Colorado, New Mexico and Nevada have set 100% renewable or clean energy standards by 2045 or 2050.

“Nearly 5,000 companies worldwide have pledged to reduce their carbon emissions consistent with the Paris Agreement,” said John Kotek, Nuclear Energy Institute's senior vice president of policy development and public affairs. “As a result we’ve seen interest in things like transitioning coal plants to becoming nuclear plants. That’s what is happening next door in Wyoming in Kemmerer.”

At the federal level, \$2.5 billion was earmarked for advanced reactor demonstrations in the 2021 bipartisan infrastructure law, he said.

“More recently, we saw the Inflation Reduction Act including a production tax credit for all new carbon-free generation, including new nuclear,” Kotek said.

Students were excited by the opportunity to ask panelists questions and learn about future employment and internship opportunities at INL.

“I’m here today to learn about the science behind it all and now to power different things like nuclear power,” said Jackson McOmer, a freshman at Thunder Ridge High School. “I think it’d be fun to get a job out there, maybe being a supplier for all the different job opportunities out there.”

Participants were able to meet one-on-one with representatives from Battelle Energy Alliance, the Naval Nuclear Laboratory, the Idaho Environmental Coalition, Idaho Falls Power, the College of Eastern Idaho and Idaho State University.

“I’m here for career exploration to learn about nuclear energy and the future that it has in Idaho,” said Emaline Johnson, a senior at College of Eastern Idaho who will graduate with her dual associate degrees in general science and arts. “I really liked the cybersecurity.”

At the College of Eastern Idaho, interested students can enroll in the health physics technology or energy systems technology programs to prepare for careers at the laboratory, said Amanda Logan, the college's director of external affairs.

During an afternoon Youth Forum Town Hall, a Pocatello High School student asked what the biggest hurdle is to widespread nuclear use in the energy sector.

Wagner said it's cost.

"The cost is affected by a lot of factors, but ultimately, utilities are going to decide what energy sources they want in what variations, what energy systems are going to work together, and cost is a very big part of their decision-making," Wagner said. "Now when we value the nature of intermittent versus firm energy, we're seeing utilities go, 'OK, this is cost effective.' ... All of our research and development, in one way or another, is about how can we drive down cost."

Idaho National Laboratory is leading the way in developing "new reactor technologies that are inherently safe so they cost less to build and to license," better nuclear fuels, and material performance, Wagner said.



*(From left) John Revier, Idaho National Laboratory director of external engagement and communications; Dana Kirkham, Idaho Environmental Coalition director of regulatory and strategic affairs; INL Director John Wagner; and Ty Blackford, Idaho Environmental Coalition president; answer students' questions during a Youth Forum Town Hall at the College of Eastern Idaho on Thursday. (David Pace, Post Register)*

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