



*Students coding
at Woodland
Elementary School.*

K-12 Computer Science Education Program

Idaho National Laboratory (INL) stands out as a science and technology resource serving as the nation's command center for advanced nuclear energy research, development, demonstration and deployment.

SUPERCOMPUTING

INL's high-performance computing resources provide scientific-computing capabilities for advanced modeling and simulation efforts, including multiscale, multiphysics performance analysis of nuclear fuel, materials in harsh environments and light -water and advanced nuclear reactors.

DIGITAL ENGINEERING

INL launched a Digital Engineering program in 2018 to support new reactor projects that predict reactor

performance and design issues early in the process, minimizing cascading risk.

ARTIFICIAL INTELLIGENCE (AI) AND MACHINE LEARNING (ML)

INL's vision is to change the world's energy future and secure our nation's critical infrastructure. To support our research missions, we have five goals:

1. **Methods:** Use AI/ML to bridge research gaps.
2. **Data:** Use INL's unique data sources and expertise to leverage AI/ML for new insights.
3. **Tools:** Innovate an agile AI/ML computing infrastructure.
4. **People:** Develop and mature researchers' AI/ML capabilities.
5. **Security:** Ensure trustworthy AI/ML that is explainable to end users and decision makers.

K-12 PROGRAMS IN COMPUTER SCIENCE EDUCATION

Digital Discovery Night

Each May, INL hosts an exciting event that immerses K-12 students and their families in the fascinating world of computer science and showcases INL's cutting-edge research. This event offers hands-on experiences in coding, robotics, AI, modeling simulations, data science, cybersecurity and more, making learning both fun and engaging.

Computer Science Education Week

INL celebrates Computer Science Education Week in December when we host robotic activities, coding activities, guest lectures and more for K-12 students. We also support the global initiative, Hour of Code, during this week.



K-12 STEM education team member presenting during Computer Science Education Week.



K-12 STEM education team member assists student participating in Hour of Code.

FOR MORE INFORMATION

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Robotics

- **Grants**
We provide grants for multiple robotics competitions, such as First Robotics and VEX Robotics, and mentor students who participate in these competitions.
- **Code & Construct: Robotics Workshop**
This initiative offers a one-day robotics workshop for students to explore the world of robotics, develop teamwork and technical skills, and ignite their passion for STEM.

Let's Code Together

As part of INL's Coding Coalition, INL team members visit various schools to educate K-12 students in different coding languages through hands-on practice sessions. This initiative helps students build confidence in computer programming and inspires them to explore STEM fields.

Innovate with AI

This exciting program introduces students from elementary to high school to the fascinating world of AI, featuring hands-on experiments that bring various AI applications to life.

STEM Scholar Computer Science Summer Camp

INL's summer program offers students an exciting opportunity to learn about various computer science concepts through fun activities, hands-on coding and robotics projects. Beyond coding and robotics, participants explore key areas of computer science including cybersecurity, data science and AI.

JOB OPPORTUNITIES AT INL

INL offers many job opportunities for individuals with computer science and cybersecurity backgrounds across various

fields, including nuclear engineering, electrical engineering and homeland security.

Battelle Energy Alliance manages INL for the U.S. Department of Energy's Office of Nuclear Energy.