NWRTC
Northwest Regional Technology Center
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Pacific Northwest
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AROUND THE REGION IN HOMELAND SECURITY

The Northwest Regional Technology Center (NWRTC) is a virtual resource center, operated by Pacific Northwest National Laboratory (PNNL), to support regional preparedness, resilience, response, and recovery. The center enables homeland security solutions for emergency responder communities and federal, state, and local stakeholders in the Northwest.

DEPARTMENT OF HOMELAND SECURITY RECOGNIZES ITS 20TH ANNIVERSARY

March 2023 marked 20 years since the creation of the Department of Homeland Security (DHS). The department marked the occasion with a special ceremony to honor the workforce and the approximately 32,000 others who joined DHS and continue to serve today. Watch the full event on YouTube and see photos on the DHS Flickr page.

In the two decades since the beginning of DHS, PNNL has remained a partner in the homeland security mission, delivering research and development in the areas of aviation; radiation, biological, and chemical detection; and public safety.

"The resulting partnerships, programs, and technology solutions that have emerged—including the launch of NWRTC—have delivered meaningful impact," said Ryan Eddy, PNNL's director of homeland security programs.

Check out highlights from the DHS Science and Technology Directorate (S&T) 20-year history here plus a highlight on its history with national laboratories here. You can also visit pnnl.gov/projects/911-remembering-20 to learn more about PNNL's science and technology impacts over the years. In photos to the right, highlights include radiation portal monitors, vapor detection, fentanyl research, and millimeter wave scanning technology.

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## CYBERSECURITY DEFENDERS ARE EXPANDING THEIR AI TOOLBOX

Scientists have taken a key step toward harnessing a form of artificial intelligence (AI) known as deep reinforcement learning to protect computer networks.

When faced with sophisticated cyberattacks in a rigorous simulation setting, deep reinforcement learning was effective at stopping adversaries from reaching their goals up to 95 percent of the time. The outcome offers promise for a role for autonomous AI in proactive cyber defense.

Scientists at PNNL documented their findings in a research paper and presented their work February 14 at a workshop on AI for Cybersecurity during the annual meeting of the Association for the Advancement of Artificial Intelligence in Washington, D.C.

"An effective AI agent for cybersecurity needs to sense, perceive, act, and adapt, based on the information it can gather and on the results of decisions that it enacts," said Samrat Chatterjee, a PNNL data scientist who presented the team's work. "Deep reinforcement learning holds great potential in this space, where the number of system states and action choices can be large."

Read the press release to learn more.
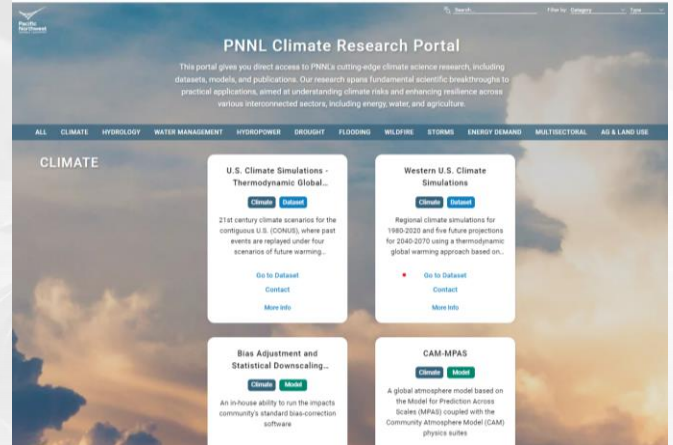
PNNL LAUNCHES CLIMATE RESEARCH PORTAL WEBSITE

Looking for cutting-edge climate science research? The new PNNL Climate Research Portal is live and home to a wide range of datasets, models, and publications spanning fundamental scientific breakthroughs to practical applications.

The searachable site highlights research aimed at understanding climate risks and enhancing resilience across various interconnected sectors, including energy, water, and agriculture. Visit the site and start your search at climate.pnnl.gov/.

PODCAST HIGHLIGHTS SCIENCE, IMAGINATION, EXPLORATION

The DHS S&T *Technologically Speaking* podcast kicked off Season 2 with a focus on how science can help solve homeland security challenges. In the 30-minute session, hosts John Verrico and Deepak Saini sit down with S&T Chief Scientist Dr. Sam Howerton. Listen to "The Power of Play" to hear about chemistry, imagination, exploration, and even fried chicken. You can also check out more episodes (including one with Seattle's own Paul McDonagh) at dhs.gov/science-and-technology/technologically-speaking-podcast.