NWRTC
Northwest Regional Technology Center
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**Pacific Northwest**
NATIONAL LABORATORY

CONTACT
Want to know more? Visit us at pnnl.gov/projects/nwrtc. Contact the NWRTC with questions and comments at nwrtc@pnnl.gov.

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.

REDEYE OFFERS FREE VISUALIZATION, REPORTING TOOL FOR CYBER THREATS

According to the Cybersecurity and Infrastructure Security Agency (CISA), 47% of American adults have had their personal information exposed to cyber criminals. Consumers worldwide lose nearly $400 and spend more than 20 hours dealing with online crime every year. RedEye is here to help.
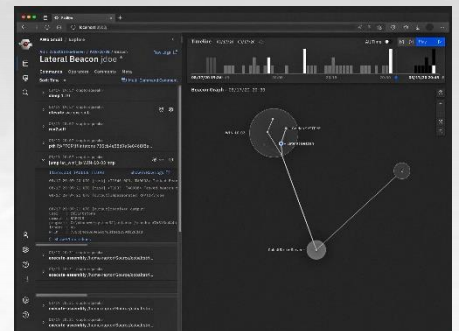
RedEye is an open-source, analytical platform that gives users a way to assess and display complex data. The first-of-its-kind tool was created to improve the operations of red and blue teams by enabling them to make effective decisions in response to cybersecurity threats. To thwart potential cyber threats, red teams mimic potential cybersecurity attacks, while blue teams work to protect against those attacks

RedEye documents the teams' steps and communicates the results to the operations and management teams. The tool is garnering positive attention and use, and users have noticed the tool's unique aspects, such as visualization of interactions, ease of use, and reporting functionality.

"Because it's publicly released, it has become a collaboration between us (PNNL and CISA) and the greater community," said Austin Golding, PNNL software engineer and RedEye project lead. "Now we have a much larger audience using the tool, providing feedback, and contributing directly to new features or bug fixes. It fundamentally changes how the project and team have to operate to continue to succeed."

Researchers at PNNL in partnership with CISA, released RedEye in October 2022. In 2023, new features are planned, which include a live parsing mode so users can follow a campaign as it runs (rather than after).

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TRAINING REFRESHES RADIOLOGICAL, NUCLEAR DETECTION SKILLS

In January and February, PNNL hosted trainings to help first responders in the Pacific Northwest refresh on the radiological/nuclear detection mission and best use of their agency-owned equipment.

PRND
Preventive
Radiological/Nuclear
Detection

"Radiation detection isn't something first responders encounter regularly in the field, so it is a perishable skill. Our annual trainings refamiliarize first responders with proper response and use of their detection equipment," said Melanie Godinez, PNNL program manager.

Throughout the year, PNNL convenes federal, state, county, local, and private law enforcement and first responder agencies from across the Puget Sound area in trainings and drills to help those with radiation detection equipment stay fluent in its use if and when their devices alert. The training is part of the Puget Sound Regional Small Vessel Maritime Preventive Radiological/Nuclear Detection program designed to maintain a regional capability to deter the illicit movement of radioactive materials within, and potentially through, the Puget Sound maritime environment. With funding from a Port Security Grant via the Seattle Fire Department, PNNL manages the purchase, inventory, and distribution of equipment and coordinates training and dockside drills for participating organizations.

"By partnering with first responders and other agencies, we are supporting a regional capability to deter the potential for illicit movement of radioactive materials through our ports and waterways," Godinez said.

The recent trainings are a precursor to dockside drills held twice a year at ports throughout the state of Washington. If your organization is interested in learning more about the training program, contact melanie.godinez@pnnl.gov.

RUGGED TRACERS TRACK IN HARSH ENVIRONMENTS

What happens in an explosion? Where do the products of that explosion go following the blast? These questions are often difficult to address. New rugged tracer particles, developed by PNNL researchers, can provide some answers.

Beyond explosives, many industries may be interested in tracking particulates through harsh environments, which often include high pressures, high temperatures, and different chemicals.

"Lots of chemical tracers exist," said Lance Hubbard, materials scientist. "The challenge is developing one that can survive harsh environments. It took a few years to convince anyone we could do it." See the PNNL web feature to learn more.

WORKSHOP EXPLORES ARTIFICIAL INTELLIGENCE FOR ARMY NEEDS

PNNL mathematician Aaron Luttman was part of the organizing committee for "Artificial Intelligence and Justified Confidence," a National Academies of Science, Engineering, and Medicine workshop to explore robust machine learning (ML) and other artificial intelligence (AI) opportunities for the U.S. Army. Luttman's expertise in ML and AI assurance, specifically focused on the security and vulnerabilities in AI systems, made him a valuable addition to the organizing committee, which included members from industry, the Department of Defense, and academia.

During the workshop, a broad range of researchers in ML and AI and adjacent fields laid out a framework of considerations the U.S. Army can use in defining justified confidence in specific ML and AI solutions. The framework informs the philosophy of how and when to deploy ML and AI technologies in command and control environments. See the PNNL web article to learn more.