



## 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.

### UPCOMING EVENTS

- July 21-25, 2019 – [Pacific NorthWest Economic Region Annual Summit](#), Saskatoon, CA
- July 31-August 1, 2019 – [DHS Centers of Excellence Summit](#), Arlington, VA
- August 7-10, 2019 – [Fire-Rescue International 2019](#), Atlanta, GA

### CONTACT

- Want to know more? Visit us on the web at <http://nwrtec.pnnl.gov>.
- Contact the NWRTC with questions and comments at [nwrtec@pnnl.gov](mailto:nwrtec@pnnl.gov).



## NORTHEASTERN RESEARCH EXPLORES URBAN RESILIENCE, RECOVERY

In June, PNNL welcomed from the Northeastern University (NU) Boston campus Professor Daniel Aldrich, director of the Security and Resilience Studies Program, and Professor Dan O'Brien, director of the Urban Informatics Program and co-director of the Boston Area Research Initiative, to meet with staff and share their research in resilience and recovery.

Dr. Aldrich shared "Hardware, Software, Firmware: New approaches to resilience across policy fields," highlighting an alternative set of toolkits for governments using sustainable, bottom-up, and locally based strategies.

"Too often our governments fall back on standard operating procedures involving hardware-based responses. Yet a growing body of research underscores the value of social ties in crisis and recovery," said Dr. Aldrich, author of *Black Wave: How Networks and Governance Shaped Japan's 3/11 Disasters*.  
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With a focus on urban informatics in a study of Boston's 311 system, Dr. O'Brien demonstrated how modern digital data can support a new wave of research-policy collaborations that can advance scholarship and policy on cities.

"This project has provided insights on a number of levels, from how urbanites take care of their neighborhoods to the potential and limitations of 'civic technologies' and other tools associated with smart cities," said Dr. O'Brien.

"Visits like this provide an exciting opportunity to hear how research in other major cities is making a difference in the way we understand recovery and resilience," said Ann Lesperance, NWRTC director on a joint appointment as director of the NU-Seattle College of Social Sciences and Humanities.

## PRESENTATION HIGHLIGHTS HOLISTIC APPROACH TO BIOSAFETY, SECURITY TRAINING

At the Federal Experts Security Advisory Panel International Working Group on Culture of Biosafety, Biosecurity, and Responsible Conduct on June 12, researchers shared "Holistic Biosecurity Outreach: Structured Approach to Biosafety and Security Training." The presentation highlighted how PNNL used a structured approach to develop comprehensive and holistic biosafety and biosecurity training content. Presenters included PNNL's Heidi Hamling, Heather Engelmann, and Rachel Bartholomew.

"Increased connectivity of facility security systems, while enabling improved efficiencies, can create potential pathways that may be exploited," said Hamling. "This was an excellent opportunity to feature PNNL's capability in the biosafety/security and curriculum development for a variety of stakeholders."

The presentation outlined the structured approach to training, holistic perspective of biosecurity, lessons learned, and next steps for future coursework.

## EXERCISE TESTS INFORMATION FLOW, TECHNOLOGY SOLUTIONS

The [Next Generation First Responder Program](#) (NGFR) Harris County Operational Experiment (OpEx) brought together the Department of Homeland Security (DHS) Science and Technology Directorate (S&T) with 13 Houston-area public safety agencies, 19 industry partners, DHS components, the U.S.

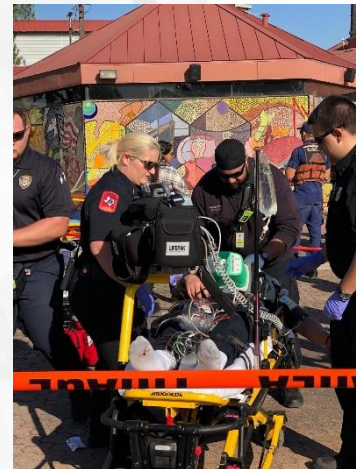


Photo: DHS S&T

Coast Guard Sector Houston-Galveston, the Federal Emergency Management Agency, and the DHS S&T National Urban Security Technology Laboratory to evaluate DHS-developed and commercial technologies integrated with existing public safety systems.

With more than 200 participants overall, OpEx tested 23 different technologies using guidance from the [NGFR Integration Handbook](#). Among the technologies was [the patent-pending VitalTag patient physiological monitoring sticker](#). Responders placed VitalTags on patients, allowing participants to see simulated vital signs and track the patients' locations. Paramedics viewed patients' heart rate, respiratory rate, systolic blood pressure, blood oxygen levels, shock index, and an electrocardiogram. Medics were alerted whenever a patient's condition deteriorated.

From indoor location tracking to HAZMAT sensors, from advanced data analytics to situational awareness and collaboration dashboards, DHS S&T and responders evaluated how the technology and integrated capabilities enhanced operational communications, increased operational coordination, improved responder safety, and augmented situational awareness. PNNL also received feedback from first responders to enhance the VitalTag design. Read more in the [DHS S&T Snapshot](#).

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