



**NATIONAL STRATEGIC  
RESEARCH INSTITUTE**  
*at the University of Nebraska*

# OPERATIONAL PULSE

**JULY 2022**

## NSRI INSIGHT

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Since our last report, in addition to continued COVID-19 mitigation efforts, the U.S. ended 2021 with a record 107,000 drug overdoses. Operators and responders from across the country have fought through millions of acres of wildfires. In the global theater, Russia's invasion of Ukraine led to increased international concerns about the production and potential use of biological and chemical weapons as well as an unsettling feeling that perhaps U.S. Allies weren't prepared to respond.

This NSRI threat report brings forward several insights critical to our military and government first responders; primarily, the evolving dynamics of fentanyl. Of note, there was also a report of an **illegal import of toxic chemicals** in California as well as the **use of ricin in a recent poisoning attempt**.

CWMD threats remain high and it could be argued have increased in just the last several months. Thank you for all you do to keep our Nation safe. Let me know how NSRI can support your objectives.

## INTENSE THREAT: FENTANYL

### WHAT TO KNOW ABOUT FENTANYL-LACED CANNABIS

Medical News Today | May 30, 2022

Several social media posts and local news reports warn of fentanyl-laced marijuana, or cannabis. While isolated case reports suggest that cannabis may sometimes contain fentanyl, most reports argue this is likely an urban legend or a very rare occurrence.

It is common for drug dealers to lace other drugs, such as prescription painkillers, with fentanyl. This is because of its comparatively low cost. However, it can intensify the side effects of other drugs and increase the risk of overdose.

### COMPLICATING THE OPIOID EPIDEMIC: SCIENTISTS ESTIMATE FENTANYL HAS HUNDREDS OF MILLIONS OF CHEMICAL VARIANTS

SciTechDaily | May 10, 2022

Scientists at the Department of Energy's Pacific Northwest National Laboratory estimate that fentanyl has hundreds of millions of possible chemical variants, known as analogs. Every variant that becomes real at the hands of an enterprising chemist spells risk.

### THE U.S. IS WORRIED ABOUT FENTANYL AS A CHEMICAL WEAPON

Treatment Magazine | March 14, 2022

The FDA approved a 10mg naloxone injector, created by the pharmaceutical company Kaléo in conjunction with the U.S. Defense Department's Chemical and Biological Weapons Defense program, for emergency treatment in cases where high-potency opioids are suspected to have been dispersed on the battlefield.

## JOURNAL ARTICLES

The following are key articles authored or co-authored by NSRI and/or University of Nebraska researchers.

### [HEAT ACCLIMATION IN FEMALES DOES NOT LIMIT AEROBIC EXERCISE TRAINING OUTCOMES](#)

International Journal of Environmental Research and Public Health | May 2022

### [MULTI-ACTOR DETERRENCE: DEFINING THE CONCEPT](#)

Aether | May 2022

### [STRENGTHENING DHS INTELLIGENCE ANALYSIS EDUCATION: CORE COMPETENCIES, GAPS, AND CHALLENGES](#)

Journal of Policing, Intelligence and Counter Terrorism | May 2022

### [AEROSOL TRACER TESTING IN BOEING 767 AND 777 AIRCRAFT TO SIMULATE EXPOSURE POTENTIAL OF INFECTIOUS AEROSOL SUCH AS SARS-COV-2](#)

PLOS ONE | December 2021

NSRI TRAINING

## 2022 COURSE CATALOG

[DOWNLOAD](#)

## NSRI NEWS & FEATURES

### [NSRI NCR LABORATORY & CONFERENCE CENTER HOSTS INTERAGENCY EMERGING THREATS WORKSHOP](#)

The purpose of the workshop was to connect DOD and DHS stakeholders to identify areas for collaboration focused on the development of biological detection and identification technologies.

### [UNMC RESEARCHERS ARE LOOKING AT SEVERAL DIFFERENT DRUGS THAT COULD HELP PEOPLE EXPOSED TO RADIATION](#)

The study is funded by a \$10 million grant from the Department of Defense. The hope of the study is to provide a drug that would prevent troops from suffering from radiation poisoning.

### [MARTY SIKES RETURNS TO NSRI TO LEAD CHEMICAL, BIOLOGICAL DEFENSE PROGRAMS](#)

For the past four years, Sikes was detailed through NSRI via the Intergovernmental Personnel Act to the Joint Program Executive Office for Chemical and Biological Defense as senior CWMD advisor.

### [FROM FARM DEVICES TO WEARABLE BATTLEFIELD TECH: RESEARCHER BRINGS NEW ERA FOR ROBOTICS](#)

A team funded by NSRI is working to introduce several early generations of a sensitive surveillance system in the form of a wearable electronic nose. The nose would enable continuous monitoring and localization of air-borne chemical vapors, which is critically important to mitigate the effects of environmental and chemical WMD.

### [PROBLEM-SOLVING TO SAVE WARFIGHTERS: RESEARCH SCIENTIST FOCUSES CAREER ON DOD NEEDS](#)

In conjunction with Tripler Army Medical Center a University of Nebraska Medical Center team is developing sophisticated, actionable training tools for low-frequency, high-value medical procedures such as intraosseous line and chest tube placement.



## CONNECT WITH NSRI

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