IAEA's Bioweapon Detection Tools Have Difficulty Finding What They're Not Looking For

Posted by Jason Dorrier on Friday at 10:00 am
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Finding pathogens in the wild (clockwise from top left: Ebola virus, Bacillus anthracis, Francisella tularensis, and Yersinia pestis) is difficult, and detection tools need to be improved. Credit: Wikimedia

The International Atomic Energy Agency (IAEA) is a global organization that promotes the peaceful use of nuclear energy and works to prevent the spread of nuclear weapons.

The agency has also set its sights on detecting biological weapons. Scientists have developed a suite of tools to detect pathogens in the wild, but they have difficulty finding what they're not looking for—novel pathogens and those that have been genetically engineered to evade detection.

Researchers at Sandia National Laboratories have developed tools that can detect pathogens in the wild, but they have difficulty finding what they're not looking for—novel pathogens and those that have been genetically engineered to evade detection. But when the aim is strong, an unlikely outcome is not impossible.

The team is presenting research on the tools at the Biodefense Conference, a gathering of biosecurity experts from around the world. The conference is hosted by the IAEA and Sandia. Let's take a look at the tools and what they can do.

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Gene-based sequencing, which uses algorithms to compare genetic material to a known sample. Protein-based sequencing, which uses algorithms to compare proteins to a known sample. Immunoassay, which uses antibodies to detect proteins in a sample. Mass spectrometry, which uses a machine to measure the mass of molecules in a sample.

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