

About Battelle

Battelle is the world's largest nonprofit independent research and development organization, providing innovative solutions to the world's most pressing needs through its four global businesses: Laboratory Management, National Security, Energy Technology, and Health and Life Sciences. It advances scientific discovery and application by conducting \$5 billion in global R&D annually through contract research, laboratory management, and technology commercialization.

Resource Effective Biodefense System (REBS)

Innovative businesses see the future—and make it better. Battelle is investing today in key initiatives that will deliver a safer, healthier, and more productive tomorrow.

Battelle applies its unmatched expertise and unique facilities to deliver homeland security solutions. From detection and protection against weapons of mass destruction to emergency preparedness/response and protection of critical infrastructure, we work with industry and government to integrate policy and the operational, technological, and logistical parameters needed to secure a safe future.

Battelle's Resource Effective Biodefense System reduces the logistical burden, yet provides a rapid and accurate next-generation capability. Based on optical spectroscopy, this autonomous biological agent identification system rapidly and accurately detects and identifies biological warfare agents (BWA) without the need for reagents or expensive consumables. The modular and adaptable design can be utilized to identify dry or liquid collections, thus providing a highly flexible capability at a significantly reduced operational cost. Battelle has demonstrated a 98% true positive rate for BWA simulants sampled under ambient conditions.

Solution

- Effective against bacteria, viruses, and toxins
- Demonstrated sensitivity in ambient air
- Continuous detection and identification
- Automatic collector adaptation to changing background conditions
- Integrated sample archival for forensic analysis
- Compatibility with third-party liquid sample collector/concentrators
- Highly portable, battery operable, modular, able to be networked



Technology

- Detection and identification based on spectroscopic analysis of individual cells or agglomerated non-cellular particulates
- Demonstrated identification at the genus-species level (strain level for relevant organisms)
- Threat library updated by software and readily adaptable to emerging threats
- Adaptable operational configurations for low-volatility chemicals

Advantages

- No need for probes and antibodies, thus lower operating cost
- Continuous identification
- Economical emerging threat detection and identification with respect to chemical methods