U.S. ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND

CBRNE Defense Conference and Exhibition

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RDECOM Chemical & Biological Center
A CENTURY OF CHEMICAL AND BIOLOGICAL EXPERTISE

• ECBC, now known as the U.S. Army Research, Development and Engineering Command Chemical & Biological Center, will join the Army Futures Command with the rest of RDECOM to lead innovation and modernization of the Army.

• The new name demonstrates RDECOM’s unified efforts to create innovative defense technologies for our Warfighters.

• New name, with the same passionate commitment to CB defense.
MODERNIZING CB DEFENSE FOR THE FUTURE FIGHT

Credit: Slaughterbots (2017), Stuart Russell, Ph.D. and the Future of Life Institute
MODERNIZING CB DEFENSE FOR THE FUTURE FIGHT

Integrated Early Warning Systems: Leaning forward with detection, networking and artificial intelligence to provide actionable information to Warfighters, and help commanders make real-time decisions.

• Perceptive Dragon 2 Demonstration
MODERNIZING CB DEFENSE FOR THE FUTURE FIGHT

Advanced Obscurants for protection of next generation combat vehicle and spectral dominance in future fights, allowing Warfighters to be better protected in maneuver.
MODERNIZING CB DEFENSE FOR THE FUTURE FIGHT

Additive Manufacturing

Additive Manufacturing provides cost-effective solutions to quickly build and repair items for Warfighter use.

Programs include:
- MakerSpace
- RAMP-MD partnership
- ADM Apprenticeship Program
Non-aqueous decontamination technologies, such as Metal Organic Frameworks, allow Warfighters and equipment to return to the fight faster after exposure.
Increased collaboration with 20th CBRNE Command and CBRNE School provides opportunities to educate Warfighters on handling CB threats, and ensures that CB defense solutions address their needs.
Synthetic Biology offers the potential to unlock new types of materials by harnessing the natural abilities of living systems, such as self-assembly, sense-and-respond, and molecular-scale control and patterning.
<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
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<tbody>
<tr>
<td>2018</td>
<td>Today we are developing paper tickets embedded with cellular machinery that change color in response to a range of threats.</td>
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<tr>
<td>2023</td>
<td>Syn Bio applications mature enough to transition to acquisition</td>
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<tr>
<td>2028</td>
<td>Novel syn bio systems to be incorporated into deployed systems</td>
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<tr>
<td>2038</td>
<td>Life-mimicking properties, such as sense-and-respond and self-healing, will start to be incorporated into deployed systems.</td>
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MODERNIZING CB DEFENSE FOR THE FUTURE FIGHT

Utilize semi-autonomous systems and robotics as a force multiplier for CB reconnaissance capabilities

- Array Configurable of Remote Network Sensors (ACORNS)
- Deep Purple
MODERNIZING CB DEFENSE FOR THE FUTURE FIGHT
“Engineers and scientists at Aberdeen Proving Ground are developing cutting-edge technology that can be put to broader use, benefiting our economy and our quality of life.”

- Michael Gill, Maryland Commerce Secretary
INDUSTRY IS A KEY PARTNER

- Advanced Manufacturing Division Apprenticeship Program
- TechLinks Innovation Discovery Events
- Maryland Defense Technology Commercialization Center (DefTech)
- Cooperative Research & Development Agreement (CRADA)
- Educational Partnership Agreements
- Technology Support Agreement
- Patent License Agreement
- Army Small Business Innovation Research (SBIR)
- Chemical Biological Defense SBIR
- Army Small Business Technology Transfer (STTR)
- ECBC Broad Agency Announcement (BAA)
- Rapid Innovation Fund BAA
- Memorandum of Understanding
- Memorandum of Agreement (MOA)
- Material Transfer Agreement (MTA)
- Interagency Agreement – non-DoD (IAA)
- JE-RDEP
- CWD OTA
“We are not trying to fight the last war better, we are trying to win the next one”

—General James C. McConville, Vice Chief of Staff of the Army

U.S. Army Research, Development, Engineering Command Chemical & Biological Center is focused on CB technologies that deliver information faster, create equipment that is lighter, ruggedized, and can be applied quickly.
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