



Chemical and Biological Defense

CBIAC
Information Analysis Center

Newsletter

Spring 2002

Volume 3 Number 2

A U.S. Department of Defense Information Analysis Center sponsored by the Defense Information Systems Agency, **Defense Technical Information Center**

DOD COLLECTIVE PROTECTION SCIENCE AND TECHNOLOGY PROGRAM

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Recent events have validated the concern over chemical and biological (CB) agent use in the United States and abroad by terrorists or hostile nations. These events have highlighted the need for improvements to existing Collective Protection (COLPRO) systems. Major defense acquisition programs, such as vehicles, ships, aircraft and shelters and building, benefit from development of advanced CB-protective technologies. COLPRO provides the warfighter with contamination-free, environmentally controlled surroundings for sustained operations in a CB environment without the need for cumbersome individual protection equipment. COLPRO also provides shelters for protection of sensitive equipment and operations that cannot be performed under CB contaminated conditions.

The objectives of this article are: (1) to present a brief introduction on the Department of Defense (DoD) COLPRO Research & Development (R&D) Program, (2) to discuss the development and implementation of a recently completed COLPRO Front-End Analysis and Master Plan (FEA/MP) process that provides a ten-year Research and Development (R&D) plan for technologies with potential application to DoD acquisition programs, and (3) to outline the direction of future R&D developments in COLPRO.

BACKGROUND

The objective of the DoD Chemical and Biological Defense Program (CBDP) is to enable our forces to survive, fight, and win in a chemically or biologically contaminated warfare environment. The DoD CBDP provides development and procurement of systems to enhance the ability of U.S. forces to deter and defend against CB agents. The Joint Science and

Technology Panel for Chemical and Biological Defense (JSTPCBD), under the guidance of the Deputy Assistant to the Secretary of Defense for the Chemical and Biological Defense Program, monitors and guides technology development for CB defense through the following business areas: Point and Standoff Detection, Individual and Collective Protection, Decontamination, Information Systems Technology, Supporting Science and Technology, and Basic Research.

The Collective Protection Business Area is unique among areas under the JSTPCBD, as it supports both CB and non-CB acquisition programs for a number of different mobility platforms or applications, including ground vehicles, aircraft, ship systems, fixed-site facilities, and mobile shelters. Despite the operational diversity of these platforms, each must be capable of supplying breathable air to users and over-pressurization within the protected environment. The requirement of providing CB protection to these platforms or applications has heightened user interest in improved COLPRO technologies, but at the same time has increased user requirements/constraints of minimizing weight, cube, operation and maintenance, and logistics of the integrated COLPRO system, including disposal issues.

Currently, four COLPRO acquisition programs require technologies to provide improved CB protection: the Joint Collective Protection Equipment, the Chemical-Biological Protective Shelter Pre-Planned Product Improvement, the Joint Transportable Collective Protection System, and Shipboard Collective Protection Equipment. In addition, a number of acquisition programs under development by the armed services will require COLPRO technology insertion, including the Future Combat System (expected to replace the Army's main battle

Continued pg. 3



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CDR USA SBCCOM
Edgewood Chemical Biological Center
ATTN: AMSSB-RRT-OM (CBIAC COTR)
5183 Blackhawk Road
Aberdeen Proving Ground, MD 21010-5424

U.S. Government agencies and private industry under contract to the U.S. Government can contact the CBIAC for information products and services. CBIAC services also extend to all state and local governments and the first responder community, to include local emergency planners, firefighters, medics and law enforcement personnel.

The CBIAC is located in Building E3330, Room 150, Aberdeen Proving Ground - Edgewood Area, Maryland 21010. For further information or assistance, visit or contact the CBIAC.

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URL: <http://www.cbic.apgea.army.mil/>



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The CBIAC Newsletter, a quarterly publication of the CBIAC, is a public release, unlimited distribution forum for chemical and biological defense information. It is distributed in hardcopy format and posted in Portable Document Format (PDF) on the CBIAC Homepage.

The CBIAC welcomes unsolicited articles on topics that fall within its to reject or edit submissions. For each issue, articles must be received by Quarter) - February 1st; Summer (Third Quarter) - May 1st; Fall (Fourth Quarter) - August 1st.

of the CBIAC COTR prior to publication. The appearance of an advertisement or article in the *CBIAC Newsletter* does not constitute endorsement by the DoD or the CBIAC.

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DOD COLPRO Science and Technology Program *cont.*

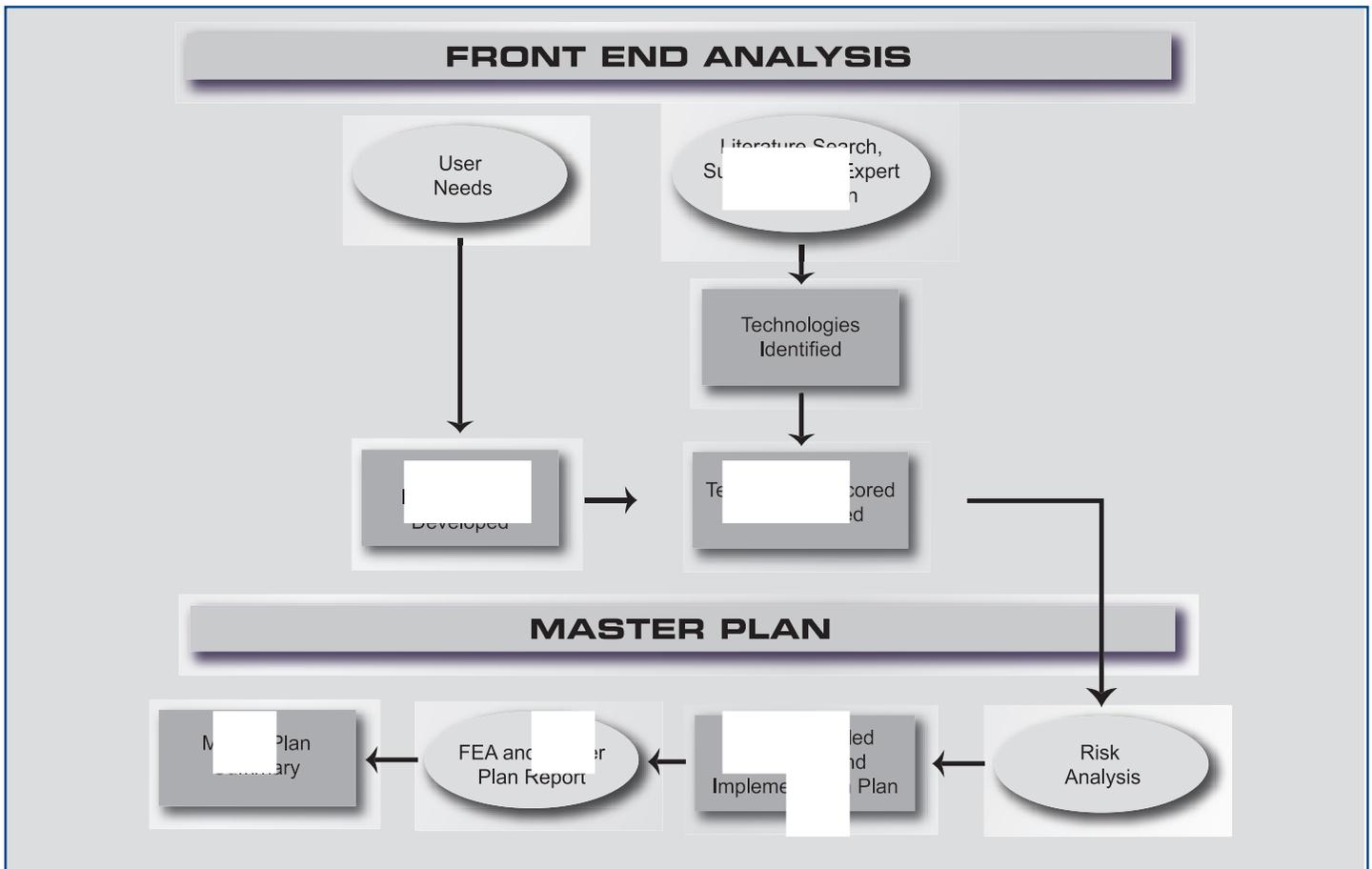
tank, the M1A2 Abrams), aircraft systems, including the RAH-66 Comanche helicopter and the C-17 transport, and shipboard systems integrated into the CVN 77 carrier and the LHA assault ship. In addition, future developmental programs, such as the Joint Advanced Filtration System, will incorporate new technologies identified under the COLPRO business area.

COLPRO FRONT-END ANALYSIS and MASTER PLAN

The JSTPCBD directed the COLPRO business area to conduct an FEA to assess current and emerging technologies, and to use the results of this assessment to develop an MP for technology investment. The FEA effort focused on two major CB-protective thrust areas—air purification, and shelter materials and treatments. The FEA categorized technologies within these thrust areas with respect to their ability to provide COLPRO in five primary application areas: ground vehicles, aircraft, ship systems, fixed sites, and mobile shelters, each of which has specific requirements and concerns. Additionally, non-CB COLPRO thrust areas, such as structural supports, seams and closures, and integrated power and environmental control systems were evaluated during the master plan process. These support system components and relative technologies are crucial to the successful operation of integrated COLPRO systems.

The COLPRO FEA and MP process was recently concluded. This process was employed to evaluate the relative maturity of technologies for air purification and shelter materials and treatments, and to determine their readiness for insertion into CB and non-CB acquisition programs over the next 10 years. The primary objective was to provide the COLPRO Business Area Manager (BAM) with technical and programmatic information needed to make the future investment decisions in technologies with the greatest potential to enhance existing COLPRO systems and to lessen the logistical and operational burdens experienced by the warfighter.

The figure below illustrates the approach used in the FEA and MP processes. Parallel efforts were conducted to identify technologies applicable to the two main thrust areas (air filtration and shelter materials), and to define COLPRO user needs. Pertinent documents, such as the Joint Mission Needs Statement, the Joint Future Operational Capabilities, Operational Requirements Documents for applicable COLPRO programs, and the Joint Service Research, Development and Acquisition Plan, were reviewed to identify user needs and requirements. These needs and requirements were condensed into a set of evaluation criteria, which were used to construct models for assessing the performance of each technology.



Contract Awards • *By Mary Frances Tracy*

Demilitarize Chemical Weapons

Bechtel National Inc.
San Francisco, CA
Delivery Order 0001- part of a \$217,000,000 (cumulative total) contract. January 18, 2002
By Headquarters Operational Support Command,
Rock Island, IL

53 Joint Biological Point Detection Systems (JBPDS)

Technical Products Group, Inc.
Intellitec Division
Deland, FL 32724
\$9,260,600. January 18, 2002
By U.S. Army Robert Morris Acquisitions Center,
Edgewood Branch, MD

Chemical Demilitarization on Johnston Island

Washington Demilitarization Company
Boise, ID
\$6,717,106 (Increment to \$552,643,277).
January 28, 2002
By Operations Support Command,
Rock Island, IL

Expand Metropolitan Medical Response System, Develop Regional Hospital Emergency Plans, Enhance Lab Capabilities, Improve Health Alert Communications, and Increase the Country's Emergency Stockpile of Medical Supplies

Various States
\$240,000,000. January 2002
By U.S. Department of Health and Human Services,
Washington D.C.

RAPID Long-Distance Detection Systems

Bruker Daltonics, Inc.
Billerica, MA
\$1,000,000 (approximate). February 4, 2002
By U.S. Department of Defense Foreign Military Financing,
Washington D.C.

Exploratory and Development Research for the Biological Effects of Directed Energy Applications

Veridian Engineering, Inc.
Burke, VA
\$27,150,000 (estimated). February 11, 2002
By 311th Human Systems Wing,
Brooks Air Force Base, TX

Production of Custom Lyophilized Polymerase Chain Reaction (PCR) Assays for Bacterial and Viral Organisms

Idaho Technology, Inc.
Salt Lake City, UT
\$2,502,000 (Base Year Award on a Cumulative Total of \$13,554,000). February 14, 2002
By North Atlantic Medical Command Contracting Center,
Washington, DC

Chemical Weapons Demilitarization at Johnston Island

Washington Demilitarization Co., Boise, ID
\$73,228,500. February 21, 2002
By Headquarters Operations Support Command,
Rock Island, IL

237 Biological Agent Warning Sensor (BAWS) and Contractor Logistical Support for Joint Biological Program Detection System (JBPDS)

Technical Products Group, Inc.
Intellitec Division
Deland, FL 32724
\$14,150,000. February 22, 2002
By U.S. Army Robert Morris Acquisitions Center,
Edgewood Branch, MD

Product Improvement for the Design, Development, and Production of Rubber Skins for the MCU-2A/P Gas Mask

American Technology Corp.
Baltimore, MD
\$6,632,200. March 13, 2002
By 311th Human System Program Office,
Brooks Air Force Base, TX

140,000 XM100 Sorbent Decontamination Systems

Guild Associates, Inc.
Dublin, OH
\$6,837,100. March 15, 2002
By U.S. Army Robert Morris Acquisitions Center,
Edgewood Branch, MD

Engineering, Manufacturing and Development of the Joint Service General Purpose Mask

Avon Rubber and Plastics
Cadillac, MI
\$500,000 (Increment to \$15,031,953 Cumulative Total).
April 5, 2002
By U.S. Army Robert Morris Acquisition Center,
Aberdeen Proving Ground, MD

Technological Assessment of Medical Research and Development Programs

American Institute of Biological Sciences
Sterling, VA
\$12,520,176. April 19, 2002
By U.S. Army Medical Research Acquisition Activity,
Fort Detrick, MD

Development of the Institute of Soldier Nanotechnologies University Affiliated Research Center

Massachusetts Institute of Technology
Cambridge, MA
\$70,000,000. April 26, 2002
By U.S. Army Robert Morris Acquisition Center,
Durham, NC

New CBIAC Information Resources • By Richard M. Gilman

Books

Tucker, Jonathan. **Scourge: The Once and Future Threat of Smallpox**. New York: Atlantic Monthly Press, 2001.

The author, Director of the Monterey Institute for International Affairs, traces the history of smallpox and its impact on human affairs.

There are chapter length treatments of the ravages caused by smallpox epidemics of the past; the introduction and effects of Dr. Edward Jenner's smallpox vaccine; the successful, two-decade long, World Health Organization campaign to eradicate smallpox; the Soviet Union's secret biological weapons program and its weaponization of smallpox; the recent debates over whether to destroy the remaining research samples of the deadly virus; the "stay of execution" for the smallpox virus and the re-emergence of the smallpox threat—this time as a potential bioterrorist weapon.

Includes numerous tables, figures, six appendices and an index.

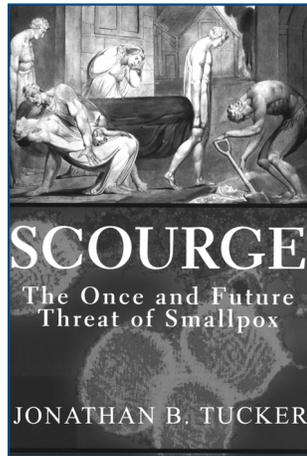
CB-183525
ISBN 0-87113-830-1
Atlantic Monthly Press
841 Broadway
New York, N.Y. 10003
Phone: (212) 614-7850
Fax: (212) 614-7886

Documents from the Web

Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction. **Third Annual Report to the President and the Congress of the United States of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction. III. For Ray Downey**. Washington, D.C.: Rand Corporation, 2001
<http://www.rand.org/organization/nsrd/terrrpanel>

This third annual report, published a few months after the terrorist attacks of September 11th, focuses on challenges in five specific areas: (1) Empowering State and Local Response; (2) Improving Health and Medical Capabilities; (3) Strengthening Immigration and Border Controls; (4) Addressing Cyber Security; and (5) Clarifying Roles and Missions on the Use of the Military.

Includes numerous appendices dealing with various aspects of homeland defense, emergency preparedness, and counter-terrorism.



CB-160320
Rand Corporation
1333 H Street, N.W.
Washington, D.C. 2000-4707

Alexander, Lexi. **Decontaminating Civilian Facilities: Biological Agents and Toxins**. Alexandria, VA: Institute for Defense Analysis, 1998. <http://208.184.25.73/technical.htm>

"Bioterrorism has emerged as one of the greatest potential threats to our society. OATSD/(NCB)/CP (Office of the Assistant Secretary of Defense for Nuclear, Chemical and Biological Defense Programs/Counterproliferation) was concerned that while many efforts were focusing on the front end of a biological terrorism incident, such as dealing with mass casualties, few were focusing on the later stages of this type of disaster, namely, the decontamination and restoration of a clean and safe building to the public." (*Executive Summary*)

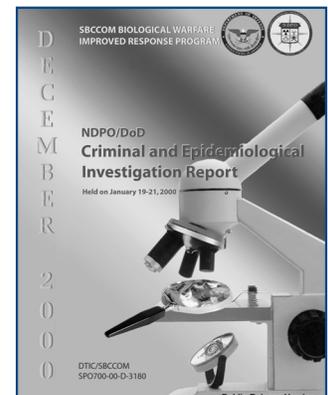
CB-104588
Institute for Defense Analysis
Alexandria, VA 22311

NDPO/SBCCOM. Homeland Defense: NPDO/DoD Criminal and Epidemiological Investigation Report. January 2000. Washington, D.C.: NDPO/SBCCOM, 2000.
http://www2.sbccom.army.mil:80/hld/bwirp/bwirp_npdo_dod_ceir_download.htm

"...there is a gap in the coordination and cooperation between the criminal and epidemiological investigations that would take place following an actual bioterrorist incident. The law enforcement community and the medical/public health community typically conduct their investigations separately and independently. As a result, information that may benefit one or both investigations is not obtained or exchanged. In an effort to close this gap, SBCCOM teamed with the National Domestic Preparedness Office (NDPO) to sponsor a workshop in January 2000." (*Introduction*)

CB-178659
National Domestic Preparedness Office
Washington, D.C. 20535

National Institute of Justice. **An Introduction to Biological Agent Detection Equipment for Emergency First Responder, NIJ Guide 101-0. December 2001**. Washington, D.C.: U.S. Department of Justice, 2001.
<http://www.ojp.usdoj.gov/nij/pubs-sum/190747.htm>



Calendar of Events

The CBIAC highlights conferences, symposia, meetings, exhibitions and workshops of interest to the CBD community both on our website and in every issue of our newsletter. If you would like to have a CBD-related event posted on the CBIAC Calendar of Events, submit the pertinent information via email to cbiac@battelle.org. Due to space limitations, the CBIAC will accept submissions on a first-come, first-served basis and reserves the right to reject submissions. For a more extensive list of events, **visit our website at <http://www.cbiac.apgea.army.mil/>**.

June 6-7, 2000

Homeland Security Summit: Threats and Solutions

Ronald Reagan Building and International Trade Center;
Washington, D.C.

<http://www.mcgraw-hill.com/homeland/index.htm>

June 9-12, 2002

BIO 2002 International Biotechnology Convention & Exhibition: "Life Advances"

Metro Toronto Convention Centre; Toronto, Ontario, Canada

<http://www.bio2002.org>

June 10-12, 2002

The 2nd Annual Symposium and Exhibition on Terrorism Preparedness and Response

(#2450)

Millennium Biltmore Hotel; Los Angeles, CA

POC: NDIA

Phone: 703.522.1820 Fax: 703.522.1885

<http://www.ndia.org>

<http://register.ndia.org/interview/register.ndia?PID=Brochure&MID=2450>

June 10-12, 2002

COURSE: Biological Weapons and Other Dangers: Risks, Responses and Responsibilities of Bioscientists (62A)

Harvard University; Cambridge, MA

POC: Federation of American Scientists (FAS)

<http://www.fas.org>

June 10-14, 2002

COURSE: Field Management of Chemical and Biological Casualties (FCBC)

Aberdeen Proving Ground, MD

POC: Chemical Casualty Care Division, USAMRICD

Phone: 410.436.2230 DSN 584.2230

Fax: 410.436.3086 DSN 584.3086

ccc@apg.amedd.army.mil

<http://ccc.apgea.army.mil/>

June 17-21, 2002

Eurosatory

Paris, France

<http://www.salon-eurosatory.fr/affiche2.htm>

June 18-20, 2002

COURSE: DoD HAZMAT Training

Palatine, IL

<http://www.cvent.com/l.asp?code=ezzlheziodliyvlcizinqliibblr366d>

June 18-22, 2002

70th Annual MORS Symposium: The Next Frontier-The War on International Terrorism

Ft. Leavenworth, KS

POC: MORS

Phone: 703.751.7290 Fax: 703.751.8171

morsoffice@aol.com

<http://www.mors.org>

June 19, 2002

The National Conference on Homeland Security: Addressing Safety And Security In Our Changing World

Washington, D.C.

<http://www.nchomelandsecurity.org/ConferenceInfo.asp>

June 21-23, 2002

Domestic Preparedness 2002, A New Standard

The Thunderbird Hotel and Conference Center;

Minneapolis, MN

<http://www.mhususa.com/domprep2002.html>

June 24-25, 2002

BECON 2002: Sensors for Biological Research and Medicine

Natcher Conference Center

National Institutes of Health; Bethesda, MD

POC: MasiMax Resources, Inc.

Phone: 240.632.5618 Fax: 240.632.0519

mbrown@masimax.com

<http://www.masimax.com/becon2002/index.cfm>

June 30-July 3, 2002

National Environmental Health Association Chemical and Bioterrorism Preparedness Conference 2002

Minneapolis Hilton; Minneapolis, MN

POC: NEHA

Phone: 303.756.9090 Fax: 303.691.9490

staff@neha.org

<http://www.neha.org>

July 22-26, 2002 (see web site for additional dates)

COURSE: Weapons of Mass Destruction Installation Emergency Responder Training Course (WMD IERTC)

U.S. Army Chemical School; Ft. Leonard Wood, MO

POC: US Army Chemical School

Phone: 573.596.0131 ext. 6-2452 Fax: 573.596.2479

<http://www.wood.army.mil/cmtd/wmd/wmd-iertc.htm>

Calendar of Events *cont.*

August 13-15, 2002

2002 MSS National Symposium on Sensor and Data Fusion

SPAWAR Systems Center; San Diego, CA
POC: IRIA Center, Veridian Systems
Division, Inc.

Phone: 734.994.1200 ext. 2821/2881

Fax: 734.994.5550

mss@veridian.com

<http://www.iriacenter.org>

<http://www.iriacenter.org/irismet.nsf/Sensor%20Fusion?OpenPage>

August 19-22, 2002

7th Annual Joint Services Pollution Prevention and Hazardous Waste Management/Tri-Services CADD/GIS

Henry B. Gonzalez Convention Center;
San Antonio, TX

POC: NDIA

Phone: 703.247.2587

Fax: 703.522.1885

<http://www.p2-hwmconference.com>

http://tsc.wes.army.mil/center_info/symposium/symposium.asp

http://register.ndia.org/interview/register.ndia?PID=Brochure&SID=_0M60TRS6D&MID=2400

August 21-23, 2002

Global Summit on Cyber Terrorism and the Targets of Critical Infrastructures

Grand Hyatt Washington; Washington,
DC

<http://www.sector5.biz>

September 1-5, 2002

NEMA 2002 Annual Conference

Ashville, NC

<http://www.nemaweb.org/Meetings/Conference.cfm>

September 6-13, 2002

Worldwide Chemical Conference & Exhibition

(#2300)

Fort Leonard Wood, Missouri

POC: NDIA

Phone: 703.522.1820

Fax: 703.522.1885

<http://www.ndia.org>

Highlights From the MRICD Toxicogenomics Conference

By: Cindy Kronman, PAO, U.S. Army MRICD

The U.S. Army Medical Research Institute of Chemical Defense (MRICD) sponsored a mission-associated Toxicogenomics Conference on November 9, 2001. Toxicogenomics, the application of the recent advances in the molecular biological sciences involving DNA, RNA and protein to the problem of toxicology, has its foundation within the fast-moving field of genome sequencing. Many areas of research on the toxicity and treatment of chemical warfare agent exposure can benefit from these biotechnology advances by defining which genes are affected during toxicity and which are important to successful treatment.

Scientists at MRICD started an effort in 1997 to vigorously apply the recent advances in gene expression technology to the problem of medical chemical defense. Other government laboratories, such as the U.S. Air Force Research Lab, U.S. Army Center of Environmental Health Research, U.S. Army Medical Research Institute of Infectious Disease, U.S. Army Edgewood Chemical Biological Center, and Walter Reed Army Institute of Research, have similar research interests. The conference allowed scientists to discuss recent advances in technology, share data, and plan future directions for their research.

Col. James A. Romano, Jr., commander, MRICD, opened the conference with a challenge to its participants:

"My goals for the workshop," said Romano, "are to determine the capability of this technology to lead to a leap ahead in our ability to understand and medically defeat chemical warfare agents, to determine how your technologies are currently being applied in chemical defense, to foster serious collaboration efforts among you and to enable the DoD labs to leverage our intellectual power with that of industry and academia."

The conference, organized by Dr. John Schlager, one of the MRICD's principal

investigators actively using this technology, and Lt. Col. Harry Slife, MRICD's chief, Pharmacology Division, brought together scientists from fourteen different laboratories, from industry and academia as well as from government. Participants covered such topics as the application of toxicogenomics technologies to the study of specific chemical warfare agents, use of alternative species and cultured cells as models, aspects of environmental monitoring by using toxicogenomics, and emerging methods of research and data analysis in the field. The two main chemical warfare agent research efforts highlighted were sulfur mustard and low-dose agent exposure.

As the conference concluded Romano observed:

"It is evident that the ability to identify DNA changes, which is possible now because of an improved ability to identify genes, as well as advances in computer software development, are already being effectively used in medical chemical defense research to identify mechanisms and potential targets for therapy. Conventions for data analysis are being validated and adopted, which will allow for comparability of data among the participating labs. Finally, clearly the participants intensely share intellectual interests. This offers the potential for remarkable advances in medical protection against CWA."

For further information email
Cindy Kronman:
cindy.kronman@amedd.army.mil



Note: This press release was intended for the Winter 2002 issue. Our apologies for the delay.

IN THE NEWS • *By Mary Frances Tracy*

Printed Media

ECBC's Homeland Defense in Demand and other CBD resources

CB Quarterly

Issue 28 December 2001
POC: Edgewood CB Center's Advanced Planning and Initiatives Directorate
cet@sbccom.apgea.army.mil

Next-Generation Materials For Biological Weapon Detection

Army AL&T

January-February 2002
"The Army has been researching the application of advanced biotechnology to devise new molecules that recognize BW agents, with an emphasis on how these molecules will provide the means to develop more specific and sensitive sensors to detect BW agents."

Web Site News Articles

Small Sensors Continually Monitor Water and Air for Harmful Compounds

JOM
smalltimes January 9, 2002
"As fears of chemical and biological warfare escalate, a system of sensors developed by the U.S. Department of Energy's Sandia National Laboratories has been offered as a potential preventative tool."
http://www.smalltimes.com/document_display.cfm?document_id=2875

Lockheed Creates Mail Biohazard Detection System

By Andrea Shalal-Esa
Reuters January 15, 2002
"Lockheed Martin Corp., the leading supplier of mail-sorting equipment to the U.S. Postal Service, said on Tuesday it developed an inexpensive system to detect possible biohazards in mail after last year's anthrax scare, and could begin installing it within two months."
<http://www.laurushealth.com/HealthNews/reuters/NewsStory0115200228.htm>

Salt Lake's Ability to Respond to Bioterrorism Strengthened; BioDex™ Supports Area Hospitals and Emergency Responders

PR Newswire January 28, 2002
"In response to security concerns related to the upcoming Olympic Games, MICROMEDEX has partnered with area hospitals to distribute bioterrorism response information. With BioDex, MICROMEDEX has created a single electronic repository for intuitive and immediate access to information on the identification, protection, and treatment of the agents of bioterrorism."
<http://library.northernlight.com/FA2002012880000077.html?cb=0&sc=0#doc>

Space Invention May Protect Against Bioterrorism

By Nicole Charbonneau
HealthScout News February 7, 2002
"Technology created to maintain greenhouses in space could

have an unexpected benefit – protecting office workers from a bioterrorist attack."
<http://health.yahoo.com/search/healthnews?lb=s&p=id%3A8859>

Electro-Chemical Technologies Launches Commercialization of Building Decontamination Technology

Business Wire February 7, 2002
"The recent anthrax tainted letters sent to various news outlets and government organizations across the country constituted the first significant biological attack on the United States soil."
<http://library.northernlight.com/FC20020207740000898.html?cb=0&sc=0#doc>

Mercy Crew Trains for Chemical, Biological and Radiological Warfare

By Journalist 1st Class Sonya Ansarov
USNS Mercy Public Affairs
Story Number: NNS020215-05 February 15, 2002
"The terrorist attacks of Sept. 11, 2001, were a wake-up call to the importance of getting and staying ready. One way the crew of USNS Mercy (T-AH 19) is doing just that is by realistic response training to a deadly trilogy of possible attacks."
http://www.news.navy.mil/search/display.asp?story_id=877

Everything DoD Does Is to Protect American Way of Life

By Rudi Williams
AFIS/American Forces Press Service March 29, 2002
" 'Everything the Department of Defense does is aimed at homeland security,' said Peter F. Verga, DoD's special assistant for homeland security. 'What we're doing in Afghanistan and around the world to win the war on terrorism is specifically to provide security for the people of the United States,' said Verga, who directs DoD's Homeland Security Task Force. His responsibilities include conducting and managing complex studies and analyses to establish policies and procedures to focus and upgrade DoD's preparation for, and response to, acts of terror."
http://www.defenselink.mil/cgi-bin/dlprint.cgi?http://www.defenselink.mil/news/Mar2002/n03292002_200203291.html

Army Teams With Massachusetts Institute Of Technology (MIT) To Establish Institute For Soldier Nanotechnology

U.S. Army News Release
#R-02-011 March 13, 2002
"Today, the U.S. Army Research Office announced the selection of the Massachusetts Institute of Technology (MIT) to serve as the newest Army-sponsored University-Affiliated Research Center (UARC) for the Institute for Soldier Nanotechnologies (ISN). The ISN will provide the Army with a corps of expertise in the development and application of nanotechnology for the soldier; including the creation of uniforms and materials that could help heal soldiers, protect against bullets, chemical agents or monitor a soldier's life support processes."
<http://www.dtic.mil/armylink/news/Mar2002/r20020313r-02-011.html>

U.S. Army Non-Stockpile Chemical Materiel Project Completes First Set of Engineering Scale Tests

*PLASMOX® System Tested in Switzerland on
Neutralent Simulants*

Media Release Edgewood, Md. —

The U.S. Army Non-Stockpile Chemical Materiel Project (NSCMP) has completed the first of three phases of engineering scale testing plasma-arc technologies for the destruction of neutralents. Neutralents are compounds produced by the destruction of either chemical agents or industrial chemicals.

In January 2001, while under contract with Stone & Webster for NSCMP, Burns and Roe Enterprises, Inc. and its technology partner, MGC Plasma AG of Switzerland, completed tests of MGC's PLASMOX® plasma system. Plasma is generated from ionizing gas so that it becomes a conductor of electrical energy. Plasma technologies use a high intensity electrical discharge, or arc, to break apart the chemical bonds of solid, liquid and gaseous compounds into simpler, non-hazardous compounds. It has been demonstrated that both liquid and solid wastes can be processed effectively using plasma technologies. The demonstration was performed at MGC's facilities using their transportable plasma system.

The purpose of the testing was to assess system operability during the processing of two simulated neutralent waste streams and to obtain engineering data to support preliminary design parameters. The scale tests were also used to demonstrate maximum system throughput; the continuous, stable operation of the PLASMOX® system; and the ability to treat neutralents so their byproducts can be readily disposed of without additional treatment. The tests also provided assurance that the system's discharge would meet or exceed environmental laws and regulations.

The chemical agents treated during the scale tests were Sarin (GB) and Mustard (H). Each of the agents was combined with the neutralent monoethanolamine, or MEA. The results of the first of three tests indicate that neutralent byproduct streams treated by a PLASMOX® unit can be disposed as non-hazardous wastes. Additional plasma technology tests are planned based on the results of the PLASMOX® system tests.

The PLASMOX® plasma system was selected by NSCMP for limited engineering scale testing based on the recommendation of an independent group of academics, related industry professionals and citizens known as the Technology Evaluation Panel (TEP). The TEP's members have many years of experience in conducting technology evaluations for government and industry.

PLASMOX® technology has been successfully deployed in fixed-base and mobile applications in Europe and Asia. The German Ministry of Defense selected plasma-arc technology to treat chemical warfare materiel and contaminated soils. The transportable plasma system was used to destroy chemical warfare agents including Clark, Lewisite, Phosgene, Adamsite and Yperit. Based on its proven success, the plasma system was recently shipped to Albania to destroy its chemical warfare munitions and agents.

[For more information, please contact the Program Manager for Chemical Demilitarization Public Outreach and Information Office at \(800\) 488-0648.](#)

U.S. Army MRICD 2002 Bioscience Review

June 2-7, 2002

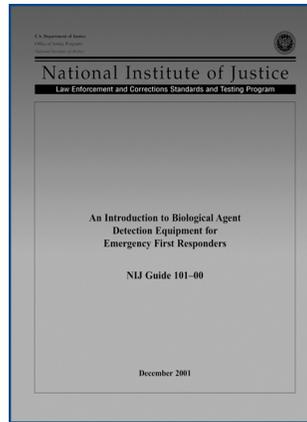
"Confronting Chemical Threats with Medical Research" was the theme of the thirteenth biennial medical chemical defense Bioscience 2002 Review, hosted by the US Army Medical Research Institute of Chemical Defense (MRICD), 2-7 June at the Marriott's Hunt Valley Inn, Hunt Valley, Maryland. Attended by subject matter experts from the Department of Defense, academia, industry and many allied countries, the conference featured platform talks with panel discussions as well as poster presentations. This year, 90-minute afternoon workshops allowed for additional discussion and information exchange.

The conference reviewed research progress on a variety of efforts in the Medical Chemical Defense Research Program, as well as current research efforts in the area of biological toxins. Sessions included nerve agent seizures, neuroprotection, nerve agent scavengers and biotechnology, low dose chronic exposure, chemical casualty care doctrine, vesicating agents, topical skin protectants and active topical skin protectants, and diagnostics and medical management of chemical casualties.

Scheduled social events fostered continuing interaction among conference participants. Planned events included an evening at Baltimore's National Aquarium, open only for bioscience attendees and their guests. The closing banquet on Thursday evening included a keynote address by Dr. Richard Leitch of the Uniformed Services University of Health Sciences. Dr. Leitch's presentation was entitled "Black September: Terrorism, Weapons of Mass Destruction, and Homeland Security Post-9/11."

New Info. Resources *cont.*

"This NIJ Guide provides emergency first responders with information to aid them in their understanding of biological agent detection equipment. Among the topics discussed include: the four most common classes of biological agents, challenges to biological agent detection, biological agent detection system components and technologies, and preparation for a biological incident. The Guide concludes with a summary on the current state of biological agent detection." (*Publisher's Synopsis*)



CB-187541

U.S. Department of Justice
Office of Justice Programs
810 Seventh Street, N.W.
Washington, D.C. 20531

O'Connor, Laurel E., Preparer. **A Comparison of Decontamination Technologies for Biological Agent on Selected Commercial Surface Materials.** SBCCOM, Biological Weapons Improved Response Program, Aberdeen Proving Ground, MD, 2001
<http://208.184.25.73/technical.htm>

"This study evaluates available technologies (mostly research-scale) on the basis of to what level these technologies reduce the spore contamination on panels of different materials, which represent office environments. The testing platform consisted of six vertical surfaces, each made of a different material which could be commonly found in a typical civilian office environment. These test surfaces were uniformly contaminated with the bacterial agent simulant, *bacillus globigii*, BG and then sampled to determine the concentration level of the contamination at time zero (t=0). The test participants decontaminated the panels using their technology and procedure. The following day, the test panels were sampled again by swabbing to check for surviving BG spores." (*Executive Summary*)



CB-160429

SBCCOM
Biological Weapons Improved Response Program
Aberdeen Proving Ground, MD 21010

In the News *cont.*

Military Works to Meet Transformation Goals

By Linda D. Kozaryn

AFIS/American Forces Press Service April 10, 2002
"No one knows what threats the future holds. So defense officials must prepare for the unexpected. Testifying before the Senate Armed Services Committee April 9, Deputy Defense Secretary Paul D. Wolfowitz outlined steps the U.S. military is taking in preparing to meet future challenges. He said the Defense Department has moved away from the 1990s idea of planning for two major, nearly simultaneous regional wars. Instead, officials now plan for a wider array of contingencies." http://www.defenselink.mil/cgi-bin/dlprint.cgi?http://www.defenselink.mil/news/Apr2002/n04102002_200204104.html

Army Scientists Win Awards for Bio Detection

ArmyLink News

Army News Service

April 15, 2002

"Two scientists from the Edgewood Chemical Biological Center near Aberdeen, Md., were recipients of this year's 'Excellence in Technology Transfer' awards from The Federal Laboratory Consortium." ... "This year's winners from Edgewood were Dr. Charles Wick and Dr. Peter Stopa and his team. Both developed detection technologies for viruses and biological agents." <http://www.dtic.mil/armylink/news/Apr2002/a20020415techawards.html>

Web Sites: **Homeland Security**

Homeland Defense Journal

<http://www.homelanddefensejournal.com/>

Federal Emergency Management Agency

<http://www.fema.gov>

Centers for Disease Control

<http://www.cdc.gov>

U.S. Army Soldier and Biological Chemical Command

<http://www.sbccom.army.mil>

FirstGov

America Responds to Terrorism

<http://www.firstgov.gov/Topics/Usgrresponse.shtml>

Web Sites: **CBD News**

eMedicine – Instant Access to the Minds of Medicine

"Article Index by Specialty" provides CBD-related articles under the category of "Emergency Medicine: Biochemical Warfare." http://www.emedicine.com/emerg/WARFARE__CHEMICAL_BIOLOGICAL_RADIOLOGICAL_NUCLEAR_AND_EXPLOSIVES.htm

National Defense Magazine

Current issue as well as past issues can be searched by text term, author or topic. Searching for "Chemical Defense" or "Biological Defense" retrieves pertinent CBD articles. <http://nationaldefense.ndia.org>

eCatalyst

CBD-related articles included in each issue.

<http://www.sbccom.army.mil/hooah/archive/index.htm>

DOD COLPRO Science and Technology Program *cont.*

Candidate technologies were identified through literature searches and consultation with subject matter experts (SMEs) from government, industry and academia. The initial field of candidates was narrowed to technologies that require development in support of DoD acquisition programs.

The FEA relied upon participation from SMEs with a broad range of knowledge about the technologies and their potential to provide CB protection. SME panels applied the evaluation model to the selected technologies. Assessments were conducted and the logical decision software was used to produce rankings of air purification technologies for each of the five application areas, and of shelter materials and treatments for each of three applications (fixed site materials, mobile shelter materials, and mobile shelter material treatments).

Using the results of these technology assessments, the SMEs considered the technologies' uncertainty and technical risk, advancing to the Master Plan phase of the effort the more mature technologies and those that offer significant improvements in performance. The SMEs estimated resource and time requirements for insertion of high-potential technologies at key program milestones over the ten-year time period. The technologies were then considered within a structured investment strategy, which allowed for the determination of the optimum cost-to-benefit ratio for the different options.

The FEA and MP effort was a structured approach to identify technologies with potential for CB protection within COLPRO systems, and resulted in the development of a decision support tool for the COLPRO BAM to use when considering program funding and structure. Technologies will advance rapidly over the next ten years, offering reduced size and weight, improved protection, and more facile integration into systems. The FEA and MP will continue to serve the COLPRO business area in determining the best investment strategy by providing a structurally sound basis for evaluating technologies as they mature.

VISION FOR COLPRO

Future collective protection equipment development efforts will be focused on integrated NBC protection systems at the crew, unit, and platform level. Modernization efforts will concentrate on: (1) improvements to current vapor and particulate filtration media to extend filter life and to offer improved performance against current and/or emerging threats, (2) advanced air filtration (vapor and particulate) technologies, integrated with environmental control, to greatly reduce the logistical burden and offer greatly improved performance against current and postulated threats, (3) increased application of collective protection systems onto vehicles, vans, shelters, fixed sites, and ships, within the Joint Services, (4) improved transportable shelter system with integrated power/environmental control/ filtration, (5) improvements to

current collective protection systems to reduce weight, volume, and power requirements, (6) standardization of filters within the joint services to address storage and procurement concerns, and (7) other COLPRO system requirements, such as increased blast and fragmentation protection or optimized energy management.

The COLPRO Business Area R&D vision is to enhance technologies that provide a protected environment for personnel and mission critical equipment in DoD operations. Making collective protection inherent to the shelter, weapon platform, or building without substantial costs is an important objective that directs R&D efforts towards reducing operation, maintenance, and logistical burden. A balanced program that considers the total force protection scenario, takes a systems approach, and addresses all application areas within the services will provide comprehensive protection and best value.

For more information on COLPRO contact Bruce J. Nielsen at 850-283-6227 or email: bruce.nielsen@tyndall.af.mil.

NBC Defense Collective Protection Conference 2002 (COLPRO '02)

The **NBC Defense Collective Protection Conference (COLPRO 02)** is being organized by the Chemical Biological Defense Programs Office in cooperation with the U.S. Army, U.S. Navy, U.S. Air Force and U.S. Marine Corps, and joint organizations. The theme is "21st Century Collective Protection." The conference will be held at The Rosen Centre Hotel, Orlando, Florida, 29-31 October 2002. The objective of the conference is to bring together the military, government, industry, and academic communities to exchange information on technologies, concepts and applications of NBC protection to support Department of Defense requirements. It is a forum to attract not only the established military-industrial community, but also the larger base of non-traditional sources of ideas, methodologies, and technologies that can be applied to address military collective protection requirements.

For further information contact:

**Science and Technology Corporation
Meeting Services International
ATTN: COLPRO 02 /
Diana McQuestion**

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Hampton, Virginia 23666-1393 - USA
Telephone: 757-766-5831 Fax: 757-865-1294
Email: meetings@stcnet.com
www.colpro2002.com

Look for the CBIAC Booth at These Conferences

* **Worldwide Chemical Conference & Exhibition**

Ft. Leonard Wood, MO,
September 6 - 13, 2002

* **NBC Collective Protection Conference 2002**

Orlando, FL, October 29 - 31, 2002

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