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**FACSIMILE TRANSMISSION**

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DATE: June 3, 1999 *faxed refax'd 6-7-99 Tel*

TO: Julie Hooks  
Office of Congressman Jerry Lewis

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FROM: Admiral Zumwalt

TOTAL NUMBER OF PAGES INCLUDING THIS COVER SHEET: 5

Ms. Hooks:

At a meeting with Congressman Bill Young, he suggested that I schedule a meeting with Congressman Lewis concerning their work together on the Appropriations Committee.

The topic is my work with the National Center for Countermeasures to Biological and Chemical Threats housed at Texas Tech University in Lubbock, Texas. Please see attached executive summary.

Please call my assistant, Priscilla Barry, to discuss dates. I am headed out of town on Wednesday, June 9, but am available on June 7 and 8. I would need only 15 minutes of the Congressman's time.

# A NATIONAL CENTER FOR COUNTERMEASURES TO BIOLOGICAL AND CHEMICAL THREATS

## EXECUTIVE SUMMARY

### **Texas Tech University System**

The Institute of Environmental and Human Health (TIEHH)  
Texas Tech University  
Texas Tech University Health Sciences Center

### **University of Texas System**

University of Texas at Austin  
University of Texas Medical Branch at Galveston  
University of Texas-Southwestern Medical School

### **University of South Florida**

College of Public Health

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**Other Collaborators:** U.S. Department of Justice (South Texas); Texas Department of Health; Emergency Preparedness First Responders (Austin, TX); Florida Department of Health (Tampa, FLA); The Institute for Defense Analysis (Alexandria, VA); The Center for Professional Development and Training (CPDT) at the Department of Defense; South Plains College (Lubbock, TX)

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**Overview of Statement of Work:** The attached document provides descriptions of specific projects and interdisciplinary teams of expertise to provide real solutions to current inadequacies in military and civilian biodefense capabilities and training.

#### **Purpose:**

- To conduct basic and applied research, education, and training in order to improve the ability of the Department of Defense and other federal agencies to address chemical/biological terrorism.
- To provide scientific resources and a central facility aimed at improving countermeasures to chemical/biological terrorism and training. This facility at the Reese Center in Lubbock is envisioned as a *permanent resource for the American public* that will draw expertise from academia, government, military, industry, and the private sector.
- To help the Department of Defense develop a prototype capability that can be a) implemented in a national threat condition, b) used as a test bed or c) serve as a springboard for other regional or national efforts.

**Focus:** Drawing from multiple disciplines and pools of expertise (universities, government, the public sector), a working infrastructure will be developed for interdisciplinary research and training in countermeasures to CB agents.

**Approach:** There are four thrust components required:

- 1) scientific validation of a possible biological/chemical incident (including air/fluid sampling, determination of pathogen virulence factors/pathogenicity islands and signatures, multi-array sensors);
- 2) physical and medical countermeasures for use on regional/national scale or on small groups of affected persons (e.g. rapid diagnosis, pharmaceuticals, vaccines, triage, quarantine, epidemiology and transport)
- 3) communication so that appropriate action is taken by authorities with minimal social disorganization;
- 4) development of an integrated system (integration of sensors into systems; conversion of data to information including data fusion and iconography, modeling).

These four areas are congruent with the requirements for biological warfare defense identified by the Defense Advanced Research Projects Agency (DARPA) and with JV 2010 identified by the military services. The Biological Warfare Defense, the Combat Casualty Care and Controlled Biological Care section of the DARPA Defense Science Office (DSO) have seven research and development areas that are addressed by this proposal: Unconventional Pathogen Protection (UPP); Sensors; Advanced Diagnostics; Tissue Based Biosensors; Accelerated Consequence Management; Advanced Biomedical Technologies; and Biomimetic Systems.

The following team members are currently supported by the BWD Program of DSO: Steve Kornguth (Unconventional Pathogen Protection-UPP), Robert Shope (UPP), Stephen Johnston (UPP), George Georgiou (Sensors).

The Joint Chiefs of Staff Vision 2010 elements of full dimensional protection, full spectrum dominance and precision engagement are directly addressed by this proposal.

A proposed integrated team can assist the Department of Defense and other relevant government agencies in comprehensively addressing the challenges of social and response disorganization that might be anticipated during and immediately after a biological/chemical incident. The team can offer an analytical element to appropriate authorities and thereby strengthen the framework of national security.

### **Focus Areas of National Center Participants**

#### **Texas Tech University System:**

R&D of novel medical and physical countermeasures for chemical/biological agents (Unconventional Pathogen Protection- DSO of DARPA)

- clothing and barrier materials, using "smart" fabrics
- decontamination equipment and materials
- pharmacological intervention strategies
- development of anti-virals and anti-bacterials
- early detection and risk assessment for humans, crops, and animals

State-of-the-art modeling (physical, toxicological, physiological, epidemiological) with supercomputer on-site (DSO and ISO Divisions of DARPA)

Expertise in potential agricultural targets of bioterrorism (APHIS/USDA. APHIS activity in biological warfare defense closely interactive with DARPA DSO programs).

Development of Reese Center, including virtual reality laboratory, as a facility for military, interagency, and civilian training. Includes lodging and dining facilities, a fully-equipped hospital and runways for scenario training.

Facilities for field testing of countermeasures

#### **University of Texas System**

R&D in novel sensor design (Sensors/Tissue based sensors/UPP/Biomimetic systems of DSO DARPA; Advanced ISR management [AIM] of ISO at DARPA)

Medical triage (development and training; UPP, Advanced Biomedical Technologies [ABT]/Accelerated Consequence management [ACM])

Medical countermeasures—anti-virals, anti-bacterials, pharmaceuticals (UPP, ABT, ACM)

Integration with existing federal and state infrastructure, including First Responders, FBI, and Texas Dept. of Health on training and operations)- (BWD, CCC and CBS sections of DSO and AIM of ISO at DARPA)

Systems integration- (BWD program in DSO and AIM in ISO sections of DARPA)

**University of South Florida College of Public Health**

Training of public health personnel in the management of chemical and biological threats (BWD and Combat Casualty Care [CCC] of DSO and AIM of ISO at DARPA)

Long-distance learning and interstate communications integration, in collaboration with the Centers for Disease Control (CDC)- (BWD and Combat Casualty Care [CCC] of DSO and AIM of ISO at DARPA)

Interfacing with Southern Command

Development and modification of leading edge sensors to meet public health care needs (BWD section of DSO at DARPA)

**Institute for Defense Analyses (IDA)**

Linkage and support to assure that the research conducted within this program maintains a focus on the national security community and the specific challenges addressed.

Highlighting, focusing and extending research which shows exceptional promise for limiting disorganization and re-establishing structure; managing the health and casualty impact of the CB incident; and identifying areas that require further investigation

**Center for Professional Development (CPD)**

Education, training, and outreach

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<i>Federal Funding Request for FY 2000 =</i>	\$32.0 M
<i>Total Project Budget for FY 2000 =</i>	<u>\$45.0 M</u>
State/University Contribution	\$ 6.5 M
Other	\$ 6.5 M
Federal Request-CB Countermeasures Research	\$14.0 M
Federal Request for Operations/Training Facility	\$18.0 M

*Total Federal Request for 5 Years = \$160 M*

## Key Points:

- ✓ Requirements from the Department of Defense related to biological/chemical countermeasures were defined from the Militarily Critical Technology List and DARPA briefings.
- ✓ Expanded team, representing maximum research and training talent in the region, was assembled. Unique pools of expertise in human and environmental toxicology, sensor technology, wind engineering, textiles, and agriculture were identified from the Texas Tech University System and University of Texas campuses.
- ✓ The University of South Florida, in collaboration with the Centers for Disease Controls, was identified for expertise in distance learning and emergency medical response.
- ✓ Multiple integrated University systems (including medical and law schools) with strong track records of interdisciplinary work with other universities, government, military, and community groups
- ✓ Texas Tech, through The Institute of Environmental and Human Health (TIEHH), will take the lead in this program and provide administrative oversight, as previously agreed upon by all parties.
- ✓ Year-round operational capability at Reese Center (former airforce pilot-training base) with permanent buildings to facilitate on and off-site education, training, and response capability. Central location, regionally and nationally.
- ✓ Modern communication capabilities for interstate medical and training outreach
- ✓ Texas and Florida Departments of Health and community support.
- ✓ State-of-the-art facilities for toxicological research at TIEHH, a joint project of Texas Tech University and Texas Tech Health Sciences Center. TIEHH is located at Reese Center.
- ✓ Supercomputer (on-site at TIEHH) with virtual reality laboratory and seating for 35, accessible to all parties.
- ✓ Accountability in research with experience in quality assurance and Good Laboratory Practice (GLP) studies, experience that will be critical for addressing record keeping, security, and compliance issues.
- ✓ Admiral Elmo Zumwalt, Jr. (retired) was briefed on this initiative on January 25<sup>th</sup>, 1999 at Texas Tech. He has a long history of concern about adverse environmental health effects associated with war and presently serves as a member of the President's Foreign Intelligence Advisory Board and the Special Oversight Board for Department of Defense Investigations of Gulf War Chemical and Biological Incidents. He is also chairman of the Agent Orange Coordinating Council.
- ✓ Dr. Steven Kornguth was selected as the coordinator for Texas Tech, the University of Texas campuses, Texas Dept. of Health, the Institute for Defense Analysis, DARPA, and other contributors. He is on the Texas Tech staff as a Special Assistant to the Director for Countermeasures to Chemical and Biological Threats. He is also a faculty member at the University of Texas (Austin) and a retired professor emeritus from the University of Wisconsin, experienced with DARPA funding, accountability and transition to development.