



**The Institute of Environmental & Human Health**



# **Admiral Elmo R. Zumwalt, Jr. National Program for Countermeasures to Biological and Chemical Threats**

**Steven M. Presley, Ph.D.**

**15 September 2010**

**Texas Tech University & Texas Tech University Health Sciences  
Center**

*[www.tiehh.ttu.edu](http://www.tiehh.ttu.edu)*



# *TIEHH Overview*

*TIEHH is a multidisciplinary program that studies the toxic effects of contaminants on the health of people and the environment.*



- **Six buildings at Reese Technology Center.**
- **~150,000 ft<sup>2</sup> of space, including offices, world-class laboratories, and housing for specialized equipment including high performance computing.**
- **Currently ~50 MS and PhD graduate students in Environmental Toxicology.**
- **Core and adjunct faculty from both TTU and TTUHSC, as well as institutions around the U.S. Current projects involve over 200 faculty, staff, students and research collaborators on TIEHH payroll.**

# *Admiral Elmo Russell Zumwalt, Jr., USN*



**Commander U.S. Naval Forces, Vietnam and Chief of the Naval Advisory Group, U. S. Military Assistance Command, Vietnam, 1 October 1968 - 15 May 1970. Chief of Naval Operations 1 July 1970 - 1 July 1974.**

***Zumwalt Program* began in January 1999 through discussions between ADM Zumwalt and key administrators at TTU and TTUHSC.**

**Discussions focused upon growing and realistic threats our nation faced, and will face, from the use of biological and chemical weapons by domestic and foreign enemies of the United States.**



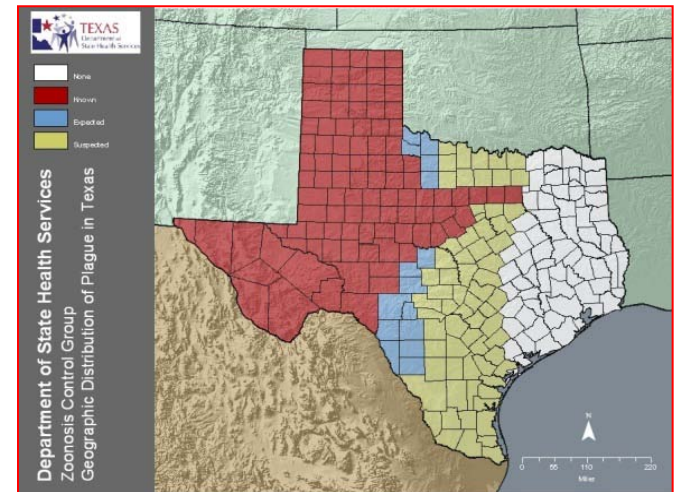
# Zumwalt Program



**Founding member of National Consortium of Biological Defense Researchers (sponsored by U.S. Army Soldier Biological Chemical Command).**

**Total program research funding since established (FY01-FY10) of \$26.8 million.**

**Currently nine active research projects, involving more than 50 scientists representing six departments from the Texas Tech University System.**





# *Mission of the Zumwalt Program*

**Research focus within the *Zumwalt Program* is upon investigating and promulgating approaches, methods and technologies to counter the emerging biological and chemical weapon agent threats posed to the military Force and American homeland.**



***The individual***

***“Far forward deployed”***

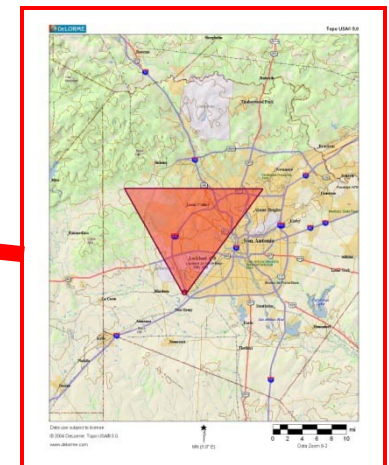
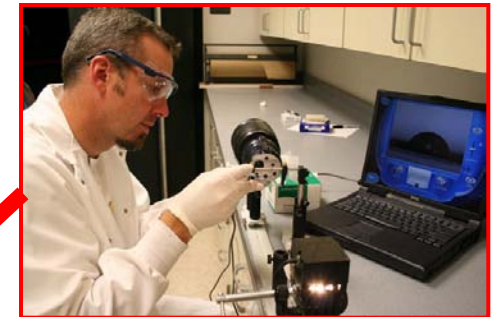


***In-garrison & Support***



# *Research Focus Areas*

- I. Modeling, Simulation and Visualization**
- II. Agent Detection, Remediation and Therapeutic Intervention Strategies**
- III. Sensors and Personal Protective Devices**
- IV. Environmental Protection Strategies**

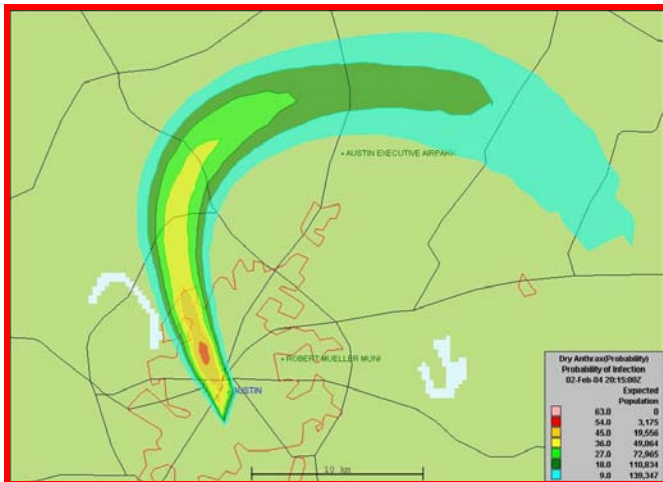




# How We Function



***Zumwalt Program*** has oversight and administers various U.S. Army Research, Development and Engineering Command (RDECOM)-funded research projects.



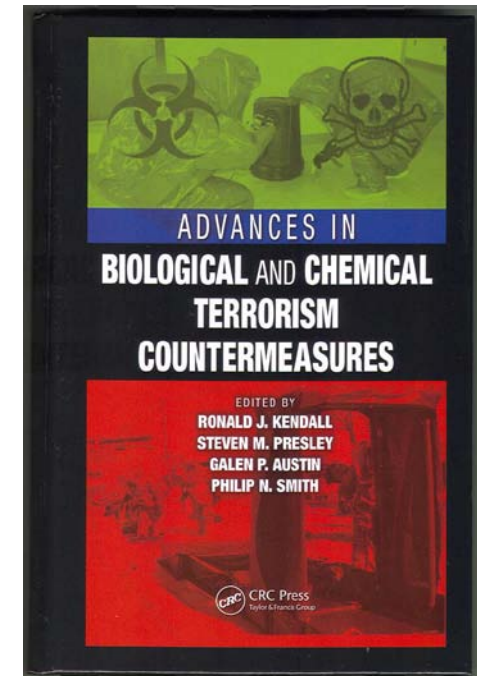
All research executed with full Quality Assurance / Quality Control support.

# *Zumwalt Program Accomplishments*



## Program scientists have leveraged successes:

- **\$4,870,000 in additional research funding (18 projects).**
- **>80 published abstracts and peer-reviewed scientific articles.**
- **> 490 technical reports.**
- **~115 professional scientific presentations in 13 states & 5 foreign countries.**
- **Submitted ~33 related research grant proposals, totaling ~\$56.1 million.**
- **Three U.S. patents issued.**
- **Written a comprehensive textbook entitled *Advances in Biological and Chemical Terrorism Countermeasures*, published by Taylor & Francis CRC Press.**





# *New Initiatives Resulting from Zumwalt Program*



- **Enhanced sensitivity and specificity of biological and chemical agent sensors.**
- **Adaptation of biological and chemical agent sensor technologies to more adequately support homeland security needs.**
- **Non-woven materials technology research to improve safety of military forces and first responders in diverse environments.**
- **Novel approaches to military medical force protection.**
- **Biological and chemical environmental threat recognition, prediction and mitigation technologies.**
- **Detection, prevention and remediation of pre- and post-harvest biological terrorism against livestock production agriculture.**
- **Curricula and educational resources for resident and non-resident training of elected government officials and emergency response personnel for response to biological and chemical terror incidents.**



# **Thank You for Your Attention**

**You are invited to visit the Institute**

**Telephone: 806-885-4567**

**or**

**Email: *steve.presley@tiehh.ttu.edu***