

## **2<sup>nd</sup> Annual Countermeasures Against Chemical Threats (CounterACT) Network Research Symposium April 15-17, 2008, Washington D.C.**

The overarching goal of the CounterACT Network research program is to enhance the current medical response capabilities of the nation in preparation for a chemical event emergency. To achieve this goal, the National Institutes of Health has developed a comprehensive cooperative research network comprised of research centers of excellence, individual research projects, small business innovation research projects, contracts and inter-agency agreements with other federal entities

### **Purpose of the Meeting**

The primary objective of this meeting was to give CounterACT awardees the opportunity to present new research findings made during the second year of their awards for the purpose of sharing this information among the Network investigators and with NIH Program Officials.

The meeting was held April 15-17, 2008 at the Embassy Suite Convention Center in Washington DC. The presentations were grouped by topic into one of five sessions: Session I – Cyanide, Session II – Pulmonary Agents, Session III – Vesicating Agents, Session IV – Nerve Agents I, and Session V – Nerve Agents II. Several poster sessions were included in the agenda to allow for maximal interaction among investigators. A special session was devoted to an interactive discussion with representatives from the U.S. Food and Drug Administration about how to navigate the regulatory pathway.

### **Meeting Attendees**

Among the approximately 170 participants were over 100 CounterACT Principal Investigators (PIs), co-investigators (Co-PIs), and their research staff, along with 24 junior scientist travel awardees funded through the 2008 CounterACT Travel Award Program. Also in attendance were scientists from many federal agencies interested in medical countermeasure development, e.g. the Department of Defense, Office for Public Health Emergency Preparedness, Biomedical Advanced Research and Development Authority, and the Office of President.

## Meeting Agenda

**DAY 1 Tuesday, April 15, 2008**

7:30 am - 8:00 am      **Registration**

8:00 am - 8:10 am      **Introduction and Goals**  
Dr. David A. Jett, NINDS

### **Session 1: Metabolic Agents (Chair: Dr. Gennady E. Platoff Jr., NIAID)**

8:10 am - 8:30 am      **US Army Research on Cyanide**  
Dr. Gary Rockwood, U.S. Army Medical Research Institute of Chemical Defense

8:30 am - 8:50 am      **Countermeasures Against Chemical Threats: Countermeasures Against Cyanide**  
Dr. Steven E. Patterson, University of Minnesota

8:50 am - 9:10 am      **Pre-Clinical and Clinical Studies of Cobinamide, a New Cyanide Detoxifying Agent**  
Dr. Gerry R. Boss, University of California, San Diego

### **Session 2: Pulmonary Agents (Chair: Dr. Elizabeth A. Maull, NIEHS)**

9:10 am - 9:30 am      **US Army Research on Pulmonary Agents**  
Mr. Dana Anderson (for Dr. Alfred Sciuto)  
U.S. Army Medical Research Institute of Chemical Defense

9:30 am - 9:50 am      **Prevention and Treatment of Chlorine Gas Induced Injury to the Pulmonary System**  
Dr. Sadis Matalon, University of Alabama at Birmingham

9:50 am - 10:10 am      **Functional Genomics of Chemical-Induced Acute Lung Injury**  
Dr. George Leikauf, University of Pittsburgh

10:10 am - 10:30 am      **Novel Therapies for Chlorine-Induced Lung Injury**  
Dr. Gary W. Hoyle, University of Louisville

10:30 am - 10:50 am      **Therapeutics Against Chemical Threat Induced Respiratory Toxicity**  
Dr. Magus Che (for Dr. Madhusoodana P. Nambiar)  
Geneva Foundation at Walter Reed Army Institute of Research

10:50 am - 11:00 am      **Break**

### **Session 3: Vesicating Agents (Chair: Dr. Carl C. Baker, NIAMS)**

11:00 am - 11:20 am      **US Army Research on Toxic Vesicants**  
Dr. John Graham, U.S. Army Medical Research Institute of Chemical Defense

11:20 am - 12:20 pm      **Novel Antioxidant Therapeutics for Sulfur Mustard Toxicity [Center Report]**  
Dr. Carl W. White et al., National Jewish Medical & Research Center

12:20 pm - 1:30 pm      **Lunch**

- 1:30 pm - 2:30 pm      **Poster Session**
- 2:30 pm - 2:50 pm      **Detoxification of Electrophilic Chemical Threat Agents by Nucleophilic Scavengers**  
Dr. Michael C. MacLeod, University of Texas
- 2:50 pm - 3:10 pm      **Sensory Neural Mechanisms of Pulmonary Agent and Vesicant Toxicity**  
Dr. Sven-Eric Jordt, Yale University
- 3:10 pm - 4:10 pm      **Identification of Therapeutics for the Treatment of Sulfur Mustard Injury [Center Report]**  
Dr. Gary R. Grotendorst et al., Lovelace Biomedical and Environmental Research Institute
- 4:10 pm - 5:10 pm      **UMDNJ/Rutgers University CounterACT Research Center of Excellence [Center Report]**  
Dr. Jeffrey D. Laskin et al., University of Med/Dent NJ-RW Johnson Medical School
- 5:10 pm - 7:00 pm      **Poster Networking Session**

**DAY 2 Wednesday, April 16, 2008**

- 8:00 am - 9:00 am      **Food and Drug Administration Q&A**  
Dr. Susan S. McDermott, Medical Officer  
Office of Counterterrorism and Emergency Coordination  
Center for Drug Evaluation and Research

**Session 4: Nerve Agents #1 (Chair: Dr. David A. Jett, NINDS)**

- 9:00 am - 9:20 am      **Next Generation Oxime Therapeutic for Chemical Agent Inhibited CNS (Brain) ChEs**  
Dr. Richard K. Gordon, Geneva Foundation at Walter Reed Army Institute of Research
- 9:20 am - 9:40 am      **Oxime-Assisted Catalysis of Organophosphates and Reactivation of AChE**  
Dr. Palmer W. Taylor, University of California, San Diego
- 9:40 am - 10:00 am      **Induced Therapeutic Overexpression of Acetylcholinesterase *in vivo***  
Dr. Richard L. Rotundo, University of Miami
- 10:00 am - 10:20 am      **Neuroprotective Roles for Neuregulins in Neurotoxin-mediated Neuronal Injury**  
Dr. Byron D. Ford, Morehouse School of Medicine
- 10:20 am - 10:40 am      **Age and Sex Effects on Nerve Agent Damage to the Brain and Antidotal Therapies**  
Dr. Edson X. Albuquerque, University of Maryland at Baltimore
- 10:40 am - 10:50 am      **Break**

- 10:50 am - 11:10 am **US Army Research on Anticonvulsants and Neuroprotectants**  
Dr. John McDonough (for Dr. Tony Shih)  
U.S. Army Medical Research Institute of Chemical Defense
- 11:10 am - 11:30 am **CounterACT Preclinical Development Facility**  
Dr. Carol Green, SRI International
- 11:30 am - 11:50 am **A First-Responder EEG Device for Seizure Management in a Nerve Gas Attack**  
Dr. Scott B. Wilson, PERSYST Development Corporation
- 11:50 am - 12:10 am **Automated Seizure Detection Following Nerve Agent Exposure**  
Dr. David L. Sherman, Infinite Biomedical Technologies, LLC
- 12:10 pm - 1:30 pm **Lunch**
- 1:30 pm - 2:30 pm **Poster Session**
- 2:30 pm - 2:50 pm **Field Deployable, Automatic, EEG Seizure Detector and Brain Dysfunction Monitor**  
Dr. Mohammad Modarres-Zadeh, Cleveland Medical Devices, Inc.
- 2:50 pm - 3:10 pm **Midazolam Clinical Trial**  
Dr. Robert Silbergleit (for Dr. William Barsan), University of Michigan
- 3:10 pm - 3:30 pm **Anticonvulsant Screening Program**  
Dr. Steve White, University of Utah
- 3:30 pm - 3:50 pm **Prostanoid Modulators that Reduce Brain Injury and Inflammation After Seizures**  
Dr. Raymond J. Dingledine, Emory University
- 3:50 pm - 4:10 pm **Mechanism and Treatment of Nerve Agent-Induced Seizures**  
Dr. Jaideep Kapur, University of Virginia
- 4:10 pm - 4:30 pm **Counter Measures Against Acetylcholine Receptor Activated Status Epilepticus**  
Dr. Robert J. DeLorenzo, Virginia Commonwealth University
- 4:30 pm - 4:50 pm **Efficacy of GluR5 Antagonists Against Soman-Induced Seizures and Neuropathology**  
Dr. Maria F. Braga, Uniformed Services University of the Health Sciences
- 4:50 pm - 5:10 pm **Anticholinesterase Neurotoxicity is Mediated by Oxidative Injury**  
Dr. Dejan Milatovic, Vanderbilt University Medical Center

**DAY 3 Thursday, April 17, 2008**

**Session 5: Nerve Agents #2 (Chair: Dr. Joseph J. Pancrazio, NINDS)**

- 8:00 am - 8:20 am **Targeted Paraoxonase Fusion Protein as a Neurotherapeutic for Nerve Gas Agents**  
Dr. Yufeng Zhang, ArmaGen Technologies, Inc.

- 8:20 am - 8:40 am **Novel Protein-Based Therapeutics for Nerve Agent Detoxification**  
Dr. Matthew Redinbo, University of North Carolina
- 8:40 am - 9:00 am **Catalytic Bioscavengers with Broad Specificity Against OP Nerve Agents**  
Dr. James Wild, Texas A&M University
- 9:00 am - 9:20 am **Novel Therapeutic Agent to Treat Nerve Agent Exposure after Civilian Attack**  
Dr. John K. Troyer, PharmAthene, Inc.
- 9:20 am - 10:20 am **Center for Catalytic Bioscavenger Medical Defense Research [Center Report]**  
Dr. David E. Lenz et al., U.S. Army Medical Research Institute of Chemical Defense
- 10:20 am - 10:40 am **Break**
- 10:40 am - 11:00 am **A Plant-Derived Recombinant Bioscavenger to Prevent Insecticide Neurotoxicity**  
Dr. Yvonne J. Rosenberg, PLANTVAX, INC.
- 11:00 am - 11:20 am **Development of a Selective Biosensor for Detecting Organophosphate Exposure**  
Dr. Jon O. Nagy, ATERIS Technologies, LLC  
Dr. Charles M. Thompson, ATERIS Technologies, LLC and University of Montana
- 11:20 am - 11:40 am **Fiber Grating-Based Chemoselective and Reversible Sensor Array**  
Dr. Kisholoy Goswami, Innosense, LLC
- 11:40 am - 12:00 pm **Mass Spectrometry in Clinical Diagnosis of Nerve Agent Exposure**  
Dr. Oksana Lockridge, University of Nebraska
- 12:00 pm - 12:20 pm **Innovative Biomonitoring Device for Rapid Diagnosis of Exposure to Nerve Agents**  
Dr. Yuehe Lin, Battelle Pacific Northwest Labs
- 12:20 pm - 12:40 pm **Biosensor for Real-Time Chemical Monitoring**  
Dr. John R. Cashman, Human Biomolecular Research Institute
- 12:40 pm - 1:00 pm **Receptor Sites and Antagonists for Paralytic Neurotoxins**  
Dr. William A. Catterall, University of Washington

**Adjourn**