Workshop Title: **Neurological Effects after Chemical Nerve Agent Exposures**

When/Where: Feb 26-27, 2014 NIH in Bethesda, MD

NIH Sponsor: NIH CounterACT Program and NINDS (David A. Jett, PhD)

Workshop Co-Chairs

Pamela J. Lein, PhD
University of California, Davis

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Purpose and Goals:

The HHS Office of the Assistant Secretary of Preparedness and Response (ASPR) and Department of Defense (DoD) have large multi-agency programs on the development of better medical countermeasures against chemical threat agents. NIH is charged with basic and translational research in this area, and to this end, NINDS has led the NIH CounterACT program since 2006. The ASPR develops Scenario-Based and Product-Specific Requirement Documents that help set the HHS research priorities. Currently, HHS is developing such documents for therapeutics that could prevent or reduce the short- and long-term effects of acute, non-lethal exposures to organophosphorus (OP) nerve agents such as sarin. The Public Health Emergency Medical Countermeasure Enterprise (PHEMCE) is exploring the existing clinical data of non-lethal nerve agent exposure and associated long-term neurological sequelae. The relevance of these anecdotal clinical reports is not known, but it is clear that in order for researchers in this field to adopt best practices, the animal models they develop and use to examine the non-lethal neurological effects of nerve agent exposure should be relevant to those observed in humans. This goal of this workshop is to inform the scientific community on the availability of human and animal data supporting neurological effects after non-lethal exposure to nerve agents, and how these data could be used to develop the best animal models for testing therapeutics.

Workshop Deliverables:

1. Detailed White Paper(s) on human and animal non-lethal effects, research gaps, and best practices for animal model development.
2. Review article(s) on the same topics for peer-reviewed publication.

Pre-workshop Activities

Regular teleconferences are being held with the Workshop Planning Committee to discuss speakers, breakout session activities, and overall workshop structure. The intent is for proactive preparation for the most fruitful in-person discussions possible during the 1.5 days at the workshop.

Workshop Structure (also see attached Draft Agenda):

Day 1: general sessions for orientation and calibration, followed by breakouts with specific questions that address overall workshop goals. An informal dinner will follow that evening. At the beginning of Day 2 there will be a film and discussion of the actual use of threat agents in Japan and OP poisoning around the world, followed by working groups to develop lists of research gaps and best practices, followed by wrap up and formulation of final lists.

Primary Workshop Questions:

1. What is the evidence in humans for neurological effects after sub-lethal exposure to OP nerve agents?

2. What animal models exist for neurological effects after sub-lethal exposure to OP nerve agents, and what is the evidence that these effects occur in animals?

3. How do we improve the validity of animal models?

4. Can we learn more about appropriate assessment tools and animal models from other types of acute brain injury such as seizures, TBI, or large-vessel stroke?

Attendees:

A. Experts in Human Data on Chemical Exposures
B. Experts in Animal Models of Chemical Exposures and Animal Data
C. Disease Experts, with Animal Model Experience (TBI, SE, stroke)
D. Government and Industry Stakeholders