VIPER Institute
Venom Immunochemistry, Pharmacology, and Emergency Response

Proposal for New Academic Organizational Unit
Executive Summary

**Name of Proposed Institute:** Venom Immunochemistry, Pharmacology, and Emergency Response Institute (VIPER)

**Place within the University:** Administratively housed within the College of Medicine; formal partnership with the Arizona Poison and Drug Information Center (APDIC); collaboration with College of Science; affiliation with BIO5 Institute.

**Nature of the Change:** VIPER has evolved over time as an informal partner to the Arizona Poison Center. This proposal makes no change in APDIC structure or function. VIPER will function as an independent research partner of the more public service-based APDIC, with a shared commitment to education and multidisciplinary work.

**Mission:** Applied phylogenetics of venom: using clues from the genealogy of animals to guide scientific discovery toward practical applications.

**Relationship of goals to the University’s mission:**
- **Discovery:** provision of a common forum for venom and envenomation research within the UA and in collaboration with international partners
- **Education:** consolidation of curricular elements essential to drug discovery and testing, emphasizing venom-derived products and treatment of envenomation
- **Service:** efficient collaboration among medical toxicologists, venom research staff, and poison center staff for response to venom emergencies
- **Inspiration:** sharing the evolutionary richness of Arizona’s unique venom resources with the public and with colleagues worldwide, through partnerships with the Arizona-Sonora Desert Museum and by conference hosting and participation

**Specific activities, projects and programs to be conducted by the Institute:**
- **Snakebite** coagulopathy studies and clinical trials
- **Exotic venoms** clinical decision-making support and clinical trials
- **Scorpion** venom neurotoxicity studies and clinical trials
- **Widow spider** antivenom clinical trials
- **Brown spider** phylogenetics and diagnostic investigations
- **Phylogenetic Arachnarium** collaboration with the Arizona-Sonora Desert Museum
- **International Conference** planning for September 2007
- **Collaborations** with US Army and Texas A&M’s Natural Toxins Research Center
- **Pharmaco economics** of antivenom
- **Medical toxicology support** of APDIC clinical mission
- **Curricular support** of programs in the Colleges of Medicine, Science and Pharmacy
Faculty and Staff:
- **VIPER Director:** Leslie Boyer, MD, Medical Director, APDIC
- **APDIC Liaison:** Jude McNally, Managing Director, APDIC
- **AHSL Liaison:** Gary Freiberger, Director, AHSL Library
- **ASDM Liaison:** Craig Ivanyi, General Curator of Living Collections
- **US Military Liaison:** Michael Miller, Lieut Col, Director of Emergency Medical Program at Ft. Hood, TX
- **NTRC Liaison:** John Perez, Regents Professor, Texas A&M
- **Lead Clinician:** John Sullivan, Dept. of Emergency Medicine
- **Lead Clinical Investigator:** Leslie Boyer, Dept of Pediatrics
- **Lead Research Nurse:** Jody Mallie, Dept. of Pediatrics
- **Lead Scientist (Neurobiology):** Andrea Yool, Dept. of Physiology
- **Lead Scientist (Protein Chemistry):** John Osterhout, Dept of Biochemistry
- **Projects Manager:** Judi Carrington, Department of Pediatrics
- **Affiliated UA faculty:** drawn from departments of Pharmacy Practice, Emergency Medicine, Biomedical Communications, Radiology, Pediatrics, Pathology, Pharmaceutical Sciences
- **Affiliated adjunct faculty:** drawn from the Institut de Recherche pour le Developpement, Senegal, the Biotechnology Institute of the Universidad Nacional Autonoma de Mexico, Texas A&M, Lewis and Clarke University, University of Nebraska, Australian Venom Research Unit (Melbourne), and Minneapolis Medical Research Foundation
- **Staff:** drawn from existing research staff of APDIC and Dr. Leslie Boyer

**Physical Facilities and Equipment:** no additional facilities are requested beyond those already in use or under consideration for individual VIPER members through their respective colleges and departments. Core VIPER staff and associated office space will be moved out of Pediatrics and into the College of Medicine after Institute status is granted. A Phylogenetic Arachnarium will be developed on the campus of the Arizona-Sonora Desert Museum.

**Funds requested:** No additional funds are requested for equipment, remodeling, library resources, or new faculty.

**Financing:** Financing will draw almost entirely from existing sources. VIPER infrastructure is currently derived from multiple sources, including state and federal grants, industry contracts, and a special line item in the Arizona state budget assigned for antivenom distribution. The College of Science has pledged a half-time administrative support salary toward an Education Coordinator for the new unit.

**Budget:** approximately $625,000 annually for the first 3 years

**Sunset Date:** 5 years from date of approval.