Animal Venom Research International Sri Lanka Antivenom Development Project

Venomous animal bites afflict thousands of people, men, women and children, every year in the developing world. The problem is especially pronounced among agricultural workers and families living in rural areas. Venomous snakebite, in particular, has recently been identified by the World Health Organization as a public health hazard and one of the most overlooked issues of the 21st Century.

Mission and Vision

Animal Venom Research International (AVRI) is a 501 (c) 3 nonprofit organization with the vision of alleviating human suffering caused by the bites or stings of venomous animals. Our current project involves developing a safe and effective antivenom to treat venomous snakebite in Sri Lanka. With one of the highest death rates due to snakebite in world, and a recorded number of 40,000 people bitten by snakes in 2010 alone, Sri Lanka is a nation of special concern.

Project Description- Sri Lanka Antivenom Development Project

Currently, Sri Lanka does not have an antivenom specifically developed using venoms from the five medically important venomous snake species on the island. As a result, large doses of foreign-developed antivenoms, which are of questionable purity and cause adverse reactions in 75-80% of patients, are required to treat snakebite patients. The government of Sri Lanka spends an average of $1 million U.S. annually on these poorly effective foreign antivenoms.

AVRI’s goal is to bring the technology of antivenom development to Sri Lanka, creating a sustainable program to save lives, eliminate reliance on outside manufacturing, boost scientific advancement and exchange of academic knowledge, and further the country’s internal economic expansion. To accomplish this goal, AVRI is collaborating with the University of Peradeniya, Sri Lanka and the Clodomiro Picado Institute of the University of Costa Rica. This project will be accomplished in two phases: 1) Building a serpentarium and collecting venom samples to send to Clodomiro Picado Institute for the development of antivenom using venom specifically from Sri Lankan snakes and 2) A transfer of antivenom development technology from Clodomiro Picado Institute to AVRI and University of Peradeniya.
Progress on the Sri Lanka Antivenom Development Project

AVRI is well on the way to accomplishing our goal of developing a better antivenom for Sri Lanka. We have already obtained over $52,000 U.S. in contributions from private donors and successfully built a serpentarium/research station in Sri Lanka. AVRI has also established strong partnerships with the University of Peradeniya, the Clodomiro Picado Institute, many independent researchers, and the Sri Lankan Government and religious communities for collaboration on this development project. The project has also been officially endorsed by the Honorable Shiranthi Wickramasinghe Rajapaksa, First Lady of Sri Lanka, who has agreed to be our Patron in Sri Lanka.

The Clodomiro Picado Institute is a nonprofit research organization and one of the most successful producers of effective, pure antivenoms in the world. Clodomiro Picado Institute has agreed to develop and transfer antivenom development technology to AVRI and the University of Peradeniya. The only remaining key step in the first phase of this groundbreaking endeavor is the collection of venom samples required from the snake species to be included in the antivenom formulation and to send the samples to Costa Rica.

The success of this project is assured. All we have left is to obtain a relatively small amount of funding to cover the last few pieces of equipment required and some minor expenses. The amount we are seeking totals $40,000. Both in-kind donations of equipment or monetary grants are accepted. The full amount of your contribution will go directly towards program costs; AVRI’s Board of Directors and collaborators do not receive any financial compensation from the project and have volunteered much of their own time and resources to the project’s success.

Venomous snakebite is not an obscure disease with an unforeseeable cure. We have the scientific personnel support and technology to solve the problem, please help us make it accessible to the underprivileged populations in need.

Thank you for your interest in our project.

Sincerely,

Kimberly McWhorter, MPH, CPH, DrPH(c)
Associate Executive Director
Animal Venom Research International
## Itemized Budget Needs

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
<th>Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Use</td>
<td>$20,000</td>
<td>Covered with Private Donations</td>
</tr>
<tr>
<td>Serpentarium Building Construction</td>
<td>$30,000</td>
<td>Covered with Private Donations</td>
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<tr>
<td>Well</td>
<td>$1,000</td>
<td>Covered with Private Donations</td>
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<tr>
<td>Snake Housing</td>
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<tr>
<td>Housing Racks</td>
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<tr>
<td>Electrical Outfitting</td>
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<td>Lyophilizer</td>
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<td>Glassware</td>
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<tr>
<td>Manifold</td>
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<tr>
<td>Vacuum Pump</td>
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<tr>
<td>Shipping to Costa Rica</td>
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<tr>
<td>Animal Husbandry Items</td>
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<tr>
<td>Refrigerator/freezer</td>
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<tr>
<td>Serpentarium Oversight (for 36 months)</td>
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<tr>
<td>Misc. Supplies and Office Expenses</td>
<td>$4,300</td>
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<tr>
<td>Administrative Expenses</td>
<td>$6,200</td>
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| Total                                      | $92,500| Remaining need: $40,000      |

## AVRI Executive Board of Directors

Roy Malleappah, BSc, *Executive Director*

Kimberly McWhorter, MPH, CPH, DrPH(c), *Associate Executive Director*

Dr. Daniel E. Keyler, Pharm.D., *Director of Research*

Laki Wickremesinghe, *Director of Finance*

Dana Savorelli, *Director of Field Operations*
Key Collaborators

Dr. Daniel Keyler, PharmD, Professor, Experimental and Clinical Pharmacology, University of Minnesota, College of Pharmacy and Graduate School, Minneapolis, Minnesota; Co-Director, Pharmacology-Toxicology Research Laboratories, Minneapolis Medical Research Foundation

Dr. Alexis Rodriguez-Acosta, MD, PhD, Professor of Tropical Medicine, Instituto de Medicina Tropical, Universidad Central de Venezuela
  - Scientific Consultant for Antivenom Development, Laboratory Methods

Dr. Elda Sanchez, PhD, Assistant Director Natural Toxins Research Center, Faculty of Chemistry, Texas A&M University Kingsville
  - Scientific Consultant for Venom Lethality Assays, Laboratory Methods

Dr. Scott A Weinstein, MBBS, MD, PhD, MSc, Clinical Medicine, Toxinology and Herpetology Consultant

Clodomiro Picado Institute, University of Costa Rica

Dr. Indika Gawarammana, MD, MRCP,MBBS, Senior lecturer in Medicine and Consultant Physician at the Teaching Hospital Peradeniya and Director, Clinical Research South Asian Clinical Toxicology Research Collaboration, Faculty of Medicine, University of Peradeniya, Sri Lanka
  - Lead Researcher, University of Peradeniya

Dr. Kolitha Harischandra Sellahewa, MD, MBBS, FCCP, FRACP(Hon) MACEP(Hon.), Consultant Physician, Chairman Snakebite Expert Committee SLMA, Past President Ceylon College of Physicians
  - Consultant Physician, Envenomation Specialist

Bhante Dr. Walpola Piyananda, Advisor for religious and cultural affairs

Dana Savorelli, Founder and President of Midwest Tongs, Inc.; Founder of the United States Snakebite Research Team; Founder and Director of Monkey Island Rescue and Zoological Sanctuary, Inc.

Jim Harrison, Director, Kentucky Reptile Zoo
  - Animal Husbandry, Venom Collection Consultant

Kristen Wiley, BS, MS, Director, Kentucky Reptile Zoo
  - Animal Husbandry, Venom Collection Consultant

Dr. Tejbir Sandhu, MA, M.V.Sc. Ph.D., DVM, Veterinarian and Medical Entomology Specialist, Veterinary Consultant

Dr. Douglas R. Mader, MS, DVM, Diplomate ABVP, Fellow, Royal Society of Medicine, Veterinary Consultant

Dennis Greene, JD, MBA, Legal Counsel (USA)

Nihal Jayamanne, President's Counsel, Legal Counsel (Sri Lanka)