

#### UPCOMING MEETINGS

The next Pan-American Section IST Congress will be in Miami Beach, USA, September 18-23, 2016. See later in this newsletter for further details. A website for this congress is available at [www.ist2016.com](http://www.ist2016.com).

IST Council has agreed to a changed schedule for IST congresses, commencing in 2015 with the World Congress held every second year, rotating between the 3 regions, so the next IST World Congress will be in Hainan, China, in 2017.

Toxinology Society of India Annual Meeting. Tezpur University Assam; November 22nd to 24th, 2016. Further details on website <http://www.tezu.ernet.in/dmbbt/SnakSymp-2016/>

Malaysian Toxinology Society AMSEM meeting and course. Penang, Malaysia, November 28th to December 1st, 2016. Further details on a website: <http://mstamsem.blogspot.com.au>

#### FROM THE IST EXECUTIVE

It is only two weeks before the next Pan-American Section congress, to be held in Miami Beach, Florida, USA, September 18-23, 2016. The program is in place, looks exciting, so especially for Pan-American Section members, don't miss this meeting. I look forward to meeting some of you there. More details are contained in this Newsletter.

Also an important reminder to all IST financial members who attend this Congress, that at the IST Business Meeting during the Congress we will be voting on the proposed new constitution. This has IST Council support and I urge all members attending the Congress to go to this meeting and, hopefully, vote in favour of this new constitution. A copy is included in this Newsletter.

The next IST World Congress will be in Hainan in 2017, probably late in the year, with details to follow soon. Definitely a meeting for all IST members and others interested in toxinology to put in their calendars.

The next European Section meeting, scheduled for 2018, has yet to be organised, though we already have one bid from an interesting country, Armenia, which has never hosted an IST meeting before, so this could be rather exciting. Watch out for details as they emerge.

Notices for payment of annual Membership dues for 2016 went out in January. If you have not yet paid your dues for 2016, please do so now via the IST website ([www.toxinology.org](http://www.toxinology.org)). This is currently the only source of funding for your Society and is used to support our congresses.

Julian White AM, Secretary/Treasurer, IST

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## MESSAGE FROM THE PRESIDENT (I.S.T)

Fellow IST Members: First I wish to thank the members of IST who participated in the World Health Assembly Snakebite Envenoming Side Event in Geneva this past May. The title of the event was "Science, State & Society: An Integrated Global Initiative to Reduce Snakebite Death and Disability. It is heartening to know that our membership is engaged in this critical discussion associated with the World Health Organization for better treatment and treatment availabilities particularly for those counties that suffer from a significantly high incident of snakebite. It is important that all representative bodies know that the IST is keenly aware of the problem and that our membership is uniquely qualified to be agents of change to solve these pressing health problems.

The program for the Pan American Section Regional meeting is complete and I assure all members this is going to be a very exciting meeting focused on the particular aspects of toxinology relevant to this region. Drs. Mari and Bosman and Organizing Committee have done an outstanding job putting the program together and I fully anticipate this to be a highly productive and informative conference following in the tradition of our recent regional and international meetings. Over the course of the meeting Julian White (Secretary/Treasurer) and I will be meeting with a number of the Executive Committee members to discuss IST activities and initiatives and I will inform the membership of the content and outcome of these meetings following the conference. It is my hope to have exciting announcements regarding new relationships between the IST and other related associations and further information about the upcoming regional and international conferences.

I am delighted to inform members that our Secretary/Treasurer, Julian White, has been awarded a major honor by the Australian Government, Membership of the Order of Australia ("AM"), in recognition of his important contributions to medicine and toxinology. This follows an award last year, by the Australian Medical Association, "For outstanding contribution to medicine". I hope you will join me in congratulating Julian. At some later time I hope to provide you more detail on the background to these awards.

In closing, for those colleagues in the Northern Hemisphere I hope you have enjoyed your summer and for those in the Southern Hemisphere, fear not, spring is on the way. And for all of us, I wish continued success with our basic, translational and clinical studies in toxinology!

Professor Jay Fox  
President, IST

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## **SNAKEBITE ENVENOMING SIDE EVENT**

### **69<sup>th</sup> WORLD HEALTH ASSEMBLY, GENEVA, MAY 25<sup>th</sup> 2016**

#### **Background to the Side Event**

In the pitch to host the GSI secretariat, Health Action International (HAI) suggested we enter the ballot for an NGO side-event at the 69<sup>th</sup> World Health Assembly, in May 2016. HAI is in official relations with WHO, and as a result can request space from the WHO secretariat. However, the announcement of the WHO antivenom pre-qualification program presented the opportunity to up-scale the event to a WHO Technical Briefing, organized by GSI/HAI in collaboration with WHO. In order to provide a solid support-base to the WHO Department of Essential Medicine and Health Technologies, HAI coordinated a lobby activity, in which GSI members contacted WHA Member State (MS) officials to garner support for a Technical Briefing. Thanks to the tenacity of GSI members, the lobby went so well, gathering support from no less than nineteen MS, that the proposed Technical Briefing side-event was again up-scaled by the WHO secretariat - this time to a Member State (MS) sponsored Side-Event. A MS sponsored Side Event is the highest level of interaction at WHA, beyond the central agenda itself, and attracts a much larger audience. MS were asked by WHO which MS would be the (non-financial) *Sponsor* of the event, and Costa Rican Health Minister, Dr Fernando Llorca stepped forward to offer his country's sponsorship and to lead the organization of the Side-Event. Governments of Afghanistan, Angola, Bangladesh, Benin, Burkina Faso, Cameroon, Chad, Gabon, Guinea, Kenya, Namibia, Nepal, Nigeria, Pakistan, Papua New Guinea, Philippines, Senegal and Uganda, were all co-sponsors. Supporting the event were HAI, GSI, WHO and MSF (speaker). The Costa Rican permanent delegation to the UN in Geneva was therefore tasked as the focal point for the event, and they in turn requested assistance from HAI (who have organised other successful WHA events) to coordinate the event with all parties.

#### **WHA Side Event 25<sup>th</sup> May 2016 : Science, State & Society: An Integrated Global Initiative to Reduce Snakebite Death and Disability**

##### **Objectives:**

- Raise awareness on global snakebite disease burden
- Present a tool-ready multi-stakeholder solution to snakebite envenoming
- Kick-start strategy for recovery of NTD status

##### **Meeting Agenda**

**Chair:** Dr Fernando Llorca, Minister of Health, Government of Costa Rica

**Short film** on the global burden of snakebite (see below)

##### **The Snakebite Burden**

- The global challenge of snakebite (David Warrell: GSI, UK)
- Public health & economic burden of snakebite envenoming in Africa (Abdulrazaq Habib: GSI, Nigeria)
- Why snakebite is a medical priority for MSF (Julien Potet & Gabriel Alcoba: MSF, South Sudan/CAR projects)

##### **Solutions for Snakebite**

- The need for an integrated response (Tim Reed: HAI)
- WHO assessment of antivenoms and guidelines for production (Sue Hill, WHO)
- A pathway to ending the neglect of snakebite envenoming (David Williams: GSI, Papua New Guinea)
- An integrated approach to snakebite envenoming: Costa Rica (José Gutiérrez: GSI, Costa Rica)
- Efforts to address snakebite in Angola (Dr Paula Olivera, Angola)

**Discussion:** Although there was little time for lengthy discussion, a series of statements were made from the floor.

**Closing Remarks:** Ambassador Elayne Whyte, Permanent Representative of Costa Rica to UN





## **SNAKEBITE ENVENOMING SIDE EVENT**

**69<sup>th</sup> WORLD HEALTH ASSEMBLY, GENEVA, MAY 25<sup>th</sup> 2016**

### **Meeting Photographs**



WHA Side Meeting on snakebite envenoming in progress at the 69<sup>th</sup> World Health Assembly in the UN Palais des Nations in Geneva. Photographs: David Williams, Diana Barr (GSI).



## **SNAKEBITE ENVENOMING SIDE EVENT**

### **69<sup>th</sup> WORLD HEALTH ASSEMBLY, GENEVA, MAY 25<sup>th</sup> 2016**

#### **Event Communications and publicity**

- Press Briefing (HAI)
- Press Release (HAI/GSI)
- Website information (HAI/GSI)
- Social Media (HAI/GSI)
- Advertising flyer/poster
- Pull-up banners (four)

Media reports of the meeting have appeared on a number of sites, including:

<https://sg.news.yahoo.com/125-000-people-killed-snakebites-043900227.html>  
<http://www.canindia.com/shortage-of-snake-anti-venom-likely-soon-5-million-bitten-every-year/>  
<http://blogs.discovermagazine.com/science-sushi/2016/05/28/new-video-highlights-global-burden-of-snakebite/>  
[http://www.angop.ao/angola/en\\_us/noticias/saude/2016/4/21/Switzerland-Angola-participates-meeting-snake-bites.05bbb33e-2b37-4174-a437-b07d4e02dcd3.html](http://www.angop.ao/angola/en_us/noticias/saude/2016/4/21/Switzerland-Angola-participates-meeting-snake-bites.05bbb33e-2b37-4174-a437-b07d4e02dcd3.html)  
<http://www.scidev.net/sub-saharan-africa/health/news/urgent-action-tackle-snakebites-africa.html>  
<http://www.firstpost.com/living/snakebite-deaths-india-anti-venom-tamil-nadu-world-health-assembly-fav-afrique-2802028.html>  
<http://www.mymobiledoc.org/africa-urgent-action-needed-tackle-snakebites-africa/>  
<http://www.samantanews.com/2016/05/27/50000-indians-die-from-snakebites-every-year-shortage-of-anti-venom-puts-more-lives-at-risk/>  
<http://www.bernama.com/bernama/v8/wn/newsworld.php?id=1249453>  
<http://www.nst.com.my/news/2016/05/147917/some-125000-people-killed-snakebites-every-year>  
<http://metrocebu.com.ph/2016/05/snakebites-kill-at-least-125000-people-every-year-experts/>

#### **Snakebite Advocacy Video**

A first screening of an 'Advocacy Short' produced by the Lillian Lincoln Foundation, in collaboration with GSI was shown at the outset of the event. The film is currently being dubbed into French and Spanish to increase its reach to audiences in regions of the world where English is not the first language. The film can be viewed on the GSI and HAI websites and the GSI and HAI Facebook pages:

<http://www.snakebiteinitiative.org/>  
<https://www.facebook.com/SnakebiteInitiative/>  
<http://haiweb.org/what-we-do/global-snakebite-initiative/wha-69-member-state-side-event-snakebite/>  
<https://www.facebook.com/HAImedicines/>

Since its release more than 850,000 people have seen the links to the film on the GSI Facebook page, and it has been watched nearly 150,000 times. This 7+ minute short video has been shared from the GSI Facebook Webpage by visitors more than 650 times to the page. An hour-long extended documentary will be released by the foundation in December.

#### **Information Packs**

GSI-branded Information Wallets containing background information (information sheets on antivenom treatment of snakebite, snakebite-related disabilities, a selection of peer-reviewed snakebite publications, along with posters and leaflets) were distributed to all participants at the meeting.

#### **Interpretation**

In order to cater for the large multilingual delegate community HAI funded the simultaneous interpretation of the meeting in English, French and Spanish for all who attended.





## **SNAKEBITE ENVENOMING SIDE EVENT**

### **69<sup>th</sup> WORLD HEALTH ASSEMBLY, GENEVA, MAY 25<sup>th</sup> 2016**

#### **Outcomes of the Meeting**

The meeting was attended by over 125 people, and very well received. Two major objectives of the meeting were to secure Member State support and sponsorship of:

- A request for snakebite envenoming to be added to the agenda of the 140<sup>th</sup> Executive Board meeting of the WHO in January 2017, where a proposal and call for a motion supporting a formal Resolution on action to reduce the public health burden of snakebite envenoming at the following 70<sup>th</sup> World Health Assembly in May 2017; and
- An application to the WHO NTD Department's Strategic Technical Advisory Group (STAG) Committee in April 2017 for the reinstatement of snakebite envenoming as a neglected tropical disease.

The meeting culminated with both Costa Rica and Nigeria agreeing to support these proposals with technical and ancillary support from GSI and HAI. These two pathways to greater WHO recognition of snakebite envenoming represent a very successful outcome to the meeting. This offers considerable hope that now the momentum has been created it can be sustained and ultimately achieves its goals.

#### **Minor Issues**

In February 2016 the GSI extended a written invitation requesting that either Professor Achille Massougbdji (African Society of Venimology [ASV] President) or Dr Jean-Philippe Chippaux (ASV Honorary Life-President) attend the WHA Side-Event to speak at the meeting. Unfortunately these invitations were ignored. A further approach to Dr Massougbdji by HAI in May also asking him to speak at the meeting was rejected. HAI and GSI were therefore quite surprised when just days before the side event, these gentlemen published a press release criticizing the event and accusing the organisers of 'ignoring African doctors', particularly in West Africa. Their claims ignored the participation of GSI director Professor Abdulrazaq Habib (Nigeria) as a key speaker at the meeting, along with MSF personnel speaking specifically about their experience in South Sudan and the Central African Republic, and Dr Paula Olivera (Angola) speaking about her nations experiences. Drs Massougbdji and Chippaux accused Costa Rica of having a conflict of interest because it has an antivenom production facility that has manufactured antivenom for use in Sub-Saharan Africa. This attempt to create controversy was largely ignored by those present at the WHA Side Event. Given the lengthy pre-WHA dialogue with Dr Chippaux that had been ongoing since October 2015, this sudden grandstanding was disappointing, but it did not prevent the success of the Side Event. HAI and GSI will continue engaging directly with all of the ASV members as we move forward.

#### **Next Steps**

GSI and HAI are coordinating the drafting of the following documents:

1. Draft resolution on snakebite envenoming for consideration by the WHO Executive Board
2. Dossier of relevant information and data necessary required by the WHO NTD Department to support the application for relisting of snakebite envenoming as a Neglected Tropical Disease
3. GSI strategic planning document outlining a comprehensive range of interventions, programmes and policy actions underwriting the WHO resolution on snakebite envenoming and the specific application for NTD relisting

In September 2016 HAI and GSI personnel will conduct an information session at the American IST Section Meeting in Miami, USA. Participants at this session will be invited to make written submissions to GSI for consideration by the Board during the drafting of these documents. Although our end game is to ensure that a WHO snakebite program is resourced and implemented, the current effort we are engaged in is a political and policy process. HAI and GSI are continuing to engage with senior WHO personnel and with Member States from around the World using the diplomatic channels available through the Costa Rican Permanent Mission to the UN in Geneva, whose ambassador recently met WHO Director-General, Margaret Chan to discuss this issue. Member States are also being consulted regarding the draft resolution being prepared for the WHO Executive Board Meeting in January 2017, and NTD listing application we will submit to the WHO NTD Department ahead of its STAG committee meeting in April 2017.

In the Report on the World Health Assembly (pages 4-7 of this Newsletter, some matters were mentioned under the heading "Minor Issues". For completeness and in the interests of fairness, the following items are presented, on pages 9-13, as supplied by officials of the African Society of Venimology.

As Editor of this Newsletter and Secretary/Treasurer of IST, I make no comment or judgement on the statements made and issues raised, either in the WHA report, or these further documents. They are provided for IST Members to read, if they wish.

Julian White AM

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## Getting to Know Us

In the previous issue of the newsletter we introduced a new section called Getting to Know Us. The aim of this section is to introduce either an individual toxinology laboratory or an institute with a focus on venoms or toxins to the toxinology community. Each article will cover the history, major areas of interest, and primary research methods of the laboratory or institute. In this way we hope to foster collaborations between toxinology laboratories around the world.

We are delighted that Dr Robert Harrison agreed to write the inaugural article for this section covering the history and scientific objectives of the Alastair Reid Venom Research Unit at the Liverpool School of Tropical Medicine in Liverpool, England. You will find his fascinating article in the previous issue of the newsletter.

If you would like to contribute an article to this section on your laboratory or institute, or you have a suggestion about who we should contact for submissions, please email Glenn King at [glenn.king@imb.uq.edu.au](mailto:glenn.king@imb.uq.edu.au).

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## African Society of Venimology Excluded from Snakebite Agenda at World Health Assembly

5/22/2016 *The crisis is African, and sub-Saharan voices should be heard.*

**GENEVA**— The African Society of Venimology (ASV) objects strenuously to being excluded from the agenda of the May 25 World Health Assembly meeting on the international crisis in antivenom for venomous snakebite.

One million African people are bitten by venomous snakes, each year. Twenty five to thirty thousand die. More than ten thousand suffer permanent disability from loss of limbs. But only a small fraction have access to effective antivenom, because of long-term shortages resulting from an ineffective supply chain.



ASV's membership includes physicians, scientists and public health professionals who live in sub-Saharan Africa. We have seen first hand the impact of snakebite injury on our patients and on our communities. We have conducted epidemiological studies, clinical trials of antivenoms, professional workshops and training sessions for healthcare workers throughout the region. Our patients, colleagues, and political authorities are all aware of the situation and want to work toward solutions.

ASV's in-depth analysis of the shortage reveals that it is perpetuated by a vicious circle of local market failure, supply inefficiency and loss of confidence by physicians and patients. The vicious circle can be overcome only through intensive local management of technological and therapeutic improvements. But African voices are seldom heard in international discussion of these topics, because our participation is limited by the same geography, infrastructure and economics that have caused the shortage.

Eighteen health ministries, 12 of them African, requested that the 2016 World Health Assembly include a technical meeting that would convey greater visibility of the issue, on behalf of those in need of support, and that would communicate these perspectives clearly. Organization of the event was expected to be by the World Health Organization, with broad representation from member countries. ASV members looked forward to the event as an opportunity where we would at last have a chance to share our findings and recommendations.



"We were greatly disappointed to discover, days before the opening of the meeting, that its organization has been delegated to the Costa Rican government, which has a conflict of interest through its oversight of an antivenom production facility that does business in Africa," said Achille Massougbodji, President of the ASV. "Furthermore, the practical recommendations of ASV have simply disappeared from the program, leaving a business-as-usual proposal for an 'integrated response' that will presumably concentrate resources where they have always been – outside of Africa's reach.

It is time to give those who fight, without resources or support, against a scourge that overwhelms them since time immemorial, a voice."

*For more information in English or French, contact Jean-Philippe Chippaux at [jean-philippe.chippaux@ird.fr](mailto:jean-philippe.chippaux@ird.fr). Dr. Chippaux is a founding member of the ASV. Interviews, in French, may also be arranged with ASV President Achille Massougbodji (Benin), at [massougbodjiachille@yahoo.fr](mailto:massougbodjiachille@yahoo.fr). Additional interviews may be arranged on request, with representatives from Kenya, Ghana, Cameroon, Burkina Faso, Senegal and Mali.*

## **African Experts, Ignored Again on Snakebite, Move Forward Alone**

*05/31/2016- Management of snakebite envenomation to be regional, not global*

**GENEVA-** The May 25 World Health Assembly side meeting on management of snakebite envenomation concluded without hearing the findings of the African Society of Venimology (ASV), which was denied a place on the agenda.

One million African people are bitten by venomous snakes, each year. Twenty-five to thirty thousand die, and more than 10,000 suffer permanent disability from loss of limbs. After a 2015 press announcement by Doctors without Borders regarding the severe shortage of antivenom in Africa, 18 health ministries – 12 of them African, and with regional leadership by the ASV – successfully petitioned to put snakebite on the side agenda of the annual World Health Assembly.

ASV President Achille Massougbodji states that he now regrets having convinced so many Ministers of Health to attend the meeting. “The ASV includes medical doctors and venom scientists from Algeria, Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Congo, Ivory Coast, Gabon, Ghana, Guinea, Kenya, Mali, Mauritania, Morocco, Niger, Nigeria, Senegal, Swaziland, Togo, DR Congo, and Tunisia,” he said. “We have worked for years on this problem, with very little in the way of resources, but we have made progress with important implications for the health of the African people. We wanted to present our findings to our Ministers of Health, and to the world.”

In Africa, the lack of locally-produced antivenoms means that they are imported, which distances the issue of snakebite from the local public health agenda. Some products require refrigeration, so they cannot be transported to or stored at remote clinics. In most places, there is no compensatory healthcare financing system, so patients may need to come up with several months of family income, which can prevent or delay care. Finally, complex and varied local health practices mean that most victims consult traditional healers, delaying effective treatment.

Decades of international discussion failed to result in consensus on how to correct this difficult situation, until in 2012 when the ASV brought regional experts together. Members reviewed the contributing factors, defined a remediation strategy, then began an intensely regional effort, giving priority to local practices and resources. In 2016, at last, evidence of success has emerged:

- Reporting of cases, to define needs better, is now taking place in Benin, Burkina Faso, Cameroon, Senegal and Togo, showing that cases have been previously underestimated.
- Training of healthcare personnel, by ASV members, has been conducted in Benin, Burkina Faso, Cameroon, Congo, Democratic Republic of Congo, Ghana, Guinea, Ivory Coast, Kenya, Mali, Senegal and Togo. Online training modules are under development for widespread use.
- Clinical trial partnerships, to evaluate polyvalent, highly purified, lyophilized antivenoms, have been established and the first results from these are complete.
- Government subsidies now make antivenom more affordable in Burkina Faso, Cameroon and Togo, and ASV is seeking additional funding mechanisms.
- Increased distribution and use of appropriate, heat-stable, polyvalent antivenom has resulted in significantly more snakebitten people receiving treatment in Benin, Burkina Faso, Cameroon, Ghana, Guinea, Kenya, Senegal and Togo.



Naja nigricollis (J. Benjamin)

“We must continue on this course, with or without external agreement or support,” said Massougbodji. “It is the only strategy that has worked.”

*For more information in English or French, contact Jean-Philippe Chippaux at [jean-philippe.chippaux@ird.fr](mailto:jean-philippe.chippaux@ird.fr). Interviews, in French, may also be arranged with ASV President Achille Massougbodji (Benin), at [massougbodjiachille@yahoo.fr](mailto:massougbodjiachille@yahoo.fr). Additional interviews may be arranged on request, with representatives from Kenya, Ghana, Cameroon, Burkina Faso, Senegal and Mali.*



# UNIVERSIDAD DE COSTA RICA



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MAY2016

## José Ma. Gutiérrez lucha por una mejor atención para víctimas de mordeduras de serpiente

Ministro de Salud e investigador de la UCR participaron en actividad de la OMS, en Ginebra, Suiza, propuesta por Costa Rica

[Lidiette Guerrero Portilla](#). Periodista Oficina de Divulgación e Información

Categoría: [Salud](#)

El Dr. José Ma. Gutiérrez Gutiérrez, investigador del ICP de la UCR participó en Ginebra, Suiza, en un panel que analizó frente a 120 personas una iniciativa mundial integrada para reducir la mortalidad y la discapacidad por mordeduras de serpiente (foto cortesía Jose Ma Gutierrez).

El Dr. José Ma. Gutiérrez Gutiérrez, investigador del Instituto Clodomiro Picado (ICP) de la Universidad de Costa Rica (UCR) participó el jueves anterior **en un panel paralelo a la Asamblea Mundial** de la Organización Mundial de la Salud ([OMS](#)), en Ginebra Suiza, **denominado Ciencia, Estado y Sociedad: una iniciativa mundial integrada para reducir la mortalidad y la discapacidad por mordedura de serpiente**, con la participación de 120 personas de diferentes países.



**Esta actividad la propuso a la OMS el Ministro de Salud, Dr. Fernando Llorca Castro y la delegación diplomática de Costa Rica en Ginebra** y lograron el apoyo de las representaciones de Afganistán, Angola, Bangladesh, Benin, Burkina Faso, Camerún, Chad, Gabon, Guinea, Kenia, Namibia, Nepal, Nigeria, Pakistan, Papua Nueva Guinea, Filipinas, Senegal y Uganda.

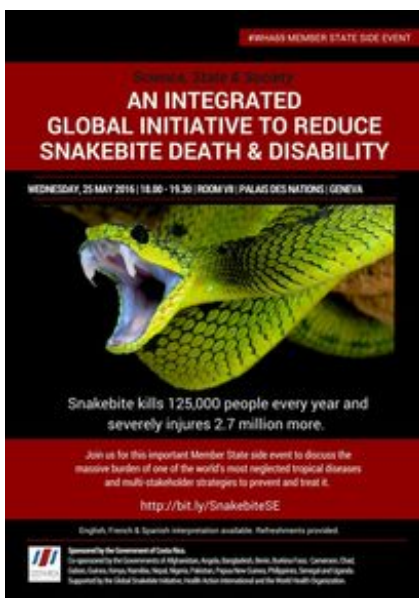
El Dr. José Ma. Gutiérrez Gutiérrez expuso **el modelo que ha seguido Costa Rica para enfrentar el problema de las mordeduras de serpientes** y en el cual ha tenido una gran participación el [Instituto Clodomiro Picado](#).

Este connotado investigador universitario forma parte además del comité director de la [Global Snakebite Initiative](#), una ONG que es líder en ese campo y **se espera que, a través del liderazgo de Costa Rica, se puedan aglutinar países que hagan planteamientos ante la OMS para que le preste más atención al problema de las mordeduras de serpiente y la falta de acceso o escasez de antivenenos.**

Las mordeduras de serpiente en el mundo afectan la vida de **4,5 millones de personas, cada año; hieren gravemente a 2,7 millones de hombres, mujeres y niños, y matan a unas 125.000 personas**, indica en su sitio esa ONG, que es una organización sin ánimo de lucro, registrada en Australia y dirigida por expertos comprometidos con la mejora del acceso a la buena calidad de los antivenenos para las comunidades más pobres del mundo.

Un [video](#) producido por esa organización revela la difícil situación que enfrentan las poblaciones africanas en relación con las mordeduras de serpiente.

## Panel efectuado



La coordinación y conducción de la sesión dedicada al problema del ofidismo la tuvo a cargo el Ministro de Salud, Dr. Fernando Llorca Castro y a criterio del Dr. José Ma. Gutiérrez fue un éxito porque **se logró el objetivo de poner en la palestra de la salud pública mundial ese tema tan importante.**

El investigador se manifestó muy agradecido de que el Ministro de Salud de Costa Rica se haya interesado en esta temática y considera que en el futuro se puedan desarrollar otras iniciativas para que la OMS le preste más atención a este problema. Para su criterio se requieren esfuerzos internacionales colaborativos, involucrando a OMS, gobiernos, organizaciones de la sociedad civil, grupos de investigación, productores de antivenenos, entidades reguladoras, etc.

La actividad se efectuó en forma paralela a la Asamblea Mundial de la OMS, en Ginebra, Suiza, y contó con la participación de ocho Ministros de Salud y representantes de diversos países.

En la actividad, además de Gutiérrez participaron los doctores David Warrell, de la Universidad de Oxford, quien se refirió al reto global que representa el problema del envenenamiento por mordedura de serpiente en Africa y Tim Reed, de la organización Health Action International planteó la necesidad de una respuesta integrada a este problema.

Por otra parte, la Dra. Sue Hill, de la OMS, expuso sobre la



**evaluación de los antivenenos** por parte de esa organización y **la preparación de guías** para la producción de esos medicamentos. Además se refirió al programa de “**precalificación**” de **antivenenos** que tiene la Organización Mundial de la Salud (OMS) que pretende evaluar su calidad y decidir cuáles pasan los criterios exigidos para estos productos en el mundo.

Asimismo los doctores Julien Potet y Gabriel Alcoba, de Médicos sin Fronteras, quienes hablaron sobre **el por qué el problema de envenenamiento ofídico es una prioridad** para esa organización, David Williams de la Global Snakebite Initiative quien expuso la **estrategia de esa ONG para enfrentar el problema**.

Al finalizar el panel la embajadora Elayne Whyte, de la Misión Permanente de Costa Rica ofreció un discurso de cierre.

En la organización de esa actividad participaron también Global Snakebite Initiative, Health Action International y Médicos sin Fronteras.

## IST Nomenclature Committee

At the last IST World Congress held in Recife, Brazil in March 2009, a symposium devoted to the topic of toxin nomenclature received significant interest from IST members. The IST Council subsequently decided to form a nomenclature committee to examine the issue of toxin naming standards and recommend possible solutions. The mandate of this committee was to propose a nomenclature system, with interim reports to IST Council and a "final" report to be delivered at the IST World Congress in 2012. This deadline was not met, but it is hoped progress will be made in the following triennium. If you have any comments or suggestions on toxin nomenclature, could you please send them to a member of the nomenclature committee, which is currently comprised of the following members:

Dr Gerardo Corzo, Mexico (Email: corzo@ibt.unam.mx)

Dr Florence Jungo, Switzerland (Email: Florence.Jungo@isb-sib.ch)

Dr Evanguedes Kalapothakis, Brazil (Email: ekalapo@icb.ufmg.br)

Prof. Glenn King, Australia (Chairman; Email: glenn.king@imb.uq.edu.au)

Prof. Manjunatha Kini, Singapore (Email: dbskinim@nus.edu.sg)

Prof. Graham Nicholson, Australia (Email: graham.nicholson@uts.edu.au)

Prof. Toto Olivera, USA (Email: olivera@biology.utah.edu)

Prof. Jan Tytgat, Belgium (Email: jan.tytgat@pharm.kuleuven.be)

### ***ArachnoServer spider toxin database***

ArachnoServer is a manually curated database that provides detailed information about proteinaceous toxins from spiders. Key features of ArachnoServer include a new molecular target ontology designed especially for venom toxins, the most up-to-date taxonomic information available, and a powerful advanced search interface. Toxin information can be browsed through dynamic trees, and each toxin has a dedicated page summarising all available information about its sequence, structure, and biological activity. ArachnoServer currently manages 567 protein sequences, 334 nucleic acid sequences, and 51 protein structures. ArachnoServer is available online at [www.arachnoserver.org](http://www.arachnoserver.org).

*The IST has established a special wiki site for members of this Nomenclature Committee to use to both communicate and develop information and recommendations. Members of the committee will soon receive an email detailing how they may access this site.*

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## IST Snake Taxonomy Advisory Group

Keeping up with changes in taxonomy for venomous animals is always a challenge for toxinologists, but it is important to do so, if published research is to maintain viability longer term, as taxonomy evolves. To improve dissemination of information on taxonomic changes the IST has invited Assoc. Prof. Scott Weinstein (Australia/USA) to chair the snake taxonomy committee with a view to generation of regular taxonomy updates which can be made available to members.

We will consider making these updates available through the newsletter and, possibly, the IST website.

Julian White AM, Secretary IST

# IST 2016

[www.ist2016.com](http://www.ist2016.com)

## XII Congress of the Pan-American Section of the International Society on Toxinology

*Toxins by the Beach*

September 18-23, 2016 Miami Beach, Florida, USA

Organizers:

**Frank Bosmans**

John Hopkins University  
Baltimore, Maryland, USA

**Frank Marí**

Hollings Marine Laboratory  
National Institute of Standards and Technology  
Charleston, South Carolina, USA



*XII Congress of the Pan-American  
Section of the International Society  
on Toxinology*

September 18-23, 2016  
Miami Beach, Florida, USA

## Toxins by the Beach

The 12th Pan-American Congress of the International Society on Toxinology, will be held on 18th -23th September 2016 at the Deauville Beach Resort in Miami Beach, Florida, USA.

- Prominent international figures in Toxinology and related disciplines .
- Guest speakers who use toxins in an academic, industrial, or medical setting.
- High-quality seminars and lively first-rate poster sessions.
- Excellent networking opportunity.

*Join us for what will be a most memorable meeting against the backdrop of South Beach, a lively Art Deco Historic district, and Latin music.*







*XII Congress of the Pan-American  
Section of the International Society  
on Toxinology*

September 18-23, 2016  
Miami Beach, Florida, USA

## About Miami Beach

•Miami Beach is famous for having the largest collection of Art Deco architecture in the world, endless beaches, fantastic cuisine and nightlife, as well as being at the crossroads of the Americas.

•Easily accessed by three international airports (MIA, FLL, PBI).

•A tropical paradise, with year-round warm weather, turquoise waters, and world-class shopping.

•A sparkling and lively destination, Miami Beach encompasses an eclectic mixture of ethnic backgrounds.



*XII Congress of the Pan-American  
Section of the International Society  
on Toxinology*

September 18-23, 2016  
Miami Beach, Florida, USA

Miami, FL, USA

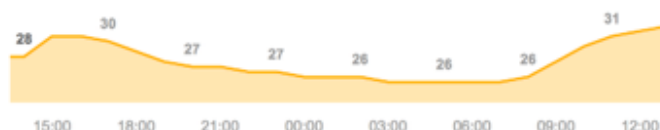
Saturday 14:00  
Mostly Cloudy



28 °C | °F

Precipitation: 15%  
Humidity: 78%  
Wind: 12 mph

Temperature   Precipitation   Wind



| Sat     | Sun     | Mon     | Tue     | Wed     | Thu     | Fri     | Sat     |
|---------|---------|---------|---------|---------|---------|---------|---------|
|         |         |         |         |         |         |         |         |
| 31° 25° | 32° 25° | 32° 25° | 32° 24° | 32° 23° | 31° 24° | 30° 23° | 31° 23° |

## Miami's Weather in September

•September is one of the wettest months in Miami. The city still enjoys mainly sunny skies, with some clouds and daily afternoon showers can be expected.

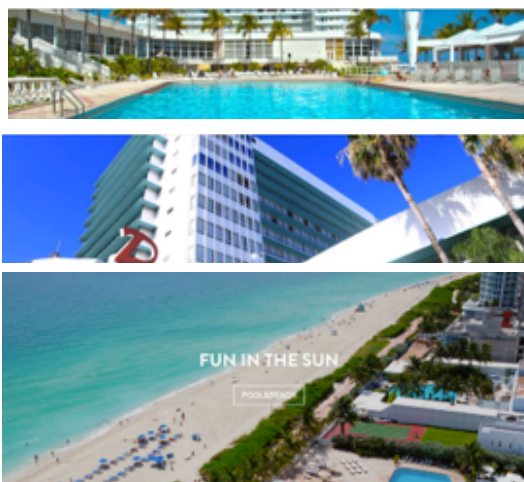
•The maximum temperature for September is between 88 and 90 degrees Fahrenheit (31 to 32 degrees Celsius), while the minimum temperature usually falls between 76 and 77 °F (24 to 25 °C).





## Deauville Beach Resort Miami

This contemporary beachfront hotel dating to the 1950s, where The Beatles stayed during their US tour in 1964, is right on the beach and only a 1.5-mile walk from the La Gorce Country Club, offering golf. Sleek rooms and suites with views of the ocean, Biscayne Bay or the city, offer 27-inch flat-screen TVs and minifridges. The property features a beach, an outdoor pool, a poolside tiki bar and a hot tub. Other amenities include a spa (fee), a fitness center, a casual restaurant and a jazz bar.



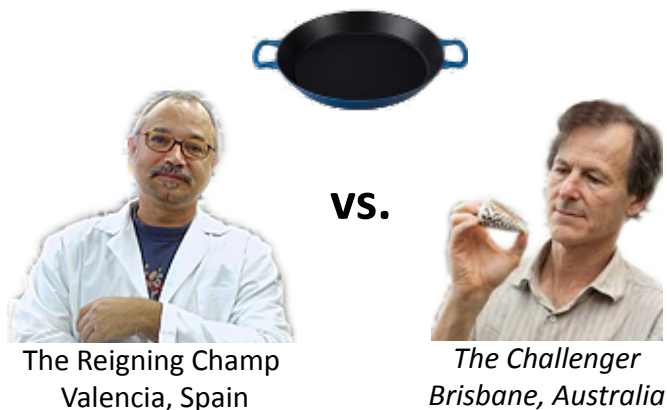
## Scientific Committee

|                              |                                   |
|------------------------------|-----------------------------------|
| Yara Cury – Brazil           | Juan Jose Calvete – Spain         |
| Denise Tambourgi – Brazil    | Gilberto Domont – Brazil          |
| Baldomero Olivera – USA      | Greta Binford – USA               |
| Jay Fox – USA                | Lourival Possani – Mexico         |
| Kenton Swartz – USA          | Michael Pennington – USA          |
| Richard J. Lewis – Australia | Baltazar Becerril – Mexico        |
| Marymeg Daly – USA           | Jose Maria Gutierrez – Costa Rica |



## Networking, Team-Building and Entertainment

- Inaugural Reception
- Poster Mixers – Beer, Wine, Tapas
- Dinner Conference
- Music and Dance
- Paella Wars*



## In a Nutshell

- Top Notch Speakers (50-60)
- No Parallels sessions (unless necessary)
- Rapid Fire Talks
- Posters – Where the action should be!



Join us!  
More info at:

**[www.ist2016.com](http://www.ist2016.com)**







## IST2016 - XII Congress of the Pan American Section of the International Society on Toxinology

*"Toxins by the beach"*

### Schedule and Program

18-23 September 2016  
Miami Beach  
Florida  
USA



This meeting would not be possible without the generous contributions from:

GOLD SPONSORS:



INSTITUTIONAL SPONSOR:



**Lodging: Deauville Hotel.**

**NOTE: all scientific sessions, posters, and socials will be held at the Le Jardin Ballroom.**

**All meals, Breaks, poster sessions, opening reception on Sunday evening, and the gala dinner reception will be held at the Richelieu Ballroom.**

## SUNDAY – SEPTEMBER 18

|                 |   |
|-----------------|---|
| 12:00 - 5:00 pm | Arrival, check-in, and badge pick-up  |
| 7:00 – 7:30 pm  | Welcome / Introductory Comments:<br><b>Frank Marí</b> (National Institute of Standards and Technology, Charleston, SC, USA) Organizer<br><b>Frank Bosmans</b> (John Hopkins University School of Medicine, Baltimore, MD, USA) Organizer<br><b>Jay Fox</b> (University of Virginia School of Medicine, Charlottesville, VA, USA) President of IST |
| 7:30 – 8:30 pm  | <b>KEYNOTE SESSION</b><br>Discussion Leader: <b>Kenton Swartz</b> (National Institutes of Health, Bethesda, MD, USA)<br><br><b>Bruce Bean</b> (Harvard Medical School, Boston, MA, USA)<br>“Natural toxins as tools in neurophysiology”   |
| 8:30 – 8:45 pm  | Discussion  |
| 8:45 pm –       | <i>Opening Reception (Hors d'oeuvre, Drinks, and Music)</i>   |

## MONDAY – SEPTEMBER 19

|                  |   |
|------------------|---|
| 7:00 – 8:15 am   | <i>Breakfast</i>  |
| 8:30 – 10:00 pm  | <b>MORNING SESSION I: – <i>Venom and toxin pharmacology</i></b><br>Discussion Leaders: <b>Denise Tambourgi</b> (Butantan Institute, São Paulo, Brazil) and <b>Jay Fox</b> , (University of Virginia, USA)                                       |
| 8:30 – 8:50 am   | <b>Denise Tambourgi</b> (Butantan Institute, São Paulo, Brazil)<br>“Loxoscelism: from basic research to the proposal of new therapies”  |
| 8:50 – 9:10 am   | <b>Jeremiah Osteen</b> (University of California, San Francisco, CA, USA)<br>“Exploiting toxins to probe pain pathways”   |
| 9:10 – 9:30 am   | <b>Ray Norton</b> (Monash University, Melbourne, Australia)<br>“Peptide toxins as therapeutic leads: immunosuppressants, novel insulins and other delights”   |
| 9:30 – 9:50 am   | <b>Baldomero Olivera</b> (University of Utah, Salt Lake City, UT, USA)<br>“Using Neuroethology, Chemical Biology and Pharmacology to Explain Cone Snail Venom Complexity”   |
| 9:50 – 10:20 am  | <i>Coffee Break</i>   |
| 10:20 – 12:00 pm | <b>MORNING SESSION II: – <i>Natural Toxins and Drug Discovery</i></b><br>Discussion Leaders: <b>Glenn King</b> (University of Queensland, Brisbane, Australia) and <b>Michael Pennington</b> (Peptides International, Inc. Louisville, KY, USA) |
| 10:20 – 10:40 am | <b>Iekhsan Othman</b> (Monash University Malaysia)  |

"Bioassay guided identification of anti-cancer proteins from *C. rhodostoma* using LCMSMS"

- 10:40 – 11:00 am **Carl-Wilhelm Vogel** (University of Hawaii, Manoa, HI, USA)  
"Development of a therapeutic agent from a venom component of cobras for diseases with complement pathogenesis"
- 11:00– 11:20 am **Maria Elena de Lima** (Universidade Federal de Minas Gerais, Belo Horizonte, Brazil)  
"PnPP-19, a peptide derived from a Phoneutria toxin, is a promising drug to treat erectile dysfunction"
- 11:20 – 11:40 am **Gina D'Suze** (Instituto Venezolano de Investigaciones Científicas, Caracas, Venezuela)  
"Antitumoral effect of Neopladine-2 in a mouse mammary tumor model"
- 11:40 – 12:00 n **MORNING SESSION III: – ORAL PRESENTATIONS IN RAPID FIRE FORMAT – *Selected Presenters from the Posters***  
Chairs: **Frank Bosmans** (John Hopkins University School of Medicine, Baltimore, MD, USA) and **Frank Mari** (National Institute of Standards and Technology, Charleston, SC, USA)
- 12:00 – 4:00 pm **OPEN NETWORKING AFTERNOON**
- 4:00 – 6:00 pm **Poster Session I and Social**
- 6:00 – 7:30 pm **Free time for dinner**
- 7:30 – 9:00 pm **EVENING SESSION: *Emerging Concepts and Technologies I***  
Discussion Leader: **Marymegan Daly** (The Ohio State University, Columbus, OH, USA)
- 7:30 – 8:00 pm **José-María Gutierrez** (Instituto Clodomiro Picado, San Jose, Costa Rica)  
"Dermonecrosis induced by venom of the African spitting cobra, *Naja nigricollis*: Pathogenesis of tissue damage and neutralization by antivenoms"
- 8:00 – 8:30pm **James Olson** (Seattle Children's Hospital, Seattle, WA, USA)  
"Scorpion toxin-derived BLZ-100 Tumor Paint in clinical trials and the Optide (Optimized peptide) drug"
- 8:30 – 9:00pm **Justin Dubois** (Stanford University, Stanford, CA, USA)  
"Modified guanidinium toxins as tools for studies of sodium Ion channel structure and function"

## TUESDAY SEPTEMBER 20

- 7:00 – 8:15 am *Breakfast*
- 8:30 – 10:00 pm **MORNING SESSION I: *Venomics and Toxinomics***  
Discussion Leaders: **Juan Calvete** (Instituto de Biomedicina de Valencia, Spain) and **Balthazar Becerril** (Universidad Nacional Autónoma de México, Cuernavaca, Mexico)
- 8:30 – 8:50 am **Juan Calvete** (Instituto de Biomedicina de Valencia, Spain)  
"Omics-driven understanding of venoms: Technological and biological advances"
- 8:50 – 9:10 am **Kate Baumann** (University of Queensland, St. Lucia, Australia)

"Beware the sting: a proteomic study of Aculeata"

|                  |   |
|------------------|---|
| 9:10 – 9:30 am   | <b>Bruno Lomonte</b> (Instituto de Biomedicina de Valencia, Valencia, Spain)<br>"Micrurus venom: compositional trends, toxicity correlates, and immunotherapy implications"   |
| 9:30 – 9:50 am   | <b>Yehu Moran</b> (Hebrew University of Jerusalem, Jerusalem, Israel)<br>"Characterizing the dynamics and complexity of venom production in a cnidarian"  |
| 9:50 – 10:20 am  | <i>Coffee Break</i>   |
| 10:20 – 12:00 pm | <b>MORNING SESSION II: <i>Diversity in the toxin realm</i></b><br>Discussion Leaders: <b>David Adams</b> (Illawarra Health & Medical Research Institute, Univ. of Wollongong, Wollongong, Australia) and <b>Gina D'Suze</b> (Instituto Venezolano de Investigaciones Científicas, Caracas, Venezuela) |
| 10:20 – 10:40 am | <b>David Adams</b> (Illawarra Health & Medical Research Institute, Univ. of Wollongong, Wollongong, Australia)<br>"Analgesic $\alpha$ -conotoxins targeting GPCR modulation of voltage-gated calcium channels in alleviating chronic pain"  |
| 10:40 – 11:00 am | <b>Samira Aili</b> (University of Technology Sydney, Sydney, Australia)<br>"Ant venom as a source of bioinsecticide leads"  |
| 11:00 – 11:20 am | <b>Christie Wilcox</b> (University of Hawaii, Manoa, HI, USA)<br>"Lionfish and scorpaeiform injuries: phylogenetic and clinical aspects of this expanding threat"   |
| 11:20 – 11:40 am | <b>Andrew Walker</b> (The University of Queensland, Brisbane, Australia)<br>"Melt with this kiss: Liquefying and paralyzing venom of the assassin bug <i>Pristhesancus plagipennis</i> "  |
| 11:40 – 12:00 n  | <b>Nadine Kabbani</b> (George Mason University, Fairfax, VA, USA)<br>"Alpha 7 nicotinic receptor signaling to the cytoskeleton during nerve growth and regeneration"  |
| 12:00 – 4:00 pm  | <b>OPEN NETWORKING AFTERNOON</b>  |
| 2:00 – 4:00 pm   | The Snake Bite Initiative   |
| 4:00 – 6:00 pm   | <b>Poster Session and Social</b>  |
| 6:00 – 7:30 pm   | <b>Free time for dinner</b>   |
| 7:30 – 9:00 pm   | <b>EVENING SESSION: <i>Emerging Concepts and Technologies II</i></b><br>Discussion Leader: <b>Frank Bosmans</b> (John Hopkins University, Baltimore, MD, USA)   |
| 7:30 – 8:00 pm   | <b>Jian Payandeh (Genentech, CA, USA)</b><br>"Inhibiting Nav1.7: when small molecules masquerade as gating modifier toxins"   |
| 8:00 – 8:30pm    | <b>Jon Sack</b> (UCDavis, Davis, CA, USA)   |



“Visualizing voltage activation of ion channels with engineered spider toxins”

8:30 – 9:00 pm

**Kenton Swartz** (National Institute of Health, Bethesda, MD, USA)

“Structure and gating mechanisms of temperature-sensing TRP channels”

## WEDNESDAY SEPTEMBER 21

7:00 – 8:15 am

*Breakfast*

8:30 – 10:00 am

### **MORNING SESSION I: *Clinical Aspects of Envenomation I***

Discussion Leaders: **Julian White** (Toxinology Dept., Women's & Children's Hospital, North Adelaide, Australia) and **Jose Gutierrez** (Instituto Clodomiro Picado, San Jose, Costa Rica)

8:30 – 8:50 am

**Baltazar Becerril** (Universidad Nacional Autónoma de México, Cuernavaca, Mexico)

“Broadening the neutralizing capacity of a family of antibody fragments against different toxins from Mexican scorpions”

8:50 – 9:10 am

**Andreas Hougaard Laustsen** (Technical University of Denmark, Lyngby, Denmark)

“Human oligoclonal recombinant antivenom against the black mamba (*Dendroaspis polylepis*)”

9:10 – 9:30 am

**Jonas Perales** (Fundação Oswaldo Cruz, Rio de Janeiro, Brazil)

“Snake Venom Myotoxin-antimyotoxin complex: Structural analysis by cross-linking, mass spectrometry, and bioinformatics approaches”

9:30 – 9:50 am

**Julian White** (Toxinology Dept., Women's & Children's Hospital, North Adelaide, Australia)

“A Neglected Approach to a Neglected, Neglected Disease?”

9:50 – 10:20 am

*Coffee Break*

10:20 – 12:00 am

### **MORNING SESSION II: *Marine Toxins***

Discussion Leaders: **Angel Yanagihara** (University of Hawaii, Manoa, HI, USA) and **Richard Lewis** (University of Queensland, Brisbane, Australia)

10:20 – 10:40 am

**Richard Lewis** (University of Queensland, St. Lucia, Australia)

“Separately evolved predatory and defensive venoms change our understanding of cone snail cabal function”

10:40 – 11:00 am

**Marymegan Daly** (The Ohio State University, Columbus, OH, USA)

“Sea anemone venoms: an evolutionary perspective”

11:00 – 11:20 am

**Carlos Alvarez** (Universidad de la Habana, Cuba)

“Beyond the pore: unveiling the intracellular network triggered by the sea anemone cytolysin ST II upon binding to membranes”

11:20 – 11:40 am

**Angel Yanagihara** (University of Hawaii, Manoa, HI, USA)

“Clinically relevant cnidarian envenomations: Pathophysiology and evidence-based management”

11:40 – 12:00 am

**Hendrix Luesch** (University of Florida, Gainesville, FL, USA)

“Exploiting marine cytotoxins for drug discovery”

|                 |  |
|-----------------|--|
| 12:00 – 4:00 pm | <b>OPEN NETWORKING AFTERNOON</b>   |
| 12:30 – 4:00 pm | Miami Zoo visit  |
| 2:00 – 4:00 pm  | IST Council Meeting  |
| 4:00 – 6:00 pm  | <b>Poster Session and Social</b>   |
| 6:00 – 7:30 pm  | <b>Free time for dinner</b>  |
| 7:30 – 9:00 pm  | <b>EVENING SESSION: <i>Emerging Concepts and Technologies III</i></b><br>Discussion Leader: <b>Frank Mari</b> (National Institute of Standards and Technology, Charleston, SC, USA)  |
| 7:30 – 8:00 pm  | <b>Glenn King</b> (University of Queensland, Brisbane, Australia)<br>“Protecting the brain after stroke with a double-knot toxin that targets acid-sensing ion channels”   |
| 8:00 – 8:30pm   | TBA  |
| 8:30 – 9:00pm   | <b>Michael Pennington</b> (Peptides International, Inc. Louisville, KY, USA)<br>“Dalazatide (ShK-186), a modified peptide derived from a sea anemone, progresses to phIIa clinical trials: milestones and lessons learned along the way” |

## THURSDAY SEPTEMBER 22

|                  |  |
|------------------|--|
| 7:00 – 8:15 am   | <i>Breakfast</i>   |
| 8:30 – 10:00 am  | <b>MORNING SESSION I: <i>Clinical Aspects of Envenomation II</i></b><br>Discussion Leaders: <b>Carlos Alvarez</b> (Universidad de la Habana, Cuba) and <b>Leslie Boyer</b> (University of Arizona Health Sciences, Tempe, AZ, USA)           |
| 8:30 – 8:50 am   | <b>Leslie Boyer</b> (University of Arizona Health Sciences, Tempe, AZ, USA)<br>“A novel equine F(ab') <sub>2</sub> antivenom against <i>M. fulvius</i> envenomation: Results from the first 20 cases in a phase 3 clinical trial in Florida” |
| 8:50 – 9:10 am   | <b>Jay Fox</b> (University of Virginia School of Medicine, Charlottesville, VA, USA)<br>“Wound exudates in the pathophysiology and clinical significance of snake envenomation”  |
| 9:10 – 9:30 am   | <b>Matthew R. Lewin</b> (Ophirex, Inc., Corte Madera, CA, USA)<br>“LY315920 is a potent, broad-spectrum, inhibitor of snake venom phospholipase A2 and is compatible with both metalloprotease inhibitors and antivenom in vitro”            |
| 9:30 – 9:50 am   | <b>Stephen Mackessy</b> (University of Colorado, USA)<br>“The effects of hybridization on divergent venom phenotypes: characterization of venom from <i>Crotalus escutulatus</i> ”   |
| 9:50 – 10:20 am  | <i>Coffee Break</i>  |
| 10:20 – 12:00 am | <b>MORNING SESSION II: <i>Structural and Biophysical Studies of Toxins</i></b>   |

Discussion Leaders: **Lachlan Rash** (The University of Queensland, St. Lucia, Australia) & **Kenton Swartz** (National Institutes of Health, Bethesda, MD, USA)

- 10:20 – 10:40 am **Christina Schroeder** (University of Queensland, Brisbane, Australia)  
“The importance of peptide-membrane interactions in toxin inhibition of sodium channels”
- 10:40 – 11:00 am **Mark Hamann** (University of Mississippi, USA)  
“NMR and DP4 studies to assign the stereochemistry of complex HAB toxins”
- 11:00 – 11:20 am **Craig Doupnik** (University of South Florida, Tampa, FL, USA)  
“Tertiapin as a pharmacophore for structure-based design of novel peptides blocking Kir channels”
- 11:20 – 11:40 am **William Kem** (University of Florida, Gainesville, FL, USA)  
“Recent research with nemertine toxins and drug design”
- 11:40 – 12:00 am **Graham Nicholson** (University of Technology Sydney, Sydney, Australia)  
“Characterization of the presynaptic PLA2 neurotoxin complex from the Australian rough-scaled snake”
- 12:00 – 12:30 **Conference group photo**
- 12:30 – 4:00 pm **OPEN NETWORKING AFTERNOON**
- 3:00 – 4:00 pm IST business meeting
- 4:00 – 6:00 pm **AFTERNOON SESSION: *New and/or notable***  
Discussion Leaders: **Christina Schroeder** (University of Queensland, Brisbane, Australia) and **Jeremiah Osteen** (University of California, San Francisco, CA, USA)
- 4:00 – 4:20 pm **Lachlan Rash** (The University of Queensland, St. Lucia, Australia)  
“The interaction of venom peptides with ASIC1: the molecular basis of subtype and species selectivity”
- 4:20 – 4:40 pm **Nanion** - TBA
- 4:40 – 5:00 pm **Francis Markland** (University of Southern California, Los Angeles, CA, USA)  
“Venom-derived agent for brachytherapy of glioblastoma”
- 5:00 – 5:20 pm **Samantha Nixon** (University of Queensland, Brisbane, Australia)  
“A polyamine isolated from *Acanthoscurria geniculata* is the first spider-venom anthelmintic against parasitic nematodes”
- 5:20 – 5:40 pm **Peter Oparin** (M.M. Shemyakin and Yu.A. Ovchinnikov Institute of Bioorganic Chemistry, Moscow, Russian Federation)  
“Purotoxin-2: first spatial structure of spider modular toxin”
- 5:40 – 6:00 pm **Tai Kubo** (Natl Inst Advanced Ind Sci & Tech, Koto-ku, Japan)  
“Development of peptide neurotoxin-based allosteric modulators of nicotinic acetylcholine receptor alpha 7: evaluation by diffracted X-ray tracking method”
- 6:00 – 9:00 pm Closing remarks from Frank Mari/Frank Bosmans and **Gala Dinner**



**FRIDAY SEPTEMBER 23**

7:00 – 10:00 am      *Breakfast*

CHECK OUT BY 11:00 AM

Proposed revised IST Constitution, to be voted on at the Business Meeting of the IST at the Miami Congress, September, 2016. Items altered/added to the existing Constitution highlighted in yellow.

## CONSTITUTION AND BY-LAWS OF THE INTERNATIONAL SOCIETY ON TOXINOLOGY

### ARTICLE I

#### *NAME*

The name of this organization shall be the INTERNATIONAL SOCIETY ON TOXINOLOGY (IST).

### ARTICLE II

#### *OBJECT*

The object of the Society is to advance knowledge on the properties and clinical aspects of poisons, toxins and antitoxins derived from animals, plants and microorganisms, and antivenoms and other treatments for toxin-induced illness, and to bring together those scholars and clinicians interested in these substances and their effects through a common Society and to support training and credentialing of medical doctors in the specialty of clinical toxinology.

### ARTICLE III

#### *NOT FOR PROFIT CLAUSE*

The assets and income of the organisation shall be applied solely in furtherance of its above-mentioned objects and no portion shall be distributed directly or indirectly to the members of the organisation except as bona fide compensation for services rendered or expenses incurred on behalf of the organisation.

### ARTICLE IV

#### *MEMBERS*

- Section 1.* The Society shall consist of Members, Associate Members, Student Members, Honorary Members and Corporate Members.
- Section 2.* Persons who have conducted and published original investigations in toxinology shall be eligible for Membership in the Society. On payment of annual Society dues they will be Financial Members for that year and entitled to vote at Society meetings.
- Section 3.* Persons who do not qualify for Membership but are working or interested in the field of toxinology shall be eligible for Associate Membership. On payment of annual Society dues they will be entitled to vote at Society meetings.
- Section 4.* Persons who are registered students studying an aspect of toxinology shall be eligible for Student Membership. On payment of any annual fee which will be determined annually by Council, they will become registered Student Members for that Society financial year, entitled to any rights that may be defined, from time to time, by Council.
- Section 5.* Persons eligible for full Membership of the Society and who opt to pay a one-time fee which shall be determined annually by Council shall be Life Members and shall not have to pay further annual dues, but shall be thereafter entitled to all the rights and privileges of Membership, except that if the Life Member indulges in activities that Council consider bring the reputation of the Society into disrepute, Council may, at its sole discretion, suspend or terminate the Life Membership, in accordance with the principles provided in Section 14 (below) of this Constitution.
- Section 6.* Persons who have, in the view of Council or the Society, made a special or unique contribution to toxinology, shall be eligible for Honorary membership in the Society. Honorary Members shall be exempt from paying annual dues to the Society, but shall have the same rights to vote as Financial Members.
- Section 7.* Organizations contributing to toxinology and the Society, which provide a regular Financial contribution to the Society, determined by Council, shall be eligible for Corporate Membership. Corporate Members shall be required to pay annual dues in

an amount to be determined, year to year, by Council, but shall not have voting rights in the Society.

**Section 8.** Organizations related to and contributing to toxinology and the Society which provide a regular Financial contribution to the Society, determined by Council, shall be eligible for Affiliate Organisation Membership. Affiliate Organisation Members shall be required to pay annual dues in an amount to be determined, year to year, by Council, but shall not have voting rights in the Society. Council has the right to negotiate with an Affiliate Organisation in regard to any further fees that might be applied to some or all members of that organisation in return for any specific privileges that might then apply to these members in regard to the Society and its activities and services, if any. Council shall have the right to revoke Affiliate Organisation Membership at any time.

*Section 9.* Council shall have the right to establish subclasses of Membership as required to further the Objects of the Society. All such subclasses of Membership may attract annual dues as determined by Council which may be additional to any dues required for the main classes of Membership (Article IV, Sections 2-6) and shall only be open to Members of the Society or members of organisations covered by Corporate Membership, or Affiliate Organisation Membership who meet criteria approved by Council for the subclass of Membership.

*Section 10.* A. Applications for Membership on behalf of the applicant shall be made by a Member of the Society on forms provided by the Secretary. The Member proposing a candidate must upon request submit to Council a letter in support of the candidate.

B. Applications for Associate Membership shall be submitted by the applicant on forms provided by the Secretary. Nomination by a Member of the Society is not required.

C. Applications for Student Membership shall be submitted by the applicant on forms provided by the Secretary. Nomination by a Member of the Society is not required, but proof of student status is required. Student membership status is only permissible while the person is a bona fide student.

D. A person shall be considered by Council for Honorary Membership if requested in writing by at least ten Financial Members. Honorary Membership shall be recommended by the Council of the Society, by a two thirds majority at secret ballot of the Council, conducted by the Secretary/Treasurer and shall become conferred following a simple majority vote of Financial Members at a General or Special Meeting of the Society.

Should a vote of Financial Members of the Society at a general or special meeting fail to attain a simple majority, then the person proposed for Honorary Membership shall not be eligible for reconsideration for such membership for a period of two years after the first failed vote and four years after a second or subsequent failed vote.

E. Applications for Life Membership of the Society shall be made by the Member, to the Secretary, and shall only be open to current Financial Members. Such applications shall then be submitted to Council for determination of an appropriate fee. On payment of such fee the Member will become a Life Member, subject to the provisions of Sections 5 and 14 of this constitution.

F. Applications for Corporate Membership shall be made to Council. An organization shall be considered by Council for Corporate Membership, by a two thirds majority at secret ballot of the Council, conducted by the Secretary/Treasurer and shall become conferred following a simple majority vote of Financial Members at a general or special meeting of the Society. Corporate Membership, once conferred, shall be reconsidered by Council every four years and reconfirmed following a

simple majority vote of Financial Members at a general or special meeting of the Society.

Should a vote of Financial Members of the Society at a general or special meeting fail to attain a simple majority, then the organization proposed for Corporate Membership shall not be eligible for reconsideration for such membership for a period of two years after the first failed vote and four years after a second or subsequent failed vote.

- G. Applications for Affiliate Organisation Membership shall be made to the Secretary by organisations meeting the provisions of Section 8 of this constitution and interested in seeking such Membership. The Secretary shall place such applications before Council, or such other subcommittee of Council as Council may, from time to time, determine, to decide on whether to accept, or in the case of a subcommittee, recommend to Council on acceptance, the application and to set terms and conditions in relation to granting Affiliate Organisation Membership for the organization so applying, in accordance with provisions of Section 8 of this constitution. An organization shall be accepted for Affiliate Organisation Membership, by at least a two thirds majority vote of the Council.

*Section 11.* The Secretary will, on request of a Council Member, circulate details of all applications for Membership, Associate Membership and Student Membership to all Council Members. After consideration Council Members may effect election and the Secretary will then inform the Member of such election. The Secretary may be delegated by Council to determine, on Council's behalf, if an application can be approved and effect election. A list of all members, including associate and student members, will be made available to all Members of the Society, not less than once a year, by such means, including electronic, as Council may, from time to time, deem appropriate. Applications for Corporate Membership and proposals for Honorary Membership shall be distributed to all Council Members, in accordance with Sections 5 and 6 (above).

*Section 12.* Failure of a Member or Associate Member to pay the annual assessment (dues) for two successive years constitutes forfeiture of membership. The Member may be reinstated either at the discretion of the Secretary, or by majority vote of the Council, upon payment of the full amount of the assessment due.

*Section 13.* **Dues.** Each Member and Associate Member shall pay annual dues as be prescribed by the Council, and as approved by the membership at a general meeting or special meeting.

*Section 14.* A Member in any category who behaves or undertakes activities that may bring the field of toxinology, or the Society, into disrepute or in other ways acts to the detriment of the Society, or it's Members, may be subject to discipline by majority decision of the Council. Members may petition Council to consider disciplinary action against a member, but Council has the sole right to determine if disciplinary action should be considered. Such discipline will be at the sole discretion of Council and may include suspension of Membership, or consideration of termination of Membership, except that where termination of Membership is recommended by Council, in a majority vote, it must be confirmed by a majority vote of Members present at a General Meeting or Special General Meeting of the Society and until such time as termination of Membership is so confirmed, the Member will have their Membership suspended. On suspension or termination of Membership, any dues paid to the Society shall be forfeit and not refundable to the Member or ex-Member.



## **ARTICLE V**

### **ANNUAL MEETING**

There shall be a regular, formal “annual” meeting of the Society (referred to in this constitution as a “General Meeting”) which, whenever possible, shall include a meeting of the Council (as determined in By-Laws Article II). The meeting shall be scheduled to occur once each year, except where Council decides that for practical reasons given the international membership of the Society, a meeting must be delayed beyond one year, such a delayed meeting must be held within two years of the previous meeting. The meeting will be held at a time and place prescribed in the ByLaws, or by notice communicated by electronic or other distribution means to each Member at least 90 days before the date of the meeting; the notice shall state the time, place, and agenda for the meeting. The Council has the right to postpone or cancel the Annual Meeting for one year if deemed necessary.

## **ARTICLE VI**

### **COUNCIL**

- Section 1.* The Council shall consist of the elected Executive Officers (President, Secretary/Treasurer, President Elect), the Immediate Past President, the current presidents and secretaries of the Regional Sections, the Editor-in-chief of Toxicon, the Chairperson or their proxy of any Board or other membership subclass governing body established by Council, and Financial Members elected from the membership. The individuals elected by the membership shall include two Members from each Region of the Society. The President shall act as Chairman of the Council or in the absence of the President, the following, in order of preference, shall act as Chairman; President Elect, Secretary/Treasurer, Immediate Past President.
- Section 2.* The purpose of the Council shall be to act as an administrative and governing body to further the activities and interests of the Society, on behalf of Members. The Council is authorized to accept any donations of cash or property, voluntarily made to further the purpose of the Society.
- Section 3.* The Council shall meet at least once each year at a time and place designated by the President and shall recommend the dues of the membership. The meeting may be at a physical place, or virtual place such as through a teleconference or similar electronic meeting system. Greater than one half of the Members of the Council, but including at least one Executive Officer (President, Secretary/Treasurer, or President Elect) shall constitute a quorum for all purposes.
- Section 4.* The Members of the Council, excluding the Executive Officers, shall serve for a term of two years, with a maximum of two consecutive terms, and shall not be eligible for re-election for the two years immediately following their term of office. The Council is empowered to appoint Members to fill any vacancy that may occur.
- Section 5.* The Council is empowered to co-opt any Member, including an Associate or Student Member, to serve on Council for a specific purpose, up to a maximum of 3 such co-opted Members, but co-opted Members shall not have voting rights on Council.

## **ARTICLE VII**

### **ELECTED EXECUTIVE OFFICERS**

- Section 1.* **Number.** The Executive Officers of the Society shall be President, President Elect, and Secretary/Treasurer.
- Section 2.* **Election.** The Executive Officers of the Society shall be elected by a majority vote of the Financial Members in a ballot by electronic or other distribution means, and will serve for a term of 4 years for the President and 4 years for the Secretary/Treasurer. Their term of office will begin immediately after the first World Congress (International Congress) following their election.

The President Elect shall assume the office of the President at the end of the regular term of office or at any time the office of the President becomes vacant. The President may serve for a maximum of two consecutive terms. The Secretary-Treasurer may be re-elected for further terms as agreed by Council.

- Section 3.* ***Vacancies.*** Any vacant office of the Society, other than that of the President, may be filled by a Financial Member elected at the next Society Meeting. During the intervals between meetings of the Society, the Council may elect a Financial Member to fill a vacant office, and the Executive Officer so elected shall serve until the next Meeting of the Society.

## **ARTICLE VIII**

### ***BOARD OF CLINICAL TOXINOLOGY***

- Section 1.* Council shall have the right to establish and modify a Board of Clinical Toxinology, for the purpose of furthering the development of expertise in the medical field of clinical toxinology.
- Section 2.* Council shall determine the constitution of and by-laws controlling function of the Board of Clinical Toxinology and shall have the right to modify the constitution and by-laws for the Board.
- Section 3.* Membership of the Board of Clinical Toxinology shall be restricted to registered medical practitioners who meet criteria established by the Board and by Council.
- Section 4.* The functions and activities of the Board of Clinical Toxinology shall be determined by the Board and by Council and supervised by Council in accordance with the constitution and by-laws of the Board as established by Council.

## **ARTICLE IX**

### ***COMMITTEES***

- Section 1.* ***Credentials Committee.*** Council is empowered to create and dissolve, as it determines, a Credentials Committee to undertake assessment of applications for Membership on behalf of the Secretary and Council. The Committee shall be elected by the Council and shall serve for a term of two years.
- Section 2.* ***Other Committees.*** Other Committees of the Society may be constituted for the promotion of the objectives of the Society, and shall consist of a limited number of Financial Members, with their number, jurisdiction, and tenure determined by Council.

## **ARTICLE X**

### ***AMENDMENT OF CONSTITUTION***

This Constitution may be amended at any Meeting of the Society by the affirmative vote of a majority of the Financial Members present in person or represented by proxy provided that notice of the proposed amendment is given to the membership at least 90 days before the Meeting at which the amendment is offered.

## **ARTICLE XI**

### ***ADOPTION AND AMENDMENT OF BY-LAWS***

By-Laws may be adopted, amended, or rescinded at any Meeting of the Society by the affirmative vote of a majority of the Financial Members present or represented by proxy provided that notice of the proposed actions is given to the Membership at least 90 days before the Meeting where such action is to be considered.

## **ARTICLE XII**

**THE EFFECTIVE DATE OF THE CONSTITUTION** This Constitution will be deemed to be effective from the date of most recent revision. The most recent revision was approved on

September (day to be added), 2016, in accordance with the rules and articles of this Constitution and the Society.

### ARTICLE XIII *DISSOLUTION CLAUSE*

In the event of the Society being dissolved, the amount that remains after such dissolution and the satisfaction of all debts and liabilities shall be transferred to another organisation with similar purposes and which has rules prohibiting the distribution of its assets and income to its members.

### BY-LAWS-ARTICLE I *MEMBERS AND MEETINGS OF MEMBERS*

*Section 1. General meeting.* The General Meeting shall be held at a time and place approved by the Society during a previous General Meeting, regularly at the World Congresses or Regional Congresses, or if a time or place for the Meeting has not been prescribed, it will be determined by the Council. The Council shall have power to change the time or place of a Meeting when circumstances so require.

*Section 2. Special meetings.* Special Meetings of the Society may be called at any time by the President at the request of the Council, or on receipt of a written request of not less than one-third of the Financial Members.

*Section 3. Notice of meetings.* Notice of the time, place, and purpose or purposes of General and Special Meetings of the Society shall be given to the Financial Members by electronic or other distribution means at least 90 days before the Meeting.

*Section 4. Quorum.* At any General or Special Meeting of the Society, fifteen Financial Members must be present or represented by proxy to constitute a quorum. A Meeting may be adjourned by vote of a majority of the Financial Members present.

*Section 5. Voting.* At every Meeting of the Society each Financial Member shall be entitled to one vote in person or represented by proxy. The proxy shall be duly appointed by instrument in writing subscribed by the Financial Member appointing the same and bearing date not more than 11 months prior to the Meeting.

*Section 6. Business of the general meeting.* The business of the General Meeting of the Society shall be:

(a) to elect Executive Officers and Members of the Council as prescribed by the Constitution;

(b) to determine the time and place for the next General Meeting;

(c) to fix the annual dues;

(d) to consider the annual Financial statement and balance sheet presented by the Council and to arrange for any action therewith as seems appropriate;

(e) to consider reports of the Council and Committees, and motions relating to the adoption of such reports, either in whole or in part, and to arrange for such action to be taken thereon, if appropriate and

(f) to consider any resolutions that can properly be considered to affect the purpose of the Society and its Membership.

*Section 7. Scientific Congresses of the Society.* The Society exists for the principal purpose of furthering the science of toxinology and to that end shall promote interchange of

ideas and research in toxinology through scientific meetings of the Society which shall be designated as Society Congresses.

The Executive Officers and Council shall work with the officers and members of Society Regional Sections to ensure regular Society Congresses are scheduled. By-Law XI governing Regional Sections of the Society shall guide the Executive Officers and Council in determining a schedule for Society Congresses.

The Society, through the Executive Officers and Council, shall have final say on the place, timing, budget, scientific and social programs for all Society Congresses.

All Members of the Society, from all categories, shall be entitled to attend Society Congresses, providing they pay any Congress fees that may be set for a Congress, except where such fees are waived, such as for invited speakers in some cases. Any person involved in toxinology, even though not a member of the Society, may be permitted to attend, at the discretion of the Congress organizers and Council, provisional on payment of any fees that may be set, but as a general principle the regular fees for attending a Society Congress shall be higher for a non-member or a Member who is non-Financial, than for a Financial Member or Financial Associate Member or a Student Member.

## **BY-LAWS-ARTICLE II**

### ***COUNCIL***

- Section 1.* **Meetings.** The Council shall meet at each General Meeting for the purpose of transaction of business, and if a majority of the Council be present, no prior notice of such Meeting need be given. Special Meetings of the Council may be held at the call of the President, or upon the written request of four Members of the Council, and shall be called by the Secretary/Treasurer. Meetings of Council, held either in person or through electronic communication, may be called by the Secretary/Treasurer to discuss and, where appropriate, decide on action in response to matters concerning the Society as may arise from time to time and no notice is required if the meeting shall be held by electronic communication except that Councilors shall have at least 48 hours to respond as part of the electronic communication process.
- Section 2.* **Notice of meetings.** Notice of all meetings of the Council shall be given by electronic or other distribution means at least 15 days before the meeting, except where the Secretary/Treasurer calls an electronic communication meeting as noted in Section 1 (above), or in regard to General Meetings of the Society where a Meeting of Council is a requirement as noted in Section 1 (above).
- Section 3.* **Chairman.** At all in-person meetings of the Council the President, or in his absence the President-Elect, shall preside.
- Section 4.* **Quorum.** At all Meetings of the Council the act of a majority of those Members present shall be the act of the Council. In the absence of a quorum of the Council at a regular Meeting of the Society and when it becomes apparent that decisions vital to the Society are necessary, the Financial Members on the Editorial Board of *Toxicon*, in coordination with the Council Members, shall make the necessary decisions.



**BY-LAWS-ARTICLE III**  
***ANNUAL AND Financial REPORTS***

The Council shall submit annually to the Society for adoption and approval a report on the general state and proceedings of the Society for the past year(s), a balance sheet and Financial statement for the past year(s).

**BY-LAWS-ARTICLE IV**  
***CUSTODY OF PAPERS, ADDRESSES AND REPORTS***

All papers, addresses and reports read before the Society, or accepted by the Society, shall be lodged with the President and become the property of the Society. Publications of these reports in the official Journal of the Society, or in any other way, may be recommended by the Council or appropriate Committee.

**BY-LAWS-ARTICLE V**  
***EXECUTIVE OFFICERS OF THE SOCIETY***

- Section 1.* ***Duties.*** The Executive Officers of the Society shall perform the duties usually performed by such officers, together with such duties as shall be prescribed by the Constitution and ByLaws or by the Society or Council.
- Section 2.* ***The President.*** The President shall preside at all Meetings of the Society and Meetings of the Council. The President shall be an *ex officio* member of all committees, except the Nomination Committee. The President shall have general charge and supervision of the business and affairs of the Society.
- Section 3.* ***The President-Elect.*** At the request of the President, or in the event of his absence or disability, the President-Elect may perform any or all duties of the President.
- Section 4.* ***The Secretary-Treasurer*** shall: 1) attend to the giving of all notices of the Society; 2) have custody of all of the Society's funds and securities, subject to such regulations as may be imposed by the Council; 3) make such payments on behalf of the Society, subject to the control of the Council; 4) enter regularly into the records of the Society full and accurate account of all money received and paid, or obligations incurred on behalf of the Society, and shall exhibit such records at all reasonable times to any Financial Member of the Society on written request to the office of the Society; 5) provide a report on the Financial situation of the Society at each General Meeting; 6) provide a report to Council on new membership applications; 7) may be required to give bond for the faithful performance of his /her duties should the Council advise.

**BY-LAWS-ARTICLE VI**  
***LIABILITY OF COUNCIL MEMBERS AND EXECUTIVE OFFICERS***

Each Council member or Executive Officer, or former Council member or Executive Officer of the Society, shall be indemnified by the Society against expenses actually and necessarily incurred by him/her in connection with the defense of any action, suit or proceeding in which he/she is made a party by reason of his/her being or having been a Council member or an Executive Officer of the Society, except in relation to matters as to which he/she shall be adjudged in such action, suit or proceeding to be liable for negligence or misconduct in the performance of his/her duties as such Council member or Executive Officer.

**BY-LAWS-ARTICLE VII**  
***CONTRACTS***

The Council, except as provided in the By-Laws may authorize any officer or officers, agent or agents, to enter into any contract or execute and deliver any instrument in the name of and on behalf of the Society, and such authority may be general or confined to specific instances; and unless so

authorized by the Council, no officer, agent or employee shall have power or authority. to bind the Society by any contract or engagement or to pledge its credit or render it liable Financially for any purpose or amount.

### **BY-LAWS-ARTICLE VIII**

#### ***FISCAL YEAR***

The fiscal year of the Society shall begin on the first day of January in each year and shall end on the thirty-first day of the following December.

### **BY-LAWS-ARTICLE IX**

#### ***PUBLICATIONS***

The official journal of the Society is *Toxicon*. Council shall recommend to the publisher of *Toxicon* (Elsevier) who should be appointed as Editor-in-chief, but the publisher shall have final say on who is appointed. Tenure for this position is not defined and is determined by the publisher. Society Newsletters will be edited by the Secretary/Treasurer of the Society in order to inform the membership on current Society affairs.

Council may determine, by majority vote, to recommend to the membership of the Society that a further publication or publications be designated as official publications of the Society, but such a recommendation shall only come into effect if a majority of Financial Members vote in favor of the recommendation at a properly constituted General or Special Meeting of the Society.

### **BY-LAWS-ARTICLE X**

#### ***REDI AWARD***

In recognition of distinguished work in the field of toxinology the Society confers the Redi Award at successive international meetings as determined by Council. The Redi Award consists of a framed award describing the merits of the awardee and a Financial contribution to help cover expenses associated with attendance at the meeting.

The recipient is selected by the Redi Award Committee (R.A.C.) which consists of the Editor of *Toxicon* (chairman), past and present Executive Officers of the Society and former Redi awardees. It is the duty of the chairman to request that members of the Committee propose nominations one year in advance of the next presentation. A list of all persons previously nominated and those being currently proposed is then sent to all members of the R.A.C., who then select three names, noting their first, second and third choices.

The chairman will award 3 points for 1st place votes, 2 points for 2nd place and 1 point for third place. The awardee is chosen on the basis of the largest number of points, but must receive 25% of the total points counted.

If no candidate reaches this level there shall be a second ballot between the three highest candidates. (Or: If 2 or more candidates receive approximately (within three votes) the same number of votes, a second ballot will be circulated. In the event two or more candidates receive the same number of votes in the final ballot, or a difference of less than three, the award will be shared equally.)

### **BY-LAWS-ARTICLE XI**

#### ***REGIONAL SECTIONS***

To promote the aims of the Society and to encourage local participation in the discipline of toxinology Regional Sections may be established. These must be approved by the Council. At Regional Meetings a Regional President, a Regional Secretary (and if necessary up to three additional members as officers) may be selected. They will serve a fixed term, but can be re-elected. Council shall determine the length of the fixed term and shall modify this fixed term, as necessary, to fit with meeting schedule rosters, but the fixed term shall not be less than 2 years and not more than 4 years.

Council will determine the meeting schedule roster between Regions, such that each Region is regularly responsible for organizing both Regional and World Congresses of the Society, according to the roster.

A Regional Section of the Society encountering difficulty in organizing their rostered meeting may apply to Council to have their roster position deferred and Council can determine to allow such deferment, providing another Regional Section can appropriately agree to swap roster positions with the Region seeking deferment.

At the time of adoption of this Constitution the Society has three Regional Sections; European, Pan-American and Asia-Pacific Sections. The roster for meetings of the Society is based on the number of Regional Sections, and their ability to regularly host full Sectional and World Congresses. Council shall determine the roster and shall amend the roster, as necessary, depending on prevailing circumstances, including the addition of new Sections and the dissolution of current Sections.

The Officers of a Regional Section will be responsible for organizing scientific meetings (Congresses) of the Society in those years in which they are rostered to do so, by direction of Council.

Regional Sections may not collect fees or other monies for the Section. All Financial affairs will be the responsibilities of the Secretary/Treasurer of the Society. Exceptions due to special circumstances should be discussed with and agreed by the Council.

The Society does not indemnify any officer of a Regional Section, or Executive Officer of the Society, or any Member of the Society, who incurs any debt or obligation in the course of organizing a meeting of and on behalf of the Society, except where such indemnity is agreed by Council under By-Law VII, but requires that the Executive Officers and Council of the Society be involved in the planing, budgeting and scientific and social programs for the meeting. Notwithstanding the lack of indemnity, the Society, as determined by the Executive Officers and Council may, at their discretion, agree to provide Society funds in support of the meeting, with such conditions and guarantees as may be determined in each such case. The use to which such funds may be put shall be at the sole discretion of the Executive Officers and Council.

Members of IST are automatically members of a Regional Section in their specific region, provided their Financial obligations to the Society are current.

## IST Council Minutes Summary May 2016

**INTERNATIONAL SOCIETY ON TOXINOLOGY COUNCIL MEETING****May, 2016****SUMMARY OF MEETING**

1. ***Those participating:*** J White, A Harvey, D Tambourgi, M Kini, D Warrell, J Fox, J Calvete, G King, F Mari, S Liang, JM Gutierrez, S Luo
2. ***Apologies:*** Y Cury, R Harrison
3. ***Minutes of last meeting:***  
Ratified
4. ***Business arising:***
  - 4.1 IST incorporation:  
Current progress is slow as there are a number of issues proving difficult to resolve.
  - 4.2 Developing and promoting IST  
Council is continuing to develop ideas and mechanisms to improve the value IST provides to members. Amongst these are changes encapsulated in the proposed revision of the IST Constitution, which will be voted on at the September Miami IST Congress.
  - 4.3 Review of relationship with Toxicon:  
Council is engaged with Elsevier in reviewing the IST-Toxicon relationship. IST does not own rights to Toxicon, Elsevier does.
  - 4.4 Review of the Objectives of the Society and possible development of a mission statement:  
The President requested Council consider a need to develop a "Mission Statement" for the Society. After re-examining the existing "Objectives" in the constitution, Council decided these were sufficient.
  - 4.5 Assistance for Secretary/Treasurer:  
The issue of ongoing assistance for the Secretary/Treasurer was discussed and a suggestion made that perhaps a student member might be interested in developing a student section of the Newsletter and assist the Secretary in Newsletter development. The Secretary would welcome interest in this idea from student members.
  - 4.6 Live Council meetings:  
Currently Council meetings are held via email and while this has allowed far more regular meetings than occurred in the past, where meetings were only held once a year at IST congresses, this email system can be cumbersome. The President suggested Council investigate a "live" meeting option via internet, and once a suitable system has been found, a trial meeting may be held.
5. ***Officer bearers reports***



## IST Council Minutes Summary May 2016

## 5.1 President's report: J Fox

I am pleased with the response of the host organizations for both the Pan Am and the IST meetings in response to our MOU. I believe this will serve us all better and produce a better product for the society and hopefully a bit less risk for the local organizers. I also wish to thank Juan for his efforts to revise our relationship with Toxicon with the aim of assuring all parties we are working for the common good. Also, thanks to Kini who has been making exploratory efforts to engage national societies with the aim of some form of affiliation with the IST. I suspect we will have more concrete information on these items at the next meeting time.

## 5.2 Secretary/Treasurer's report: J White

The Secretary/Treasurer reported on Society income, expenditure and accounts, noting that by early May 174 members had paid their annual dues for 2016, with a number still owing 2016 dues. The total value of all IST accounts in May was about US\$68,231, an increase compared to the same time last year. Amounts in US\$ are listed as approximate because some accounts are held in US\$, others in Aus\$, therefore actual value in a given currency varies depending on exchange rates.

The IST Newsletter remains a challenge because so few members contribute to it.

## 5.3 Toxicon Editor's Report - A Harvey

There have been extensive discussions with Elsevier since the editorial board meeting in Oxford last September, although few agreed actions have been completely implemented. In terms of on-going business, the journal has a healthy flow of manuscripts, with over 200 submitted by the end of April. Calls for Special Issues appear to have fallen on deaf ears - as always, suggestions from Council members are welcome.

## 5.4 Report from the GSI

David Warrell reported that: GSI, with its new partner HAI, has achieved an evening meeting in Geneva at the annual World Health Assembly of WHO in May. For the first time in the history of the WHO, the subject will be the global outrage of snake-bite. This is a signal achievement. It has attracted many national delegations and will be chaired by the Costa Rican Minister of Health. At last we have a chance to raise the profile of snake-bite and achieve its recognition as the most neglected of all neglected tropical diseases among the member states of WHO. GSI and IST will be represented at this momentous meeting by David Williams, José-Maria Gutiérrez, Abdulrazak Habib and David Warrell. Please wish us "good luck" in this endeavour!

## 5.5 Report from the Board of Clinical Toxinology - J White

J White: A Clinical Toxinology Short Course was held in Adelaide, March 14th to 19th, 2016 and was almost full (maximum is 50 enrolments), with some doctors attending from developing nations including PNG, Myanmar, Nepal and Bangladesh, all as supported attendees. Unfortunately a policy shift by the Australian Department of Immigration and Border Protection resulted in a number of doctors from developing nations being denied entry visas. The places thus vacated were filled by doctors from Australia and other developed nations who had been placed on a waiting list because the course was full.

This is planned to be the last stand-alone course, with a current objective to introduce the full diploma-level course in 2018, following the 20 year anniversary of the foundation of the short course (1997). It is likely the short course will form the introductory portion of the diploma curriculum and will still be available as a stand

## IST Council Minutes Summary May 2016

alone course for those not wishing to pursue full specialist-level training in clinical toxinology. Most of the full diploma course will likely need to be provided as remote/on-line education. It is still my hope that in addition to the lead role of my Department and the University of Adelaide, that we can involve other organisations/universities in the teaching for some course modules and it would be best if these had a global spread to clearly internationalise this effort.

The formidable task of negotiating with national medical organisations for accreditation of training in clinical toxinology and determining clinical training sites and local faculty will also need to occur in the next 12 months.

5.6 Report from the Nomenclature Committee - Nothing to report.

5.7 Report from the Snake Taxonomy Advisory Committee - Nothing to report.

5.8 Report from the European Section IST

Dr. Naira Ayyazyan has proposed Armenia as host for the next scheduled European Section congress in 2018.

5.9 Report from the Pan-American Section IST

The scheduled Pan-American Section congress will be held in Miami Beach, September 18th to 23rd, 2016, with Frank Mari and Frank Bosmans as local organisers. Council agreed to provide funding of US\$3,000 to assist the organisers.

5.10 Report from the Asia-Pacific Section IST

The local organiser for the next Asia-Pacific Section and IST World Congress, in 2017, Prof. S Liang reported: We just got the mail of Alexander who suggested that a memorial symposium dedicated to Eugene Grishin could be as part of the Asia-Pacific Section Meeting in 2017, which coincides with the next IST World Congress. I think may be that is a good arrangement if there is a problem to hold the memorial symposium dedicated to Eugene Grishin this year. Because Eugene used to serve as a Chair of the Asia-Pacific Section and also Eugene has many friends in China, it seems reasonable to organize such a symposium in the IST meeting in Hainan, China next year.

Council supported this idea.

5.11 IST Newsletter

Issues about producing newsletters, due to lack of member input were discussed.

Prof. Glenn King noted he is organising for various toxinology research groups to write profiles of their labs, for the newsletter.

## 6. ***New business:***

6.1 Revision for IST Constitution

A proposed revision of the constitution was circulated to Council members prior to this meeting. The purpose of the revisions are to provide further flexibility in membership. Specifically, a new class of Life Member would be created, allowing for payment of a lump sum, the amount of which could be varied by Council. Student membership would become potentially fee generating, at the discretion of Council. The Corporate membership category would be modified to make it easier to have national toxinology societies join under this provision. A mechanism would be introduced to allow for disciplining any member who, in the view of Council,

## IST Council Minutes Summary May 2016

brings the Society into disrepute, or undertakes some other action inconsistent with membership. Council discussed the term for President whether it should be reduced from 4 years to 2 years, which means the position of President Elect would also reduce to 2 years. Council decided to maintain the term at 4 years.

Council also decided to add a new category of membership, Affiliate Organisation Membership, under Article IV. There was also discussion about the need to have a mechanism to discipline members.

The Secretary/Treasurer was authorised by Council to make this proposed revised constitution available to members and notify members that it will be voted on at the IST Miami Congress in September.

**7. Determine timing for next Council meeting**

Next Council meeting will be at the Miami IST Congress in September.



## National Seminar on Snake Venom Research and Snake-bite Therapy: National and International Perspectives

(SnakSymp 2016) & Annual meeting of TSI

22-24 Nov. 2016

Department of Molecular Biology and Biotechnology  
Tezpur University, Tezpur, Assam, India



### News & Events

- Registration (fee.php)

### About SnakSymp 2016

SnakSymp 2016 will be a congregation of scientists, students, clinician and antivenom manufacturers from India and abroad to deliberate on recent advances on snake venom research and snakebite management. Department of Molecular Biology and Biotechnology, Tezpur University is proud to host the annual meeting of Toxinological Society of India (TSI) and the National seminar during 22-24 Nov. 2016.

Snakebite is a Neglected Tropical Disease and the victims are mainly the poor farmers and daily wage earners. Each year, approximately 4,21,000 cases of envenomation and 20,000 snakebite deaths occur throughout the world. In India approx. 40-50 thousand people die due to snakebite. This problem is more acute in our rural areas as well for the soldiers posted in the border areas.

Toxinological Society of India, a society of venom and toxin researchers, clinicians, snake biologist and antivenom manufacturing pledge to work for the improvement of the snakebite management. Multidisciplinary approaches in understanding the complexities of snake venom have gained momentum in recent years and progress has been made in the improvement of antivenoms. SnakSymp 2016 will be a promising platform to share these recent developments on venomics, transcriptomics and antivenomics.

Organizing committee cordially invites you to this annual meeting and the National Seminar to be held at Tezpur "The Least Polluted City of the Country" (WHO).

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**National Seminar on  
Snake Venom Research and Snake-bite Therapy: National and International Perspectives**  
(SnakSymp 2016) & Annual meeting of TSI  
22-24 Nov. 2016

---

**Department of Molecular Biology and Biotechnology**  
Tezpur University, Tezpur, Assam, India



## News &amp; Events

- Registration (fee.php)

## Speakers

|     |  |
|-----|--|
| 1.  | Dr. B.S. Vishwanath (Mysore)   |
| 2.  | Dr. C.R. Maity (Kolkata)   |
| 3.  | Dr. T.V. Gowda (Mysore)  |
| 4.  | Dr. A.K. Mukherjee (Tezpur) (mukherjee.php)  |
| 5.  | Dr. K. Kemparaju (Mysore)  |
| 6.  | Dr. D.P Punde (Mukhed) (punde.php)   |
| 7.  | Dr. J. Menon (Kochi) (menon.php)   |
| 8.  | Dr. J.K. Joseph (Kochi)  |
| 9.  | Dr. R.M. Kini (Singapore) (kini.php)   |
| 10. | Dr. S. P. Mackessy (USA)   |
| 11. | Dr. Y. N. Utkin (Russia)   |
| 12. | Dr. J. Fox (USA, President, IST) (fox.php)   |
| 13. | Dr. J. P. Chippaux, (France) (chippaux.php)  |
| 14. | Dr. A. Malhotra (UK)   |
| 15. | Dr. R. Doley (Tezpur)  |
| 16. | Gerry Martin (Bangalore) ( <a href="http://gerrymartin.in/about-us/our-team/gerry-martin/">http://gerrymartin.in/about-us/our-team/gerry-martin/</a> ) |
| 17. | Dr. Choo Hock Tan (Malaysia) (honk.php)  |
| 18. | Dr. M.A. Reza (Bangladesh)   |
| 19. | Dr. M.V Khadilkar (Premium Serums)   |
| 20. | Dr. A. Nair (VINS Bioproduct Ltd)  |
| 21. | Prof. D Velmurugan (velmurugan.php)  |
| 22. | Jayaditya Purkayastha (purkayastha.php)  |

## Quick Links

|   |
|---|
| How to submit Abstract ?<br>(abstract.php)  |
| Technical programme   |
| Bus Timing<br>( <a href="http://www.tezu.ernet.in/bus-timing-feb2016.pdf">http://www.tezu.ernet.in/bus-timing-feb2016.pdf</a> ) |
| How to Reach?   |
| Nearest places to visit (place.php)   |



National Seminar on  
**Snake Venom Research and Snake-bite Therapy: National and International Perspectives**  
 (SnakSymp 2016) & Annual meeting of TSI  
 22-24 Nov. 2016

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Department of Molecular Biology and Biotechnology  
 Tezpur University, Tezpur, Assam, India



## News &amp; Events

## Bank Details

## Quick Links

|                                    |                          |
|------------------------------------|--------------------------|
| <b>Name of the Bank:</b>           | State Bank of India      |
| <b>Branch:</b>                     | Tezpur University Branch |
| <b>Name of the account holder:</b> | SNAKSYMP-2016            |
| <b>A/C No :</b>                    | 35964589001              |
| <b>IFSC:</b>                       | SBIN0014259              |

## Registration Fee

|                       | Till 31 <sup>st</sup> Aug | 30 <sup>th</sup> Oct | Spot            |
|-----------------------|---------------------------|----------------------|-----------------|
| Delegates→            | Rs. 2500.00/\$150*        | Rs. 3000.00 /\$200*  | Rs. 3500/\$250* |
| Research students→    | Rs. 1500.00/\$100*        | Rs. 2000.00 /\$150*  | Rs. 2500/\$200* |
| Industrial delegates→ | Rs. 4000.00/\$200*        | Rs. 4500.00 /\$250*  | Rs. 5000/\$300* |
| In-house students→    | Rs. 1000.00               | Rs. 1000.00          | Rs. 1000.00     |
| TSI student member→   | Rs. 500.00                | Rs. 500.00           | Rs. 500.00      |

**Download the Registration form** Doc File (pdf/Registration-form.doc) PDF File (pdf/Registration-form.pdf)

**Note:** \*Registration fee for Foreigner.

How to submit Abstract ?  
(abstract.php)

Technical programme

Bus Timing  
(<http://www.tezu.ernet.in/bus-timing-feb2016.pdf>)

How to Reach?

Nearest places to visit (place.php)

\* Details of Demand Draft(DD) and online payment will be updated soon.

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## News & Events

- registration ([tee.pnpj](http://tee.pnpj))

## Accommodation

Tezpur University Guest House



Limited accommodation at T.U. Guest House on payment basis subject to availability.  
Good hotels (3 Star) are available at Tezpur town.

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# ASEAN Marine Animals & Snake Envenoming (Poisoning) Management - AMSEM 2016

The 4th International Symposium @ Penang, Malaysia. Date: 28 November to 1 December 2016

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Program

## AMSEM 2016 PROGRAM

### MONDAY, 28 NOVEMBER 2016: Pre-symposium Workshops

Venue : Hotel Equatorial Penang, 1 Jalan Bukit Jambul, Bayan Lepas, 11900 Penang.

#### A. First Aid for Bites & Stings from Venomous Animals

08.30 am : Registration  
09.00 am : Welcome speech and Introduction  
09.15 am : First Aid for Bites & Stings from Venomous Animals  
10.15 am : Morning break  
10.30 am : Practical Session  
11.30 am : Q&A / Discussion  
12.00 pm : End of Program

#### B. ECME 1: An Overview of Snakebite Envenoming in Malaysia

08.30 am : Registration  
09.00 am : Welcome speech and Introduction  
09.15 am : Overview of Snakebite Envenoming Management  
10.15 am : Morning break  
10.30 am : Practical Session: First aid / Clinical parameters monitoring / Antivenom  
11.30 am : Q&A / Discussion  
12.00 pm : End of Program

#### C. ECME 2: An Overview of Marine Envenoming & Poisoning in Malaysia

01.30 pm : Registration  
02.00 pm : Welcome speech and Introduction  
02.15 pm : Overview of Marine Envenoming & Poisoning Management  
03.30 pm : Afternoon break  
03.45 pm : Practical Session: First aid / Clinical parameters monitoring / Antivenom  
04.30 pm : Q&A / Discussion  
05.00 pm : End of Program

#### D. Venomics in Toxinology

01.30 pm : Registration  
02.00 pm : Welcome speech and Introduction  
02.15 pm : Venomics: Research & Clinical Application  
03.00 pm : Anti-venomics: Strategy towards better antivenom therapy  
03.30 pm : Afternoon break  
03.45 pm : Interactive session: Case study and interpretation  
04.30 pm : Q&A / Discussion  
05.00 pm : End of Program

### TUESDAY, 29 NOVEMBER 2016: Symposium Day 1

Venue : Auditorium Murad Mohd Noor, Sains@USM, 10 Persiaran Bukit Jambul, 11900 Bayan Lepas, Penang

08.00 am : Registration  
08.30 am : Welcome address & Introduction to AMSEM  
09.00 am : Keynote address 1: Advances in Marine Animals Toxinology  
09.45 am : Opening ceremony & photo session  
10.00 am : Morning break & Poster viewing  
10.30 am : Plenary 1 : Marine Animals Toxins & Poisoning



11.45 pm : Plenary 2 : Marine Animals Venom & Envenoming  
01.00 pm : Lunch & Poster viewing  
02.00 pm : Forum 1: Issues, Challenges & Controversies in Marine Animals Envenoming / Poisoning  
02.45 pm : Short-listed Free Paper Presentation 1 - Marine animals Toxins / Envenoming / Poisoning  
03.45 pm : Afternoon break & Poster viewing  
04.15 pm : RECS Files: Case Discussion on Marine Animals Poisoning & Envenoming  
05.00 pm : End of Program

### WEDNESDAY, 30 NOVEMBER 2016: Symposium Day 2

Venue : Auditorium Murad Mohd Noor, Sains@USM, Persiaran Bukit Jambul, 11900 Bayan Lepas, Penang

08.30 am: Registration  
09.00 am : Keynote address 2: Advances in Snake Venom Toxinology  
09.30 am : Plenary 3 : Snakes  
10.30 am : Morning break & Poster viewing  
11.00 am : Plenary 4 : Snake Venom & Antivenom  
12.00 pm : Plenary 5 ; Snakebite Envenoming Clinical Management  
01.00 pm : Lunch & Poster viewing  
02.00 pm : Forum 2: Issues, Challenges & Controversies in Snakebite Envenoming  
03.00 pm : Short-listed Free Paper Presentation 2 - Snake Toxins / Envenoming  
04.00 pm : RECS Files: Case Discussion on Snakebite Envenoming  
04.45 pm : Closing address  
05.00 pm : End of Program

### WEDNESDAY, 30 NOVEMBER 2016 : AMSEM Gala Dinner

Time : 7.30pm

Venue : Grand Ballroom, Hotel Equatorial Penang, 1 Jalan Bukit Jambul, Bayan Lepas, 11900 Penang.

### THURSDAY, 1 DECEMBER 2016: Optional Special Program

Venue : Penang National Park, Jalan Hassan Abbas, 11050 Teluk Bahang, Pulau Pinang

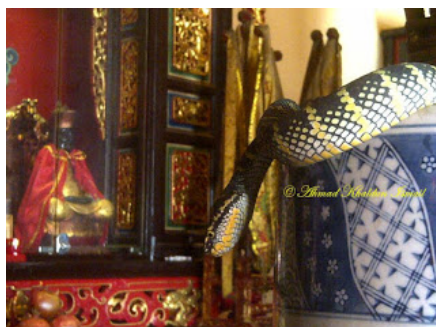
08.00 am : Registration @ Entrance of Penang National Park  
08.15 am : Welcome & Program briefing  
08.30 am : Boat ride to Pantai Keracut  
09.00 am : Tour of Turtle Landing & Hatchery Site and Meromictic Lake  
10.00 am : Boat ride to CEMACS  
10.15 pm : Morning break & Tour of CEMACS  
11.15 am : Boat ride to Teluk Bahang  
11.30 am : Introduction of Penang National Park  
12.00 pm : Live demo & safety tips: Snakes of medical significance  
13.00 pm : End of Program



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Snake Temple



Penang Hill



By Dickson Chee

Pageviews

# ASEAN Marine Animals & Snake Envenoming (Poisoning) Management - AMSEM 2016

The 4th International Symposium @ Penang, Malaysia. Date: 28 November to 1 December 2016

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## Faculty Members

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Emergency Physician

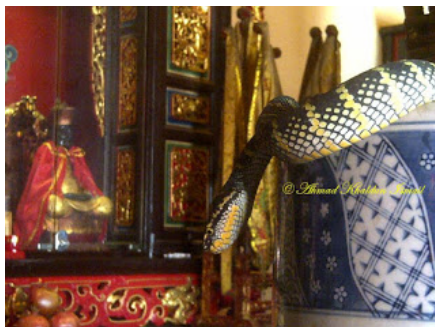
*Emergency & Trauma Department, Hospital Raja Permaisuri Bainun, Ipoh, Perak, Malaysia.*Email: [sabrinasafferi@gmail.com](mailto:sabrinasafferi@gmail.com) Recommend this on Google[Home](#)Subscribe to: [Posts \(Atom\)](#)

Snake Temple

Penang Hill

Pageviews

16,920



By Dickson Chee



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Fax: 1 520 884-9345  
ponerine@dakotacom.net

## Southwest Venoms

### CATALOGUE OF INSECT VENOMS (2012-2013)

Prices in U.S. dollars. All venoms are pure venoms (not venom sac or apparatus homogenates) collected according to the methods of Schmidt (1986. *In: Venoms of the Hymenoptera* [T. Piek, ed.], pp. 425-508. Academic Press: London.).

| Prod. No.                       | VENOM                                 | (LD <sub>50</sub> mg/kg, mice) | VENOM PRICE |      |       |        |
|---------------------------------|---------------------------------------|--------------------------------|-------------|------|-------|--------|
|                                 |                                       |                                | 1 mg        | 5 mg | 25 mg | 100 mg |
| SOCIAL WASPS                    |                                       | (LD <sub>50</sub> )            |             |      |       |        |
| Yellowjackets -- <i>Vespula</i> |                                       |                                |             |      |       |        |
| W-10                            | <i>V. pensylvanica</i>                | (6.4)                          | 50          | 225  | 1000  | *      |
| W-19                            | other species**                       |                                | *           |      |       |        |
| Hornets -- <i>Vespa</i>         |                                       |                                |             |      |       |        |
| W-20                            | <i>V. mandarinia</i>                  | (4.1)                          | 50          | 225  | 1000  | *      |
| W-21                            | <i>V. tropica</i>                     | (2.8)                          | 50          | 225  | 1000  | *      |
| W-29                            | others **                             |                                | *           |      |       |        |
| Paper wasps -- <i>Polistes</i>  |                                       |                                |             |      |       |        |
| W-30                            | <i>P. comanchus navajoe</i>           | (5)                            | 40          | 180  | 800   | *      |
| W-31                            | <i>P. flavus</i>                      | (3.8)                          | 40          | 180  | 800   | *      |
| W-32                            | <i>P. canadensis</i>                  | (2.5)                          | 50          | 225  | *     |        |
| W-33                            | <i>P. erythrocephalis</i>             | (1.5)                          | 50          | 225  | *     |        |
| W-39                            | <i>Polistes</i> sp. as available**    |                                | 30          | 135  | 600   | 2100   |
| New World Polybiine wasps       |                                       |                                |             |      |       |        |
| W-40                            | <i>Brachygastra mellifica</i>         | (1.5)                          | 60          | 270  | 1200  | *      |
| W-50                            | <i>Synoeca septentrionalis</i>        | (2.7)                          | 60          | 270  | 1200  | *      |
| W-60                            | <i>Parachartergus fraternus</i>       | (5)                            | 70          | 300  | 1400  | *      |
| W-70                            | <i>Polybia sericea</i>                | (6)                            | 80          | 350  | *     |        |
| W-71                            | <i>P. simillima</i>                   | (4.1)                          | 80          | 350  | *     |        |
| W-72                            | <i>P. occidentalis</i>                | (5)                            | 100         | *    |       |        |
| W-80                            | <i>Agelaia myrmecophila</i>           | (5.6)                          | 140         | *    |       |        |
| Old World Polybiine wasps       |                                       |                                |             |      |       |        |
| W-90                            | <i>Belonogaster juncea colonialis</i> | (3)                            | 80          | 350  | *     |        |
| SOCIAL BEES                     |                                       |                                |             |      |       |        |
| Honey bees -- <i>Apis</i>       |                                       |                                |             |      |       |        |
| B-10                            | <i>A. mellifera</i>                   | (2.8)                          | 20          | 90   | 400   | 1400   |
| B-11                            | <i>A. mellifera</i> Africanized bees  | (2.8)                          | 20          | 90   | 400   | 1400   |
| B-12                            | <i>A. mellifera</i> queens            |                                | 40          | 180  | 800   | 2800   |
| B-13                            | <i>A. dorsata</i>                     | (2.8)                          | 50          | 225  | 1000  | 3500   |
| B-14                            | <i>A. cerana</i>                      | (3.1)                          | 55          | 245  | *     |        |
| B-19                            | others ( <i>A. florea</i> , etc.)**   |                                | *           |      |       |        |
| Bumble bees -- <i>Bombus</i>    |                                       |                                |             |      |       |        |
| B-20                            | <i>B. sonorus</i>                     | (12)                           | 50          | 225  | 1000  | *      |
| B-21                            | <i>B. impatiens</i>                   | (12)                           | 50          | 225  | *     |        |
| B-29                            | other species**                       |                                | 30          | *    |       |        |



| Prod. No.                      | VENOM  | (LD <sub>50</sub> mg/kg, mice) | VENOM PRICE |      |       |        |
|--------------------------------|--|--------------------------------|-------------|------|-------|--------|
|                                |  |                                | 1 mg        | 5 mg | 25 mg | 100 mg |
| <b>ANTS -- FORMICIDAE</b>      |  |                                |             |      |       |        |
|                                |  | (LD <sub>50</sub> )            |             |      |       |        |
|                                | <i>Pogonomyrmex</i> -- harvester ants                            |                                |             |      |       |        |
| A-10                           | <i>P. barbatus</i>   | (0.6)                          | 50          | 225  | 1000  | 3500   |
| A-11                           | <i>P. maricopa</i>   | (0.12)                         | 60          | 270  | 1200  | 4200   |
| A-12                           | <i>P. occidentalis</i>   | (0.5)                          | 70          | 315  | 1400  | *      |
| A-13                           | <i>P. rugosus</i>  | (0.7)                          | 50          | 225  | 1000  | 3500   |
| A-15                           | <i>P. desertorum</i>   | (0.7)                          | 160         | *    |       |        |
| A-19                           | <i>Pogonomyrmex</i> sp. as available                             |                                | 45          | 200  | 900   | 3200   |
|                                | <i>Myrmecia</i> -- bull ants                                     |                                |             |      |       |        |
| A-20                           | <i>M. gulosa</i>   | (0.18)                         | 60          | 270  | 1200  | 4200   |
| A-21                           | <i>M. tarsata</i>  | (0.18)                         | 60          | 270  | 1200  | *      |
| A-22                           | <i>M. browningi</i>  | (0.18)                         | 70          | 315  | *     |        |
| A-23                           | <i>M. rufinodis</i>  | (0.35)                         | 70          | 315  | *     |        |
| A-24                           | <i>M. simillima</i>  | (0.21)                         | 70          | 315  | *     |        |
| A-25                           | <i>M. pilosula</i>   | (5.7)                          | 100         | *    |       |        |
| A-30                           | <i>Pachycondyla (Neoponera) villosa</i>                          | (7.5)                          | 60          | 270  | *     |        |
| A-31                           | <i>P. (Neoponera.) apicalis</i>                                  | (> 16)                         | 70          | *    |       |        |
| A-32                           | <i>P. crassinoda</i>   | (2.8)                          | 80          | *    |       |        |
| A-33                           | <i>P. (Megaponera) foetens</i> (Metabele ant)                    | (130)                          | 70          | 315  | *     |        |
| A-34                           | <i>P. (Paltothyreus) tarsatus</i> (stink ant)                    | (64)                           | 50          | 225  | 1000  | 3500   |
| A-35                           | <i>P. (Bothroponera) strigulosa</i>                              | (9)                            | 70          | *    |       |        |
| A-36                           | <i>Termitopone commutata</i>                                     | (10)                           | 70          | 315  | 1400  | *      |
| A-40                           | <i>Platythyrea lamellosa</i>                                     | (11)                           | 70          | 315  | *     |        |
| A-50                           | <i>Diacamma</i> sp.**  | (35)                           | 100         | 450  | *     |        |
| A-60                           | <i>Dinoponera gigantea</i>                                       | (11)                           | 60          | 270  | 1200  | 4200   |
| A-70                           | <i>Paraponera clavata</i> (bullet ant)                           | (6.0)                          | 60          | 270  | 1200  | 4200   |
| A-80                           | <i>Ectatomma tuberculatum</i>                                    | (1)                            | 60          | 270  | *     |        |
| A-81                           | <i>E. quadridens</i>   | (17)                           | 60          | 270  | *     |        |
| A-90                           | <i>Odontomachus</i> sp.**  | (33)                           | 60          | 275  | *     |        |
| A-110                          | <i>Tetraponera</i> sp**  | (.35)                          | 140         | 600  | *     |        |
| A-120                          | <i>Streblognathus aethiopicus</i>                                | (8.0)                          | 80          | 360  | *     |        |
| <b>SOLITARY WASPS AND BEES</b> |  |                                |             |      |       |        |
|                                | Spider wasps -- Pompilidae                                       |                                |             |      |       |        |
| SW-10                          | <i>Pepsis</i> sp.**  | (65)                           | 60          | 270  | 1200  | 4200   |
|                                | Mutillid wasps -- Mutillidae                                     |                                |             |      |       |        |
| SW-20                          | <i>Dasymutilla</i> sp.**   | (71)                           | 70          | 315  | 1400  | *      |
| SW-39                          | Other wasps (Scoliidae, Tiphiidae, Sphecidae, Eumenidae, etc.)** |                                | *           |      |       |        |
|                                | Carpenter bees -- <i>Xylocopa</i>                                |                                |             |      |       |        |
| SB-10                          | <i>X. californica</i>  | (21)                           | 50          | 225  | 1000  | *      |
| SB-11                          | <i>X. veripuncta</i>   | (33)                           | 55          | 245  | *     |        |
| SB-20                          | <i>Proxyllocopa rufa</i>   | (11)                           | 100         | 450  | *     |        |
| SB-39                          | Other bees**   |                                | *           |      |       |        |

\*Inquire for prices and availability.

\*\*Available species provided; exact determinations usually included.

# Natural Toxins

Research Center  
(NTRC)

TEXAS A&M UNIVERSITY  
KINGSVILLE

## VENOM QUALITY GUARANTEE

**Authenticity of Species • Purity of Venom**  
**Maximum Biological Activity • Our Venom is Never Pooled**

**Snake venoms contain important molecules which are valuable for researching the treatments of strokes, heart attacks, and cancer.**

The Natural Toxins Research Center (NTRC) at Texas A&M University-Kingsville is dedicated to providing high quality snake products for biomedical research. We are committed to the procurement and distribution of venoms, venom fractions and tissue for biomedical research. Venoms from the same species can be different, and therefore extracted venoms are never pooled. Each vial contains venom from a single snake, and venoms of the same species are never mixed. The vials are labeled with the snakes' scientific and common names, ID tag number and sex. The ID tag number can be traced back to the NTRC Internet Database ([ntrc.tamuk.edu/cgi-bin/serpentarium/snake.query](http://ntrc.tamuk.edu/cgi-bin/serpentarium/snake.query)) for additional information about each snake.

|  |                    |                 |                      |                     |
|--|--------------------|-----------------|----------------------|---------------------|
| Southern Copperhead - <i>Agkistrodon contortrix contortrix</i> .....     | \$75.00/1g .....   | \$50.63/500mg   |                      |                     |
| Broad-Banded Copperhead - <i>Agkistrodon contortrix laticinctus</i> ..   | \$100.00/1g .....  | \$67.50/500mg   |                      |                     |
| Northern Copperhead - <i>Agkistrodon contortrix mokasen</i> .....        | \$50.00/1g .....   | \$33.75/500mg   |                      |                     |
| Trans-Pecos Copperhead - <i>Agkistrodon contortrix pictigaster</i> ..... | \$75.00/1g .....   | \$50.63/500mg   |                      |                     |
| Florida Cottonmouth - <i>Agkistrodon piscivorus conanti</i> .....        | \$60.00/1g .....   | \$40.50/500mg   |                      |                     |
| Western Cottonmouth - <i>Agkistrodon piscivorus leucostoma</i> .....     | \$56.00/1g .....   | \$37.80/500mg   |                      |                     |
| Eastern Diamondback Rattlesnake - <i>Crotalus adamanteus</i> .....       | \$50.00/1g .....   | \$33.75/500mg   |                      |                     |
| Western Diamondback Rattlesnake - <i>Crotalus atrox</i> .....            | \$45.00/1g .....   | \$30.38/500mg   |                      |                     |
| Sonoran Sidewinder - <i>Crotalus cerastes cercobombus</i> .....          | \$125.00/1g .....  | \$84.38/500mg   |                      |                     |
| Timber Rattlesnake - <i>Crotalus horridus</i> .....                      | \$70.00/1g .....   | \$47.25/500mg   |                      |                     |
| Mottled Rock Rattlesnake - <i>Crotalus lepidus lepidus</i> .....         | \$125.00/1g .....  | \$84.38/500mg   |                      |                     |
| Blacktail Rattlesnake - <i>Crotalus molossus molossus</i> .....          | \$400.00/1g .....  | \$270.00/500mg  | \$72.90/100mg .....  | \$49.21/50mg        |
| Great Basin Rattlesnake - <i>Crotalus oreganus lutosus</i> .....         | \$125.00/1g .....  | \$84.38/500mg   |                      |                     |
| Grand Canyon Rattlesnake - <i>Crotalus oreganus abyssus</i> .....        | \$250.00/1g .....  | \$168.75/500mg  | \$45.56/100mg .....  | \$30.75/50mg        |
| Texas Coral Snake - <i>Micrurus tener tener</i> .....                    | \$2000.00/1g ..... |                 |                      |                     |
| Florida Coral Snake - <i>Micrurus fulvius</i> .....                      | \$1800.00/1g ..... |                 |                      |                     |
| Southern Pacific Rattlesnake - <i>Crotalus oreganus helleri</i> .....    | \$400.00/1g .....  | \$270.00/500mg  | \$72.90/100mg .....  | \$49.21/50mg        |
| Northern Pacific Rattlesnake - <i>Crotalus oreganus oreganus</i> .....   | \$400.00/1g .....  | \$270.00/500mg  | \$72.90/100mg .....  | \$49.21/50mg        |
| Mohave Rattlesnake - <i>Crotalus scutulatus scutulatus</i> (A) .....     | \$250.00/1g .....  | \$168.75/500mg  | \$45.56/100mg .....  | \$30.75/50mg        |
| Mohave Rattlesnake - <i>Crotalus scutulatus scutulatus</i> (B) .....     | \$1000.00/1g ..... | \$675.00/500mg  | \$182.25/100mg ..... | \$123.02/50mg ..... |
| Prairie Rattlesnake - <i>Crotalus viridis viridis</i> .....              | \$70.00/1g .....   | \$47.25/500mg   |                      |                     |
| Red Spitting Cobra - <i>Naja pallida</i> .....                           | \$100.00/1g .....  | \$67.50/500mg   |                      |                     |
| Desert Massasauga - <i>Sistrurus catenatus edwardsii</i> .....           | \$1000.00/1g ..... | \$675.00/500mg  | \$182.25/100mg ..... | \$123.02/50mg ..... |
| Western Massasauga - <i>Sistrurus catenatus tergeminus</i> .....         | \$1000.00/1g ..... | \$675.00/500mg  | \$182.25/100mg ..... | \$123.02/50mg ..... |
| Bushmaster - <i>Lachesis muta muta</i> .....                             | \$2000.00/1g ..... | \$1350.00/500mg | \$364.50/100mg ..... | \$246.04/50mg ..... |

(A) - neurotoxic venom  
(B) - non-neurotoxic venom  
\*Subject to availability

Venom is collected under stringent laboratory conditions using disposable labwear for each extraction. Venom is collected in new, non-reusable plastic cups with parafilm coverings. Snakes are allowed to bite into the parafilm diaphragm and the venom glands are not massaged. Immediately following collection, each venom sample is clarified by centrifugation at 500 x g for 5 minutes to remove cellular debris and frozen at -90° C until lyophilized.

**Foreign Investigators:** Please note that your order may be subject to import duties, taxes, tariffs, customs charges, DDP, VAT, and the like, once your package reaches your country. It is your responsibility to pay for these charges. The Natural Toxins Research Center will not be responsible for paying these charges, and we will not bill you for such charges when you place your order.

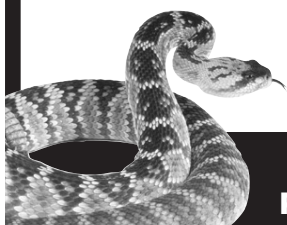
**Venom glands and fractions also for sale - call for pricing & availability**

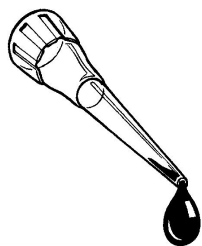
**If you're interested in study or research opportunities  
at the NTRC, call us at the number below!**

**[www.ntrc.tamuk.edu](http://www.ntrc.tamuk.edu)**

**Please Contact Us for More Information:**

**Phone: (361) 593-3082 • Fax: (361) 593-3798 • Email: [kanmd00@tamuk.edu](mailto:kanmd00@tamuk.edu)**





# Venom Supplies Pty Ltd

ABN number 39 458 465 843

PO Box 547

Tanunda

South Australia

Phone 08 8563 0001

+61 8 8563 0001

Fax 08 8563 0020

+61 8 8563 0020

Email: [venoms@venomsupplies.com](mailto:venoms@venomsupplies.com)Web: [www.venomsupplies.com](http://www.venomsupplies.com)

## Lyophilised Venoms

### Snakes

#### Scientific name

#### Price(US\$)/200mg

#### Price(US\$)/gm

|                                    |       |         |
|------------------------------------|-------|---------|
| <i>Acanthophis antarcticus</i>     | \$170 | \$745   |
| <i>Acanthophis praelongus</i>      | \$210 | \$845   |
| <i>Agkistrodon billineatus</i>     | \$50  | \$200   |
| <i>Austrelaps superbus</i>         | \$400 | \$1,600 |
| <i>Austrelaps labialis</i>         | \$700 | \$3,000 |
| <i>Bitis arietans</i>              | \$70  | \$300   |
| <i>Bitis rhinoceros</i>            | \$75  | \$340   |
| <i>Bitis nasicornis</i>            | \$75  | \$340   |
| <i>Bothriechis schlegelii</i>      | \$200 | \$850   |
| <i>Crotalus adamanteus</i>         | \$100 | \$450   |
| <i>Crotalus unicolor</i>           | \$200 | \$900   |
| <i>Crotalus vegrandis</i>          | \$160 | \$700   |
| <i>Hoplocephalus stephensii</i>    | \$220 | \$900   |
| <i>Hoplocephalus bitorquatus</i>   | \$220 | \$900   |
| <i>Naja kaouthia</i>               | \$60  | \$250   |
| <i>Naja melanoleuca</i>            | \$50  | \$200   |
| <i>Naja mossambica</i>             | \$60  | \$250   |
| <i>Naja siamensis</i>              | \$60  | \$250   |
| <i>Notechis ater humphreysi</i>    | \$350 | \$1,600 |
| <i>Notechis ater niger</i>         | \$350 | \$1,600 |
| <i>Notechis ater serventyi</i>     | \$350 | \$1,600 |
| <i>Notechis scutatus</i>           | \$300 | \$1,445 |
| <i>Ophiophagus hannah</i>          | \$200 | \$850   |
| <i>Oxyuranus microlepidotus</i>    | \$300 | \$1,300 |
| <i>Oxyuranus scutellatus</i>       | \$260 | \$1,250 |
| <i>Oxyuranus scutellatus canni</i> | \$400 | \$1,500 |
| <i>Pseudechis australis</i>        | \$110 | \$520   |
| <i>Pseudechis butleri</i>          | \$160 | \$700   |
| <i>Pseudechis colletti</i>         | \$110 | \$500   |
| <i>Pseudechis guttatus</i>         | \$110 | \$500   |
| <i>Pseudechis porphyriacus</i>     | \$140 | \$650   |
| <i>Pseudechis papuanus</i>         | \$288 | \$1,380 |
| <i>Pseudonaja affinis</i>          | \$800 | \$3,900 |
| <i>Pseudonaja aspidorhyncha</i>    | \$800 | \$3,990 |
| <i>Pseudonaja inframacula</i>      | \$800 | \$3,990 |
| <i>Pseudonaja nuchalis</i>         | \$800 | \$3,990 |
| <i>Pseudonaja textilis</i>         | \$760 | \$3,700 |
| <i>Tropidechis carinatus</i>       | \$300 | \$1,500 |

### Spider Venom

*Lampona cylindrata*

\$360 / 10sac contents    \$720 / 25sac contents

*Latrodectus hasseltii*

\$500/50 sac contents.

### Bee Venom

Pure bee venom (*Apis mellifera*)

250mg

\$58

(1-5gm)

\$130/gm

(6-10gm)

\$116/gm

(60gm and over)

\$95/gm

### Amphibian Venoms

*Bufo marinus*

\$95/200mg

\$450/gm

5% discount will apply for all orders over 5 gm and 7% will apply to orders over 15gm for venoms produced at Venom Supplies Pty Ltd.

**Medtoxin Venom Laboratories**  
**2710 Big John Drive**  
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**Phone: 386-734-3049**  
**386-740-9143**  
**Fax: 386-734-4163**  
**elapid33@aol.com**  
**www.Medtoxin.com**

## VENOM PRICELIST SPRING/SUMMER 2009

|                             |           |
|-----------------------------|-----------|
| Dendroaspis polylepis       | \$550.00  |
| Dendroaspis angusticeps     | \$400.00  |
| Dendroaspis viridis         | \$750.00  |
| Naja nivea                  | \$205.00  |
| Naja melanoleuca            | \$205.00  |
| Naja nigricollis (Tanzania) | \$205.00  |
| Naja nigricollis (Ghana)    | \$205.00  |
| Naja h. annulifera          | \$125.00  |
| Naja kaouthia               | \$205.00  |
| Naja naja (Pakistan)        | \$250.00  |
| Ophiophagus hannah          | \$150.00  |
| Micrurus f. fulvius         | \$2100.00 |
| Bitis arietans              | \$150.00  |
| Bitis g. gabonica           | \$150.00  |
| Bitis g. rhinoceros         | \$150.00  |
| Crotalus adamanteus         | \$150.00  |
| Crotalus atrox              | \$150.00  |
| Crotalus h. atricaudatus    | \$150.00  |
| Crotalus h. horridus        | \$150.00  |
| Crotalus s.scutulatus       | \$450.00  |
| Crotalus d. terrificus      | \$450.00  |
| Sistrurus m. barbouri       | \$450.00  |
| Agkistrodon c.contortrix    | \$190.00  |
| Agkistrodon c. laticinctus  | \$190.00  |
| Agkistrodon c. mokasen      | \$100.00  |
| Agkistrodon p. conanti      | \$100.00  |

Many other venoms available in limited quantity, please inquire  
 Special orders to meet research needs

Exact locality data on most species available, Species are guaranteed

Prices are quoted per gram in U.S. dollars, subject to change without notice

Payment terms net 30 days check, money order, or wire transfer

Shipping is free in the U.S. may be extra for international orders

*SERPENTARIUM SANMARU***HIGH QUALITY VENOMS & TOXINS****Lyophilized and  
crystallized venoms**

|                                      |                    |
|--------------------------------------|--------------------|
| <b>Bothrops alternatus</b>           | <b>1440, 00 US</b> |
| <b>Bothrops jararaca</b>             | <b>220,00 US</b>   |
| <b>Bothrops jararacussu</b>          | <b>264,00 US</b>   |
| <b>Bothrops moojeni</b>              | <b>300,00 US</b>   |
| <b>Bothrops neuwiedi</b>             | <b>340,00 US</b>   |
| <b>Crotalus durissus terrificus</b>  | <b>220,00 US</b>   |
| <b>Crotalus durissus collineatus</b> | <b>300,00 US</b>   |

**Lachesis muta muta** 600,00 US

**Bufo marinus / schneideri** 264,00 US

**All venoms collected in a sterile manner**

**Blood cells and freeze dried blood plasm from snakes**

**We have also outther proteins, aminoacids and toxin polyclonal antibodies from brazilian snakes**

**We trade or sale our products only with CITES from the IBAMA (Brazilian Environment Agency & Wildlife)**

**Prices quoted per gram in US. Transport FOB**

**Brazilian Contact:**

**Sanmaru Serpentarium,**

**Rod. Brig. Faria Lima km 365**

**14765-000 Taquaral SP, Brazil**

**[herpetoscience@hotmail.com](mailto:herpetoscience@hotmail.com)**

**[taquaral@gmail.com](mailto:taquaral@gmail.com)**

**Fone (55) 14 9731 2436**

**(55) 16 3958 7269**



**Kentucky Reptile Zoo**

Venom Price List 2009-2010

200 L and E Railroad

Slade, KY 40376

Tel: 606-663-9160

Fax: 606-663-6917

Web: [www.kyreptilezoo.org](http://www.kyreptilezoo.org)Email: [reptilezoo@bellsouth.net](mailto:reptilezoo@bellsouth.net)**Crotalidae**

|  |          |
|--|----------|
| <i>Agkistrodon contortrix contortrix</i>                       | \$60.00  |
| <i>Agkistrodon contortrix mokasen</i>                          | \$55.00  |
| <i>Agkistrodon contortrix laticinctus</i>                      | \$70.00  |
| <i>Agkistrodon contortrix phaeogaster</i>                      | \$70.00  |
| <i>Agkistrodon contortrix pictigaster</i>                      | \$70.00  |
| <i>Agkistrodon piscivorus leucostoma</i>                       | \$45.00  |
| <i>Agkistrodon piscivorus piscivorus</i>                       | \$45.00  |
| <i>Bothrops asper</i>  | \$100.00 |
| <i>Bothrops atrox</i>  | \$100.00 |
| <i>Bothrops moojeni</i>  | \$100.00 |
| <i>Crotalus adamanteus</i>                                     | \$60.00  |
| <i>Crotalus atrox</i>  | \$70.00  |
| <i>Crotalus basiliscus basiliscus</i>                          | \$200.00 |
| <i>Crotalus cerastes</i>                                       | \$100.00 |
| <i>Crotalus durissus cumanensis</i>                            | \$300.00 |
| <i>Crotalus durissus durissus</i> (fmr. <i>C. d. dryinas</i> ) | \$200.00 |
| <i>Crotalus durissus terrificus</i>                            | \$175.00 |
| <i>Crotalus horridus</i>                                       | \$100.00 |
| <i>Crotalus horridus</i> (type A neurotoxin)                   | \$100.00 |
| <i>Crotalus molossus</i> (Texas origin)                        | \$70.00  |
| <i>Crotalus scutulatus scutulatus</i>                          | \$250.00 |
| <i>Crotalus viridis viridis</i>                                | \$70.00  |
| <i>Protobothrops flavoviridis</i>                              | \$200.00 |
| <i>Trimeresurus borneoensis</i>                                | \$200.00 |

**Elapidae**

|  |           |
|--|-----------|
| <i>Dendroaspis angusticeps</i>         | \$350.00  |
| <i>Dendroaspis jamesoni kaimosae</i>   | \$400.00  |
| <i>Dendroaspis polylepis</i>           | \$400.00  |
| <i>Micrurus tenere</i>                 | \$1000.00 |
| <i>Naja kaouthia</i>                   | \$100.00  |
| <i>Naja kaouthia</i> (Suphan province) | \$100.00  |
| <i>Naja melanoleuca</i>                | \$80.00   |
| <i>Naja naja</i> (India)               | \$85.00   |
| <i>Naja naja</i> (Pakistan)            | \$80.00   |
| <i>Naja nigricollis nigricollis</i>    | \$80.00   |

|                            |          |
|----------------------------|----------|
| <i>Naja nivea</i>          | \$100.00 |
| <i>Naja pallida</i>        | \$100.00 |
| <i>Naja siamensis</i>      | \$60.00  |
| <i>Ophiophagus hannah</i>  | \$95.00  |
| <i>Pseudechis colletti</i> | \$320.00 |

### **Viperidae**

|                                  |          |
|----------------------------------|----------|
| <i>Bitis arietans</i>            | \$120.00 |
| <i>Bitis gabonica rhinoceros</i> | \$130.00 |
| <i>Daboia (Vipera) russelli</i>  | \$200.00 |
| <i>Daboia (Vipera) siamensis</i> | \$200.00 |
| <i>Echis carinatus</i>           | \$350.00 |
| <i>Echis pyramidium</i>          | \$350.00 |

### **Helodermatidae**

|                            |          |
|----------------------------|----------|
| <i>Heloderma horridum</i>  | \$600.00 |
| <i>Heloderma suspectum</i> | \$600.00 |

### **Terms**

- All venoms are collected in a sterile manner and frozen at -70C before lyophilization.
- Other venoms are available upon request in small quantities; please contact us for more information on other venoms
- CITES papers available on all CITES listed species. Extra costs apply for permits and inspection fees.
- Locale information available for most species.
- Payment may be made by check, money order, wire transfer, PayPal, MC, Visa, and Discover. All prices are listed per gram in US dollars. Shipping and packing charges are extra.
- Discounts on standing orders and orders of 10g or more.
- KRZ makes every effort to stay current regarding nomenclature and taxonomy. Our listing reflects current trends, with former names in parentheses. If you have questions, please feel free to contact us.
- Scale clippings for DNA analysis available at an extra charge. Please contact us for more information.

# $\alpha$

# ALPHA BIOTOXINE



**Laboratoire de production de venin**  
**Fournisseur en venin**  
**Négociant en toxines purifiées**

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**Venom supplier**  
**Pure toxins dealer**

**Venins cristallisés, venins lyophilisés, bases pour teintures mères, plasma,...**

**Crystallised venom, lyophilised venom, mother tincture bases, plasma,...**

**ALPHA BIOTOXINE est une jeune société spécialisée dans la production de venin.**

**Nous mettons à votre service plus de 20 ans d'expérience dans l'étude des animaux venimeux et la production de venin.**

**Notre laboratoire s'adapte à tout type de demande. Contactez nous.**

**ALPHA BIOTOXINE is a young society specialised on venom production.**

**We offer you more than 20 years of experience on study of venomous animals and venom production.**

**Our laboratory is adapted to all kind of request. Please contact us.**

**Rudy Fourmy  
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7911 Montroeuil-au-Bois  
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[info@alphabiotoxine.be](mailto:info@alphabiotoxine.be)**

**Visitez notre site web : [www.alphabiotoxine.be](http://www.alphabiotoxine.be)  
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# Latoxan

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Searching for your Discovery

## Venoms, Toxins, Ion Channel and Receptor Ligands Alkaloids and Plant Compounds



**LATOXAN** provides an exclusive range of bioactive natural molecules from **Plant** and **Animal** origins:

- ▣ Purified small molecules from unique plants.
- ▣ Venom fractions for an easy access to new peptides, alkaloids or polyamines with high pharmacological activity potential.
- ▣ Pure venoms from over 250 animal species.

**LATOXAN's** products are supplied with reliable taxonomy, elucidated molecular structure or complex mixtures chromatograms.

[www.latoxan.com](http://www.latoxan.com)

