



INTERNATIONAL SOCIETY ON TOXINOLOGY

NEWSLETTER

June 2009

UPCOMING MEETINGS

Pan-American Section IST

The next meeting of the Pan-American Section of the IST will be held at the Hotel Real Internacional, San Jose, in Costa Rica, April 18-22, 2010. More details will be posted when available, both on the IST website and on a site for this Congress, at panamist.icp.ucr.ac.cr. The current contact person for this meeting is Prof. Gutierrez, JOSE.GUTIERREZ@ucr.ac.cr.

Asia-Pacific Section IST

The next meeting of the Asia-Pacific Section of the IST will likely be in Vladivostok, Russia, in September 2011-12 (dates to be confirmed).

European Section IST

The next meeting of the European Section of the IST will likely be in Valencia, Spain, dates to be confirmed.

IST World Congress

See separate section inside this newsletter.

The NP2D (Natural Peptides to Drugs, <http://www.np2d.com>)

congress will take place in Zermatt (Switzerland) from April 11th to 14th, 2010. For further information, contact Dr. Reto Stocklin at reto.stocklin@atheris.ch.

4th World Conference on Exogenous Factors Affecting Thrombosis and Haemostasis (EFATH). July 17-19, 2009
Boston USA

FROM THE IST EXECUTIVE

This is the first of the IST's new electronic format, email distributed newsletters. I welcome feedback from IST members on what they want to see included (and excluded) in future newsletters. I also welcome items from IST members for inclusion in the newsletter. This should become an easy way for members to communicate to the whole membership, on matters of toxicologic interest, such as upcoming meetings, legislative and government changes affecting toxicology, and broad views of research developments. However, the newsletter is not for announcing research findings; that remains the realm of peer reviewed publications, especially *Toxicon*. All members should remember that *Toxicon* was founded by the IST and although it is managed by Elsevier, as the current publisher, it is still the official journal of the Society and welcomes submission of toxin-related papers from IST members and others. Wherever practical, try and offer your papers to *Toxicon* for publication. As noted later in this newsletter, *Toxicon* continues to improve its impact factor and general standing. It is in all our interests that this trend continue.

The IST has seen several Society meetings in the last 12 months, all outstanding in their own way; the European Section Congress in Belgium in September 2008, the Asia-Pacific Section Congress in Vietnam in December 2008, and the World Congress in Brazil in March 2009. Having so many IST meetings so close together can be a problem, but all were successful and we must thank the respective organisers for their hard work, ensuring each meeting was memorable.

Julian White, Secretary/Treasurer, IST

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MEMBERSHIP ANNOUNCEMENTS

The IST Membership Database is still being updated, a process that will soon be completed. However, until that process is complete, details of new members and membership changes will not be posted to the Newsletter (but see below). It is hoped that the Membership Database can be made available to all IST members via the IST website, with password protection for access. If this eventuates, then the Newsletter may no longer need to list changes in members details, though new members could still be listed.

Because of file size, the Newsletter may be too big for some member's email accounts and so it may be more practical to post the Newsletter on the IST website and just email members advising it is ready to download, via a link.

This raises another issue, that of access to email addresses by non IST members. Members may prefer to keep email addresses more secure, using the new membership online database, once this is operational, rather than list addresses in the publicly accessible Newsletter. As IST Secretary, I will take direction from the membership on this issue and will not include members email addresses in the Newsletter until and unless it is clear that is what most members want.

Julian White
Secretary/Treasurer IST

NEW MEMBERS

CONTACT CHANGES

DEPARTING MEMBERS

An announcement for the formation of a Special Interest Group for Student Toxinologists

Students have been an important and valued part of IST since the inception of the Society in 1962. To emphasize the importance of the role of students in the IST, the creation of a Special Interest Group for Student Toxinologists has been proposed.

The aims of the Special Interest Group for Student Toxinologists would include: to increase opportunities for students to network with possible collaborators and employers; to work with the Executive and Council, IST to ensure students are included and supported in future decisions of the IST; and to train students to become contributing members to the IST and other professional societies.

The IST is looking for student members interested in being a part of such a network, and for those students (preferably with experience with other organizations) who would like to be considered for leadership positions. Any students interested in participating in such a network should contact the following by email (please send your email to the Secretary, IST, with cc to the President, IST and to student member Maggie Gentz):
julian.white@adelaide.edu.au
antgopal@nus.edu.sg
m.gentz@uq.edu.au

MESSAGE FROM THE PRESIDENT (I.S.T)



Dear Friends, Toxinologists, As- animals, Biological and toxin sociate Members and budding weapon conventions, Biological (student) toxinologists, terrorism, Drug discovery from nature and Conservation of Bi-

It is my pleasure to introduce the new, revamped "News Letter" of the International Society on Toxinology (IST) after the new officials have taken over. I must thank Prof Julian White (Secretary-Treasurer) for his effort in changing the news letter from printed format to electronic format. These news letters will be published about three monthly and the website will be updated continuously. We also hope to use email as the routine communication within the IST and for any urgent updates.

odiversity. Your ideas are most welcome and if there is sufficient interest, then we will be able to form a "Specific Interest Group" (SIG) under the IST umbrella. Finally I must thank and congratulate all the able candidates who were proposed and conducted IST elections. We had electronic voting for the first time in the IST and it went very well. Our best wishes goes to President (Elect) Prof Alan Harvey and Secretary Treasurer (Elect)- Prof Julian White and the new council members:

I would like to hear from members about how we can improve various aspects of the IST, especially how we can increase the membership and bring in academics from disciplines such as microbiology, marine biology, and food sciences who are working on toxins. Some of the current topics under discussion are, Global Issues on Snake Bite, Clinical Toxinology Training, Nomenclature of toxins, Classification of venomous

Prof P Gopalakrishnakone
President of the IST (2009-2012)
Email: antgopal@nus.edu.sg

THE FUTURE OF THE IST NEWSLETTER

The IST Newsletter needs input from IST members to make it a more effective communication tool within the Society. The move to electronic format may open up opportunities for new sections. For instance, it might be possible to have annotated bibliographies of recent toxinology publications from other journals, or reports of other meetings with toxinology content. Available toxinology-related jobs and student postings could be listed. There are doubtless many other possibilities members may think of.

So I ask all IST members to consider what they want from the Newsletter and let me know by email. I also want to hear from IST members prepared to contribute regular sections to the Newsletter. To be vibrant and relevant the Newsletter must become more than just a brief report on IST business by myself and our President, but that requires your input.

Julian White
Secretary/Treasurer IST
julian.white@adelaide.edu.au

IST ELECTIONS 2009

The election of IST Officer bearers for 2012-2015 was conducted, for the first time, by email this year. The reason for this change is logistics and cost. The IST can no longer afford to expend income on postage for elections, newsletters etc, as this has consumed vital funds in recent years. Until now no easy alternative was available, but email is now accessible to virtually everyone.

Inevitably there will be teething problems in establishing this new communication method, but the response from most members has been positive, with many of you responding to the request for updated contact information. One example of how this will help is our members from Cuba, most of whom now have an email address allowing them better interaction with IST affairs.

President Vote

There were 3 candidates:

Dr. Yara Cury (Brazil)

Prof. Gilberto Domont (Brazil)

Prof. Alan Harvey (UK)

All 3 candidates polled significant votes, but Prof. Harvey had the most votes, by a substantial margin. Accordingly, Prof. Harvey is the President Elect of the IST (2012-2015).

Secretary-Treasurer

As there was only one candidate, Prof. Julian White (Australia), no vote was required.

IST Council 2009-2012 Vote

Many members (and quite a few non-members) were nominated for Council, too many to list here. After commencing the election process, it became clear that the current IST Constitution limits options on who may be candidates. Specifically, those serving on the previous Council (2006-2009) as general members are excluded. This resulted in several popular candidates being excluded from consideration. The new Council will need to review this and other aspects of the IST Constitution to determine if changes should be considered in the future. Any change would require majority support from the IST membership.

In addition, the President and Secretary of each of the 3 IST Regional Sections are automatically on Council.

After excluding general Councillors who had just finished serving a term, and Regional Sectional officebearers, the following 5 candidates achieved the highest votes from members:

Dr. Yara Cury (Brazil)

Prof. Lourival Possani (Mexico)

Prof. Toto Olivera (USA)

Prof. Dietrich Mebs (Germany)

Prof. Graham Nicholson (Australia)

IST Council 2009-2012

President: P Gopalakrishnakone

Secretary/Treasurer: J White

President European Section: J Tytgat

Secretary European Section: I Krizaj

President Pan-American Section: JM Gutierrez

Secretary Pan-American Section: B Lomonte

President Asia-Pacific Section: E Grishin

Secretary Asia-Pacific Section: vacant

General Councillors

Y Cury (Brazil)

L Possani (Mexico)

B Olivera (USA)

D Mebs (Germany)

G Nicholson (Australia)

At the next elections, in 2012, we will endeavour to make members aware of eligibility criteria in advance. Several IST Councillors for 2006-2009 received substantial vote support for Council positions, but were ineligible for election under the Constitution.

Julian White

Secretary/Treasurer IST

On Our Retiring Secretary/Treasurer, Prof. Dr. Dietrich Mebs

The IST World Congress in Recife, Brazil, March 2009 marked an important change for the IST. After 27 remarkable years as Secretary/Treasurer of the IST, Prof. Dr. Dietrich Mebs stepped down from this role officially, handing over to the new Secretary/Treasurer, Prof. Dr. Julian White.

Dietrich Mebs has been a pivotal person in the Society during his 27 year tenure. As Secretary-Treasurer, Dietrich has played a central role in bringing people together, promoting interactive scientific projects, supporting young scientists and opening many doors to so many people. It can be argued he played a vital role in the development of IST, as pro-active networker, always present, always available, and always responsive to all kind of requests from all over the world (and he still receives many requests and communications related to toxinology).

Both through his position as Secretary/Treasurer and because of his personality and energy he is doubt-



Marcel Laliberté



less the best known IST member within the Society, at the same time knowing more IST members well than anyone else. Equally he is the IST member who has published the broadest variety of toxinology articles, from small organic molecules to large proteins, from marine and terrestrial animals, to plants and microorganisms, covering chemical, biochemical, clinical, ecological and evolutionary aspects. In the process of undertaking this research he has worked in laboratories around the world and collaborated with many fellow toxinologists in numerous nations, a truly international effort.

He has contributed to or completely authored many books, amongst them *Gifftiere: Ein Handbuch für Biologen, Toxikologen, Ärzte und Apotheker* (also in English as *Venomous and Poisonous Animals: A Handbook for Biologists, Toxicologists and Toxinologists, Physicians and Pharmacists*), now heading into its 3rd edition, a reference book useful both to confirmed experts, young scientists, clinicians and amateurs and a solid "best seller" in the toxinology literature.

In 1997 he was one of the founding faculty of the Clinical Toxinology Short Courses and has taught on nearly all the courses held since then.

In 2003 he was one of the initiators of the Venomics project (Ménez A, Stöcklin R, Mebs D. 'Venomics' or : The venomous systems genome project. *Toxicon*. 2006 Mar;47(3):255-9), an initiative launched on behalf of the IST, which led to the creation of the non-profit Toxinomics Foundation in

which he acts as President. Dietrich also plays a key role in conco (the cone snail genome project for health), the first integrated venomomics project to unravel the venomous function of a cone snail with full genome, transcriptome and proteome sequencing, coupled to lead discovery and drug development.

Although officially retired from his Professorial position at the Forensic Science Institute, University of Frankfurt, Dietrich seems busier than ever as a toxinologist, still active as a researcher and promoter of toxinology, especially through the Toxinomics Foundation and conco project. We can expect him to remain a dynamic force in toxinology for years to come, but toxinology in general and the IST membership in particular owe this extraordinary man, a true gentleman, a great debt of thanks for his efforts on behalf of our field and our Society, over such a long period of time.

In recognition of Prof. Meb's contribution, he was awarded a special gift at the IST Business Meeting in Recife, co-sponsored by the IST and the Toxinomics Foundation. A beautiful *Conus excelsus* shell that is the centrepiece of the gift was sourced by Dr. Reto Stocklin, who, with Dietrich and the late André Ménez, initiated the Foundation. The gift was presented by Mdme. Renée Ménez, the wife of the André Ménez. It was an honour and pleasure for the Society that Renée Ménez participated in the Recife meeting.

Julian White
Reto Stocklin
Ponnampalam Gopalakrishnakone



Dietrich and some other faculty members & students at the 2003 Clinical Toxinology Short Course, International Version, held immediately after the 2003 IST World Congress in Adelaide.



XVI World Congress of the International Society on Toxinology
X Congresso da Sociedade Brasileira de Toxinologia
 Biodiversity in Toxins: Tools for Biological Research and Drug Development

Eco Resort do Cabo - Cabo de Santo Agostinho
Recife - Pernambuco - Brazil
March 15-20, 2009

organization




2009 World Congress

The 16th World Congress of the IST was held in Recife, Brazil March 2009. This meeting was co-hosted by the Brazilian Society of Toxinology. There were 548 people registered for this meeting, with a majority from Brazil, but still substantial representation from 47 other countries.

The efforts of the local organisers in Brazil, to make the meeting successful, are gratefully acknowledged by the IST. Very many papers and posters were presented, covering the full diversity of toxinology. This included special sessions on clinical toxinology training, a first for an IST World Congress.

In addition to a busy scientific schedule, there was great scope for personal interactions, both informally at communal meal times, and formally through the several social events programmed. The setting, in an equatorial coastal resort, might have persuaded attendees to relax and skip scientific sessions, but most of those present were more interested, it seems, in the science of toxinology, than in sampling the beach or pool. This is both a good sign for the IST, and a testament to the hard work of the organisers.

So, a big thank you to our many Brazilian colleagues!



The Global Snakebite Initiative

This important project is the first major undertaking resulting from the ***Global Issues in Clinical Toxinology Conference***, held in Melbourne, Australia, November 2008. At this meeting, attended by stakeholders from all continents (except Antarctica), a steering committee was formed to move towards solutions for envenomed patients Worldwide. It was considered by this meeting, attended by some senior IST members, that this process would best be promoted by close association with the IST, as a project under the IST banner. At the Asia-Pacific Section Congress in Vietnam in December 2008, a proposal was made by Prof. David Warrell, seconded by Prof. P Gopalakrishnakone (IST President), that "The Global Snakebite Initiative be formally endorsed as an official initiative of the IST." This was passed unanimously and confirmed unanimously at the IST World Congress in Recife, Brazil, March 2009. This important initiative is now officially a project of the IST. The Steering Committee, which contains a number of IST members, will produce a work plan and timeline to present to all IST members. A new website to promote the Initiative has been launched at www.snakebiteinitiative.org and it is to be hoped that this will progress to a major resource for the Initiative.

Global Snakebite Statistics

Recent research by Kasturiaratne et al, published in PLoS, has redefined global estimates of snakebite epidemiology. However, this is, to some extent, a "work in progress". One of the authors, Prof. Janaka de Silva (Sri Lanka) has kindly made available some of the data tables on which the study conclusions were based, with a "challenge" to IST members (and others) to provide more definitive data for each listed country. These tables will be listed on a separate page structure for the IST website (www.toxinology.org). All interested members are urged to peruse this information and contact Prof. de Silva if they have additional data that might be used to update the tables. This work may be considered as one section of the Global Snakebite Initiative.

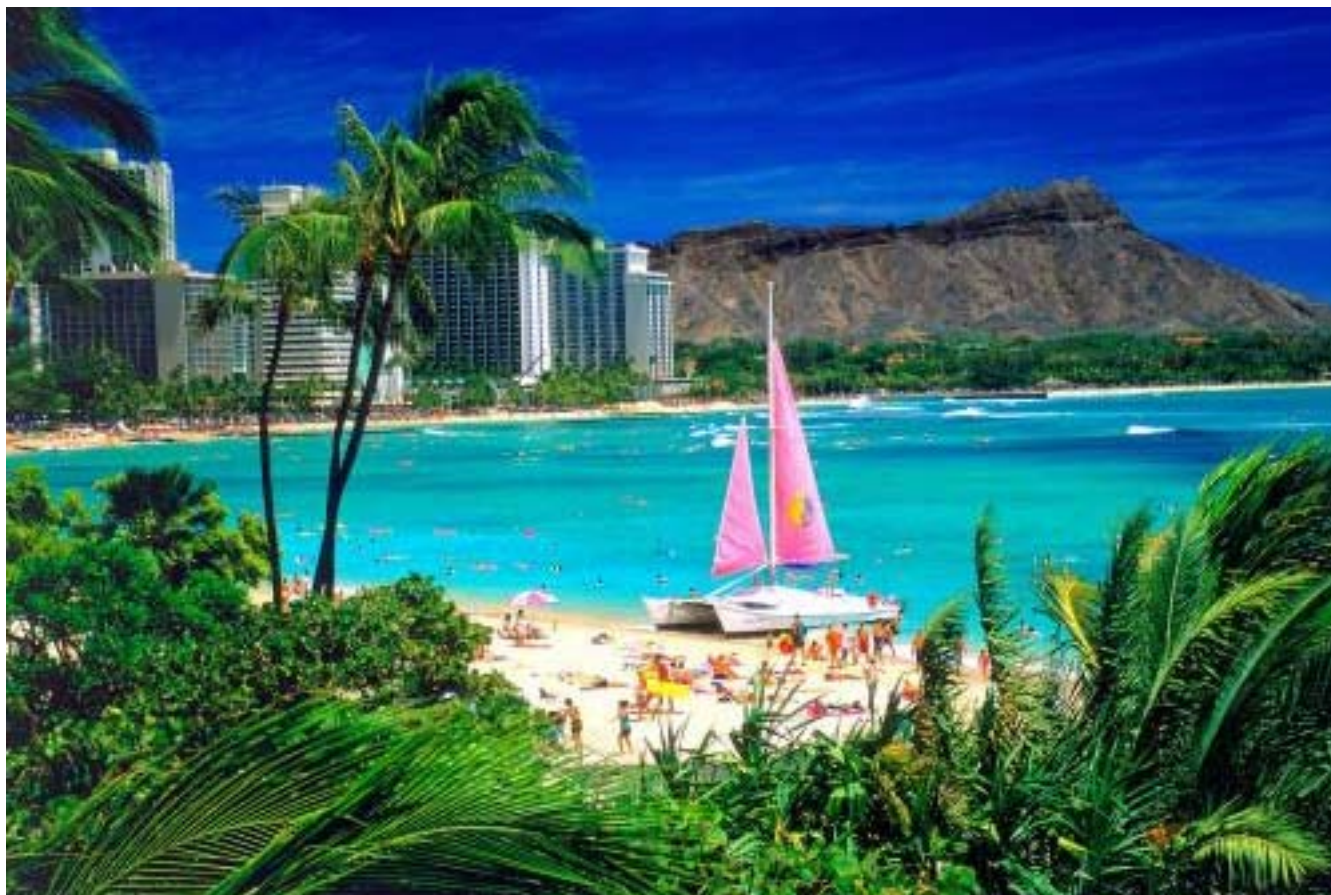
The Clinical Toxinology Initiative

The issue of specialist-level training for medical doctors, in the field of clinical toxinology, and credentialling of such training, was canvassed at the Global Issues in Clinical Toxinology Conference and again, through presentations, at the Asia-Pacific Section Congress in Vietnam. As a result a proposal was put by Prof. Julian White, seconded by Prof. Dietrich Mebs, that "The Asia-Pacific Section of the IST supports the development of a clinical toxinology initiative by the IST." This was passed unanimously and confirmed unanimously at the IST World Congress in Recife, Brazil, March 2009. This important initiative is now officially a project of the IST. A Steering Committee will be established and a report to IST members. The IST will now work towards establishing clinical toxinology as an accredited and recognised medical specialty.

As part of this process, Prof. White has had initial informal discussions with some "key players" in the medical toxicology field, in North America, Europe and Australia. While very early in the whole process, these discussions have been positive and encouraging. Similar positivity was evident in discussions with WHO personnel, although again these were informal and the WHO has not yet been approached to support this initiative.

One likely outcome of developing clinical toxinology under the banner of the IST will be an increase in clinician membership and resurgence of clinical papers and posters at IST meetings, alongside the more basic and applied toxin research. The latter will not be in any way devalued by development of IST involvement in clinical toxinology. It is intended these two aspects of toxinology will grow in partnership.

It should also be recognised that the IST membership has been active in clinical toxinology training for many years, most notably the long-standing French course run through the Paris Museum of Natural History (now in its 30th year - congratulations to Max Goyffon), the International Clinical Toxinology Short Course (held in Adelaide since 1997), and the Brazilian course. The latter hosted discussions on clinical toxinology training at the IST World Congress in Brazil, March 2009, thanks to the efforts of Profs. Baravierra and Haddad.



NEXT IST WORLD CONGRESS

At the most recent IST World Congress in Brazil, March 2009, members present at the Business Meeting of the IST indicated interest in Hawaii being the venue for the next World Congress. However, Dr. Angel Yanagihara, from Hawaii, indicated she was not yet in a position to confirm the viability of holding the Congress there. Prof. Gopalakrishnakone also presented a comprehensive bid from Singapore. Normally this would then require a vote from members, but prior to a vote being held, the Singapore bid was withdrawn, leaving only the tentative bid from Hawaii.

All IST members should now work together to support Dr. Yanagihara and her colleagues in ensuring Hawaii can host a successful Congress, probably in 2012. The IST Council will need to work with our Hawaiian colleagues to determine the best time in 2012 to hold the Congress. We would welcome feedback from members on this, but initially sometime in June would seem suitable, because it would coincide with usually good weather, the end of teaching terms in the US and Europe, and would be close to holiday times for the Northern Hemisphere, allowing members to more easily schedule holidays with family, incorporating attendance at the Congress. We will be striving to ensure the Congress is affordable, including less expensive accommodation for student members. Because Hawaii is part of the US, members from some countries not covered by the US Visa-waiver program will need to organise visas well in advance. More on this as plans develop.

Organising an IST World Congress is not easy and requires a great deal of effort by local IST members. This work, on behalf of all of us, deserves to be valued by the membership and we should all see what we can do to assist the local organisers. It is particularly important to gain an idea of likely attendance to allow budget planning. Therefore, once plans are further advanced, we will ask all members to indicate if they definitely intend to attend the meeting, or will definitely not be coming. Once a Scientific Organising Committee is established for the Congress, input from members on possible meeting content will be sought.

For the present, members should communicate re the Congress via the Secretary IST (julian.white@adelaide.edu.au) and President (antgopal@nus.edu.sg).

EFATH 2009

FIRST ANNOUNCEMENT

4th World Conference on Exogenous Factors Affecting Thrombosis and Haemostasis (EFATH)

July 17-19, 2009

Boston USA

This meeting will be the 25th anniversary of the first EFATH and will immediately follow the XXII Congress of the ISTH. The main theme will be "From Genomes and Proteomes to the Clinic" and will celebrate the advances in venom research and therapeutics in the last 25 years, with historical perspectives, cutting edge advances, and an extensive scientific program.

Call for abstracts; September 2008.

Preliminary inquiries: mclane@udel.edu

Website: <http://www.udel.edu/medtech/mclane/EFATH09.html>





NATURAL PEPTIDES TO DRUGS
3rd International Congress

Natural Peptides to Drugs (NP2D)

The NP2D (Natural Peptides to Drugs, <http://www.np2d.com>) congress will take place in Zermatt (Switzerland) from April 11th to 14th, 2010. For further information, contact Dr. Reto Stocklin at reto.stocklin@atheris.ch.



17^{èmes} Rencontres en Toxinologie (RT17)

Paris, les 02 et 03 décembre 2009



Nous avons le plaisir de vous inviter à participer au colloque annuel de la Société Française pour l'Etude des Toxines¹, qui se déroulera à l'Institut Pasteur de Paris, les mercredi 2 et jeudi 3 décembre 2009 et qui aura pour thème : **Toxines et signalisations**.

Conférenciers pressentis

Klaus Aktories (Albert Ludwigs Universität, Allemagne)
Amparo Alfonso (Université de Santiago de Compostelle, Espagne)
Gisou van der Goot (Ecole Polytechnique Fédérale de Lausanne, Suisse)
Guido Kroemer (INSERM, Villejuif)
Rick Titball (School of Biosciences, Exeter, Grande Bretagne)
Bernard Poulain (CNRS, Université L. Pasteur, Strasbourg)
Gilles Prevost (CNRS, Université de Strasbourg)

La langue officielle est l'anglais. Le français est cependant accepté, mais il est conseillé de faire les supports (diapos et posters) en anglais afin de faciliter les discussions avec nos collègues étrangers.

Une demi-journée sera dédiée aux communications en dehors du thème des RT17 et aux présentations de résultats récents acquis dans d'autres domaines de la toxinologie tels que : toxines et environnement, nouvelles toxines, structure et fonction des toxines, intoxications, envenimations, traitements... Les communications présentées par des jeunes scientifiques feront l'objet de la plus grande attention.

APPEL A COMMUNICATION

La SFET lance un appel à communication (orale et/ou écrite) sur le thème du colloque, mais également dans tout autre domaine de la toxinologie.

Les participants souhaitant présenter une communication devront envoyer un résumé d'une page maximum au secrétariat de la SFET (fgoudey@noos.fr) **au plus tard le 15 septembre 2009**, à moins qu'ils n'aient soumis, au préalable, un article pour publication dans l'e-book 2009 (voir ci-dessous).

Les formats pour les résumés et les posters seront indiqués ultérieurement.

APPEL A PUBLICATION

Depuis 2008 et après 7 livres de la série « Rencontres en Toxinologie » édités par la SFET et publiés chez des éditeurs, la SFET a lancé l'édition et la publication d'un e-book. N'hésitez pas à consulter le premier volume paru en 2008 : <http://sfet.asso.fr/images/stories/SFET/pdf/EBook-RT16-2008-signets.pdf>. L'e-book 2009 sera disponible, en libre accès sur le site, dès le 2 décembre 2009.

Les participants au colloque sont invités à soumettre un article (la SFET incitant les auteurs à utiliser l'anglais, mais le français est accepté). Pour cela, ils devront envoyer, **au plus tard le 30 avril 2009**, un résumé d'une demi-page environ (voir document joint) au secrétariat de la SFET (fgoudey@noos.fr). Les résumés feront l'objet d'une présélection.

La date limite d'envoi des manuscrits est fixée au **15 juin 2009**. Les articles seront expertisés par au moins deux référés.

¹ N'hésitez pas à visiter le site WEB de la SFET <http://www.sfet.asso.fr/>

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) 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
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
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
Northern Pacific Rattlesnake - <i>Crotalus oreganus oreganus</i>	\$400. ⁰⁰ /1g	\$270. ⁰⁰ /500mg	\$72. ⁹⁰ /100mg
Mohave Rattlesnake - <i>Crotalus scutulatus scutulatus</i> (A)	\$250. ⁰⁰ /1g	\$168. ⁷⁵ /500mg	\$45. ⁵⁶ /100mg
Mohave Rattlesnake - <i>Crotalus scutulatus scutulatus</i> (B)	\$1000. ⁰⁰ /1g	\$675. ⁰⁰ /500mg	\$182. ²⁵ /100mg
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
Western Massasauga - <i>Sistrurus catenatus tergeminus</i>	\$1000. ⁰⁰ /1g	\$675. ⁰⁰ /500mg	\$182. ²⁵ /100mg
Bushmaster - <i>Lachesis muta muta</i>	\$2000. ⁰⁰ /1g	\$1350. ⁰⁰ /500mg ...	\$364. ⁵⁰ /100mg ...

(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.

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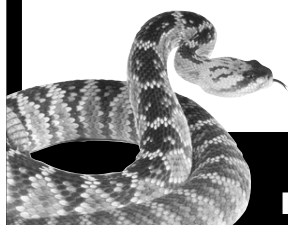
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Lyophilised Venoms

Snakes

Scientific name

Price(US\$)/200mg

Price(US\$)/gm

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<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
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