

## Sunday

### **2.00pm Launch Arrives**

Heron Island Welcome

Lunch for new arrivals

*Restaurant*

### **4.30pm Registration**

*Wistari Room*

5.30pm Millennium Science Welcome Reception

*Wistari Terrace*

### **6.00pm Opening Plenary**

*Wistari Room*

A/Prof. Katherine Below

Chairman: Prof. Paul Alewood

Unravelling the secrets of an enigmatic Australian: platypus  
venom

7.30pm Dinner

*Restaurant*

## Monday

<b>9.00am Session 1: Biodiscovery</b>		
	<i>Wistari Room</i>	Chairman: Prof. Manjunatha Kini
9.00am	Prof. Baldomero Olivera	Venoms as natural product libraries: conopeptides, a case study
9.30am	Dr. Frank Mari	Fishing for nicotinic agonists from <i>Conus americanus</i> : a new wave of $\alpha$ -conotoxins with varying selectivity profiles for blocking nAChRs
10.00am	A/Prof. Bryan Fry	Venom breathing dragons: novel toxins from Anguimorpha lizards
10.30am	Morning Tea/Coffee	
<b>11.00am Session 2: Molecular Design</b>		
	<i>Wistari Room</i>	Chairman: Prof. Baldomero Olivera
11.00am	Dr. Palmer Taylor	Natural products and soluble receptor surrogates as models and templates in drug design
11.30am	Dr. Igor Kasheverov	Design of new $\alpha$ -conotoxins: from computer modeling to potent cholinergic compounds
12.00pm	Dr. Keith Elmslie	$\omega$ -conotoxins MVIIA and MVIIC differentially affect N-type calcium channel gating
12.15pm	Dr. Chiang-I Wang	Studies of ligand-receptor interactions and discovery of novel active conotoxins for nicotinic acetylcholine receptor using acetylcholine binding protein
12.30pm	Lunch <i>Restaurant</i>	

**4.00pm Session 3: Screens and Assays***Wistari Room*

Chairman: Dr. Birgit Priest

4.00pm Prof. Wayne Hodgson

The cardiovascular effects of Australian animal venoms: mechanisms of action and treatment strategies

4.30pm Dr. Barbara Sanderson

Cancer cell lines show differential sensitivity to killing by venom from sea anemone

5.00pm Dr. Russell Teichert

Calcium-imaging assays for discovery of novel peptide toxins with therapeutic potential

5.15pm Dr. Joseph Schulz

Cone snail venom modulators of zebrafish spinal motor activity

5.30pm Dr. Irina Vetter

Biodiscovery of ion channel modulators using FLIPR high throughput screening

5.45pm Dr. Katharina Zimmerman

Is inhibition of outward potassium current sufficient to initiate cold transduction in nociceptor nerve endings?

6.00pm End of Session

6.30pm Dinner

*Restaurant***8.00pm Session 4: Insect Toxins***Wistari Room*

Chairman: Dr. Greta Binford

8.00pm Dr. John McIntyre

Uses of spider-venom peptides for crop protection

8.30pm Dr. Volker Herzig

Insecticidal toxins: enhancing stability and oral activity

8.45pm Ms. Mari D. Heghinian

Investigating the neuromodulatory effects of cone snail toxins in *Drosophila melanogaster*

9.00pm End of Session

## Tuesday

### 9.00am Session 5: Sodium Channels as Analgesic Targets

	<i>Wistari Room</i>	Chairman: Dr. Stephan Kellenberger
9.00am	Dr. Alan Wickenden	Sodium channel drug discovery: challenges and opportunities
9.30pm	Prof. Raymond Norton	Conoxins targeting voltage-gated sodium channels: designing new analgesics
10.00pm	Dr. Birgit Priest	Pros and cons of peptide toxins as proof-of-concept molecules for ion channel targets
10.30am	Morning Tea/Coffee	

### 11.00am Session 6: Novel Analgesic Targets

	<i>Wistari Room</i>	Chairman: Dr. Alan Wickenden
11.00am	Dr. Stephan Kellenberger	Structure and function of acid-sensing ion channels
11.30pm	Ms. Natalie Saez	Experimentally-validated model of the interaction between $\pi$ -TRTX-Pc1a (PcTx1) and the pain target ASIC1a
11.45pm	Mr. Sebastian Senff	Development of potent and specific modulators of the human voltage-gated sodium channel Nav1.7 for treating chronic pain
12.00pm	Mr. Christopher Bohlen	Novel tandem ICK toxin from tarantula venom forms a nearly irreversible bivalent ligand for TRPV1
12.15pm	Dr. Lachlan Rash	Mode of action of APETx2 on ASIC channels
12.30pm	Lunch	
	<i>Restaurant</i>	

**4.00pm Session 7: Transcriptomics and Proteomics***Wistari Room*

Chairman: Prof. Edouard Nice

4.00pm Dr. Greta Binford

The phylogenetic scale of venom variation in sicariid spiders

4.30pm Dr. Arturo Lluisma

Novel venom peptides from the cone snail *C. pulicarius* discovered through next-generation sequencing of its venom duct transcriptome

4.45pm Dr. Sebastien Dutertre

Proteomic and transcriptomic analysis of *C. mamoreus* venom gland

5.00pm Dr. Reto Stöcklin

CONCO: the cone snail genome project for health

5.30pm Ms. Nicole Leung

Unveiling Venom: analysis of novel A-superfamily conotoxins in *C. tulipa* and other fish-hunting cone snails

5.45pm Dr. Gisela Concepcion

Bioactive venom peptides from Turrids (family Turridae)

6.00pm End of Session

**7.00pm Davies Collison Cave Conference Dinner***Wistari Terrace*

## Wednesday

3.30pm Afternoon Tea/Coffee  
*Wistari Terrace*

### 4.00pm Session 8: Hot Spots

*Wistari Room*

Chairman: Dr. Reto Stöcklin

4.00pm Dr. Chiang-I Wang

Molecular basis for substrate binding and antagonist selectivity in human norepinephrine transporter by homology modelling and docking simulation

Mr. Marco Inserra

Is GABA<sub>B</sub> the molecular analgesic target of the  $\alpha$ -conotoxins Vc1.1 and RgIA?

Dr. Ian Napier

Are glutamate transporters good targets for neuropathic pain?

Ms. Cecilia Prator

Venom variation during prey capture and development in *Conus*

Mr. Eivind Undheim

Venom on ice: adaptive evolution of Antarctic octopus venom

Dr. Raveendra Anangi

Determination of the structure of PaurTx3, a potent blocker of human voltage-gated sodium channels

Dr. Oliver Knapp

Identification of Nav1.8 channel domains responsible for  $\mu$ O-conotoxin MrVIB binding and channel biophysical properties

Ms. Julie Klint

Structure and function of  $\mu$ -TRTX-Hhn2a, a potent blocker of tetrodotoxin-sensitive Nav channels

Dr. Rodrigo Morales

Improving the oral toxicity of insecticidal spider-venom peptides

Mr. Jeff McArthur

$\mu$ -Conotoxin KIIIA: molecular features underlying selective targeting of neuronal sodium channels

Dr. Rocio Finol-Urdaneta

Functional versatility: inhibition of proteases and potassium channels by Conkunitzins S1 and S2

A/Prof. Dirk van Helden

New approaches to first aid treatment for snakebite

Dr. Philippe Favreau

Molecular and pharmacological switch in the venom of individual cone snails

Dr. Emily Wong

Platypus venom evolution through gene duplications

Prof. Edouard Nice

High throughput robotic production of monoclonal antibodies from protein and peptide determinants

**5.30pm ABSciex/Latoxan Sunset Drinks**

*Pavilion*

**6.30pm Dinner**

*Restaurant*

**8.00pm Millenium Science Poster Session**

*Wistari Room*

## Thursday

### 9.00am Session 9: Toxin Structure and Function

	<i>Wistari Room</i>	Chairman: Prof. Juan Calvete
9.00am	Prof. Richard Lewis	Discovery and development of $\chi$ -conopeptides for pain
9.45am	Dr. Michael Pennington	Advancing ShK peptide into the clinic for treatment of multiple sclerosis
10.00am	Dr. Daniel Obrecht	From the natural antibiotic protegrin to the clinical candidate POL7080
10.30am	Morning Tea/Coffee	

### 11.00am Session 10: High Throughput Technologies - Going Faster

	<i>Wistari Room</i>	Chairman: Dr. Frank Mari
11.00am	Prof. Diana Imhof	Ionic liquids-applications in conotoxin synthesis reveals interesting aspects of peptide folding
11.30am	Dr. Andreas Brust	High throughput synthesis of peptide-thioester: a safety catch linker approach enabling parallel hydrogen fluoride cleavage
11.50am	Dr. Mehdi Mobli	Automated high-resolution structure determination of peptide toxins from raw NMR data
12.10am	Dr. Mack Flinspach	Recombinant production of venom peptides and variants in a mammalian expression system
12.30pm	Lunch	
	<i>Restaurant</i>	



**4.30pm Session 11: Snake - Derived Therapeutics**

*Wistari Room*

Chairman: Prof. Glenn King

4.30pm Prof. Martin Lavin

A venomics program: from molecules to applications

5.00pm Prof. Manjunatha Kini

New toxins from snake venoms

5.30pm Prof. Juan Calvete

The strange case of the *RPTLN* gene

6.00pm End of Session

**7.00pm Davies Collison Cave Farewell BBQ**

*Wistari Terrace*

## Friday

10.30am Morning Tea/Coffee  
*Wistari Terrace*

### **11.00am Session 12: Cone Snail Therapeutics**

*Wistari Room*

Chairman: Prof. Richard Lewis

11.00am Prof. David Adams

$\alpha$ -Conotoxin modulation of N-type calcium channels via GABA<sub>B</sub> receptor activation in sensory neurons and transfected mammalian cells

11.20am Prof. Mac Christie

Novel  $\omega$ -conotoxins from *C. catus* relieve pain with both central and peripheral administration

11.40am Prof. Robert French

Electrostatic interactions of conotoxins and their diverse effects on ion conduction, channel gating and enzymatic activity

12.00pm Prof. David Craik

Running rings around toxins

12.30pm Lunch

*Restaurant*

**2.00pm Launch Departs**