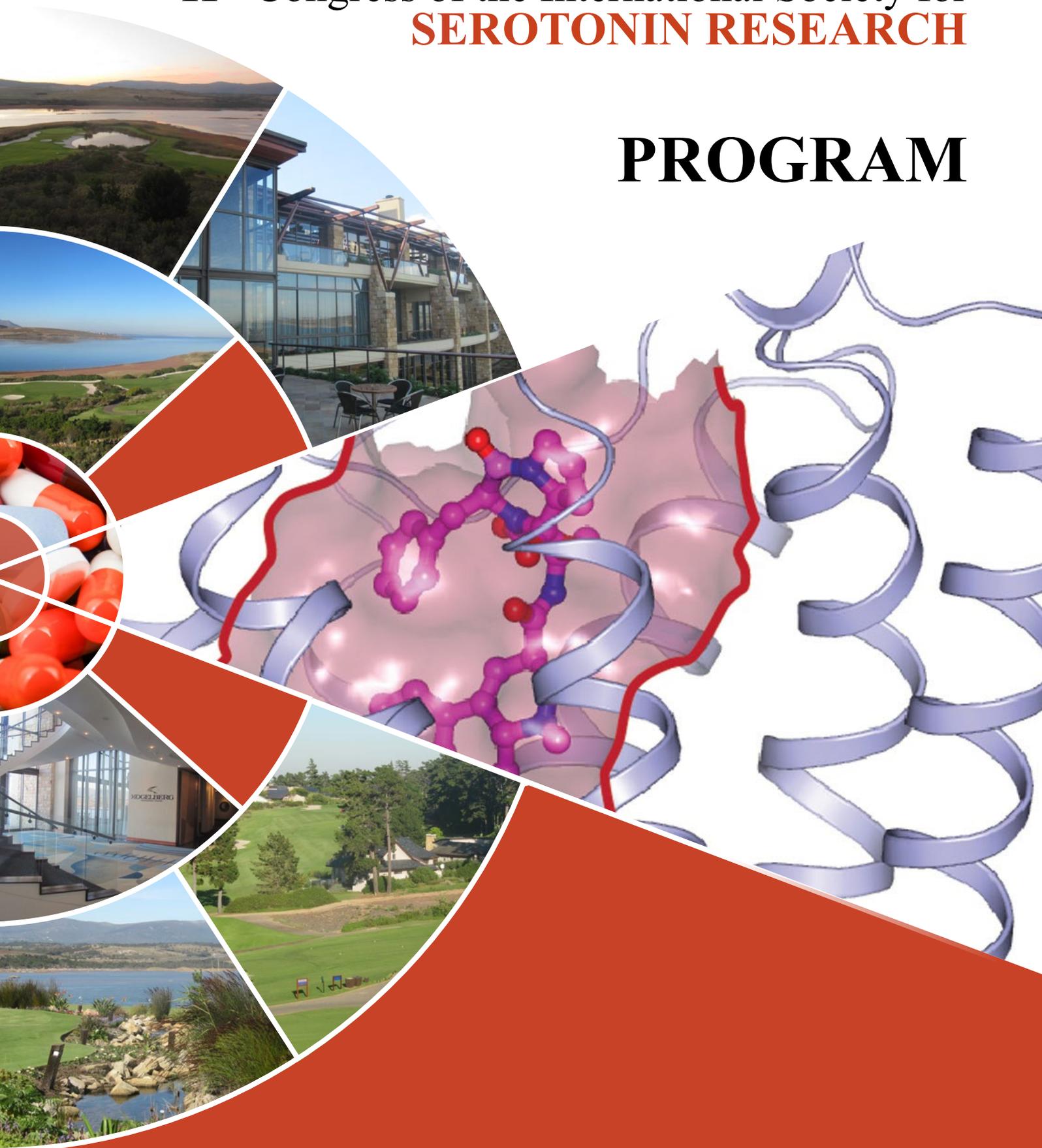


11th Congress of the International Society for
SEROTONIN RESEARCH

PROGRAM



9 – 12 July 2014

11th Congress of the International Society for
SEROTONIN RESEARCH

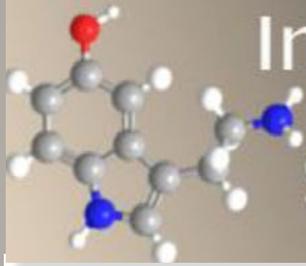
ISSR Sponsors

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International Society for Serotonin Research

Formerly Serotonin Club



Serotonin



Safari

Local organising committee:

Prof Brian H. Harvey, North-West University, Potchefstroom (Chair)
Prof Soraya Seedat, University of Stellenbosch, Cape Town
Prof Sandra van Dyk, North-West University, Potchefstroom
Dr Sian Hemmings, University of Stellenbosch, Cape Town
Dr Jacques Joubert, University of the Western Cape, Cape Town
Mr Dewet Wolmarans, North-West University, Potchefstroom
Mr Henk Oosthuizen, Medi-Clinic, Cape Town



A warm welcome by the President of the International Society for Serotonin Research

It gives me great pleasure to welcome you to the 11th meeting of the International Society for Serotonin Research. This year, our meeting will be held at the beautiful Arabella Estate near Capetown, South Africa, and is an official satellite conference of the 17th World Congress of Basic and Clinical Pharmacology to be held in that city.

The program of this year's meeting includes some of the leading serotonin researchers in the world, focusing on the role of serotonin in psychiatric illness, immune modulation, Alzheimer's disease, obesity and addiction, as well as serotonin neuroanatomy, neuropharmacology and receptor function. A particularly exciting aspect of the meeting is that a selection of highly talented graduate students and postdocs present their work as part of a symposium or in the special "Prodigees and Pioneers" session. As there are no parallel sessions, all registrants will have maximum opportunity to attend as many presentations as possible. The program also includes social events such as Cheese and Wine Tasting and a Gala Dinner.

The theme of the 2014 meeting is "A Serotonin Safari" and clearly this is a unique opportunity to extend your conference stay and explore the beautiful Western Cape or other parts of South Africa and its neighbouring countries. I am looking forward to seeing you in South Africa and hope you have a wonderful meeting.

Sincerely,

Maarten van den Buuse
President
International Society for Serotonin Research



A hearty welcome to a Serotonin Safari, Arabella, Western Cape, South Africa, 2014

It is a great pleasure to welcome you to the 11th Congress of the International Society for Serotonin Research (ISSR) at the Arabella Country Estate in the picturesque Western Cape Province of South Africa.

The theme of the conference is “A Serotonin Safari”, and is an apt theme for the first ISSR meeting to be held on African soil. The ISSR and the Local Organizing Committee (LOC) have taken great effort in putting together what we believe to be a fantastic academic program that will appeal to all clinical and basic scientists that have a deep interest in the biology of serotonin. By bringing together the best speakers talking on the latest cutting edge research covering the physiology of serotonin in its broadest sense, ISSR 2014 will be the year’s premier event for discussing the diverse roles of this important molecule, and for showcasing the latest research. We trust that it will impart new knowledge, initiate new areas of research, and mobilize new solutions to many ailments that challenge medical science today. The congress is purposefully placed as a pre-conference satellite meeting to the World Congress of Pharmacology 2014 (WCP2014) in order to allow delegates at ISSR 2014 to also attend the WCP2014 meeting in Cape Town. While the program caters for top academics, young aspiring talent is also afforded an opportunity to present their work at a special forum on pioneers and prodigies. But it’s not just work and no play, and the LOC have also planned evening entertainment during the meeting that will complement the ambience of the venue and its surroundings, don’t miss it.

The meeting presents as an ideal opportunity to network and to make contact with some of the leading minds in the field, so that ISSR 2014 will serve to encourage and empower young graduate students to reinforce their chosen careers, yet at the same time foster local and international relations and collaborations in the area of serotonin research. We not only wish you a very successful and valuable academic meeting, but that you will also be caught up in the raw beauty of South Africa, its people, its wild-life and its natural beauty. Please make the most of this opportunity, enjoy the environs, enjoy Cape Town, enjoy the “vibe” of the meeting, and may it be a boiling pot for long-term interaction and collaboration between Africa and the world.

Sincerely yours,

Brian Harvey
Chair
Local Organizing Committee
ISSR 2014

General Information

Registration desk

The registration desk, located in the reception foyer of the hotel, will be open every day. For any assistance, do not hesitate to contact them or any member of the LOC during your stay.

Presenters

A slide room is available on the same floor as reception and will be indicated as such. Presenters are free to use this facility to review their presentations.

Presenters must have their presentations available in the designated auditoriums at least 20 minutes before the start of the session in order to load their presentation and to check if the presentation and any video clips etc. is functional. Please bring your presentation on a memory stick or CD.

Presenters must present themselves to the session chairman 10 minutes before the start of the symposium/plenary or academic session in order to receive any necessary information regarding the proceedings.

Session chairs

Session chairs must be present in the auditorium at least 10 minutes before the start of the session. This is advised so that any information from the conveners can be conveyed to the chairman before the start of the session, to allow the session chairs introduce themselves to the presenters, and also to advise the presenters on any important aspects pertaining to the proceedings of the session.

Poster display

The poster session will take place in the Kogelberg Foyer on the 10th of July at 19h00. Posters will be numbered (see program) and should be displayed accordingly using the designated poster boards provided. Please confirm the number of your poster, details of which are provided in the program, and ensure that your poster is put up well in advance of the start time of the session. Presentation and discussion of posters will begin promptly at 19h00 as stipulated on the program. Poster presenters should remove their posters at the end of the poster session on the 10th July as the boards will be removed early the next day. For assistance with hanging the posters, please consult the reception desk.

Poster Awards

Two Poster Awards will be presented at the gala dinner, viz. a Student Award and a Senior Investigator Award. Participation in the competition is voluntary, please indicate your interest in participating at the registration desk on the day of your arrival, or as soon as possible thereafter.

Internet access

WiFi internet access is provided and included in room rates. Please contact the reception desk for any assistance.

Daily Shuttle

The shuttles between the airport and congress venue is complimentary. Shuttles are only included for arrival on 8 and 9 July and departure on 13 July to either the airport or the Cape Town central business district. Shuttle times are available at www.issr2014.org. All other transport must be booked at the travel desk of the hotel.

11th Congress of the International Society for
SEROTONIN RESEARCH



PROGRAM

9 – 12 July 2014

WEDNESDAY

9 JULY 2014

8:00 – 17:00	REGISTRATION
	FREE TIME
18:00	Irvine Page Plenary Lecture It's All In The (Serotonin Receptor) Family HERBERT Y. MELTZER (Northwestern University Feinberg School of Medicine, USA) <i>Sponsored by: Dainippon Sumitomo Pharma Co., Ltd.</i>
19:30	WELCOME DINNER WITH MARIMBA BAND

THURSDAY

10 JULY 2014

8:00 – 9:15	<p>Serotonin, schizophrenia and depression</p> <p><i>Chair: Maarten van den Buuse</i> <i>Co Chair: Herb Meltzer</i></p> <p>MAARTEN VAN DEN BUUSE (University of Melbourne, Australia) Role of 5-HT_{1A} receptors in psychosis and sensory gating</p> <p>KEVIN FONE (University of Nottingham, United Kingdom) Influence of social isolation of rats from weaning on serotonergic function, social withdrawal and memory as a potential model of schizophrenia</p> <p>TREVOR SHARP (Oxford, UK) 5-HT₂ receptor effects of a repurposed, lithium-mimetic with therapeutic potential for bipolar depression and related disorders</p>
SHORT INTERMISSION	
9:30 – 10:45	<p>Serotonylation: Regulation in diverse systems; from tetrahymena to mammalian brain</p> <p><i>Chair: Nancy Muma</i></p> <p>PABLO MOYA (Universidad de Valparaiso, Chile) Common and Rare Alleles of the Serotonin Transporter Gene, SLC6A4, Associated with Tourette's Disorder</p> <p>PATRICK SCHLOSS (Central Institute of Mental Health, Germany) Serotonin, dopamine and noradrenaline - more than neurotransmitters: transglutaminase-mediated monoaminylation of extracellular matrix proteins</p> <p>NANCY MUMA (University of Kansas, USA) Serotonylation of Small G Proteins is Regulated by 5-HT_{2A} Receptors to Modify Dendritic Spines</p>
INTERMISSION AND COFFEE	

11:15 – 12:30	<p>Serotonin: A modulator of innate immune cells</p> <p><i>Chair: Luc Maroteaux</i></p> <p>ANGEL L CORBI (Centro de Investigaciones Biológicas, Spain) Serotonin modulates the functional polarization and the transcriptional signature of human macrophages</p> <p>JOSEF PRILLER Charite-Universitaetsmedizin Berlin Serotonergic modulation of microglia function</p> <p>ANN ROUMIER (Université Pierre et Marie Curie, France) Role of serotonin-microglia interaction in sickness behavior</p>
LUNCH	
13:30 – 15:00	<p>Cell-type dissection of the serotonergic system and of its developmental targets</p> <p><i>Chair: Alexandre Dayer</i></p> <p>ALEXANDRE DAYER (Geneva University Medical School, Switzerland) Role of the 5-HT6R on pyramidal neuron migration</p> <p>PHILIPPE MARIN (Universités Montpellier, France) A serotonin receptor/Cdk5 complex controls neuronal differentiation</p> <p>PATRICIA GASPAR (Université Pierre et Marie Curie, France) Specificity in the projection pattern of the different raphe subnuclei. Looking for developmental cues</p> <p>NIDA Travel Awardee: KATE NAUTIYAL (Columbia University, USA) Serotonin 1B receptors affect neural circuits underlying aggression during development, but modulate impulsivity circuits during adulthood</p>
INTERMISSION AND COFFEE	

15:20 – 16:50	<p>Serotonin, cortical microcircuitry and cognition</p> <p><i>Sponsored by: Lundbeck</i></p> <p><i>Chair: Trevor Sharp</i> <i>Co-chair: Connie Sánchez Morillo</i></p> <p>GUADALUPE MENGOD (Instituto de Investigaciones Biomédicas de Barcelona, Spain) Localization of 5-HT receptor subtypes within the cortical microcircuitry</p> <p>VICTORIA PUIG (Massachusetts Institute of Technology, USA) Serotonin influences on prefrontal cortex function: neurons, networks, and circuits</p> <p>JUDITH HOMBERG (Radboud University Medical Centre, The Netherlands) Cognitive alterations in serotonin transporter knockout rats: for better and for worse</p> <p>NIDA Travel Awardee: COLLIN CHALLIS (University of Pennsylvania, USA) Optogenetic modulation of the prefrontocortical-dorsal raphe microcircuit bidirectionally biases socioaffective decisions after social defeat</p>
FREE TIME	
17:15	<p>Pioneers and Prodigies - NIDA Travel Awardees</p> <p>MATT BRODSKY (University of Washington, USA) Regulation of neuronal primary cilia morphology in striatal neurons by 5-HT6 receptors</p> <p>ORNELLA MANFRA (University of Oslo, Norway) Antagonist-mediated down-regulation of 5-HT7 serotonin receptors is regulated by C-terminal domains and interaction with GASPI</p> <p>AMANDA MAPLE (University of Arizona, USA) Htr2a expression responds rapidly to environmental stimuli in an Egr3-dependent manner suggesting a functional link between two schizophrenia susceptibility genes</p> <p>FIONA ZEEB (Centre for Addiction and Mental Health, Toronto, Canada) Long-term depletion of serotonin increases risky decision-making on the rat gambling task</p>
19:00	POSTER SESSION AND LIGHT FINGER BUFFET

FRIDAY

11 JULY 2014

8:00 – 9:15	<p>Novel insights into serotonin receptor structure and function</p> <p><i>Chair: Finn Olav Levy</i> <i>Co-organizer: Sylvie Claeysen</i></p> <p>JOËL BOCKAERT (Universités Montpellier, France) 5-HT_{2A} receptors: biased phosphoproteomes following activation by hallucinogens and non-hallucinogenic agonists</p> <p>KJETIL W ANDRESSEN (University of Oslo and Oslo University Hospital, Norway) FRET- and FRAP-based evidence for ligand-independent preassociation of 5-HT₇ receptors and G_s</p> <p>DANIEL WACKER (University of North Carolina, USA) Structural Features for Functional Selectivity at Serotonin Receptors</p>
SHORT INTERMISSION	
9:30 – 10:45	<p>The serotonin receptors: From function to structure and back</p> <p><i>Chair: Danny Hoyer</i> <i>Co-chair: Nick Barnes</i></p> <p>DANNY HOYER (The University of Melbourne, Australia) 5HT receptors from structure to function: a long journey</p> <p>JOHN McCORVY (Purdue University, USA) Molecular Recognition of Serotonin Receptors</p> <p>SARAH LUMMIS (University of Cambridge, UK) 5-HT₃ receptors</p>
INTERMISSION AND COFFEE	

11:15 – 12:30	<p>New contributions of serotonin receptors and their molecular networks in synaptogenesis, degeneration and addiction</p> <p><i>Chair: Valérie Compan</i></p> <p>UMBERTO SPAMPINATO (Université de Bordeaux, France) Serotonin_{2C} receptors modulate dopamine transmission in the nucleus accumbens independently of dopamine release: studies with cocaine</p> <p>VERONIQUE SGAMBATO-FAURE (Université Lyon, France) Does modulation of the serotonergic system by ‘Ecstasy’ impact the expression of symptoms in the monkey model of Parkinson’s disease?</p> <p>VALÉRIE COMPAN (Universités Montpellier, France) Selecting one’s addiction to cocaine, anorexia or food depends on the activity state of serotonin 4 receptors</p>
LUNCH	
13:30 – 14:45	<p>Serotonin neurons come of age with 5HT_{1A} receptor function</p> <p><i>Chair: Evan Deneris</i></p> <p>EVAN DENERIS (Case Western Reserve University, USA) An early postnatal critical period for transcriptional maintenance of <i>Htr1a</i> autoreceptor expression</p> <p>RODRIGO ANDRADE (Wayne State University School of Medicine, USA) Using optogenetics to understand Dorsal Raphe serotonergic synaptic transmission</p> <p>ZOE DONALDSON (Columbia University, USA) Genetic mechanisms underlying variation in 5-HT_{1A} receptors in the human</p>
INTERMISSION AND COFFEE	

	<p>Serotonin: A new hope in Alzheimer's Disease</p> <p><i>Chair: Sylvie Claeysen</i> <i>Co-chair: Joël Bockaert</i></p> <p>JOHN CIRRITO (Washington University, USA) Serotonin signaling lowers amyloid-beta levels and plaques in transgenic mice and humans</p> <p>SYLVIE CLAEYSEN (Universités de Montpellier, France) 5-HT₄ receptor agonists: novel promising agents for AD prevention</p> <p>NIDA Travel Awardee: NATHAN MITCHELL (University of Texas Health Science Center San Antonio, USA) Mechanisms contributing to lack of antidepressant efficacy in juveniles and adolescents</p> <p>NIDA Travel Awardee: DERYA SARGIN (University of Toronto, Canada) Mice with compromised 5-HTT function lack phosphotyrosine-mediated inhibitory control over prefrontal 5-HT responses</p>
15:20 – 16:50	
	FREE TIME
17:15	Cheese and wine tasting event, with music
19:30	Free evening – own dinner arrangements to be made

SATURDAY

12 JULY 2014

8:00 – 9:15	<p>Drug addiction and impulsivity: Is serotonin involved?</p> <p><i>Chair: Kathryn Cunningham</i> <i>Co-Chair: John Neumaier</i></p> <p>KATHRYN CUNNINGHAM (University of Texas Medical Branch, USA) Cortical 5-HT_{2A} R:5-HT_{2C} R involvement in convergent impulsivity and cocaine cue reactivity</p> <p>JOHN NEUMAIER (University of Washington, USA) 5-HT_{1B} and DREADD regulation of relapse to cocaine seeking</p> <p>VALERIE VOON (Cambridge University, UK) Serotonin and impulsivity</p>
SHORT INTERMISSION	
9:30 – 10:45	<p>The 5HT_{2C} receptor at the interface of obesity and addiction</p> <p><i>Chair: Harriet Schellekens</i> <i>Co-chair: John F Cryan</i></p> <p>GIUSEPPE D'AGOSTINO (University of Cambridge, UK) Characterization of appetite-regulating 5-HT_{2C} receptors</p> <p>GUY HIGGINS (University of Toronto, Canada) Novel therapeutic opportunities for anti-obesity 5-HT_{2C} receptor agonists in psychostimulant abuse and nicotine dependence</p> <p>HARRIET SCHELLEKENS (University College Cork, Ireland) A Role for 5-HT_{2C} receptor heterodimerization in food intake and reward</p>
INTERMISSION AND COFFEE	

11:15 – 12:30	<p>The role of serotonin systems in the adverse neuropsychiatric side-effects and recreational use of HIV-1 antiretroviral drugs</p> <p><i>Chair: John Schetz</i> <i>Co-Chair: Charles P France</i></p> <p>JOHN SCHETZ (University of North Texas Health Science Center, USA) Antiretrovirals as emerging drugs of abuse: serotonergic neuropharmacology of efavirenz and other antiretroviral drugs</p> <p>JAVIER GONZALEZ MAESO (Icahn School of Medicine at Mount Sinai, USA) Serotonin 5-HT_{2A} receptor involvement in the hallucinogen-like actions of efavirenz in mice</p> <p>CHARLES P FRANCE (University of Texas Health Science Center San Antonio, USA) Preclinical assessment of the abuse potential of antiretroviral drugs: the role of serotonin mechanisms</p>
LUNCH	
13:30 – 15:00	<p>From optogenetics to the microbiome: Emerging strategies to understand the role of serotonin in anxiety and addiction</p> <p><i>Chair: Andrew Holmes</i> <i>Co-organizer: Lyn Daws</i></p> <p>ANDREW HOLMES (NIAAA, USA) 5-HT moderates corticostriatal control of cognition</p> <p>NICOLAS SINGEWALD (University of Innsbruck, Austria) Anxiety-related regulation of non-coding RNAs: a role for 5-HT receptors</p> <p>JOHN CRYAN (University College Cork, Ireland) The gut microbiome: A key regulator of brain serotonin and behavior</p> <p>NIDA Travel Awardee: CATHERINE MARCINKIEWCZ (University of North Carolina, USA) Serotonin inputs to the bed nucleus of stria terminalis shape network function and behaviors relating to fear memory and anxiety</p>
INTERMISSION AND COFFEE	

15:20 – 16:50	<p>Fast measurements of serotonin in brain: Implications for psychiatric disease and drug abuse</p> <p><i>Chair: Lyn Daws</i> <i>Co-chair: Anne Andrews</i></p> <p>ANNE ANDREWS (University of California, USA) Serotonin and dopamine release and reuptake by fast microdialysis</p> <p>KATIE ANNE JENNINGS (Oxford University, UK) Serotonin, fear and the amygdala: the challenge of studying serotonin in a region receiving mixed monoamine innervation.</p> <p>LYN DAWS (University of Texas Health Science Center San Antonio, USA) How much extracellular serotonin matters? Deconvoluting serotonin clearance kinetics in vivo</p> <p>NIDA Travel Awardee: VERA NIEDERKOFER (Harvard Medical School, USA) Aggression modulation through specialized dopamine receptor-expressing serotonergic neurons</p>
	FREE TIME
18:00	<p>Maurice Rapport Plenary Lecture</p> <p>Serotonin and Behaviour – What is the link?</p> <p>CHARLES MARSDEN (University of Nottingham, UK) <i>Sponsored by : Dainippon Sumitomo Pharma Co., Ltd.</i></p>
19:30	GALA DINNER AND AWARD PRESENTATIONS

11th Congress of the International Society for
SEROTONIN RESEARCH



POSTERS

9 – 12 July 2014

THURSDAY

10 JULY 2014, 19:00

Alenina N	P 01 Brain serotonin deficiency: physiological and behavioral analysis of a Tph2-knockout rat
Andrews A -Yang	P 02 Serotonin and Dopamine release and reuptake by fast microdialysis
Barnes N	P 03 Negative Allosteric Modulation of the Human 5-HT _{3A} Receptor; Strategy for the Treatment of Irritable Bowel Syndrome
Beck SG	P 04 Development of the normal physiology of serotonin neurons and the 5-HT _{1A} receptor-effector complex
Benecke R	P 05 The Genetic and Epigenetic Aetiology of Anxiety Proneness
Bert B	P 06 Impact of 5-HT _{2A} and 5-HT _{1A} receptors on the murine serotonin syndrome
Neumann J	P 07 Desensitization of ventricular 5-HT ₄ receptors
Eui-Bae	P 08 Comparing the expressional patterns of placental magnesium/phosphorus transporting channels between healthy and preeclampsia pregnancies
Fink H	P 09 Impact of 5-HT _{2A} and 5-HT _{1A} receptors on the murine serotonin syndrome
Fraser R	P 10 Characterization of decynium-22 analogs in the inhibition of plasma membrane monoamine and organic cation transporter functions: Novel targets for the development of new antidepressant drugs
Hemmings S	P 11 Serotonin transporter gene variants are associated with increased risk of suicide in an HIV-positive Ugandan population
Jinnah H	P 12 RNA Editing-Mediated Regulation of Serotonin 2C Receptor Expression

King M	P 13 Contribution of serotonergic and dopaminergic mechanisms to the physiological and behavioural effects of mephedrone following binge dosing in the rat
Malan-Müller S	P 14 The role of serotonin in DCS-induced fear extinction in an animal model of PTSD
Mtintsilana A	P 15 Chronic constant light alters dopamine and serotonin activity in the rat brain
Neumaier J	P 16 5-HT _{1B} receptors activate Erk1/2 in a neuronal cell line
Teixeira C	P 17 Optogenetic dissection of the serotonergic circuits controlling emotional behaviors
Ulsund A	P 18 FRET- and FRAP-based characterization of 5-HT ₇ receptor-G protein preassociation and low versus high potency G _s activation
van den Heuvel L	P 19 BDNF Val66Met polymorphism and plasma levels in acutely traumatised road traffic accident survivors
Whitney MS	P 20 A highly efficient approach for specific targeting of postnatal brain 5-HT synthesis
Wolmarans MM	P 21 Social isolation rearing induces elevated tryptophan, anthranilic acid and 3-OH anthranilic acid and altered cortico-striatal serotonin metabolism –relevance for schizophrenia
Yoshioka MD	P 22 Fear memory is retrieved through the activation of serotonin 5-HT ₇ receptor in the ventral hippocampus

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**NIDA TRAVEL
AWARDEES**

9 – 12 July 2014

Moya P	P 23 Common and Rare Alleles of the Serotonin Transporter Gene, SLC6A4, Associated with Tourette's Disorder
Nautiyal K	P 24 Serotonin 1B receptors affect neural circuits underlying aggression during development, but modulate impulsivity circuits during adulthood.
Challis C	P 25 Optogenetic modulation of the prefrontocortical-dorsal raphe microcircuit bidirectionally biases socioaffective decisions after social defeat
Brodsky M	P 26 Regulation of Neuronal Primary Cilia Morphology in Striatal Neurons by 5-HT ₆ Receptors
Sargin D	P 27 Mice with compromised 5-HTT function lack phosphotyrosine-mediated inhibitory control over prefrontal 5-HT responses
Manfra O	P 28 Antagonist-mediated down-regulation of 5-HT ₇ serotonin receptors is regulated by C-terminal domains and interaction with GASP1
Maple AM	P 29 HTR2A expression responds rapidly to environmental stimuli in an Egr3-dependent manner suggesting a functional link between two schizophrenia susceptibility
Zeeb FD	P 30 Permanent depletion of serotonin increases risky decision-making and impairs acquisition of the rat gambling task
Donaldson D	P 31 Genetic mechanisms underlying variation in 5-HT1A receptors in the human
Mitchell N	P 32 Mechanisms contributing to lack of antidepressant efficacy in juveniles and adolescents
Marcinkiewicz C	P 33 Serotonin inputs to the bed nucleus of stria terminalis shape network function and behaviors relating to fear memory and anxiety
Niederkofler V	P 34 Identifying subsets of serotonergic neurons that selectively modulate aggressive and social behaviors in the mouse

11th Congress of the International Society for
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BIOSKETCHES

9 – 12 July 2014



Emeritus Professor Charles A Marsden

Charles Marsden is Emeritus Professor of Neuropharmacology at the University of Nottingham UK and was previously Co-Director of The Institute of Neuroscience at Nottingham. He graduated in zoology from the University of London in 1966 and then studied for an MSc in Biochemical Pharmacology and then a PhD in invertebrate neurotransmission at the University of Southampton from 1966-1969. Charles Marsden worked at the University of Bergen, Norway (1969-72) and then at the Institute of Neurology, with Gerald Curzon, in London (1972-77) before moving to the University of Nottingham in 1978. In between London and Nottingham he spent an exciting and fruitful research period at the State University of Kansas in Lawrence working with Ralph Adams.

Charles Marsden was President of the British Association of Psychopharmacology (BAP) from 2000-2002 and of the International Serotonin Club from 2006-2008. In 2001 Charles Marsden was awarded the JR Vane medal by the British Pharmacological Society for an "outstanding contribution to neuropharmacology" and in 2013 was given a Lifetime Achievement award by the BAP. Princess Maha Chakri Sirindhorn of Thailand presented him with a Global leadership award in 2008 for his work developing medical education in Thailand. Charles Marsden has supervised over 70 successful PhD students.

His research has centred on neurotransmitter control of behaviour with particular emphasis on in vivo assessment of neurotransmitter function during behaviour. This work over the past 30 plus years has made a significant contribution to the development of new technologies such as HPLC with electrochemical detection, in vivo voltammetry in vivo microdialysis and small animal functional magnetic resonance (fMRI). The work has contributed to our understanding of the neural mechanisms involved in stress, anxiety and depression with special attention to the role of serotonin.

Another major area of research has been the development of environmental animal models of psychiatric disorders including the isolation reared rat as a neurodevelopmental model, which has attracted wide international attention as a model of schizophrenia at both an academic and industrial level. Charles Marsden has also worked on models of depression and ADHD and the development of novel drug treatments for these disorders. Drugs of abuse have also been an important area of research with significant studies on ecstasy and cocaine particularly in regard to the mechanisms involved in potential neurotoxicity of such drugs.



Herbert Y. Meltzer, MD

Herb Meltzer, MD, is Professor of Psychiatry and Behavioral Sciences and Professor of Physiology at the Feinberg School of Medicine Chicago, IL and visiting Professor at the Soochow University School of Medicine in Suzhou, China. He received his BA with Distinction from Cornell University, an MA in Chemistry from Harvard, and his MD from Yale University and has been President of the American College of Neuropsychopharmacology (ACNP) and the Collegium International Neuro-psychopharmacologicum (CINP). He served as editor of *Psychopharmacology: The Third Generation of Progress* and co-editor of the ACNP journal, *Neuropsychopharmacology*, and is a member of the editorial

board of numerous scientific journals.

Dr. Meltzer is the recipient of the Efron and Paul Hoch Awards of the ACNP, the Noyes Prize of the Commonwealth of Pennsylvania, the Edward J. Sachar Award from Columbia University, the Lieber Prize for Schizophrenia Research from NARSAD, the Stanley Dean Award for Research in Schizophrenia of the American College of Psychiatry, the Gold Medal Award of the Society of Biological Psychiatry, the Earl Sutherland Prize for Achievement in Research of Vanderbilt University (2004), the Research Prize of the American Psychiatric Association (2005), the Grant Liddle Award for Clinical Research from Vanderbilt University (2008), and the Lifetime Achievement Award of the Winter Conference on Psychosis Research (2011). He has chaired the Young Investigator Grant Review Committee for the Brain and Behavior Research Foundation (formerly NARSAD) since its inception and the International Psychopharmacology Algorithm Project, a web-based algorithm to guide the treatment of schizophrenia (www.IPAP.org).

Dr. Meltzer's research interests include the discovery, development and optimal utilization of pharmacologic treatments for schizophrenia, the cause and treatment of cognitive impairment in schizophrenia (CIS), the elucidation of the mechanism of action of antipsychotic drugs and the discovery and development of novel treatments for schizophrenia and CIS, the development of genetic biomarkers for mental illness and personalized medicine, and the causes and prevention of suicide. His research has emphasized the importance of numerous serotonin receptors in the action of antipsychotic drugs and most recently, as targets for improving cognition. This research has been at basic, clinical and translational levels.

