

# Pre-final Scientific Program

## RegPep23

*The 23<sup>rd</sup> International  
Symposium on  
Regulatory Peptides*

*Advances in basic research on regulatory peptide physiology leading to  
accelerated translation to peptide-based therapeutics*

*A world congress with hybrid on-site and virtual presentations and discussions.*

*Final schedule to be published on 31 July 2021 (update June 12th, 2021)*



International  
Neuroendocrine  
Federation



Princess Mundo Imperial, Riviera Diamante, Acapulco, México

August 15-20, 2021

Sponsors

Journal of Neuroendocrinology



RegPep22 group photo archive: Sep 25th, 2018

# Keynote Speakers



**Dick Swaab** (*opening lecturer, introduced by Ruud Buijs, Chair of 23<sup>rd</sup>RegPep*)

Netherlands Institute for Neuroscience, The Netherlands, plenary speaker)

*Sexual differentiation of the human brain*

**Carmen Sandi** (*introduced by Limei Zhang, IRPS Co-President*)

Brain and Mind Institute, EPFL, Switzerland

*Neural circuits linking stress, anxiety, and motivation*

**Valery Grinevich** (*Introduced by Mary Lee*)

University of Heidelberg, Germany

*How does a single neuropeptide elicit pleiotropic behavioral and metabolic effects?*

**Robert Millar** (*introduced by Victor Navarro*)

University of Pretoria, S. Africa

*Rescue of function of mutant human GPCRs in the HPG axis*

**Geert De Vries** (*introduced by Árpád Dobolyi*)

Georgia State University, USA

*Sex differences in the brain seen from whole-body perspective*

**Diego Bohorquez** (Duke University, USA)

**Victor Mutt lectureship awardee**

*Introduced by: Lee E Eiden (IRPS Co-President)*

*A gut sense for calories*

# Keynote Symposium:

Chair: Gareth Leng

# *Current Topics of Regulatory Peptides in Systems Biology*



**Plenary Symposium:  
Current Topics in Regulatory Peptides in Systems Biology**  
Chaired by: Gareth Leng

- **Patrick Sexton** (Monash University, Australia): *Mechanisms of signaling by G protein-coupled receptors*
- **Luis de Lecea** (Stanford University, USA): *Optogenetic control of neuromodulatory circuits in brain states*
- **Marisela Morales** (NIDA/NIH, USA): *Fast and slow co-transmission in modulatory system*
- **Árpád Dobolyi** (Semmelweis University, Budapest, Hungary): *Tuberoinfundibular peptide 39: an emerging new social neuropeptide*
- **Xioke Chen** (Stanford University, USA): *Thalamic control of opioid-associated memory*
- **Victor Navarro** (Harvard Medical School, USA): *Upstream neuropeptides in HPG axis pulse generation*
- **Javier Stern** (GSU, USA): *Real-time two-photon imaging of the rat hypothalamus in vivo*

# 16 Scientific Themes of RegPep23\*

## 1. Gut-brain interactions

**Diego Bohorquez** (Duke University, USA): A gut sense for calories

**Wei Ying** (UCSD, USA): DRIg+ macrophages prevent gut microbial DNA-containing extracellular vesicle effects

**Duan Chen** (Norwegian University of Science and Technology, Norway): Neural signaling modulates metabolism of gastric cancer

**John Furness** (Florey Institute, Australia): Dopamine and ghrelin receptor co-expression and interaction in defecation centers within the spinal cord

**Posters: to be announced**

*Lead discussant: Sushil Mahata*

## 2. Co-transmission, classical and peptidergic

**Marisela Morales** (NIDA, NIH, USA): Fast and slow co-transmission in brain modulatory systems

**Melissa Chee** (Carlton University, Canada): MCHR1-mediated control of locomotion

**Lee E. Eiden** (NIMH, NIH, USA): PACAP-glutamate co-transmission in brain circuits

**Andrew Gundlach** (Florey Institute, Australia): Relaxin-3/GABA neurons in the nucleus incertus: brainstem modification of behavior

**Posters: to be announced**

*Lead discussant: Limei Zhang*

## 3. Peptide-ligand GPCR signaling

**Patrick Sexton** (Monash University, Australia): Mechanisms of signaling in G protein-coupled receptors

**Corinne Bousquet** (INSERM Toulouse, France): Somatostatin signaling in pancreatic cancer

**Hélène Castel** (University of Rouen, France): Biased signaling at the urotensin II receptor

**Wenqin Xu** (NIMH, NIH, USA): RapGEF2-dependent signaling by family B peptide receptors

**Robert Millar** (University of Pretoria, S. Africa): Rescue of function of mutant human GPCRs in the HPG axis

**Posters: to be announced**

*Lead discussant: Andrew Gundlach*

## 4. Reproductive hormones and behaviors

**Victor Navarro** (Harvard Medical School, USA): Upstream neuropeptides in HPG axis pulse generation

**Rosie Brown** (Otago University, New Zealand): PRL in MPOA and nursing behavior

**Erik Hrabovszky** (KOKI, Hungary) The kisspeptin system in reproduction and emotions

**Colin Brown** (Otago University, New Zealand): Peptides modulating physiological responses in pregnancy

**Posters: to be announced**

*Lead discussant: Ruud Buijs*

## 5. Neuropeptide regulation of rhythmic behavior

**Peng Li** (University of Michigan, USA): A peptidergic control circuit for sighing

**Ruud Buijs** (UNAM, Mexico): Role of vasopressin in daily setting of the outputs of the SCN clock

**Carolina Escobar** (UNAM, Mexico): Circadian rhythms and promotion of metabolic health

**Eva Soto** (UNAM, Mexico): Liver-brain axis underlies circadian anti-inflammatory reflexes

**Posters: to be announced**

*Lead discussant: Mike Ludwig*

## 6. Vasopressin and oxytocin: shifting the neurosecretory peptide paradigm in brain and periphery

**Valery Grinevich** (Central Institute for Mental Health, Mannheim, Germany): How does a single neuropeptide elicit pleiotropic behavioral and metabolic effects?

**Luis Paiva** (Universidad Austral de Chile, Chile): Insulin signaling on oxytocin neurons.

**Mike Ludwig** (University of Edinburgh, UK): Vasopressin in olfactory and visual processing)

**Paul Matthew** (SUNY at Buffalo, USA): Social development and vasopressin

**Andrés Quintanar-Stephano** (Universidad de Aguascalientes, Mexico): The role of vasopressin as an immunoregulatory hormone)

**Yoichi Ueta** (University of Occupational and Environmental Health, Japan): Transgenic approaches to reveal physiological role of central vasopressin system

**Posters: to be announced**

*Lead discussant: Colin Brown*

## 7. Peptidergic signaling in brain circuits specifying behavior

**Luis De Lecea** (Stanford University, USA): Optogenetic control of neuromodulatory circuits in brain states

**Nicholas Betley** (University of Pennsylvania, USA): Peptidergic signaling in a hypothalamus to hindbrain circuit prioritizes hunger over pain

**Joanna Dabrowska** (Rosalind Franklin University, USA): Oxytocin, fear memory, and the bed nucleus of the stria terminalis

**William Giardino** (Stanford University, USA): Extended amygdala neuropeptide circuits driving arousal, affect, and addiction

**Limei Zhang** (UNAM, Mexico): New vista of Calyx of Held-like synapse in telencephalon from rhombencephalic glutamate-peptidergic long range *HiFi pathway* for threat coping

**Posters: to be announced**

*Lead discussant: James Blevins*

## 8. Oxytocin-physiology and emerging neurotherapeutics

**James Blevins** (University of Pennsylvania, USA) Oxytocin treatment for obesity in rodents and primates

**Margarita Curras-Collazo** (UC Riverside, USA) Oxytocin dysregulation in diabetogenic conditions induced by soybean oil diets

**Danilo Lustrino** (Federal University of Sergipe, Brazil) Anabolic and anti-catabolic effects of oxytocin on skeletal muscle protein metabolism

**Mary Lee** (NIDA, NIH, USA) Evidence of central signaling after systemic administration of oxytocin

**Pawel Olszewski** (University of Waikato, New Zealand) Oxytocin as a pharmacological tool to regulate meal size

**Posters: to be announced**

*Lead discussant: Joanna Dabrowska*

## 9. Pleiotropic actions of chromogranin-derived peptides

**Geert Van den Boogaart** (Groningen Biomolecular Sciences and Biotechnology Institute (GBB), The Netherlands): Catestatin controls gut immune homeostasis and microbial composition)

**Sushil Mahata** (UCSD, USA): Regulation of immunometabolism by catestatin)

**Posters: to be announced**

*Lead discussant: Paweł Olszewski*

## 10. Angiotensin II in the renin-angiotensin-aldosterone system and in the brain

**Thomas Cunningham** (UNT Health Science Center, USA): Renin-angiotensin-aldosterone system in cardiovascular regulation and salt balance)

**Paul J. Marvar** (George Washington University, Washington D.C., USA): Angiotensin II in emotional flexibility and fear-based disorders

**Enrique C. Guerra** (UNAM, Mexico): ACE2 and its down-stream peptides of the renin-angiotensin-aldosterone system in SARS-CoV-2 infection and COVID-19

**Posters: to be announced**

*Lead discussant: Ki Goosens*

## 11. Sex, sex hormones, neuropeptides and reproductive behavior

**Dick F. Swaab** (Netherlands Institute for Neuroscience, The Netherlands): Sexual differentiation of the human brain

**Alexa Veenema** (Sex differences in the juvenile and adult vasopressin system in the regulation of social behavior)

**Geert De Vries** (Georgia State University, USA) Sex differences in the brain seen from whole-body perspective

**Vito Hernandez** (UNAM, Mexico) Aging and GABAergic transmission in limbic system: testosterone and neuropeptides

**André Mecawi** (Universidade Federal de São Paulo, Brazil): Estrogen control of neurohypophyseal gene expression and hormone secretion

**Posters: to be announced**

*Lead discussant: Árpád Dobolyi*

## 12. Neuropeptides and stress

**Inga Neumann** (Univ. Regensburg, Germany): Interactions of oxytocin and the HPA axis

**Ki Goosens** (Icahn School of Medicine at Mt. Sinai, New York, USA) Ghrelin signaling in the brain and its effects in central stress circuits

**Peter Duncan** (University of Edinburgh, UK) Corticotroph plasticity in stress: at the brain-endocrine interface

**Sunny Z. Jiang** (NIMH, NIH, USA) Behavioral significance of conditional ablation of PACAPergic projections in the brain

**Gil Levkowitz** (Weizmann Institute, Israel): Peptidergic modulation of stress response in zebrafish

**Valentina Sabino** (Boston University School of Medicine, USA): Neuropeptides and anxiety: Actions of CRH and PACAP in central amygdala

**Posters: to be announced**

*Lead discussant: Lee Eiden*

## 13. Pain-related peptide signaling-from opioids to TIP-39, from respiration to reward

**Arpad Dobolyi** (Semmelweis University, Budapest, Hungary) TIP-39: a peptide with multiple neurotransmitter actions related to aversive stimulus processing

**Sung Han** (Salk Institute, USA) Brainstem opioidergic pathways that mediate pain-breathing interaction

**Xiaoke Chen** (Stanford University, USA): Thalamic control of opioid-associated memory

**Posters: to be announced**

*Lead discussant: Tom Cunningham*

## 14. Neuropeptides in circuits for appetite, anxiety, and motivation

**Carmen Sandi** (Brain and Mind Institute, EPFL, Switzerland) Neural circuits linking stress, anxiety and motivation

**Alistair Ferguson** (Queen's University, Canada) CVOs as sensor and integrators for ingestive behaviors

**Scott Kanoski** (University of Southern California, USA) Melanin-concentrating hormone and appetitive processes

**Emily Noble** (University of Georgia, USA) Central oxytocin in social and reward-based feeding

**Posters: to be announced**

*Lead discussant: Teresa Morales*

## 15. Neuropeptides and brain integrative functions

**Francesco Ferraguti** (Medical University of Innsbruck, Austria): Cortical VIP interneurons and salience broadcasting

**Jing Lu** (Zhejiang University, China): Hypocretin/orexin system in schizophrenia

**Xiao-dong Wang** (Zhejiang University, China) Tactile modulation of memory and anxiety requires dentate granule cells along the dorsoventral axis

**Posters: to be announced**

*Lead discussant: Dora Zelena*

## 16. Neuro-glial interaction and neuroinflammation

**Chun-Xia Yi** (Netherlands Institute for Neuroscience, The Netherlands): Hypothalamic neuron-glial interaction in metabolic disorders

**Dora Zelena** (Hungarian Academy of Sciences, Hungary): Tissue inflammation and insulin resistance

**Teresa Morales** (UNAM, Mexico): Protective effects of prolactin in neurotoxin-hippocampal injury

**Rogelio Hernandez-Pando** (INNSZ, Mexico): Neuroimmune activation during experimental pulmonary tuberculosis

**Mario Zetter** (UNAM, Mexico): Early life stress and neuropeptides-microglial role in neurodevelopment

**Posters: to be announced**

*Lead discussant: Inga Neumann*

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- The **keynote/keynote symposium talks**, and **in-person speakers' presentations** will be scheduled in *real-time* within the RegPep23, August 15-19, 2021. Details TBA on July 31st.
- **Virtual presentations of speakers who are unable to attend the meeting in-person** will be available on the conference website, passcode guarded, **starting on August 9th, 2021**, for RegPep23 delegates' viewing.
- **Each scientific theme** will be represented in the RegPep23 world congress, with a **hybrid 30min-long session for discussion and Q&A**. **Speakers and poster presenters, in-person or via Zoom**, are required to be the panelists, as well as the appointed discussants.

# *Special events*

## **Theme X: Scientific publishing: obligations and opportunities**

*An exploration of how our scientific community can support the journals that truly fulfill the mission of advancing science communication for all scientists*

*Lead discussants: Julian Mercer, Bob Millar, Dave Grattan, Gareth Leng: current and past editors-in-chief, Journal of Neuroendocrinology, the IRPS official journal.*

*Willis K (Rick) Samson, Editor-in-Chief, American Journal of Physiology -Regulatory, Integrative, and Comparative Physiology, and incoming Distinguished Member of IRPS*

## **Theme Y: Neuropeptides and receptors in epilepsy & neural excitability**

Chaired by: George Fink and Tomas Hökfelt

## **Theme Z: Challenges for the field in the next 10 years**

Chaired by: Lee Eiden and Greti Aguilera

## **IRPS General Assembly Distinguished Members recognition**

Greti Aguilera  
Jose Antunes-  
Rodrigues.  
Sue Carter  
Luis de Lecea  
Richard DiMarchi  
George Fink

John Furness  
Hal Gainer  
Tomas Hökfelt  
Jens Juul Holst  
Bob Jensen  
Gareth Leng  
Maurice Manning

Bob Millar  
John Morris  
Quentin Pittman  
Jens Rehfeld  
Rick Samson  
Dick Swaab



22nd International Symposium  
on Regulatory Peptides  
RegPep 2018  
Acapulco Diamante, México

Time	Sunday 15th August 2021	Monday 16 <sup>th</sup> August 2021	Tuesday 17 <sup>th</sup> August 2021	Wednesday 18th August 2021	Thursday 19th August 2021
6:00-7:00	Optional: Organized deep sea fishing trip (6-10am)	Morning coffee: Starbucks	Morning coffee: Starbucks	Morning coffee: Starbucks	Morning coffee: Starbucks
07:00 - 08:00		Keynote lectures & special events (KS-I) Real-time broadcasting to delegates	Keynote lectures & special events (KS-II) Real-time broadcasting to delegates	Keynote lectures & special events (KS-III) Real-time broadcasting to delegates	Keynote lectures & special events (KS-IV) Real-time broadcasting to delegates
08:00 - 09:00		Buffet breakfast	Buffet breakfast	Buffet breakfast	Buffet breakfast
09:00 - 10:00					
10:00 - 11:00		Free time	Scientific session (SS-I) 6-8 on-site speakers: Real-time broadcasting to delegates	Scientific session (SS-II) 6-8 on-site speakers: Real-time broadcasting to delegates	Scientific session (SS-IV) 6 on-site speakers: Real-time broadcasting to delegates
11:00 - 12:00		General Check-in and registration Business meeting: IRPS council extended meeting	Box lunch + posters viewing	Box lunch + posters viewing	Vitor Mutt prize lecture Closing ceremony, RegPep24 announced
12:00 - 13:00					
13:00 - 14:00		Box lunch + posters viewing	Box lunch + posters viewing	Box lunch + posters viewing	Group photograph
14:00 - 15:00		Scientific themes roundtables (R-I) Q&A Panelists: Speakers, poster presenters, discussants and delegates Real-time broadcasting to delegates	Scientific themes roundtables (R-II) Q&A Panelists: Speakers, poster presenters, discussants and delegates Real-time broadcasting to delegates	Scientific themes roundtables (R-III) Q&A Panelists: Speakers, poster presenters, discussants and delegates Real-time broadcasting to delegates	Late check out to be arranged with the hotel and luggage keeping
15:00 - 16:00					Optional: organized Xtasea: the world current longest zipline over-ocean experience
16:00 - 17:00	Opening ceremony, Music, Opening lecture <i>Dick Swaab</i>	Free time	Free time	Free time	Post RegPep23 special event
17:00 - 18:00					
18:00 - 21:00	Music and welcome reception	IRPS council/PC and DM, editors' reception (by invitation) 19:00 >	Young investigator / graduate students reception and... "Let's dance, RegPep!" (All are welcome, tickets for sell) 19:00>	Conference dinner. Speakers invited. Tickets for sell. 19:00 > Formal evening wear for ladies and gentlemen recommended. Photo	