

Pre-final Scientific Program

RegPep23

*The 23rd 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 28th, 2021)



INTERNATIONAL BRAIN
IBRO
RESEARCH ORGANIZATION



International
Neuroendocrine
Federation

IUPHAR
International Union of Basic
and Clinical Pharmacology

Three-day full virtual program: August 9th -11th, 2021

Four-day full in-person program: August 15-19, 2021

Princess Hotel Mundo Imperial, Riviera Diamante, Acapulco, México

Sponsors

Journal of Neuroendocrinology



BSN
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Neuroendocrinology



INSTITUTO DE
NEUROBIOLOGÍA



Keynote Speakers



Dick Swaab (*opening lecturer, introduced by Ruud Buijs, Chair of 23rd 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): DR Ig+ 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

Simone Middle (University of Edinburgh, UK): Seasonal breeding in birds: Environmental regulation of the neuroendocrine and behavioural systems.

Ryoichi Teruyama (Louisiana State University): Sex hormones and the behavior of neurosecretory neurons

Alexandra Castillo-Ruiz (Georgia State University, USA): Effects of birth mode on vasopressin and oxytocin neurons of the hypothalamus

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: Arpad 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, Ex-Editor-in-Chief, *American Journal of Physiology -Regulatory, Integrative, and Comparative Physiology (APS)*, Deputy Editor-in-Chief, *Physiological Review (APS)*, and incoming Distinguished Member of IRPS

Theme Y: Neuropeptides and receptors in epilepsy & neural excitability

Chaired by: George Fink and Tomas Hökfelt

Merab Kokoia (Lund University, Sweden): Neuropeptides for gene therapy in epilepsy

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

Chaired by: Lee Eiden and Greti Aguilera

Rick Samson: Peptides as Therapeutics: Orphan GPCR-Ligand Matching is Just the Beginning.
TBA

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



General distribution

Full Virtual Program: August 9-11, 2021

Full in-person program: August 15-19, 2021

| Time | Sunday 15th August 2021 | Monday 16 th August 2021 | Tuesday 17 th August 2021 | Wednesday 18th August 2021 | Thursday 19th August 2021 |
|---------------|---|---|--|---|--|
| 6:00-7:00 | | Morning coffee: Starbucks | Morning coffee: Starbucks | Morning coffee: Starbucks | Morning coffee: Starbucks |
| 07:00 - 08:00 | Optional: Organized deep sea fishing trip (6-10am) | 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 | Box lunch + posters viewing | Vitor Mutt prize lecture Closing ceremony, RegPep24 announced |
| 12:00 - 13:00 | | | | | |
| 13:00 - 14:00 | | | | | Group photograph |
| 14:00 - 15:00 | | Free time | 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 |
| 15:00 - 16:00 | Opening ceremony, Music, Opening lecture <i>Dick Swaab</i> | | | | Late check out to be arranged with the hotel and luggage keeping |
| 16:00 - 17:00 | | Free time | Free time | Free time | Optional: organized Xtasea: the world current longest zipline over-ocean experience |
| 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 | Post RegPep23 special event |