



RegPep25 *Scientific Program*

American University, Washington D.C.
June 23-27, 2025

25th International Symposium on Regulatory Peptides

Photo: Sandra González



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Meeting organizers:

Colin Saldanha

Director, Center of Neuroscience and Behavior
(CNB) American University, Washington D. C., USA

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Lee Eiden, IRPS Treasurer

Vito Hernández, IRPS Secretary

Terry Davidson,

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International
Regulatory
Peptide Society
Incorporated

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Journal of Neuroendocrinology



Pre-RegPep25 special event
Five Generations of Research Celebrating 50 years of RegPep
Constitution Hall, AU

Discussion leader: **Greti Aguilera and Ruud Buijs**

- 08:00 – 08:45 **Dick Swaab** (Netherlands Institute for Neuroscience, KNAW, Amsterdam, The Netherlands, IRPS DM)
“Neuropeptide pioneers”
- 08:45 – 09:30 **John Furness** (University of Melbourne, Australia, IRPS DM)
“Gut peptides from the beginning and looking to the future”
- 09:30 – 10:30 **RegPep pioneers roundtable**: panelists TBC.
- 10:00 – 12:00 **RegPep young investigator symposium (YIS)**
Co-Chairs: **Alan Kania** (Germany) & **Rebeca Mendez** (USA/Mexico)
YIS1: Lei Xiao (Fudan University, China)
“Diversity and complexity of the hypothalamic oxytocinergic system in neurons, circuits and functions”
YIS2: Alan Kania (University of Heidelberg, Germany)
“Oxytocin signaling in the nucleus incertus: implications for trans-ventricular brain state modulation”
YIS3: Rebeca Mendez (U. Penn, Philadelphia, USA & Mexico)
“Circadian regulation of vagal glucose sensing and insulin secretion by the CART”
YIS4: Luis Paiva (Pontific Catholic University of Chile, Chile)
“Nerve growth factor (NGF) as a modulator of reproductive and neuroendocrine peptides”
YIS4: Aleksandra Trenk (Jagiellonian University, Krakow, Poland)
“Interplay of relaxin-3 and oxytocin systems in hippocampus”
YIS5: Mario Zetter (UNAM/LaSalle University, Mexico)
“Adult neurogenesis and migration in magnocellular AVP system”

RegPep25 Inaugural Ceremony
Constitution Hall, American University

- 14:00 - 14:15 Welcome from the AU-CNB and introduction of RegPep25 by the Co-Chairs
- 14:00 - 15:00 **PL1: Inaugural Plenary Lecture 1: Michael Greenberg** (Harvard University, USA)
2023 Brain Prize Laureate
Introduced by **Lee Eiden** (RegPep25 Co-Chair)
“Sensory experience-dependent regulation of neuropeptides in learning and memory”
- 15:00 - 15:15 Interlude 1
- 15:15 - 16:00 **PL2: Inaugural Plenary Lecture 2: Zhou-Feng Chen** (Shenzhen Bay Laboratory, China)
Introduced by **Luis de Lecea** (IRPS DM)
“Neuropeptide coding of itch, pain and touch”
- 16:00 - 16:15 Interlude 2
- 16:15 - 17:00 **PL3: Lay lecture: Colin Saldanha** (Director, Center for Neuroscience and Behavior, AU, USA)
Introduced by **Limei Zhang** (RegPep25 Co-Chair)
“A day in the life: Peptides and the integration of biological function”

- 17:00 - 21:00 **Welcome Reception & Poster Presentation**
Mary Graydon Center, AU

Tuesday, June 24, 2025

- 7:00 - 8:00 Breakfast (buffet), Terrace Dining Room

Room A (Scientific session SS)	Room B (Scientific session SS)
SS1: Relaxin Family Peptides: From Brain Circuits to Therapeutic Frontiers Chair: Juan Marugan (NCATS, NIH, USA) 08:00 - 08:05 Introduction 08:05 - 08:30 Akhter Hossain (Melbourne, Australia) "RXFP4 and INSL5, physiological roles and therapeutic implications" 08:30 - 08:55 Irina Agoulnik (Florida, USA) "INSL3 and its receptor RXFP2" 08:55 - 09:20 Francisco Olucha-Bordonau (Castellón, Spain) "Connectivity of relaxin-3 projections related to cognitive and emotional processes" 09:20 - 09:45 Ross Bathgate (Australia) "Therapeutic targeting of the relaxin receptor, RXFP1" 09:45 - 09:50 General discussion/conclusion	SS2: Neuropeptidergic Control of Reproduction and Beyond: Insights from Kisspeptin and Oxytocin Circuits Chair: Mike Lehman (USA) 08:00 - 08:05 Introduction 08:05 - 08:30 Martin Kelly (Oregon, USA) "The Role of Hypothalamic Arcuate Kisspeptin Neurons as the Gatekeepers of Fertility" 08:30 - 08:55 Michael Lehman (Ohio, USA) "KNDy neurons of the hypothalamus: an update of their roles in health and disease" 08:55 - 09:20 Vito Hernandez (UNAM, Mexico) "Kisspeptin Signaling Beyond Reproduction: Chemoanatomical Characterization and Functional Insights" 09:20 - 09:45 Ryoichi Teruyama (Louisiana State Univ, Baton Rouge, USA) "Sexually dimorphic oxytocin system in the CNS" 09:45 - 09:50 General discussion/conclusion

Short break

SS3: Neuropeptides and Social Motivation: Circuits Shaping Sex Behavior, and Choice Chair: David Keller (Germany) 10:00 - 10:05 Introduction 10:05 - 10:30 Aras Petrulis (GSU, USA) "Vasopressin in the lateral septum drives sex-specific social interest" 10:30 - 10:55 Mario Gil (Texas, USA) "Social and Sexual Behaviors Regulated by AVP and OT in Rodent Forebrain and Midbrain" 10:55 - 11:20 David Keller (University of Cologne, Germany) "Complementary roles of neurotensin and somatostatin cells in the lateral septum in regulating sex-dependent social interactions and feeding behavior" 11:20 - 11:45 Ki Goosens (Icahn School of Medicine at Mount Sinai, USA) "Regulation of complex decision-making by ghrelin" 11:45 - 11:50 General discussion/conclusion	SS4: Neuropeptides and Emotional Brain States: From Circuit Salience to Synaptic Precision Chair: Francesco Ferraguti (Austria/Italy) 10:00 - 10:05 Introduction 10:05 - 10:30 Norbert Hajos (IN, USA) "VIP-containing midbrain input to central amygdala controls contextual fear memory formation" 10:30 - 10:55 Claudia Schmuckermair (U. Innsbruck, Austria) "Control of salience detection by VIPergic insular interneurons: implications for anxiety in Autism Spectrum Disorders" 10:55 - 11:20 Limei Zhang (UNAM, Mexico) Neuropeptide in fast synaptic transmission: molecular and ultrastructural features of subcortical peptidergic synapse 11:20 - 11:45 Anna Blasiak (Jagiellonian University, Krakow, Poland) "Interplay of relaxin-3 and oxytocin systems in shaping ventral hippocampus neuronal activity - possible involvement in anxiety control in rat and human" 11:45 - 11:50 General discussion/conclusion
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- 12:00 - 13:00 Lunch (buffet), Terrace Dining Room

- 13:00 – 13:45 **PL4: Dayu Lin** (New York University, USA) introduced by **Dave Grattan**
"The neural mechanisms underlying the rise and fall of maternal aggression"

Short break

- 14:00 – 16:00 **KS1: Keynote symposium 1.** Chair: **Limei Zhang** (IRPS President)

Nora Volkow (NIDA, NIH, USA)
"Harnessing GLP-1 agonists to understand and treat addictions"

William Wisden (Imperial College, London, UK)
"The impact of molecular neurobiology on modern neuroendocrinology"

Luis de Lecea (Stanford School of Medicine, USA)
"Neuropeptides and control of behavioral states"

Short break

- 16:10 – 17:30 **Workshop on translational aspects of peptide GPCRs.** Chair: **Bob Millar**

Bob Millar (University of Pretoria, South Africa)
"Rescue of mutant peptide GPCRs in the HPG axis with small molecules: a more viable therapy than gene editing"

Terry Moody (NIH, USA)
"Leveraging receptor visualization to cancer treatment: bombesin and theragnostics"

Mary Lee (VA, Washington DC, USA)
"GLP-1R agonists and sodium glucose transport inhibitors in treatment of dementia"

Wednesday, June 25, 2025

- 7:00 - 8:00 Breakfast (buffet), Terrace Dining Room

Room A (Scientific session SS)	Room B (Scientific session SS)
SS5: Peptides Involved in Energy Regulation Chair: Jean-Louis Charli (Mexico) 08:00 - 08:05 Introduction 08:05 - 08:30 Jean-Louis Charli (UNAM, Mexico) "The TRH degrading ectopeptidase and energy homeostasis" 08:30 - 08:55 Patricia Joseph-Bravo (UNAM, Mexico) "Sex-dependent regulation of TRH and thyroid axis by food, cold, exercise and stress-related energy demands" 08:55 - 09:20 Margarita Curras-Collazo (UC Riverside, USA) "CCK-AR-expressing Vagal Sensory Afferents of the Gut-Brain Axis Contribute to Pro-inflammatory IL-6 Response to LPS" 09:20 - 09:45 Lucila K. Elias (Uni. Sao Paulo, Ribeiro Preto, Brazil) "Neuroendocrine regulation of energy homeostasis" 09:45 - 09:50 General discussion/conclusion	SS6: Neuropeptidergic Integration of Emotion, Fear, and Social Behavior Chair: Joanna Dabrowska (USA) 08:00 - 08:05 Introduction 08:05 - 08:30 Hala Harony-Nicolas (Mount Sinai, New York City, USA) "Brain circuits of social behavior with a focus on social recognition memory and the role of oxytocin on neuronal activity and behavior" 08:30 - 08:55 Eric G. Krause (Georgia State University, USA) "The integration of interoceptive signals and behavioral responses via oxytocin receptors" 08:55 - 09:20 Zhihua Gao (Zhejiang University, China) "The role of oxytocin in emotional control" 09:20 - 09:45 Joanna Dabrowska (Rosalind Franklin Univ., USA) "Vasopressin and oxytocin integrate interoceptive signals and fear memory in extended amygdala" 09:45 - 09:50 General discussion/conclusion

Short break

SS7: Neuropeptides and Hormonal Networks in Cardiovascular and Renal Function Chair: Teresa Morales (UNAM, Mexico) 10:00 - 10:05 Introduction 10:05 - 10:30 Eric Lazartigues (Louisiana, USA) "miRNA targeting for the renin-angiotensin system" 10:30 - 10:55 Paul Marvar (Washington DC, USA) "The Brain Angiotensin System: Connecting Cognition, Stress, and Cardiovascular Disease" 10:55 - 11:20 Andrea Godino (Argentina) "Early life programming of osmoregulatory responses-emphasis on the vasopressin-angiotensin system" 11:20 - 11:45 Teresa Morales (Mexico) "Prolactin Dysregulation in a Mice Model of Kidney Disease" 11:45 - 11:50 General discussion/conclusion	SS8: Neuropeptides and the Architecture of Sleep: Circuits, Clocks, and Cognitive Health Chair: Bill Wisden (Imperial College, London, UK) 10:00 - 10:05 Introduction 10:05 - 10:30 Ruud Buijs (UNAM, Mexico) "Vasopressin as neurotransmitter of the biological clock signals the rest period in physiology and activity" 10:30 - 10:55 Kyoko Tossell (Imperial College, London, UK) "Role of prefrontal cortex somatostatin neurons directing top-down control of sleep preparatory behavior and sleep" 10:55 - 11:20 Jason Rihel (UCL, UK) "Zebrafish as a model system to study role of galanin in regulating sleep homeostasis". 11:20 - 11:45 Sara Calafate (Portugal) "Early alterations in the MCH system link aberrant neuronal activity and sleep disturbances in a mouse model of AD" 11:45 - 11:50 General discussion/conclusion
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- 12:00 - 13:00 Lunch (buffet), Terrace Dining Room
- 13:00 – 13:15 **PL5: Scott Kanoski** (USC, USA Viktor Mutt Lecturer) Introduced by Terry Davidson
Presenter: Terry Davison (USA)
"Peptide control of energy balance"

Short break

14:00 – 16:00	KS1: Keynote symposium 1 Chair: Colin Saldanha (Director, CNB, AU) Rae Silver (Columbia University, USA) "Circadian rhythms and the portal pathways of circumventricular organs" Susan Wray (NIH, USA) "LHRH Secretion: Why so many modulators?" David Grattan (Otago University, New Zealand) "What Prolactin teaches us about the evolution of peptide physiology"
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Short break

**16:15 – 17:00 Round table: Peer Review & Scientific Publication:
An Open Discussion
(Co-Chaired: Tom Cunningham & Lee Eiden)**

Free evening (Speakers gathering and young investigators gathering)

Thursday, June 26, 2025

- 7:00 - 8:00 Breakfast (buffet), Terrace Dining Room

Room A (Scientific session SS)

SS9: Control of peptides regulating appetitive drives and energy homeostasis

Chair: **Andras H. Leko** (Hungary)

08:00 - 08:05 Introduction

08:05 - 08:30 **Denise Belsham** (UT, Canada)
"Neuropeptide regulation by hypothalamic microRNAs"

08:30 - 08:55 **Maria García-Robles** (Chile)
"Neurobiology of Glia-Neuron Interactions in the Hypothalamus: Diets, Feeding Behavior, and Neurogenesis"

08:55 - 09:20 **Andras Leko** (Sемmelweis Univ., Hungary)
"Sexually dimorphic effects of GHSR in diet-induced obesity"

09:20 - 09:45 **John Furness** (Florey Institute, Australia)
"Roles of the ghrelin receptor: investigation of its mechanism in reversing agonist action at the D2 dopamine receptor"

09:45 - 09:50 General discussion/conclusion

Room A (Scientific session SS)

SS10: PACAP signaling across systems: from stress circuits to metabolic control

Chair: **Jessica Barsson** (USA)

08:00 - 08:05 Introduction

08:05 - 08:30 **Arun Anantharaman** (University of Toledo, USA)
"Mechanisms for PACAP-induced depolarization leading to chromaffin cell secretion"

08:30 - 08:55 **Sarah Gray** (Univ. Northern British Columbia, Canada)
"PACAP in peripheral ganglia and role in the regulation of metabolism"

08:55 - 09:20 **Jessica Barson** (Drexel University, USA)
"PACAP in the paraventricular nucleus of the thalamus: Relationship with ethanol drinking and dependence".

09:20 - 09:45 **Sunny Jiang** (NIMH, USA)
"Novel prefrontal cortico-hypothalamic PACAPergic projection modulates CRH neurons in PVN"

09:45 - 09:50 General discussion/conclusion

Short break

SS11: PTH2 and Catestatin: Novel peptidergic modulators of brain and behavior

Chairs: **Arpad Dobolyi** (Hungary)

08:00 - 08:05 Introduction

08:05 - 08:30 **Gina Puska** (Univ. Veterinary Medicine, Hungary)
"PTH2 (TIP39) plays a role in the control of maternal behavior"

08:30 - 08:55 **Lukas Anneser** (Friedrich Miescher Inst. for Biomed. Research, Switzerland)
"There are other fish in the sea: Social density encoding by the neuropeptide PTH2"

08:55 - 09:20 **Arpad Dobolyi** (Eotvos Lorand Univ., Hungary)
"Single nucleus sequencing of the human arcuate nucleus: insights into the role of PTH2 in prolactin secretion"

09:20 - 09:45 **Sushil Mahata** (UCSD, USA)
"Chromogranin A deficiency and catestatin supplementation improve tauopathy and cognitive functions in PS19 Mice"

09:45 - 09:50 General discussion/conclusion

SS12: Neuropeptides in mood disorders: mechanisms linking emotion, sex, and brain state

Chair: **Tom Cunningham** (USA)

08:00 - 08:05 Introduction

08:05 - 08:30 **Tom Cunningham** (UNTHSC, USA)
"Sex Differences in Vasopressin in an animal model of hyponatremia"

08:30 - 08:55 **Jing Lu** (University of Zhejiang, China)
"Hypocretin & receptor regulate neuroplasticity and cognitive function in depressed model"

08:55 - 09:20 **Hiroe Hu** (NIH, USA)
"Arginine vasopressin and mood disorders"

09:20 - 09:45 **Aimin Bao** (Zhejiang University, China)
"The role of oxytocin in bipolar disorder: from animal model to postmortem human brain"

09:45 - 09:50 General discussion/conclusion

- 12:00 - 13:00 Lunch (buffet), Terrace Dining Room

- 13:00 - 13:45 **PL6: Vincent Prevot** (INSERM, France) Introduced by **Ruud Buijs**
"A role for GnRH in the control of cognition... and more?"

Visit to the **Smithsonian National Air and Space Museum's Steven F. Udvar-Hazy Center**, Chantilly, Virginia

Conference dinner (19:00-23:00)

Founders Room School of International Service AU

- 08:00-8:45 SL1 Neuroscience Special Lecture sponsored by JNE/BSN

Xiao-Ke Chen (Stanford University, USA)

Introduced by **Francesco Ferraguti** (Innsbruck, Austria)

“Descending peptidergic control of chronic mechanical pain”

IRPS General Assembly (09:00-10:00)

- 10:00-10:45 SL-2 Neuroscience Special Lecture sponsored by IBRO

Hugo Tejada (NIMH-IRP, NIH, USA)

Presenter: **Susan Wray** (NIH, USA)

“Prefrontal cortical neuropeptidergic control of threat processing and circuit function”

Closing Lecture (10:45-11:30)

Dick Swaab

(Netherlands Institute for Neuroscience, KNAW, Amsterdam, The Netherlands)

Presenter: **Ruud Buijs** (UNAM, Mexico)

“Dead brains tell lively stories”

Farewell lunch and group photo

