

Last Update: September. 6, 2016.

Scientific Program

Dopamine 2016, Vienna, Austria

Monday, September 5th

09:00 Registration

11:00 Opening Remarks, Welcome Addresses

11:15 **Plenary Lecture 1:** **C1 + C2**

Chair: Antonello Bonci (NIDA-IRP, Baltimore, USA)

Introduction

11:20 **Karl Deisseroth** (Stanford University, USA)

Integrated brainwide structural and functional analysis

12:15 **Short lunch break**

13:00 **Parallel Symposium 1:** **C2**

Thinking locally, acting globally: novel mechanisms for regulation of the response characteristics of dopamine neurons

Supported by:



Chair: Susan G Amara (NIMH, USA)

Co-Chair: Aurelio Galli (Vanderbilt Kennedy Center, Nashville, USA)

Introduction

13:10 Speaker 1: **Suzanne M Underhill**, (NIMH, USA)

Regulated trafficking of dopamine and glutamate transporters: a mechanism for signal integration by dopamine neurons

13:35 Speaker 2: **Susan L. Ingram** (Oregon Health & Science University, USA)

Amphetamine increases dopamine neuron NMDA-GluN2B synaptic currents involved in locomotor stimulation

14:00 Speaker 3: **Sweyta Lohani** (University of Pittsburgh, USA)

Phasic and tonic dopamine neurotransmission may be a continuum.

14:25 Speaker 4: **Andrew Yee** (Physiology, Centre for Brain Res,

University of Auckland, New Zealand)

Activity-dependence of dopamine release from the somato-dendritic region of nigral dopaminergic neurons

13:00 Parallel Symposium 2: C1

Functional diversity of dopamine signalling in the mammalian brain

Chair: **Stephan Lammel**, (University of California, Berkeley, USA),

Co-Chair: **Robert Malenka** (Stanford University, USA)

Introduction

13:10 Speaker 1: **Robert Malenka** (Stanford University, USA)

Circuit architecture of VTA dopamine neurons revealed by systematic input-output mapping

13:35 Speaker 2: **Kay Tye** (Massachusetts Institute of Technology, USA)

The role of dopamine in driving both positive and negative valence

14:00 Speaker 3: **Ilana Witten** (Princeton University, USA)

Reward and choice encoding in midbrain dopamine neurons depends on striatal target

14:25 Speaker 4: **Taku Nagai** (Nagoya University, Japan)

Phospho-proteomic analysis of the dopamine pathway enables discovery of a novel reward signal in vivo

13:00 Parallel Symposium 3: A

DA heteroreceptor complexes and their receptor-receptor interactions Relevance for addiction

Supported by:



Chair: **Kjell Fuxe** (Karolinska Institutet, Sweden)

Co-Chair: **Anita Hansson** (Central Institute of Mental Health, Germany)

Introduction

13:10 Speaker 1: **Karolina Wydra** (Polish Academy of Sciences, Poland)

The role of striatal adenosine A2A- dopamine D2 interactions in cocaine addiction

13:35 Speaker 2: **Dasiel Borroto-Escuela** (Karolinska Institutet, Sweden)

On the existence of multiple A2A, D2R and Sigma 1 allosteric receptor-receptor interactions in sigma1-D2 and A2A-D2-Sigma1 heteroreceptor complexes: role in brain plasticity and cocaine

actions

14:00 Speaker 3: **Anita Hansson** (Central Institute of Mental Health Mannheim, Germany)

Cross-talk of corticotrophin releasing hormone subtype 1 with dopamine D1 receptor: Functional relevance in alcohol dependence

14:25 Speaker 4: **Peter Vanhoutte** (Neuroscience Paris-Seine, Université Pierre et Marie Curie, France)

D1R/NMDAR heteromers in the striatum integrate dopamine and glutamate signalling to control synaptic plasticity and cocaine-induced responses

13:00 Parallel Symposium 4: D

Selective neuronal vulnerability in Parkinson's disease

Chair: Louis-Eric Trudeau (Université de Montréal Departments of pharmacology and neurosciences)

Introduction

13:10 Speaker 1: **Louis-Eric Trudeau** (Université de Montréal Departments of pharmacology and neurosciences)

Axonal arborization and energetic metabolism of nigral dopamine neurons : a window into selective vulnerability in Parkinson's disease.

13:35 Speaker 2: **Markus Riessland** (The Rockefeller University Laboratory of cellular and molecular neuroscience)

Dopaminergic neuron-intrinsic regulators orchestrate subtype-specific gene networks against degeneration

14:00 Speaker 3: **D. James Surmeier** (Northwestern University, Feinberg School of Medicine, Department of Physiology)

Selective neuronal vulnerability, calcium and Parkinson's disease

14:25 Speaker 4: **Patrik Fazio** (Department of Clinical Neuroscience, Karolinska Institutet, Sweden)

In vivo mapping of the dopamine transporter (DAT) within the nigro-striatal pathway of Parkinson's disease patients and control subjects using [18F]FE-PE2I and high-resolution positron emission tomography

13:00 Parallel Symposium 5: B

What's wrong with the dopamine system in gambling disorder?

Chair: Guillaume Sescousse (Radboud University, The Netherlands)

Co-Chair: Ruth van Holst (Academic Medical Center, Amsterdam, The Netherlands)

Introduction

13:10 Speaker 1: **Ruth van Holst** (Academic Medical Center,

Amsterdam, The Netherlands)

Abnormal dopamine synthesis capacity in gambling disorder?

13:35 Speaker 2: **Isabelle Boileau** (CAMH, Toronto, Canada)

[¹¹C]-(+)-PHNO PET imaging of dopamine D(2/3) receptors in gambling disorder

14:00 Speaker 3: **Paul Cocker** (University of British Columbia, Canada)

A role for the dopamine D4 receptor in mediating expectations of reward on a rodent slot machine task

14:25 Speaker 4: **Alexander Genauck** (Department of Psychiatry and Psychotherapy, Charité - Universitätsmedizin Berlin, Germany)

Cue-induced changes in decision-making in pathological gamblers: alterations in loss aversion and their relation to symptom severity

14:50 Plenary Lecture 2: C1 + C2

Chair: **Gaetano Di Chiara** (Biomedical Sciences, University Of Cagliari, Italy)

Introduction

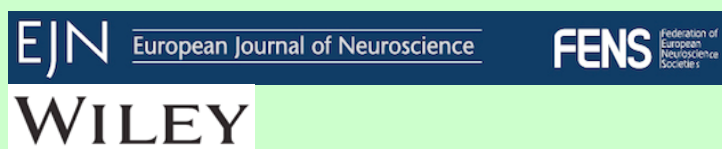
14:55 **Nora Volkow** (NIH/NIDA, USA)

Dopamine: In and out of control

15:50 Coffee/Tea break

16:20 Oleh Hornykiewicz Special Birthday Symposium C1 + C2

Supported by:



Chair: **Robert Schwarcz** (University of Maryland School of Medicine, USA)

Opening words by **J. Paul Bolam** (University of Oxford, UK)
Introduction

16:30 Speaker 1: **Ann M. Graybiel** (Massachusetts Institute of Technology, USA)

A tribute to Professor Oleh Hornykiewicz: Steps toward Identifying Functions of the Striosomal System

17:10 Speaker 2: **Michael Schlossmacher** (University of Ottawa, Canada)

Modeling three variants of Parkinson's in mice based on complex aetiologies in humans

17:50 Speaker 3: **Werner Poewe** (University of Innsbruck, Austria)

The changing concept of Parkinson's Disease

18:30 Transition to Town hall

19:00- **Cocktail Reception, Town hall**
22:00

Tuesday, September 6th

09:00 **Plenary lecture 3:** **C1 +C2**

Chair: **Anthony G. Phillips** (University of British Columbia, Canada)

Introduction

09:05 **Trevor Robbins** (Cambridge University, United Kingdom)

Multidimensional roles for dopamine in cognition and behaviour: A translational perspective

10:00 **Coffee/Tea break**

10:30 **Parallel Symposium 6:** **C2**

Regulation of DA autoreceptors function in mesencephalic dopaminergic neurons

Chair: **Nicola B. Mercuri** (University of Rome Tor Vergata, Italy)

Co-Chair: **Birgit Liss** (University of Ulm, Germany)

Introduction

10:40 Speaker 1: **Nicola B. Mercuri** (University of Rome Tor Vergata, Italy)

Modulation of D2 autoreceptors function in substantia nigra dopaminergic neurons; an in vitro electrophysiological approach.

11:05 Speaker 2: **Birgit Liss** (University of Ulm, Germany)

Calcium modulation of somatodendritic dopamine D2-autoreceptor responses

11:30 Speaker 3: **David Sulzer** (Columbia University, USA)

Optical means to measure presynaptic regulation of dopamine release

11:55 Speaker 4: **Jakob Kisbye Dreyer** (Department of Neuroscience and Pharmacology, University of Copenhagen)

Presynaptic dopamine autoreceptors account for individual differences in the dopamine baseline: Theory meets experiment in freely moving rats

10:30 **Parallel Symposium 7:** **C1**

Shaping synapses, circuits and behavior with dopamine

Supported by:



Chair: Wulf Haubensak (*Institute of Molecular Pathology, Austria*)

Introduction

10:40 Speaker 1: **Jeremiah Cohen** (Johns Hopkins University School of Medicine, USA)

Dopamine and serotonin circuits for reward

11:05 Speaker 2: **Elke Edelmann** (University Magdeburg, Germany)

Dopaminergic modulation of hippocampal spike timing-dependent plasticity

11:30 Speaker 3: **Wulf Haubensak** (*Institute of Molecular Pathology, Austria*)

A dopamine learning circuit for writing emotional memory

11:55 Speaker 4: **Kimberly A. Kempadoo** (Neuroscience, Columbia University, United States of America)

Dopamine is co-released from the locus coeruleus into the dorsal hippocampus to promote spatial learning

10:30 Parallel Symposium 8:

A

Changing the record: dopamine and memory updating

Supported by:



Chair: Amy Milton (*University of Cambridge, United Kingdom*)

Introduction

10:40 Speaker 1: **Emma Cahill** (University of Cambridge, United Kingdom)

Dopamine signalling in the basolateral amygdala and the reactivation of a reconsolidating fear memory.

11:05 Speaker 2: **Janine Rossato** (University of Edinburgh, United Kingdom)

Dopamine balances information update into previous knowledge

11:30 Speaker 3: **Amy Reichelt** (University of New South Wales, Australia)

Updating memories – the importance of dopaminergic prediction error signaling in memory reconsolidation

11:55 Speaker 4: **Mareike Clos** (Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Germany)
Dopaminergic modulation of recognition memory performance and the striatal memory confidence signal – a pharmacological fMRI study

10:30 Parallel Symposium 9: D

Missense mutations in the dopamine transporter gene: new insights into dopamine disease biology

Chair: **Ulrik Gether** (University of Copenhagen, Denmark)

Introduction

10:40 Speaker 1: **Manju Kurian** (University College London, United Kingdom)

Characterisation of the Phenotypic Spectrum of Dopamine Transporter Deficiency Syndrome

11:05 Speaker 2: **Sonja Sucic** (MedUni Vienna, Austria)

Pharmacochaperoning of the dopamine transporter

11:30 Speaker 3: **Ulrik Gether** (University of Copenhagen, Denmark)

Missense mutations in the dopamine transporter gene: commonality between neuropsychiatric and neurodegenerative diseases?

11:55 Speaker 4: **Ali Salahpour** (Pharmacology and Toxicology, University of Toronto, Canada)

Pharmacological chaperones rescue dopamine transporter deficiency syndrome mutations

10:30 Parallel Symposium 10: B

Dopamine and flexible decision-making in humans

Supported by:



Chair: **Roshan Cools** (Radboud University, The Netherlands)

Introduction

10:40 Speaker 1: **Roshan Cools** (Radboud University, The Netherlands)

Reconciling striatal dopamine's roles in reward-based learning and cognitive control

11:05 Speaker 2: **Lorenz Deserno** (Max Planck Institute for Human Cognitive and Brain Sciences, Germany)

A role for presynaptic striatal dopamine in model-based decision-making

11:30 Speaker 3: **Sandra Iglesias** (University of Zurich and Swiss Federal Institute of Technology, Switzerland)

Hierarchical prediction error responses modulated by dopaminergic and cholinergic substances

11:55 Speaker 4: **Philipp Schwartenbeck** (Centre for Cognitive Neuroscience, Austria)

The dopaminergic midbrain encodes shifts in beliefs

12:10 Lunch and Poster Session

**Aula
Foyer
C1**

14:00 Parallel Symposium 11:

C2

Encoding Dopamine Neuron Diversity

Chair: Raj Awatramani (Northwestern University Chicago, USA)

Introduction

14:10 Speaker 1: **Sandra Blaess** (Institute of Reconstructive Neurobiology, Life and Brain Center, University of Bonn, Bonn, Germany)

Developmental origin and function of mesocortical dopaminergic neurons

14:35 Speaker 2: **Siew Lan Ang** (The Francis Crick Institute, Mill Hill Laboratories)

Molecular heterogeneity of midbrain dopamine neurons

15:00 Speaker 3: **Raj Awatramani** (Northwestern University Chicago, USA)

Genetic approaches to unraveling dopaminergic neuron diversity

15:25 Speaker 4: **Martin Levesque** (Psychiatry and neurosciences, Universite Laval, Canada)

Mecanisms controlling the diversity of dopaminergic axon projections

14:00 Parallel Symposium 12:

A

Stress-Induced Dopamine Neuroplasticity in Humans

Chair: Chawki Benkelfat (McGill University, Canada),

Co-Chair: Marco Leyton (McGill University, Canada)

Introduction

14:10 Speaker 1: **Jennifer Lissemore** (McGill University, Canada)

Plasticity of the Dopaminergic System: Fear Conditioning & Drug-Stress Cross-Sensitization

14:35 Speaker 2: **Alice Egerton** (Kings College London, United Kingdom)

Adversity in Childhood Linked to Elevated Striatum Dopamine

Function in Adulthood

15:00 Speaker 3: **Inez Myin-Germeys** (Maastricht University, The Netherlands)

The role of prefrontal dopamine in stress reactivity in psychosis

15:25 Speaker 4: **Richard J. Beninger** (Psychology, Queen's University, Canada)

Inverse incentive learning: dopamine and decreased responding to stimuli

14:00 Parallel Symposium 13:

D

Genetic dissections of dopaminergic pathway in addiction

Supported by:



Chair: **Alban de Kerchove d'Exaerde** (Université Libre de Bruxelles, Belgium)

Introduction

14:10 Speaker 1: **Veronica Alvarez** (NIH, USA)

A novel synaptic mechanism that contributes to the stimulant effects of cocaine

14:35 Speaker 2: **Daniela Neuhofer** (Medical University of South Carolina, USA)

Cell type specific dysregulation of Gabaergic plasticity in the Ventral Pallidum after extinction from cocaine self administration

15:00 Speaker 3: **Philippe Faure** (CNRS Paris, France)

Nicotinic modulation of dopaminergic activity and exploration

15:25 Speaker 4: **Christoph Kellendonk** (Department of Pharmacology, Psychiatry, Columbia University, United States of America)

Dopamine D2 receptors on ventral striatal projection neurons increase motivation by shifting the functional balance from the indirect to the direct pathway

14:00 Parallel Symposium 14:

B

Novel Mouse Models in the Service of Dopamine-Linked Brain Disorders: Insights into Pathophysiology and Treatments

Supported by:



Chair: **Randy D. Blakely** (Vanderbilt University, USA)

Co-Chair: **Freja Hansen** (University of Copenhagen, Denmark)

Introduction

14:10 Speaker 1 : **Randy D. Blakely** (Vanderbilt University, USA)

Impact of Dopamine Transporter-Mediated, Non-Vesicular DA Release on ADHD Traits as Studied in the DAT Val559 Mouse Model

14:35 Speaker 2: **Ellen Hess** (Emory University, USA)

Dopaminergic transmission in L-DOPA-responsive dystonia

15:00 Speaker 3: **Nikhil Urs** (Duke University Medical Center, USA)

Genetic Manipulation of Dopamine Signal Transduction Genes for Insights into Parkinson's Disease and Schizophrenia Therapeutics

15:25 Speaker 4: **Fabien Ducrocq** (INRA UMR 1286, University of Bordeaux, France)

Impact of brain lipid composition on reward processing and mesolimbic dopamine transmission: a role in schizophrenia endophenotypes?

14:00 Parallel Symposium 15: C1

Novel molecular targets of L-DOPA-induced dyskinesia: from animal models to clinical investigations

Chair: Anna R. Carta (University of Cagliari, Italy)

Co-Chair: Rita Raisman-Vozari (INSERM Paris, France)

Introduction

14:10 Speaker 1: **Elaine Del-Bel** (University of Sao Paulo, Brasil)

Nitrgergic system Implication in L-DOPA-Induced Dyskinesia: From Animal Models to Clinical Investigations

14:35 Speaker 2: **Anna R. Carta**

Dyskinesia and neuroinflammation: evidences from intermittent versus continuous L-DOPA delivery in PD patients and experimental animal.

15:00 Speaker 3: **Irene Ruiz de Diego** (Cajal Institute, Spain)

DREAM protein reduces L-DOPA-induced dyskinesia

15:25 Speaker 4: **Oscar Solis** (Cajal Institute, CSIC, Spain)

Genetic deletion of dopamine D3 receptor attenuates L-DOPA-induced dyskinesia

15:40 Coffee/Tea break

16:10 Plenary lecture 4: C1 + C2

Chair: Siegfried Kasper (Medical University of Vienna, Austria)

Introduction

16:15 **Anissa Abi-Dargham** (Stony Brook University, USA)
Dopamine in schizophrenia: where does it stand in the cascade of pathological events?

18:30 **Welcome Drink and Snacks for all lounges at the Van Swieten Saal**
· **Jazz lounge featuring the Benny Sharoni Quartet, Van Swieten Hall, Medical University Vienna or**
· **Classical lounge featuring the “Variatias Ensemble” at the Josefinum, Medical University Vienna or**
· **Electronic lounge featuring Martin Pieper, FM4 at the Narrenturm, Museum of Natural History**

Wednesday, September 7th

09:00 **Plenary lecture 5:** **C1 + C2**

Chair: David Sulzer (Psychiatry, Columbia University, USA)

Introduction

09:05 **Christian Lüscher** (University of Geneva, Switzerland)

The emergence of a circuit model for addiction: from synaptic mechanisms to translational implications

10:00 Coffee/Tea break

10:30 **Parallel Symposium 16:** **C2**

Synaptic and intrinsic mechanisms underlying dopaminergic neurons activity

Chair: Pablo Henny (Universidad Catolica de Chile, Chile)

Introduction

10:40 Speaker 1: **Elyssa Margolis** (Department of Neurology University of California, San Francisco UCSF Sandler Neurosciences Center, USA)

A role for projection target in the morphological and physiological properties of VTA neurons

11:05 Speaker 2: **Carlos Paladini** (Department of Biology The University of Texas, USA)

Dopamine neurons in vivo

11:30 Speaker 3: **Aya Matsui** (National Institute on Alcohol Abuse and Alcoholism National Institute of Health Bethesda, USA)

Opioid modulation of GABA transmission to Dopamine and GABA neurons

11:55 Speaker 4: **Joseph F. Cheer** (University of Maryland School

of Medicine, United States of America)

WHOLE brain mapping of monosynaptic cannabinoid type 1 receptor inputs into dopamine neurons of the ventral tegmental area

10:30 Parallel Symposium 17: C1

Adolescent dopamine disobeying adult rules: recent molecular, electrophysiological, and behavioural findings

Chair: **Cecilia Flores** (McGill University, Canada)

Introduction

10:40 Speaker 1: **Cecilia Flores** (McGill University, Canada)

Understanding decisions by dopamine axons in adolescence

11:05 Speaker 2: **Bitá Moghaddam** (University of Pittsburgh, USA)

Unique encoding of reward related learning and extinction by adolescent dopamine neurons

11:30 Speaker 3: **Etienne Coutureau** (Université de Bordeaux, France)

Mesocortical dopaminergic system developmental trajectories during adolescence in rat

11:55 Speaker 4: **Silvia Corongiu** (Biomedical Sciences, University of Cagliari, Italy)

Adolescence versus adulthood: differential effects of drugs of abuse on mesolimbic dopamine transmission

10:30 Parallel Symposium 18: D

Aberrant decision-making in addiction and disorders of compulsivity

Supported by:



Chair: **Anne Beck** (Charité Berlin, Germany)

Introduction

10:40 Speaker 1: **Valerie Voon** (University of Cambridge, United Kingdom)

Presynaptic dopamine and Mu-opioid receptor density in model-based learning: valence effects

11:05 Speaker 2: **Miriam Sebold** (Charité Berlin, Germany)

Neurobiological correlates of learning and decision-making in alcohol dependence – The LeAD study

11:30 Speaker 3: **Andrea Reiter** (Max-Planck Institute for Cognitive and Brain, Leipzig, Germany)

Investigating flexible behavioral adaptation in addictive disorders and associated risk factors - transdiagnostic evidence from

Reinforcement Learning and modeling-based fMRI

11:55 Speaker 4: **Philippe Tobler** (University of Zurich, Switzerland)

Dopamine D2/3 and μ -opioid receptor antagonists reduce cue-induced responding and reward impulsivity in humans

10:30 Parallel Symposium 19:

A

Dopamine and the social brain

*Chair: **Camilla Bellone** (University of Lausanne, Switzerland)*

Introduction

10:40 Speaker 1: **Carmen Sandi** (Swiss Federal Institute of Technology Lausanne, Switzerland)

Involvement of the mesolimbic system and mitochondrial function on the link between anxiety and social competition

11:05 Speaker 2: **Miriam Melis** (University of Cagliari, Italy)

Synaptic changes within the mesocortical circuit following early life adverse social experience

11:30 Speaker 3: **Francois Tronche** (Sorbonne University, France)

Gene regulation in dopamine circuitry and stress-related behaviors.

11:55 Speaker 4: **Junchol Park** (Neuroscience, University of Pittsburgh, United States of America)

Concomitant VTA-PFC neural encoding of anxiety-related modulation of goal-directed behavior

10:30 Parallel Symposium 20:

B

Deciphering dopamine function with new tools: from molecule to synapse and behaviour

Supported by:



*Chair: **Harald Janovjak** (Institute of Science and Technology Austria)*

*Co-Chair: **Xin Jin** (The Salk Institute, USA)*

Introduction

10:40 Speaker 1: **Stephanie Cragg** (University of Oxford, United Kingdom)

Illuminating axonal gatekeepers of dopamine transmission

11:05 Speaker 2: **Mark Howe** (Dept. of Neurobiology, Northwestern University, USA)

Rapid signalling in distinct dopaminergic axons during locomotion and reward revealed by novel optical recording approaches

- 11:30 Speaker 3: **Garret Stuber** (University of North Carolina, USA)
Hypothalamic-VTA circuits for motivated behavioral states
- 11:55 Speaker 4: **Christopher Howard** (Molecular Neurobiology Laboratory, Salk Institute for Biological Studies, United States of America)
Dissecting the role of nigrostriatal dopamine in action selection

12:10 Lunch and Poster session

**Aula
Foyer
C1**

14:00 Parallel Symposium 21:

C2

Implications of functional selectivity/biased signalling in the actions of dopamine: Beta-Arrestin signalling an avenue to novel psychopharmacology

Supported by:



Chair: Marc Caron (Duke University, USA)

Introduction

- 14:10 Speaker 1: **Marc Caron** (Duke University, USA)
Neuron selective deletion of β arrestin2 uncovers unique mechanism of dopamine D2 receptor biased ligands
- 14:35 Speaker 2: **Patricio O'Donnell** (Psychiatric Disorders and Circuitry Neuroscience Research Unit, Pfizer Inc., USA)
D2 beta arrestin signaling increases firing in fast spiking interneurons in the prefrontal cortex
- 15:00 Speaker 3: **Ian Ellwood** (UCSF San Francisco, USA)
The role of dopaminergic inputs to prefrontal cortex in cognitive flexibility
- 15:25 Speaker 4: **Emiliana Borrelli** (University California Irvine, United States of America)
Dopamine-mediated control of brain circuits and neuropsychiatric disorders

14:00 Parallel Symposium 22:

A

Dopaminergic mechanisms underlying neuronal dysfunction in Parkinson's Disease genetic models

Supported by:



Chair: **Huaibin Cai** (National Institute on Aging/NIH, USA)

Introduction

- 14:10 Speaker 1: **Loukia Parisiadou** (Northwestern University, USA)
A LRRK2 postsynaptic role in the striatum projection neurons in response to dopamine signaling
- 14:35 Speaker 2: **Richard Wade-Martins** (University of Oxford, United Kingdom)
Dysfunction precedes aggregation: early deficits in dopaminergic neurotransmission in transgenic rodent models of Parkinson's disease
- 15:00 Speaker 3: **Aryn Gittis** (Carnegie Mellon University, USA)
Cell-specific stimulation in the GPe produces long-lasting recovery of motor function in dopamine depleted mice
- 15:25 Speaker 4: **Paul Dodson** (MRC Brain Network Dynamics Unit, University of Oxford, United Kingdom)
Cell-type selective encoding of spontaneous movement by dopaminergic neurons

14:00 Parallel Symposium 23: D
Dopaminergic mechanisms of drug withdrawal: a window into addiction therapies

Chair: **Olivier George** (The Scripps Research Institute, USA)

Introduction

- 14:10 Speaker 1: **Andrew Tapper** (University of Massachusetts Medical School, USA)
The role of dopamine receptor signaling in the interpeduncular nucleus during nicotine withdrawal
- 14:35 Speaker 2: **Ja-Hyun Baik** (School of Life Sciences and Biotechnology, Korea University, Korea)
Role of dopamine D2 receptor in cocaine-induced plasticity and relapse
- 15:00 Speaker 3: **Olivier George** (The Scripps Research Institute, USA)
Addiction and corticotropin releasing factor: from the amygdala to the prefrontal cortex and beyond..
- 15:25 Speaker 4: **Amy Newman** (Medicinal Chemistry Section, MTMDB, National Institute on Drug Abuse-Intramural Research Program, United States of America)
Novel and highly selective dopamine D3 receptor antagonists/partial agonists that attenuate oxycodone- and THC-dependence related behaviors

14:00 Parallel Symposium 24: B
Diversity of co-transmission by dopamine neurons

Chair: **Marisela Morales** (National Institutes of Health/NIDA, USA)

Introduction

- 14:10 Speaker 1: **Marisela Morales** (National Institutes of Health/NIDA, USA)
Co-transmission diversity among dopamine and glutamate neurons of the ventral tegmental area
- 14:35 Speaker 2: **Nao Chuhma** (Columbia University, USA)
Mapping dopamine neuron transmission and co-transmission across striatal subregions
- 15:00 Speaker 3: **Nicolas Tritsch** (Harvard Medical School, USA)
Inhibitory neurotransmission by midbrain dopamine neurons
- 15:25 Speaker 4: **Thomas S. Hnasko** (Neurosciences, University of California, San Diego, United States of America)
Ventral tegmental area glutamate neurons co-release GABA and promote positive reinforcement

14:00 Parallel Symposium 25:

C1

Dopamine modulation of motivated behavior: beyond cell body firing

Supported by:



Chair: **Kate M. Wassum** (University of California Los Angeles, USA)

Introduction

- 14:10 Speaker 1: **Katherine Brimblecombe** (University of Oxford, United Kingdom)
Investigating the heterogeneous effects of neuromodulators on striatal dopamine release: What is the role of the illusive striosome and matrix sub-territories?
- 14:35 Speaker 2: **Kate M. Wassum** (University of California Los Angeles, USA)
Modulation of nucleus accumbens dopamine release during cue-motivated behavior.
- 15:00 Speaker 3: **John Dani** (University of Pennsylvania, USA)
Dopamine Regulation of Synaptic Plasticity Underlying Reward and Aversive Behavior.
- 15:25 Speaker 4: **Jocelyn M. Richard** (Psychological and Brain Sciences, Johns Hopkins University, United States of America)
Role of ventral pallidal neurons and dopamine inputs in reinforcement and cue-elicited approach

15:40 Coffee and tea break

16:10 Business Meeting

17:00 Plenary lecture 6: C1 + C2

Chair: Michael Freissmuth (Medical University of Vienna, Austria)

Introduction

17:05 Harel Weinstein (Cornell University, USA)

Allosteric mechanisms of the dopamine signaling machines: The moving stories of GPCRs and transporters

Thursday, September 8th

09:00 Plenary lecture 7: C1 + C2

Chair: Nathalie Ginovart (University of Geneva)

Introduction

09:05 Patricia Janak (Johns Hopkins University, USA)

Deconstructing dopamine's role in reward learning and seeking

10:00 Coffee/Tea break

10:30 Parallel Symposium 26: D

Just when you thought you knew DAT: New twists on dopamine efflux and transport

Chair: Lynette C Daws (University of Texas Health Science Center, USA)

Co-Chair: Harald H. Sitte (Medical University Vienna, Austria)

Introduction

10:40 Speaker 1: Jonathan Javitch (Columbia University, USA)

Mechanisms of amphetamine action illuminated through optical monitoring of dopamine synaptic vesicles in Drosophila brain

11:05 Speaker 2: Habibeh Khoshbouei (University of Florida, USA)

Sigma-1 receptor modulates methamphetamine regulation of dopamine transporter activity

11:30 Speaker 3: Lynette C Daws (University of Texas Health Science Center, USA)

Organic cation transporters: Unsuspected players in the actions of amphetamine

11:55 Speaker 4: **Felix P. Mayer** (Institute of Pharmacology, Medical University of Vienna, Austria)

Amphetamine triggers reverse transport via the organic cation transporter 3

10:30 Parallel Symposium 27:

C2

Canonical and non-canonical D2 dopamine receptor signalling, from the cell surface to the ribosome

Supported by:



Chair: Jean Martin Beaulieu (Laval University, Canada)

Introduction

10:40 Speaker 1: **Signe Mathiasen** (Columbia University, USA)

Single-molecule imaging of D2 receptor signaling

11:05 Speaker 2: **Emmanuel Valjent** (University Montpellier, France)

Regulation of Ribosomal S6 phosphorylation in D1R- and D2R-expressing striatal neurons

11:30 Speaker 3: **Jean Martin Beaulieu** (Laval University, Canada)

Regulation of mood related behavior by GSK3 mediated dopamine receptor signaling

11:55 Speaker 4: **Jordi Ortiz** (Neuroscience Institute, Universitat Autònoma de Barcelona, Spain)

D2 receptor crosstalk with metabotropic glutamate receptors, but not with GABAB receptors, in the regulation of dopamine synthesis in rat brain

10:30 Parallel Symposium 28:

C1

Sex differences in dopamine and reward

Chair: Jill B. Becker (University of Michigan, USA)

Introduction

10:40 Speaker 1: **Mary F. Kritzer** (Stony Brook University, USA)

Sex differences in and sex hormone effects on the glutamatergic mechanisms that regulate dopamine levels in the prefrontal cortex of adult rats

11:05 Speaker 2: **Esther Kristina Diekhof** (University of Hamburg, Germany)

The role of estrogen and progesterone in reinforcement learning and impulsive choice - Evidence from behavioral and neuroimaging research

11:30 Speaker 3: **Kelly Cosgrove** (Yale University, USA)
Sex differences revealed in the dopaminergic signature of tobacco smoking

11:55 Speaker 4: **Kyoji Okita** (Department of Psychiatry and Biobehavioral Sciences, UCLA, United States of America)
Sex Difference in Midbrain Dopamine D2-type Receptors and in Association with Nicotine Dependence

10:30 Parallel Symposium 29: A
Preclinical and clinical studies on Modafinil as a potential treatment for psychostimulant use disorders

Chair: Gianluigi Tanda (NIDA/NIH, USA),

Co-Chair: Edythe London (Laboratory of Molecular Neuroimaging University of California, Los Angeles)

Introduction

10:40 Speaker 1: **Maddalena Mereu** (University of Padua, Italy)
Lack of Dopamine-mediated effects differentiate Modafinil from Methylphenidate actions on cocaine reinforced behavior in rats

11:05 Speaker 2: **Gianluigi Tanda** (NIDA/NIH, USA)
Effects on neurochemistry and behavior of modafinil and its analogs in rodents: new clues for the next generation of medications for the treatment of psychostimulant use disorders

11:30 Speaker 3: **Edythe London** (University of California, Los Angeles, USA)
D2-type Dopamine Receptors and Executive Functioning in Stimulant Users: Modafinil as a Potential Therapeutic Agent

11:55 Speaker 4: **John D. Salamone** (Psychological Sciences, University of Connecticut, United States of America)
Dopamine, effort, and behavioral activation: animal models of effort-related motivational symptoms in psychopathology

10:30 Parallel Symposium 30: B
Dopaminergic Regulation of Adaptive Decision Making in Primates

Supported by:



Chair: Bruno Averbeck (NIMH, USA)

Introduction

10:40 Speaker 1: **Stephanie Groman** (Yale University, USA)
Uncovering the roles of meso-striatal dopamine D2 and D3 receptors in decision-making

11:05 Speaker 2: **Hannah Clarke** (University of Cambridge, United

Kingdom)

Orbitofrontal dopamine depletion upregulates caudate dopamine and alters behavior via changes in reinforcement sensitivity

11:30 Speaker 3: **Vincent Costa** (NIMH, USA)

Comparison of the involvement of dopamine and the amygdala in reinforcement learning

11:55 Speaker 4: **Simon N. Jacob** (Institute of Neuroscience, Technical University of Munich, Germany)

Cell-type specific modulation of behaviorally relevant and distracting stimuli by dopamine D1 receptors in primate prefrontal cortex

12:10 Lunch and Poster session

**Foyer
C1
Aula**

14:00 Parallel Symposium 31:

C2

Dopamine in the periphery: new insights into peripheral dopaminergic function in physiology, disease and therapeutics

Chair: Zachary Freyberg (Columbia University, USA)

Introduction

14:10 Speaker 1: **Ines Armando** (University of Maryland, USA)

Protective effects of the dopamine D2 receptor on renal inflammation and fibrosis

14:35 Speaker 2: **Joan Berman** (Albert Einstein College of Medicine, USA)

Dopamine mediates neuroinflammation and HIV infection of the CNS: Critical roles in neuroAIDS

15:00 Speaker 3: **Alessandro Bonifazi** (NIDA/NIH, USA)

Novel tools to investigate the role of dopamine D2/D3 receptors in antipsychotic drug-induced metabolic disease

15:25 Speaker 4: **Tianyan Zhou** (Department of Pharmaceutics, Peking University, China)

Dopamine enhances the response of sunitinib in the treatment of drug-resistant cancer: involvement of eradicating cancer stem-like cells

14:00 Parallel Symposium 32:

C1

The role of dopamine in psychosis: the latest findings from the prodrome and schizophrenia

Supported by:



Chair: **Oliver Howes** (MRC Clinical Science Centre Imperial College and King's College, United Kingdom)

Co-Chair: **Matthäus Willeit** (Medical University Vienna, Austria)

Introduction

- 14:10 Speaker 1: **Oliver Howes** (MRC Clinical Science Centre Imperial College and King's College, United Kingdom)
Dopamine synthesis in psychosis: relationship to cannabis and treatment response
- 14:35 Speaker 2: **Ana Weidenauer** (Medical University Vienna, Austria)
Effects of d-amphetamine in sensitization and schizophrenia: evidence from [11C]-(+)-PHNO PET imaging
- 15:00 Speaker 3: **Romina Mizrahi** (CAMH, University of Toronto, Canada)
Dopamine dysfunction in people at ultra-high risk for psychosis: the critical role of stress and cannabis
- 15:25 Speaker 4: **Roberto Frau** (Neuroscience and Clinical Pharmacology, University of Cagliari, Italy)
Targeting neurosteroidogenesis as therapeutic strategy for dopamine-related neuropsychiatric disorders

14:00 Parallel Symposium 33:

A

Paradigm-shifting insights into dopamine signalling: lessons learned from the study of trace amine associated receptor 1 pharmacology

Chair: **David Grandy** (Oregon Health & Science University, USA)

Co-Chair: **Raul Gainetdinov** (St. Petersburg State University, Russia)

Introduction

- 14:10 Speaker 1: **Klaudia Brix** (Jacobs University Bremen, Germany)
Trace Amine-Associated Receptor 1 Localization - Implications for Ligand-triggered Action
- 14:35 Speaker 2: **Raul Gainetdinov** (St. Petersburg State University, Russia)
Functional consequences of modulating dopamine and glutamate transmission by TAAR1
- 15:00 Speaker 3: **Jun-Xu Li** (University at Buffalo, USA)
Activation of TAAR 1 reduces cocaine addiction: from behavior to neurobiology
- 15:25 Speaker 4: **Evgeny Budygin** (Neurobiology and Anatomy, Wake Forest School of Medicine, United States of America)

Exploring effects of TAAR1 activation on real-time dopamine neurotransmission, using optogenetics and voltammetry

14:00 Parallel Symposium 34:

B

Dopamine islands, patches, and striosomes: A neglected division of the striatum

Supported by:



Chair: Gordon W. Arbuthnott (OIST Graduate University, Japan)

Co-Chair: Ann M. Graybiel (Massachusetts Institute of Technology, USA)

Introduction

14:10 Speaker 1: **Violeta G. Lopez-Huerta** (OIST Graduate University, Japan)

Striosomes as a 'private' compartment within striatum

14:35 Speaker 2: **Jill Crittenden** (Massachusetts Institute of Technology, USA)

Differential cholinergic control of striosomal and matrix projection neurons in mice with amphetamine-induced repetitive behavior

15:00 Speaker 3: **Takaichi Fukuda** (Kumamoto University, Japan)

Not all striosomes are equal - it depends on where they are.

15:25 Speaker 4: **Carmelo Sgobio** (German Center for Neurodegenerative Diseases - DZNE, Munich, Germany)

Aldehyde dehydrogenase 1-positive nigrostriatal dopaminergic fibers exhibit distinct projection pattern and dopamine release dynamics at dorsolateral striatum

14:00 Parallel Symposium 35:

D

Neuronal dopamine homeostasis and Parkinson disease

Chair: Christian Pifl (Medical University Vienna, Austria)

Introduction

14:10 Speaker 1: **Eugene Mosharov** (Columbia University, USA)

Differential sensitivity of SN and VTA neurons to stress in vitro

14:35 Speaker 2: **Gary Miller** (Emory University, USA)

Low VMAT2 expression in mice recapitulates feature of Parkinson's disease

15:00 Speaker 3: **Luigi Zecca** (Institute of Biomedical Technologies, National Research Council, Segrate (Milan), Italy)

Protective and toxic role of neuromelanin in brain aging and Parkinson disease

15:25 Speaker 4: **Sandhya Kortagere** (Drexel University College of Medicine, United States of America)

Dissecting the role of functional selectivity of Dopamine D3 receptor agonists in L-dopa induced dyskinesia and Parkinson's disease

15:40 Coffee/Tea break

16:10 **Plenary lecture 8:** **C1 +C2**

Chair: **Günther Sperk** (Medical University of Innsbruck)

Introduction

16:15 Mark Wightman (University of North Carolina, USA)

Analytical Tools Propel Discoveries about Dopamine Neurotransmission

17:10 Closing Remarks **C1 +C2**

**Conference Dinner at the Vienna Heurigen Restaurant
Fuhrgassl-Huber**