International Basal Ganglia Society Clinical Workshop 2017 in conjunction with the Movement Disorders Society
Saturday March 25 2017

Scientific Basis of Movement Disorders: Pathophysiology and Pharmacology of the Basal Ganglia
Chaired by Jose A. Obeso and Jose Bargas.

9:00 - 9:15. Welcome and Introduction: Jose A. Obeso, Jose Bargas.


10:00-10:45. H. Bergman (Israel): Cortico-basal ganglia circuits in the parkinsonian state

10:45-11:00. General Discussion

11:00-11:30 Coffee Break

11:30-12:15 J. Blesa (Spain): Animal models of parkinsonism and compensatory mechanisms.

12:15-13:00. M. Morelli (Italy): Levodopa-induced dyskinesias: Molecular and circuitry changes.

13:00-13:15 General Discussion

13:15-14:30 Lunch Break


15:15-16:00 A. Stefani (Italy): Deep Brain Stimulation: The mechanisms of action.

16:00-16:15 General Discussion

16:15-16:30 Coffee Break

16:30-17:15 E. Bezard (France): α-Synuclein Pathophysiology: Therapeutic Implications.

17:15-17:30 Closing Remarks. Jose Bargas, Jose A. Obeso.
Article publishing

A tutorial

By Paul Bolam

Sunday, March 25 from 9:00 AM to 10:00 AM
Selected topics in Basic Science Research
(Basic Science Tutorial)

Chaired by: Nicola B. Mercuri

Introduction by Nicola B. Mercuri (University of Rome Tor Vergata, Italy): “Usefulness of Basic Research to understand neurological diseases of the basal ganglia”.

Mike Beckstead (University of Texas Health Science Center, San Antonio, USA) “Optogenetics as a tool: probing synaptic plasticity in the dopaminergic system”.

Patricio O'Donnell (Pfizer Neuroscience USA) “The striatum as an information integrator”.

Miriam Bocarsly (NIH/NIGMS, USA) "Dopamine D₂ receptors in the basal ganglia regulating motivated behaviors“.

Jeffrey Conn (Vanderbilt University, USA) “M₄ muscarinic receptors modulating striatal and nigral dopamine signaling”.

Hitoshi Morikawa (University of Texas, Austin, USA) “Calcium regulation of neuronal activity and plasticity in the mesolimbic system”.

(Sunday March 26 beginning at 11:00 AM)
IBAGS 2017 Sessions

(Under construction)

Founder Member Conference

Paul Bolam (Oxford Univ, UK)

“Reflections on the Basal Ganglia and Parkinson's Disease”
“Direct and indirect pathways: Friends or Foes?”

A friendly conversation* between Rui Costa (Champaullimaud, Ctr., Portugal) and Anatole Kreitzer (Gladstone, UCSF, USA) aiming to understand Basal Ganglia conceptual models more dynamically: what remains and what has to be changed about the “Two pathways model” (or “rate model”), of the Basal Ganglia after 27 years of being one of the most heuristic models of neuroscience?

Moderator: D. J. Surmeier (Northwestern Univ., USA)

1. R Costa: Basal Ganglia models…TBD (20 min)
2. A Kreitzer: Basal Ganglia models…TBD (20 min)
Questions addressed or guided by J. Surmeier (10 min)
3. A Kreitzer Reply (10 min)
4. R Costa Reply (10 min)
General discussion guided by J. Surmeier (20 min)

*This conversation at the summit of the technological revolution in Basal Ganglia research substitutes the traditional Key Note.
"Pathophysiology of Parkinson’s disease"

(Organizational levels: from molecular to systems & behavior)

Chair: Thomas Boraud (U. Bordeaux, France)

1. Laura Volpicelli (University of Alabama, Tuscaloosa, USA): "G2019S-LRRK2 expression increases the mobile pool of α-synuclein and accelerates recruitment to alpha-synuclein inclusions"

2. Erwan Bezard (CNRS, Bordeaux, France): "Parkinson’s disease is a prion disease"

3. Emilie Syed (MRC, Oxford, UK): "Dynamics of striatal dopamine release related to movement and reward"

4. Claire Delaville (NIH, Bethesda, USA): "Excessive Synchronization in Basal Ganglia-Thalamocortical Circuits in the Hemiparkinsonian Rat During Bradykinesia and Dyskinesia"

5. Aude Retailleau (Univ of Haifa, Haifa, Israel): "Dopamine depletion in the striatum disrupts spatial learning"

6. Jose Obeso (Centro Integral en Neurociencias A.C. HM Cinac, Spain) “Pathophysiology of PD: Findings and lessons from focal interventions"
“Signaling mechanisms and striatal synaptic plasticity in L-DOPA-induced dyskinesias”

(Organization levels: cellular to systems)

Chair: Rosario Moratalla (Inst. Cajal, Spain)

1. Gustavo Murer (Univ of Buenos Aires, Argentina). "Direct / indirect pathway balance after chronic L-Dopa and during LID“.

2. Rosario Moratalla, (Cajal Institute, CSIC, Madrid, Spain) “Synaptic changes after L-DOPA in the lesioned striatum”.

3. Alexandra Nelson (University of California, San Francisco, USA), TBD

4. Maryka Quik (Bioscience Division, SRL International, Menlo Park, USA), TBD

5. Anna Carta (Univ of Cagliari, Italy), TBD.

6. Oscar Solis (Cajal Institute & Univ of Puebla Mexico), TBD.

(Last two speakers have 10 min talks)
“Revealing the Behavioral Functions of Basal Ganglia Circuits”

(Organizational levels: from systems to behavior)

Chair: Joshua Berke

1. Kenji Doya (OIST, Japan), TBD.
2. Mark Howe (Northwestern Univ., USA), TBD.
3. Joshua Berke (Univ of Michigan, USA), TBD.
4. Ann Graybiel (MIT, USA), TBD
"Modeling and theory of basal ganglia circuitry and function"

(Organizational levels: from neurons/synapses to networks/systems)

Chair: Dieter Jaeger

1. Dieter Jaeger (Emory Univ, USA): “Introduction to Modeling Basal Ganglia”. 15 min (no questions).

2) Kim Avrama Blackwell (G. Mason Univ., USA) " How do post-synaptic signaling molecules, activated by calcium and neuromodulators, contribute to striatal synaptic plasticity"

3) Jeanette Hälgren Kotalneski (KTH, Stockholm, Sweden), TBD.

4) Fred Hamker (University Chemniz, Germany), “Neuro-computational insights into basal ganglia pathway functions”.

5) Rafal Bogacz (Oxford Univ., UK) “Learning reward uncertainty in the basal ganglia“.
"Basal Ganglia Circuits at the Center of Addiction"

(Organizational level: from cellular to systems)

Chair: David M. Lovinger

1. Trevor Robbins (Cambridge Univ., UK), TBD
2. Kathleen Grant (Oregon National Primate Research Center/OHSU, USA), TBD
3. Peter Kalivas (Medical University of South Carolina, USA), TBD
4. Bernard Balleine (University of Sydney, Australia), TBD
"Striatal interneurons systems"

(Organizational levels: from neurons/synapses to networks/systems)

Chair: James Tepper


2. Charles W. Wilson (UTSA, USA), “Sub and supra threshold resonance in striatal interneurons”.

3. Enrico Bracci (Sheffield Univ. UK) “Stuff about striatal PLTS interneurons that you never thought of”.

4. M. Assous (Rutgers U, USA) “Differential cortical and thalamic inputs to the two types of striatal NPY interneurons”.

5. G. Silberberg (Karolinska I, Sweden) “Intrinsic and extrinsic inhibitory inputs to striatal cholinergic interneurons”.

“Basal Ganglia structure and function”

(Organizational levels: from neurons to circuits)

Chair: Icnelia Huerta-Ocampo

1. Dorothy Oorschot (University of Otago, New Zeeland) TBD

2. Marisela Morales (NIDA, USA) TBD


4. Juan Mena-Segovia (Rutgers University, USA) TBD

5. Jeffrey Wickens (Okinawa Institute of Science and Technology, Japan) TBD
"Cellular and functional heterogeneity of the external globus pallidus"

(Organizational levels: from molecular to systems)

Chair: Mark Bevan

1. Peter Magill (Oxford Univ., UK) “Neuronal substrates of a division of labor in the external globus pallidus”


3. Hagai Bergman (Hebrew University of Jerusalem, Israel) “Low frequency discharge bursters (LFD-B) in the non-human primate GPe : discharge pattern and correlation properties”.

4. Somebody from S. Chan Lab. (Northwestern Univ., USA), “Cell-specific GABAergic Signaling in the Gpe”

5. Jerome Baufreton (Bordeaux Univ., France) “Functional characterization of afferent inputs of GPe neurons”.

“Establishment of cellular identity and function in the striatum”

(Organizational levels: molecular to systems)

Chair: Jens Hjerling-Leffler

1. Yevgenia Kozorovitskiy (North Western Univ. USA) "Neuromodulation of postnatal synaptogenesis"

2. Tommas Ellender (Oxford Univ. UK) "Development of striatal neurons and circuits"

3. Sonia Garel (École Normale Supérieure, France) "Building the striatal mosaic: active intermixing of direct and indirect projection neurons"

4. Jens Hjerling-Leffler (Karolinska Institutet, Sweden) “Development of neuronal transcriptional identity in the striatum”
Neurophysiology and behavior in non human primates

Chair: Hugo Merchant

1) Okihide Hikosaka (National Eye Institute, NIH, USA) “Monkey neurophysiology of different basal ganglia nuclei during motor learning and decision making”.

2) Masato Tanaka (Hokkaido Univ., Japan) “Monkey neurophysiology of timing behavior in the caudate and motor thalamus”.


4) Sonja Kotz (Maastrich University, The Netherlands) “Cognitive Psychology of music and language in Patients with basal ganglia lesions”.

5) Bruno Averbeck (NIMH, USA) “Learning and Decision Making is prefrontal and premotor cortex and the basal ganglia”.