

Sunday, October 30th

- 3:00 pm Check-in
- 6:00 pm Reception (*Lobby*)
- 7:00 pm Dinner
- 8:00 pm Welcome and opening remarks**
- 8:10 pm Keynote Talk: Thomas Jessell, HHMI/Columbia University**
Motor neurons and the sense of place
- 9:10 pm Refreshments available at Bob's Pub

Monday, October 31st

- 7:30 am Breakfast (*service ends at 8:45am*)
- 9:00 am Session 1: Specification and function of neuronal subpopulations involved in motor output**
Chair: Lynn Landmesser
- 9:00 am **Lynn T. Landmesser**, Case Western Reserve University
Session introduction and historical perspective
- 9:15 am **Ole Kiehn**, Karolinska Institutet
Organization of neuronal networks involved in flexor-extensor alternation in the mammalian spinal cord
- 9:45 am **Martyn Goulding**, Salk Institute for Biological Studies
Genetic dissection of the interneuronal circuits controlling movement in mice
- 10:15 am **Marco Tripodi**, Biozentrum and FMI, Basel
Motor antagonism exposed by spatial segregation and timing of neurogenesis
- 10:30 am Break
- 11:00 am **William Kristan**, University of California, San Diego
Making decisions and generating motor patterns using multifunctional neurons
- 11:30 am **Abdel El Manira**, Karolinska Institutet
Principles of organization and function of locomotor microcircuits in adult zebrafish
- 12:00 pm **David McLean**, Northwestern University
Development and functional organization of an axial locomotor network
- 12:30 pm Lunch
- 2:00 pm Session 2: Muscle synergies, CPG models, and feedback systems**
Chair: Douglas Stuart
- 2:00 pm **Douglas G. Stuart**, University of Arizona
Session introduction and historical perspective
- 2:15 pm **Richard Nichols**, Georgia Institute of Technology
Task dependent feedback in motor coordination

- 2:45 pm **Emilio Bizzi**, Massachusetts Institute of Technology
Modularity for motor coordination
- 3:15 pm **Quan Wen**, Harvard University
*Bending waves during *Caenorhabditis elegans* locomotion are driven and organized by proprioceptive coupling*
- 3:30 pm Break
- 4:00 pm **David J. Maxwell**, University of Glasgow
New perspectives on interneurons in motor networks
- 4:30 pm **Jack L. Feldman**, University of California, Los Angeles
Rhythmogenesis for breathing: Microcircuits and two oscillators
- 5:00 pm Poster Reception
- 7:00 pm Dinner
- 8:00 pm Science Speed Dating! (Lobby)**
- 9:00 pm Refreshments available at Bob's Pub

Tuesday, November 1st

- 7:30 am Breakfast (*service ends at 8:45am*)
- 9:00 am Session 3: Planning, action and learning**
Chair: Roger Lemon
- 9:00 am **Roger N. Lemon**, University College London
Session introduction and historical perspective
- 9:15 am **Karel Svoboda**, Janelia Farm Research Campus/HHMI
Sensorimotor loops underlying active somatosensation
- 9:45 am **Carl C.H. Petersen**, Ecole Polytechnique Federale de Lausanne
Synaptic mechanisms of cortical sensorimotor integration
- 10:15 pm **Binyamin Hochner**, Hebrew University
The organization of the motor control system in the flexible arm of the octopus
- 10:45 am Break
- 11:15 am **Rui Costa**, Champalimaud Neuroscience Programme
Learning and organizing new action repertoires
- 11:45 am **Daniel Wolpert**, Cambridge University
Probabilistic models of human sensorimotor control
- 12:15 pm **John Kalaska**, Université de Montréal
Brain mechanisms for interacting with a world full of action choices
- 12:45 pm Lunch
- 1:15 pm Tour (*optional – meet at reception*)
- 2:15 pm Session 4: Planning, action and learning (continued)**
Chair: Adam Hantman
- 2:15 pm **Chris I. De Zeeuw**, Erasmus University
The neural basis of cerebellar motor control: Distributed dynamic plasticity
- 2:45 pm **Michael Hausser**, University College London
Synaptic integration in cerebellar granule cells during locomotion

- 3:00 pm **Mark M. Churchland**, Columbia University
A conserved principle underlying movement generation
- 3:15 pm **Trevor Drew**, University of Montreal
Contribution of the posterior parietal cortex to visually-guided locomotion in the cat
- 3:45 pm Break
- 4:15 pm **Bijan Pesaran**, New York University
A role for coherent spiking activity in coordinating visual behavior
- 4:45 pm **John W. Krakauer**, Johns Hopkins University
Motor learning: Is it one thing or many different things?
- 5:15 pm **Atsushi Iriki**, RIKEN Brain Science Institute
Induction of higher cognitive functions through monkey tool use training
- 5:45 pm Poster Reception
- 7:00 pm Dinner
- 8:00 pm** **Keynote Talk: Marc Raibert**, Boston Dynamics
Dynamic robots for rough terrain
- 9:00 pm Refreshments available at Bob's Pub

Wednesday, November 2nd

7:15 am Breakfast (*service ends at 8:30am*)

8:45 am Session 5: Insect motor circuits
Chair: Silvia Arber

8:45 am **Ansgar Büschges**, Biocenter Cologne
Generating goal directed and adaptive locomotor behaviors: The role of individual control for a seemingly simple locomotor pattern

9:15 am **Michael Dickinson**, University of Washington
The control of sequential motor actions in the flight behavior of Drosophila

9:45 am **Anne C. von Philipsborn**, Institute of Molecular Pathology
Neuronal circuits for Drosophila courtship song

10:00 am **Roy E. Ritzmann**, Case Western Reserve University
Negotiating complex terrain: Insect brains and behavior – not so simple after all

10:30 am Break

11:00 am Session 6: Functional restoration and neuroengineering
Chair: Keir Pearson

11:00 am **John P. Donoghue**, Brown University
Motor cortex: Functional properties based on neural interface research

11:30 am **Gregoire Courtine**, University of Zurich
Robotic and neuroprosthetic systems to enable, train, and restore motor functions after CNS disorders

12:00 pm **Kaoro Takakusaki**, Asahikawa Medical University
Neural substrates for gait control in relation to the basal ganglia function

12:30 pm Closing remarks

12:35 pm Lunch and Departure (*To-go boxes available from server for those on first shuttle*)

1:00 pm First shuttle to Dulles

1:45 pm Second shuttle to Dulles

2:30 pm Last shuttle to Dulles