Sunday, May 13

3:00 pm Check-in

6:00 pm Reception *(Lobby)*

7:00 pm Dinner *(Table assignments noted in Dining Room!)*

8:00 pm **Welcome and Opening Remarks (Organizers)**

8:05 pm **Plenary Talk**
Daniel Wolpert, Columbia University
Human sensorimotor learning

8:50 pm Refreshments available at Bob's Pub

NOTE:
Meals are in the **Dining Room**
Talks are in the **Seminar Room**
Posters are in the **Lobby**

Monday, May 14

Talks are 15 min + 5 min for Q&A

7:30 am Breakfast *(service ends at 8:45am)*

9:00 am **Session 1: Rodent motor cortex I**
Chair: Andrew Pruszynski

9:00 am **Yi Zuo**, University of California, Santa Cruz
Motor skill learning induces circuit-specific synapse formation in the mouse motor cortex

9:20 am **Jesse Goldberg**, Cornell University
Cortical control of kinematic primitives in mice performing a center-out reach task

9:40 am **Bence Ölveczky**, Harvard University
Non-control functions for motor cortex

10:00 am Break

10:45 am **Session 2: Rodent motor cortex II**
Chair: Yi Zuo

10:45 am **Ian C. Duguid**, University of Edinburgh
Motor cortical circuit dynamics during skilled forelimb movement

11:05 am **Christian Ethier**, Université Laval
Ventral tegmental area contribution to motor cortical encoding of reward expectation

11:25 am **Eric A. Yttri**, Carnegie Mellon University
The role of the cortico-striatal axis in goal-oriented reaching

11:45 am Lunch *(service ends at 1pm)*

1:30 pm **Session 3: Rodent motor cortex III**
Chair: Adam Hantman

1:30 pm **Yutaka Yoshida**, Cincinnati Children's Hospital Medical Center
Corticospinal circuits from the sensory and motor cortex differentially regulate skilled movements through distinct interneurons

1:50 pm **Ju Lu**, University of California Santa Cruz
Functional diversity of new spines formed during a forelimb-specific reaching task

2:10 pm **Britton A. Sauerbrei**, Janelia Research Campus/HHMI
Normal and perturbed neural dynamics in motor cortex during a reach to grab task

2:30 pm **Claire Warriner**, Columbia University
The role of motor cortex in antagonist muscle co-contraction in mouse

2:50 pm Break

3:30 pm **Session 4: Motor learning in humans**
Chair: Claire McKellar

3:30 pm **Maurice Smith**, Harvard University
Understanding the interactions between implicit motor learning and explicit strategies in humans

3:50 pm **Isaac L. Kurtzer**, New York Institute of Technology
Long-latency reflexes to on-axis and off-axis displacements increase with the target approach consistent with optimal feedback control

4:10 pm Break

4:30 pm **Poster Blitz** *(3 min / 2 slides max)*

Ahmet Arac, University of California, Los Angeles
Spencer Arbuckle, The University of Western Ontario
Benjamin Dann, German Primate Center
Michaël Elbaz, Université Laval
Juan Alvaro Gallego, Spanish National Research Council
James Goodman, University of Chicago
Firas Mawase, Johns Hopkins University
Richard Roth, Johns Hopkins University
Abigail Russo, Columbia University
Windsor Ting, CERVO Research Centre
Tess Veuthey, University of California, San Francisco

5:15 pm Poster Reception

7:00 pm Dinner *(Table assignments noted in Dining Room!)*

8:15 pm **Plenary Talk**
John W. Krakauer, Johns Hopkins University
The post-stroke arm and hand

9:00 pm Refreshments available at Bob's Pub

Tuesday, May 15

7:30 am Breakfast *(service ends at 8:45am)*

9:00 am **Session 5: Population dynamics**
Chair: TBD

9:00 am **Nicholas Hatsopoulos**, University of Chicago
Spatiotemporal patterning in motor cortex required for movement initiation

9:20 am **Mark M. Churchland**, Columbia University
Motor cortex embeds muscle-like commands in an untangled population response

9:40 am **Hansjörg Scherberger**, German Primate Center (DPZ)
Sensorimotor processing for hand movement control in the primate brain

10:00 am **Daniel J. O'Shea**, Stanford University
Population dynamics of proprioceptive error signals in motor cortex

10:20 am Break

11:00 am **Session 6: Human hand function**
Chair: Abigail Person

11:00 am **Andrew Pruszynski**, Western University
Hand control reveals smart spinal stretch responses

11:20 am **Jörn Diedrichsen**, Western University
Searching for the neural basis of human dexterous skill

11:40 am **Lior Shmuelof**, Ben-Gurion University of the Negev
Motor acuity acquisition is rapid and does not transfer to other tasks and effectors

12:00 pm Lunch *(service ends at 1pm)*

1:00 pm Tour *(optional – meet at reception)*

2:00 pm **Session 7: Subcortical circuits I**
Chair: Mark Churchland

2:00 pm **Robert Brownstone**, University College London
Spinal microcircuits for regulating paw function

2:20 pm **Eiman Azim**, Salk Institute for Biological Studies
Feedback circuits for skilled forelimb movement

2:40 pm **Martyn Goulding**, Salk Institute for Biological Studies
Genetic dissection of the spinal circuits for touch and movement

3:00 pm **Ludwig F. Ruder**, Friedrich Miescher Institute for Biomedical Research
Brainstem circuit modules for construction of skilled forelimb movements

3:20 pm Break

4:00 pm **Session 8: Subcortical circuits II**
Chair: Robert Brownstone

4:00 pm **Helen C. Lai**, University of Texas Southwestern Medical Center
Probing the origin and function of motor neurons involved in fine motor control

4:20 pm **Abigail L. Person**, University of Colorado School of Medicine
Investigating the role of cerebellar output during skilled motor behavior in mice

4:40 pm **Adam Hantman**, Janelia Research Campus/HHMI
TBD

5:00 pm Poster Reception

6:45 pm Dinner

8:00 pm Refreshments available at Bob's Pub

Wednesday, May 16

7:30 am	Breakfast *(service ends at 8:45am)*
9:00 am	**Session 9: Computational and other systems I** **Chair: Martyn Goulding**
9:00 am	**Stephen Lisberger**, Duke University *A neural-circuit model that mimics Bayesian inference in sensory-motor behavior*
9:20 am	**Sergiy Yakovenko**, West Virginia University School of Medicine *Biomimetic models for upper-limb myoelectric prosthetics*
9:40 am	**Claire E. McKellar**, Janelia Research Campus/HHMI *High-precision neural circuit mapping in a primitive model of directed reaching*
10:00 am	Break
10:45 am	**Session 10: Computational and other systems II** **Chair: Helen Lai**
10:45 am	**Samuel J. Sober**, Emory University *Spike timing codes for skilled motor control*
11:05 am	**Josh Huang**, Cold Spring Harbor Laboratory *Genetic dissection of glutamatergic pyramidal neuron subpopulations underlying motor cortex output pathways*
11:25 am	Conclusion / Final Remarks
11:30 pm	Lunch and Departure (Lunch *service ends at 1pm*)
12:30 pm	First shuttle to Dulles
1:30 pm	Second shuttle to Dulles
2:30 pm	Last shuttle to Dulles