



Program for Motoneuron Meeting

June 11-14, 2018

The Conference venue is the University Memorial Center (UMC) in the middle of the University of Colorado Boulder campus.

The podium talks will be presented in Room 140 of the Chemistry building (Chem 140), which is adjacent to UMC.

The poster sessions and the morning and afternoon breaks will be held in the Glenn Miller Ballroom (UMC).

Monday, June 11

7:00 Registration opens

Introduction

8:10 Roger Enoka and CJ Heckman (Chem 140)

Session #1 – Chair: **Janet Taylor** (Perth)

8:20	Janet Taylor	Introduction to session
8:30	CJ Heckman (Chicago)	Motoneuron to motor unit: the state of our understanding
9:00	Randy Powers (Seattle)	Interpretation of motor unit firing patterns
9:15	Al Hassan (Chicago)	Motor unit firing patterns in stroke
9:30	Andy Fuglevand (Tucson)	Impact of PIC blockade on motor unit activity
9:45	Janet Taylor	Discussion

10:00 *Morning break + **Session A** Posters*

Session #2 – Chair: **Michael Johnson** (Chicago)

10:30	Michael Johnson	Introduction to session
10:40	Jean-Sébastien Blouin (Vancouver)	Motor unit territories in human muscles
10:55	Laura McPherson (Miami)	Distributions of inputs across arm muscles
11:10	Ed Kim (Chicago)	Differences between tibialis anterior and soleus
11:25	Utku Yavuz (Stuttgart)	Distribution of the strength of reciprocal inhibition between lower limb muscles
11:40	Michael Johnson	Discussion

12:00 *Lunch + **Sessions B and C** Posters*

Session #3 – Chair: **Rob Brownstone** (London)

1:30	Rob Brownstone	Introduction to session
1:40	Daniel Zytnicki (Paris)	Extrinsic and intrinsic excitability of motoneurons in mouse models of ALS
1:55	Chris Link (Boulder)	Cellular mechanisms of neuroinflammation in ALS and Alzheimer's Disease
2:10	Christine DiDonato (Chicago)	Genetics of spinal muscular atrophy
2:25	George Mentis (New York)	Mechanisms of motoneuron dysfunction in spinal muscular atrophy
2:40	Rob Brownstone	Discussion

3:00 *Afternoon break + **Session D Posters***

Session #4 – Chair: **Simon Gandevia** (Sydney)

3:30	Simon Gandevia	Introduction to session
3:40	Malgorzata Skup (Warsaw)	Electrical stimulation can increase the density of glutamatergic and cholinergic terminals on motoneurons
3:55	Jacob McPherson (Miami)	Hebbian learning for spinal stimulation
4:10	Mathieu Chardon (Chicago)	Stimulation of dorsal columns to activate motor pools
4:25	Francisco Alvarez (Atlanta)	Graded local spinal neuroinflammation directs motor circuit plasticity after peripheral nerve injury
4:40	Simon Gandevia	Discussion
5:00	Monica Perez and others	Remembering Christine Thomas

5:30 – 7:30 ***Welcome reception and All posters** ([UMC Ballroom](#))*

Tuesday, June 12

Session #5 – Chair: **Zev Rymer** (Chicago)

8:20	Zev Rymer	Introduction to session
8:30	Silvia Muceli (London)	High-density surface EMG recordings
9:00	Xiaogang Hu (Chapel Hill)	Comparison of different high-density EMG decomposition methods
9:15	Gizem Yilmaz (Istanbul)	Comparison of single motor unit potentials using intramuscular and scanning EMG electrodes
9:30	Chris Thompson (Philadelphia)	Quantifying the influence of spinal interneurons on motor output through population interneuron and motor unit recordings
9:45	Zev Rymer	Discussion

10:00 *Morning break + **Session E Posters***

Session #6 – Chair: **Véronique Marchand-Pauvert** (Paris)

10:30	Véronique Marchand-Pauvert	Introduction to session
10:40	Evangelos Kiskinis (Chicago)	Induced pluripotent stem cells from humans
10:55	Gareth Miles (Fife)	Revealing ALS pathophysiology using human iPSPC-based technology
11:10	Colin Franz (Chicago)	<i>In vitro</i> trauma induces TDP-43 proteopathy and exacerbates motor neuron degeneration in ALS patient iPSC-derived motor neurons.
11:25	Cassie Mitchell (Atlanta)	Unraveling the complexity of ALS clinical metrics: predicting survival and optimizing care
11:40	Véronique Marchand-Pauvert	Discussion
12:00	Lunch + Sessions F and G Posters	

Session #7 – Chairs: **CJ Heckman and Vicki Tysseling** (Chicago)

1:30 Poster session – all posters

3:30 **Afternoon break**

Session #8 – Chair: **Inge Zijdwind** (Groningen)

4:00	Inge Zijdwind	Introduction to session
4:10	David Bennett (Edmonton)	Presynaptic facilitation of the monosynaptic reflex in animals
4:25	Monica Gorassini (Edmonton)	Presynaptic facilitation of the monosynaptic reflex in humans
4:40	Milap Sandhu (Chicago)	Intermittent hypoxia-induced plasticity in individuals with spinal cord injury
4:55	Véronique Marchand-Pauvert (Paris)	Heteronymous modulation of H reflexes in ALS
5:10	Jacques Durand (Marseilles)	Hyperexcitability in lumbar networks after SCI in neonate rodents: Motoneuron excitability and excitatory amino acid transmission.
5:25	Inge Zijdwind	Discussion

6:30 – 10:00 **Games Night** (UMC Connection)

Wednesday, June 13

Session #9 – Chair: **Nina Suresh** (Chicago)

8:20	Nina Suresh	Introduction to session
8:30	Allie Hyngstrom (Milwaukee)	Ischemic conditioning and motor unit firing behavior post-stroke
8:45	Dan Feeney (Boulder)	<u>Variability in common synaptic input modulates force steadiness and pegboard time in young and old adults</u>

9:00	Taian Vieira (Torino)	Biofeedback modulation of postural muscle activity
9:15	Madeleine Lowery (Dublin)	Variations in motor unit coherence and nonlinear EMG features of the first dorsal interosseous muscle with increasing force
9:30	Inge Zijdwind (Groningen)	Motor unit discharge characteristics in muscles weakened by spinal cord injury
9:45	Nina Suresh	Discussion

10:00 *Morning break + **Session H** Posters*

Session #10 – Chair: **Jules Dewald** (Chicago)

10:30	Jules Dewald	Introduction to session
10:40	Monica Perez (Miami)	Sensorimotor processing in neurorehabilitation
11:10	Chet Moritz (Seattle)	Therapeutic stimulation for recovery of function after spinal cord injury
11:25	Awad Almuklass (Riyadh)	Modulation of motor activity with electrical nerve stimulation of sensory nerve fibers
11:40	Jules Dewald	Discussion

12:00 *Lunch + **Session I** Posters*

Session #11 – Chair: **Vicki Tysseling** (Chicago)

1:30	Vicki Tysseling	Introduction to session
1:40	Kathy Quinlan (Kingston, RI)	Animal models of motor dysfunction
2:20	Timothy Cope (Atlanta)	Chemotherapy effects on motoneurons
2:35	Mark Rich (Dayton)	Sepsis effects on PICs
2:50	Sherif Elbasiouny (Dayton)	Regulation of motoneuron excitability in ALS
3:05	Vicki Tysseling	Discussion

3:20 *Afternoon break + **Session J** Posters*

Session #12 – Chair: **Jayne Garland** (London, ON)

3:45	Jayne Garland	Introduction to session
4:00	Jacques Duchateau (Brussels)	Role of rate coding in maximizing performance
4:15	Francesco Negro (Brescia)	Estimating motor unit activity during isometric contractions at different rates of force development.
4:30	Anna Hudson (Sydney)	Coordination of motor unit activity in parasternal intercostal muscles
4:45	Ales Holobar (Slovenia)	Identification of motor unit firing patterns from high-density surface electromyograms in dynamic muscle contractions
5:00	Jayne Garland	Discussion

7:00 – 10:00 ***Motoneuron Fête** (Rembrandt Yard)*

Thursday, June 14

Session #13 – Chair: **Kemal Türker** (Istanbul)

8:30	Kemal Türker	Introduction to session
8:40	Charles Rice (London, ON)	Changes in motor unit properties with advancing age
8:55	David Nguyen (Sydney)	The effect of age on the behavior of human diaphragm single motor units
9:10	Evangelos Christou (Gainesville)	Increasing and releasing force in older adults: modulation of motor unit activity
9:25	Brian Dalton (Okanagan, BC)	Maintaining motor units into old age: lessons from master athletes
9:40	Kemal Türker	Discussion
10:00	<i>Morning break</i>	

Session #14 – Chair: **Sandrine Bertrand** (Bordeaux)

10:30	Sandrine Bertrand	Introduction to session
10:40	Hans Hultborn (København)	My histories with PICs since 1983
11:10	Frédéric Brocard (Marseille)	Kv1.2-channels promote nonlinear spiking motoneurons for powering up locomotion
11:25	Marc Binder (Seattle)	Cooperative gating of adjacent calcium channels within surface membrane clusters formed by stochastic self-assembly enhances calcium influx
11:40	Claire Meehan (København)	Reconciling results in adult mouse models of ALS
11:55	Sandrine Bertrand	Discussion
12:15	General Discussion	
12:30	Business Meeting	
1:00	<i>Lunch</i>	
4:00	Happy Hour at <u>Backcountry Pizza and Tap House</u>	

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