## 46th Annual Meeting
Atlanta, Georgia – 2015

### Tuesday, March 17, 2015

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00 pm – 3:00 pm</td>
<td>ASN Scientific Sessions</td>
</tr>
<tr>
<td>3:00 pm – 3:30 pm</td>
<td>Coffee Break Terrace/Regency Foyer</td>
</tr>
<tr>
<td>3:30 pm – 5:30 pm</td>
<td>ASN Scientific Sessions</td>
</tr>
<tr>
<td>5:30 pm – 7:00 pm</td>
<td>Poster Session II - Authors Present/Wine &amp; Cheese</td>
</tr>
</tbody>
</table>

### Symposium S20
**Neuron-Oligodendrocyte Interactions in Development and Disease**
- Chair: Vittorio Gallo
- Co-Chair: David Pleasure
- **S20-01** Bruce Appel
  - ACTIVITY-BIASED SELECTION OF AXONS FOR MYELINATION IN VIVO
- **S20-02** Vittorio Gallo
  - NEONATAL BRAIN INJURY CAUSES ABNORMALITIES IN NEURON-NG2 CELL SYNAPTIC COMMUNICATION
- **S20-03** David Pleasure
  - IMMUNE-MEDIATED DEMYELINATION AND NEURONOPATHY IN AN AUTOIMMUNE MULTIPLE SCLEROSIS MODEL
- **S20-04** Jeff Rothstein
  - OLIGODENDROCYTE SUPPORT OF NEURONS AS A BASIS FOR NEURODEGENERATION INITIATION

### Symposium S21
**Glia Amino Acid Transporters in Health and Disease**
- Chair: Arturo Ortega
- **S21-01** Georgi Ggelashvili
  - FUNCTIONAL CROSS-TALK BETWEEN DIFFERENT SYSTEMS OF GLUTAMATE TRANSPORT AND METABOLISM IN THE SPINAL CORD
- **S21-02** Farrukh Chaudry
  - THE SLC38 FAMILY OF GLUTAMINE TRANSPORTERS AND THEIR CONTRIBUTION TO THE GLUTAMATE/GABA/GLUTAMINE CYCLE
- **S21-03** Arturo Ortega
  - GLAST-DEPENDENT CONTROL OF THE GLUTAMATE/GLUTAMINE SHUTTLE: MOLECULAR TARGETS OF POLLUTANTS
- **S21-04** Michael Aschner
  - GPR30 REGULATES GLUTAMATE TRANSPORTER GLT-1 EXPRESSION IN RAT PRIMARY ASTROCYTOITES

### Symposium S22
**Calpain Inhibitors in Preclinical Models of Neurodegeneration and Neurotrauma**
- Chair: Naren Banik
- Co-Chair: Supriti Samantaray
- **S22-01** Kathryn Saatman
  - EFFECTS OF CALPAIN INHIBITION IN TRAUMATIC BRAIN INJURY AND AXONAL DEGENERATION
- **S22-02** Yoshiyuki Tamada
  - ISCHEMIA ACTIVATES CALPAINS IN EXPERIMENTAL RETINAL NEUROPATHIES
- **S22-03** Supriti Samantaray
  - CHRONIC INTERMITTENT ETHANOL-INDUCED AXON AND MYELIN DEGENERATION IS ATTENUATED BY CALPAIN INHIBITION
- **S22-04** Isaac Donkor
  - CALPAIN INHIBITORS: A SURVEY OF COMPOUNDS IN THE PATENT AND SCIENTIFIC LITERATURE

### Symposium S23
**Inflammation and Myelination: A Match Made in Heaven?**
- Chair: Dana McTigue
- **S23-01** Margot Mayer-Proschel
  - LOSS OF BAX-INTERACTING FACTOR-1 INCREASES NEURONAL SENSITIVITY TO ISCHEMIC INJURY
- **S23-02** Ludmila Volobueva
  - ROLE OF MITOCHONDRIA IN POST STROKE NEUROGENESIS AND INFLAMMATION
- **S23-03** Selva Baltan
  - MITOCHONDRIAL DYNAMICS IN WHITE MATTER STROKE
- **S23-04** Shinghua Ding
  - ROLE OF P66HIF1 IN MITOCHONDRIAL FUNCTION AND BIOGENESIS AFTER ISCHEMIA

### Symposium S24
**Modulation of ABC Transporters and APOE Levels as Therapeutic Targets for Alzheimer’s**
- Chair: Danny Michaelson
- Co-Chair: Mary Jo LaDu
- **S24-01** John Parks
  - KEY FUNCTIONS OF ABCA1 IN MULTIPLE TISSUES
- **S24-02** Cheryl Wellington
  - THE THERAPEUTIC POTENTIAL OF ABCA1 FOR ALZHEIMER DISEASE
- **S24-03** Mary Jo LaDu
  - APOLIPOPROTEIN E LIPIDATION AS A MECHANISTIC THERAPEUTIC TARGET FOR LOWERING SOLUBLE AMYLOID-β LEVELS IN ALZHEIMER’S DISEASE
- **S24-04** Daniel Michaelson
  - ABCA1 DIRECTED TREATMENT OF APOE4 DRIVEN NEURODEGENERATION IN ALZHEIMER’S DISEASE
Neurons sensing noxious stimuli and conducting pain signals from periphery to the spinal cord are predominantly glutamatergic. Members of the SLC1A family of high-affinity glutamate transporters, GluTs (GLAST/EAA1T, GLT1/EAA2, EAAC1/EAA3, and EAAT4) are differentially expressed in sensory neurons and surrounding glial cells. These plasma membrane proteins together with glutamate/cystine exchanger, xCT, are responsible for fine tuning of glutamate concentrations at glutamate receptors and, thus, modulation of excitatory signalling in the spinal cord. Several compounds, believed to affect high-affinity glutamate transport system, including therapeutically promising beta-lactams, have been examined in an in vivo model of neuropathic pain. Both pain behavior and glutamate transporter expression have been investigated in this model at various time-points. For the first time, changes in the expression of rare splice variants of glial glutamate transporter GLT1 have been demonstrated in rats with induced neuropathic pain. The dynamics of expression of high-affinity glutamate transporter subtypes and pattern of nociceptive pointed at complex relations between the functional state of glutamate transport system and the levels of analgesia provided by the tested compounds. The glutamate transport system has been also studied in co-cultures of dorsal root ganglion (DRG) neurons and spinal glial cells. In this in vitro model system, that partially recapitulates primary pain signaling. This also affects GluT interaction with other components of the glutamate sensing- and metabolizing machinery, including mechanisms of refilling and recycling of synaptic vesicles in DRG neurons and spinal glia. The elucidated regulatory pathways seem to provide fine tuning of excitatory signaling in the spinal cord and, can, thus, emerge as prospective drug targets for chronic pain treatment.