

## Nanosymposium podium presentations

### **NOVEMBER 13, 2016, 1:45- 200 PM; ROOM SDCC 32B**

#### **201.04. Stem cell modeling of ALS identifies mTOR and mitochondria dysregulation associated to VAPB mutation**

**\*H. C. MIRANDA<sup>1</sup>**, J. MORESCO<sup>2</sup>, J. M. WARD<sup>1</sup>, M. MITNE, Neto<sup>3</sup>, J. OKUBO<sup>1</sup>, S. MOORE<sup>1</sup>, M. ZATZ<sup>4</sup>, J. YATES, III<sup>2</sup>, A. R. LA SPADA<sup>1</sup>, A. R. MUOTRI<sup>1</sup>;  
<sup>1</sup>UCSD, La Jolla, CA; <sup>2</sup>The Scripps Res. Inst., La Jolla, CA; <sup>3</sup>Grupo Fleury, Sao Paulo, Brazil; <sup>4</sup>Univ. of Sao Paulo, Sao Paulo, Brazil

### **NOVEMBER 13, 2016, 3:30 – 3:45 PM; ROOM SDCC 32B**

#### **201.11. iPSC disease modeling of the excitability phenotype of ALS patient derived motor neurons**

**\*K. C. ROET<sup>1</sup>**, O. WISKOW<sup>2</sup>, S. LEE<sup>1</sup>, X. HUANG<sup>1</sup>, J. SANDOE<sup>2</sup>, A. GRANTHAM<sup>1</sup>, D. BAKER<sup>2</sup>, L. BARRETT<sup>1</sup>, K. EGGAN<sup>2</sup>, C. J. WOOLF<sup>1</sup>;  
<sup>1</sup>Dept. of Neurobio., Boston Children's Hosp., Boston, MA; <sup>2</sup>Harvard Univ., Cambridge, MA

### **NOVEMBER 14, 2016, 8:30 – 8:45 AM; ROOM SDCC 23A**

#### **282.03. Modeling drug response in autism using pluripotent stem cells**

**\*C. MARCHETTO**, Y. KIM, R. SANTOS, A. D. MENDES, S. LINKER, F. GAGE;  
Salk Inst., La Jolla, CA

## Poster Presentations

### NOVEMBER 12, 2016, 1:00 PM

**42.09. Phenotyping of human of ipsc-derived dopaminergic neurons containing the engineered a53t alpha-synuclein mutation**

\*B. W. JARECKI<sup>1</sup>, K. MANGAN<sup>2</sup>, K. KIM<sup>2</sup>, N. AUMANN<sup>2</sup>, L. LITTLE<sup>2</sup>, C. CARLSON<sup>2</sup>, S. DELAURA<sup>2</sup>, E. JONES<sup>2</sup>; <sup>1</sup>Marketing/Sales/Business Develop., CDI, Madison, WI; <sup>2</sup>Cell. Dynamics, Madison, WI

### NOVEMBER 13, 2016, 8:00 AM

**134.07. Functional electrophysiological phenotyping of human iPSC-derived neurons grown on MEAs – a novel approach for *In vitro* disease modeling of neurodegenerative diseases**

\*B. M. BADER, K. JUEGELT, O. H.-U. SCHRÖDER; NeuroProof GmbH, Rostock, Germany

### NOVEMBER 13, 2016, 1:00 PM

**211.20. Astrocytes are necessary for synchronized bursting behavior of neuronal networks in culture**

K. R. SANCHEZ<sup>1</sup>, F. PERRY<sup>1</sup>, M. A. HARRINGTON<sup>1</sup>, \*M. TEMBURNI<sup>2</sup>; <sup>1</sup>Biol. Sci., <sup>2</sup>Biol., Delaware State Univ., Dover, DE

**227.10. Pharmacological profiling of human and mouse motor neurons on microelectrode arrays**

\*D. F. MOAKLEY<sup>1</sup>, J. D. PEREIRA<sup>1</sup>, J. S. GAL<sup>1</sup>, A.-C. DEVLIN<sup>1</sup>, Y. SAPIR<sup>1</sup>, L. A. WILLIAMS<sup>2</sup>, N. ATWATER<sup>2</sup>, D. BAKER<sup>2</sup>, O. WISKOW<sup>2</sup>, S. LEE<sup>3</sup>, K. ROET<sup>3</sup>, K. EGGAN<sup>2,4</sup>, C. J. WOOLF<sup>3,4</sup>, B. J. WAINGER<sup>1,4</sup>; <sup>1</sup>Massachusetts Gen. Hosp., Charlestown, MA; <sup>2</sup>Harvard Univ., Cambridge, MA; <sup>3</sup>Boston Children's Hosp., Boston, MA; <sup>4</sup>Harvard Stem Cell Inst., Cambridge, MA

**227.15. Development and functional applications of human iPSC-derived spinal motor neurons**

E. JONES<sup>1</sup>, C. CHAVEZ<sup>1</sup>, B. MELINE<sup>1</sup>, J. LIU<sup>1</sup>, M. MCLACHLAN<sup>1</sup>, T. BURKE<sup>1</sup>, C. MCMAHON<sup>1</sup>, \*L. CHASE<sup>2</sup>, W. WANG<sup>1</sup>; <sup>1</sup>Cell. Dynamics Intl., Madison, WI; <sup>2</sup>Cell. Dynamics Int'l, Inc., Madison, WI

## **NOVEMBER 14, 2016, 8:00 AM**

### **301.16. Functional endpoint assays to assess neurotoxicity with human iPSC-derived neurons**

S. DELAURA<sup>1</sup>, \*E. M. JONES<sup>2</sup>, K. KIM<sup>1</sup>, C. KANNEMEIER<sup>1</sup>, R. LEWIS<sup>1</sup>, K. MANGAN<sup>1</sup>, B. SWANSON<sup>1</sup>, C. CARLSON<sup>1</sup>; <sup>1</sup>Cell. Dynamics Intl., Madison, WI; <sup>2</sup>Gist Consulting, Middleton, WI

## **NOVEMBER 14, 2016, 1:00 PM**

### **407.09. Using high-throughput screening to predict novel antiseizure interventions**

\*A. MOUSAVI NIK, S. HULSIZER, I. PESSAH; Univ. of California Davis, Davis, CA

### **423.18. Assessing drug neurotoxicity and functional mode of action using high-throughput MEA recording from human iPSC neurons combined with multivariate spike train analysis**

\*K. JÜGELT, A. STEDER, O. H. U. SCHROEDER, B. M. BADER; NeuroProof GmbH, Germany

## **NOVEMBER 15, 2016, 8:00 AM**

### **495.11. BrainPhys™ Neuronal Medium supports the electrical activities of neurons derived from human pluripotent stem cells and primary CNS tissues in long-term cultures**

C. K. H. MAK<sup>1</sup>, \*V. M. LEE<sup>1</sup>, L. H. CHEW<sup>1</sup>, K. MCCORMACK<sup>1</sup>, S. LLOYD-BURTON<sup>1</sup>, A. C. EAVES<sup>1,2</sup>, T. THOMAS<sup>1</sup>, S. A. LOUIS<sup>1</sup>; <sup>1</sup>STEMCELL Technologies Inc, Vancouver, BC, Canada; <sup>2</sup>Terry Fox Lab., BC Cancer Agency, Vancouver, BC, Canada

### **501.28. Pyrethroid insecticide effects on spontaneous electrical activity in neural networks are consistent with effects on voltage gated sodium channels (VGSCs) and dependent on time, concentration, and structure**

J. D. STRICKLAND<sup>1,2</sup>, C. GRANT<sup>4</sup>, J. ROSS<sup>1</sup>, \*W. D. ATCHISON<sup>3</sup>, T. J. SHAFER<sup>4</sup>; <sup>1</sup>Axion Biosystems, Atlanta, GA; <sup>3</sup>Dept Pharmacol & Toxicol, <sup>2</sup>Michigan State Univ., East Lansing, MI; <sup>4</sup>US Environ. Protection Agency, Research Triangle Park, NC

### **523.17. Multielectrode array studies with culture models of motor neurons**

\*A. THARANEETHARAN<sup>1</sup>, S. K. CUSTER<sup>2</sup>, M. A. HARRINGTON<sup>1</sup>; <sup>1</sup>Delaware State Univ., Dover, DE; <sup>2</sup>Indiana Univ. Sch. of Med., Indianapolis, IN

### **558.05. Simultaneous multiwell optogenetic stimulation and microelectrode array recording for disease modeling and toxicological assays**

I. P. CLEMENTS, \*H. B. HAYES, A. M. NICOLINI, C. A. ARROWOOD, D. C. MILLARD, J. D. ROSS; Axion Biosystems, Atlanta, GA

### **561.02. Functional human neurons derived from iPS cells display a range of unique and “exciting” MEA phenotypes.**

\*K. P. MANGAN, C. KANNEMEIER, E. ENGHOFFER, J. MA, S. DELAURA, C. CARLSON; Cell. Dynamics, Intl., Madison, WI

## **NOVEMBER 15, 2016, 1:00 PM**

### **581.04. Multielectrode array platform to study long-term potentiation in human induced pluripotent stem cell-derived neuronal networks**

\*S. BIESMANS, S. HINCKLEY, A. BANG; CPCCG Screening Ctr., Sanford Burnham Prebys Med. Discovery Inst., LA Jolla, CA

### **581.11. C9orf72 als patient and control ipsc line-derived cortical neurons and astrocytes reveal diminished network activity when co-cultured with c9orf72 patient-derived astrocytes**

\*V. J. GARCIA, G. M. THOMSEN, D. RUSHTON, K. WU, R. H. BALOH, C. N. SVENDSEN; Cedars-Sinai, West Hollywood, CA

### **582.13. Dynamics of human neuronal network microcircuitry on high-throughput multielectrode arrays and application in drug screening**

\*S. HINCKLEY, S. BIESMANS, A. BANG; CPCCG, Sanford Burnham Prebys Med. Discovery Inst., La Jolla, CA

### **592.01. Leveraging iPSC-derived cortical neurons harboring known epilepsy mutations to advance personalized medicine**

\*C. B. CARLSON, M. MCLACHLAN, B. MELINE, C. MCMAHON, T. BURKE, S. DELAURA, E. JONES, K. MANGAN; Cell. Dynamics Intl., Madison, WI

## **NOVEMBER 16, 2016, 8:00 AM**

### **689.22. Pathogenic aspects of SCN1A haploinsufficiency in human ipsc derived cortical neurons.**

\*D. SIMKIN<sup>1,2</sup>, G. L. ROBERTSON<sup>2</sup>, E. KISKINIS<sup>2</sup>, A. L. GEORGE, Jr.<sup>1</sup>; <sup>1</sup>Pharmacology, Feinberg Sch. of Med., <sup>2</sup>Neurology, Feinberg Sch. of Med., Northwestern Univ., Chicago, IL

### **691.12. Quantification of seizurogenic activity with multiwell microelectrode array technology for proconvulsant risk assessment and disease-in-a-dish epilepsy models**

\*D. C. MILLARD, H. B. HAYES, A. M. NICOLINI, C. A. ARROWOOD, J. D. ROSS; Axion Biosystems, Atlanta, GA

## **NOVEMBER 16, 2016, 1:00 PM**

### **774.13. Functional assessment of *In vitro* neurotoxicity and network activity using human iPSC derived peripheral neurons on microelectrode arrays**

\*G. C. LUERMAN<sup>1</sup>, D. HESS<sup>2</sup>, E. GUENTHER<sup>3</sup>, H. BOHLEN<sup>2</sup>; <sup>1</sup>Axiogenesis Inc, Plymouth Meeting, PA; <sup>2</sup>Axiogenesis AG, Cologne, Germany; <sup>3</sup>NMI TT GmbH, Reutlingen, Germany