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# DEVELOPMENT AND HOMEOSTASIS OF SKELETAL MUSCLE IN HEALTH AND DISEASE

Asilomar Conference Grounds, Pacific Grove, CA, U.S.A.

June 6 – June 11, 2016

## PROGRAM

Program Abstract Numbers are in *italics*. Full abstract text is available online in the Abstracts Booklet. Poster Abstracts are listed after the Plenary Sessions.

### Monday, June 6

2-6 PM	Meeting Registration	Merrill Hill
3- PM	Housing Check-in	
6-7 PM	Dinner	
7:30-8:30 PM	<b>Opening Keynote Address</b>	Merrill Hill
7:30	<b>Steve Burden, David Glass and Simon Hughes</b> , Meeting Co-Chairs <i>Welcome and Introduction</i>	
7:40	<b>1</b> <b>Louis Kunkel</b> (Boston Children's Hospital and Harvard Medical School, USA) <i>Muscular Dystrophy: Therapy development and genetic modifiers of severity</i>	
8:30-9:30 PM	Opening Reception and set up for Poster Session 1 Poster Session 1 theme: <i>Muscle Diseases and Therapies</i>	Fred Farr Forum

### Tuesday, June 7

7-8:30 AM	Breakfast	
8 AM-5 PM	Meeting Registration	
8:30-11:45 AM	<b>Plenary Session 1</b>	Merrill Hill
	<b>Molecular mechanisms of early muscle development and myoblast fusion</b> <i>Chair: Mary Baylies</i>	
8:30	<b>2</b> <b>Andrea Münsterberg</b> (University of East Anglia, United Kingdom) <i>Regulation of early myogenesis by microRNAs</i>	
9:00	<b>Olivier Pourquié</b> (Harvard Medical School, USA) <i>Making muscle in vitro</i>	
9:30	<b>Colin Crist</b> (McGill University, Canada) <i>Translational control of muscle stem cell activity</i>	
10:00	<b>3</b> <b>Natasha C. Chang</b> , Fabien P. Chevalier, Melanie Lacaria, Michael A. Rudnicki (Sprott Centre for Stem Cell Research, Ottawa Hospital Research Institute, Canada) <i>Symmetric satellite stem cell expansion requires p38<math>\gamma</math>MAPK</i>	
10:15-10:45	Break	
10:45	<b>4</b> <b>Doug Millay</b> (Cincinnati Children's Hospital Medical Center, USA) <i>Mechanisms and applications of muscle stem cell fusion</i>	
11:15	<b>5</b> <b>Talila Volk</b> , Shuoshuo Wang, Karen Fridman, Dana Lorber (Weizmann Institute of Science, Israel) <i>The mechanobiology of muscle nuclei: mechanisms and functional significance</i>	
11:45-1 PM	Lunch	

1-3 PM	<b>Plenary Session 2</b>	Merrill Hill
	<b>Molecular mechanisms of myofibrillogenesis/sarcomerogenesis</b>	
	<i>Chair: Helen Blau</i>	
1:00	<b>Frank, Schnorrer</b> (Max Plack Institute, Munich, Germany) <b>EMBO Young Investigator Lecture</b> <i>Myofibrillogenesis in flight muscles</i>	
1:30	<b>Eldad Tzahor</b> (Weizmann Institute, Rehovot, Israel) <i>Agrin promotes cardiac regeneration by attenuating Dystroglycan-induced cardiomyocyte maturation</i>	
2:00	<b>6 Giselle A. Joseph</b> , Robert S. Krauss (Icahn School of Medicine at Mount Sinai, USA) <i>Age-related myopathy with megaconial mitochondria in mice lacking Group I PAKs</i>	
2:15	<b>7 Ronald L Neppi</b> <sup>1,2</sup> , Chia-Ling Wu <sup>2</sup> , Kenneth Walsh <sup>2</sup> ( <sup>1</sup> Department of Orthopedic Surgery, Brigham and Women's Hospital, USA; <sup>2</sup> Whitaker Cardiovascular Institute, Boston University School of Medicine, USA) <i>lncRNA Chronos is an ageing related repressor of muscle hypertrophy</i>	
2:30	<b>Mary Baylies</b> (Memorial Sloan Kettering Cancer Center, USA) <i>Mechanisms driving myonuclear positioning and its impact on muscle function</i>	
3-3:30	Break	
3:30-5:40 PM	<b>Plenary Session 3</b>	Merrill Hill
	<b>Skeletal muscle ageing: causes of decline, prevention and reversal</b>	
	<i>Chair: Gabrielle Kardon</i>	
3:30	<b>Shahragim Tajbakhsh</b> (Pasteur Institute, Paris, France) <i>Regulation of stem cells during developmental and regenerative myogenesis</i>	
4:00	<b>8 Alessandra Sacco</b> (Sanford Burnham Prebys Medical Discovery Institute, USA) <i>Developmental progression of skeletal muscle stem cells is mediated by autonomous extracellular matrix remodeling</i>	
4:30-4:40	Poster Blitz 1	
4:40	<b>Eric Olson</b> (University of Texas Southwestern, USA) <i>New Insights into muscle disease and regeneration</i>	
5:10	<b>10 Helen Blau</b> (Stanford University, USA) <i>Rejuvenating muscle stem cell fate and function</i>	
5:40-7 PM	Dinner	
7:30-10 PM	<b>Poster Session 1</b> <i>Muscle Diseases and Therapies</i>	
7:30-8:45	<b>Even</b> number board authors presentation	
8:45-10	<b>Odd</b> number board authors presentation	

**Wednesday, June 8**

7-8:30 AM	Breakfast	
8 AM-5 PM	Meeting Registration	
8:30-10 AM	<b>Plenary Session 4</b>	Merrill Hill
	<b>Skeletal muscle as an endocrine organ: nutrition and lifelong health</b>	
	<i>Chair: Michael Rudnicki</i>	
8:30	<b>Ken Walsh</b> (Boston University Medical Center, USA)	

		<i>The role of glycolytic muscle in cardio-metabolic disease</i>	
9:00		<b>Zoltan Arany</b> (University of Pennsylvania Medical Center, USA)	
		<i>Muscle metabolism and the vasculature</i>	
9:30	<b>11</b>	<b>Laura Lukjanenko</b> <sup>1,2</sup> , Juliane Jung <sup>3</sup> , Nagabhooshan Hegde, Claire Perruisseau-Carrier <sup>1</sup> , Eugenia Migliavacca <sup>1</sup> , Michelle Rozo <sup>4</sup> , Sonia Karaz, Guillaume Jacot Karaz <sup>1</sup> , Manuel Schmidt <sup>3</sup> , Liangji Li <sup>4</sup> , Sylviane Metairon, Frédéric Raymond, Umji Lee, Federico Sizzano <sup>1</sup> , David H. Wilson <sup>5</sup> , Nicolas A. Dumont <sup>5</sup> , Alessio Palini <sup>1</sup> , Reinhard Fässler <sup>6</sup> , Pascal Steiner <sup>1</sup> , Patrick Descombes <sup>1</sup> , Michael A. Rudnicki <sup>5</sup> , Chen-Ming Fan <sup>4</sup> , Julia von Maltzahn <sup>3</sup> , Jérôme N. Feige <sup>1</sup> , C. Florian Bentzinger <sup>1</sup> ( <sup>1</sup> Nestle Institute of Health Sciences, Switzerland; <sup>2</sup> Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland; <sup>3</sup> Leibniz Institute for Age Research, Germany; <sup>4</sup> Department of Embryology Carnegie Institution of Washington, USA; <sup>5</sup> Regenerative Medicine Program Ottawa Hospital Research Institute, Canada; <sup>6</sup> Department of Molecular Medicine Max Planck Institute of Biochemistry, Germany)	
		<i>Loss of fibronectin from the aged stem cell niche affects the regenerative capacity of skeletal muscle</i>	
9:45	<b>12</b>	Marine Theret <sup>1,2,3</sup> , <b>Rémi Mounier</b> <sup>1,2,3</sup> ( <sup>1</sup> Institut Neuromyogène, Université Claude Bernard Lyon 1, France; <sup>2</sup> INSERM U1217, France; <sup>3</sup> CNRS UMR 5310, France)	
		<i>AMPKα1-LDH pathway regulates muscle stem cell self-renewal by controlling metabolic homeostasis</i>	
10:00-10:30		Break	
10:30 AM-12:25 PM		<b>Plenary Session 5</b>	Merrill Hill
		<b>Maintenance of skeletal muscle mass - hypertrophy and atrophy</b>	
		<i>Chair: Peter Currie</i>	
10:30		<b>Marco Sandri</b> (Venetian Institute of Molecular Medicine, Padua, Italy)	
		<i>Novel routes in the control of muscle mass</i>	
11:00	<b>13</b>	<b>Ravi Singh</b> <sup>1</sup> , Arseniy Kolonin <sup>1</sup> , William Lagor <sup>2</sup> , Marta Fiorotto <sup>2,3</sup> , Thomas Cooper <sup>1,2</sup> ( <sup>1</sup> Department of Pathology and Immunology, <sup>2</sup> Department of Molecular Physiology Biophysics, <sup>3</sup> Department of Pediatrics, Baylor College of Medicine, USA)	
		<i>Rbfox regulated splicing of Calpain 3 is important for maintaining muscle mass</i>	
11:15		<b>David Glass</b> (Novartis Institutes for Biomedical Research, USA)	
		<i>Signaling pathways mediating skeletal muscle function</i>	
11:45	<b>14</b>	Mary Colasanto <sup>1</sup> , Shai Eyal <sup>2</sup> , Payam Mohassel <sup>3</sup> , Michael Bamshad <sup>4</sup> , Carsten Bonnemann <sup>3</sup> , Eli Zelzer <sup>2</sup> , Anne Moon <sup>5</sup> , <b>Gabrielle Kardon</b> <sup>1</sup> ( <sup>1</sup> University of Utah, USA; <sup>2</sup> Weizmann Institute of Science, Israel; <sup>3</sup> National Institutes of Health, USA; <sup>4</sup> University of Washington, USA; <sup>5</sup> Weis Center for Research, USA)	
		<i>Of Mice and Men: Unexpected insights into muscle development from the Ulnar-Mammary Syndrome gene, Tbx3</i>	
12:15-12:25		Poster Blitz 2	
12:25-2 PM		Lunch	
12:25-2 PM		Poster Session 1 tear-down and Poster Session 2 set-up Poster Session 2 themes: <i>Early Muscle Development/Myogenesis</i> ▪ <i>Muscle Regeneration</i> ▪ <i>Neuromuscular Junctions</i> ▪ <i>Transcription and Chromatin Regulation</i>	
12:25-6 PM		Free Time	
6-7 PM		Dinner	
7:30-10 PM		<b>Poster Session 2</b>	Fred Farr Forum
		<i>Early Muscle Development/Myogenesis</i> ▪ <i>Muscle Regeneration</i> ▪ <i>Neuromuscular Junctions</i> ▪	

7:30-8:45 *Transcription and Chromatin Regulation*  
**Even** number board authors presentation  
 8:45-10 **Odd** number board authors presentation

**Thursday, June 9**

7-8:30 AM Breakfast  
 8 AM-5 PM Meeting Registration

8:30-11:45 AM **Plenary Session 6** Merrill Hill

**Problems and prospects for therapy in DMD and other myopathies**

*Chair: Shahragim Tajbakhsh*

- 8:30 **15** Jennifer Whiddon<sup>1</sup>, Amy Campbell<sup>1</sup>, Sean Shadle<sup>1</sup>, Sujatha Jagannathan<sup>1</sup>, Jun Wen Zhong<sup>1</sup>, Jong Won Lim<sup>1</sup>, Chao-Jen Wong<sup>1</sup>, Lauren Snider<sup>1</sup>, Rabi Tawil<sup>2</sup>, Silvere van der Maarel<sup>3</sup>, Robert Bradley<sup>1</sup>, **Stephen Tapscott**<sup>1</sup> (<sup>1</sup>Fred Hutchinson Cancer Research Center, USA; <sup>2</sup>University of Rochester, USA; <sup>3</sup>Leiden University Medical Center, The Netherlands)  
*Facioscapulohumeral dystrophy: Molecular mechanisms and therapeutic opportunities*
- 9:00 **16** **Kevin Campbell**<sup>1,2</sup> (<sup>1</sup>Howard Hughes Medical Institute, USA; <sup>2</sup>University of Iowa, USA)  
*Structural basis of dystroglycan function*
- 9:30 **59** **Jared Talbot**<sup>1</sup>, Emily Teets<sup>1</sup>, Casie Jingle<sup>1</sup>, David Langenau<sup>2,3</sup>, Sharon Amacher<sup>1</sup> (<sup>1</sup>The Ohio State University, Columbus, OH, USA; <sup>2</sup>Massachusetts General Hospital, Boston, MA, USA; <sup>3</sup>Harvard University, Boston, MA, USA)  
*six-family genes and mylpfa are required to maintain trunk fast muscle integrity*
- 9:45 **Chen-Ming Fan** (Carnegie Institution for Science, USA) – *Disregulated beta-1 integrin activity in aged and dystrophic muscle stem cells*

10-10:30 Break

- 10:30 **17** **Jan J.G.M. Verschuuren** (Leiden University Medical Center, The Netherlands)  
*Antibody-mediated dysfunction of the neuromuscular synapse*
- 11:00 **18** **Markus A. Ruegg** (University of Basel, Switzerland)  
*Restoration of basement membrane assembly by small linker proteins prevents laminin-alpha2-deficient muscular dystrophy*
- 11:30 **93** **David Beeson**, Judith Cossins, Kate Belaya, Pedro Rodriguez-Cruz, Jacqueline Palace (University of Oxford, UK)  
*Hereditary myasthenic syndromes: new genes and better treatment*

11:45-1 PM Lunch

11:45-1 PM Poster Session 2 tear-down and Poster Session 3 set-up  
 Poster Session 3 themes: *Muscle Ageing* ▪ *Musculoskeletal Interactions* ▪ *Regulation of Muscle Mass* ▪ *Stem and Satellite Cells*

1:00-4:40 PM **Plenary Session 7** Merrill Hill

**Muscle diversification**

*Chair: Tom Rando*

- 1:00 **Warren Tourtellotte** (Northwestern University School of Medicine, USA)  
*Molecular and developmental mechanisms mediating skeletal muscle stretch receptor morphogenesis and proprioception*
- 1:30 **20** Tapan G. Pipalia<sup>1</sup>, Jana Koth<sup>1,2</sup>, Shukolpa D. Roy<sup>1</sup>, Christina L. Hammond<sup>1</sup>, Koichi Kawakami<sup>3</sup>  
**Simon M. Hughes**<sup>1</sup> (<sup>1</sup>King's College London, UK; <sup>2</sup>Oxford University, UK; <sup>3</sup>National Institute of Genetics, Japan)  
*Imaging fusion in vivo reveals roles of two distinct Pax7 stem cell populations in larval*

- zebrafish muscle repair*
- 2:00 **21** **Rosamaria Correra**<sup>1</sup>, David Ollitault<sup>1</sup>, Alessia Mazzola<sup>1</sup>, Bjorn Adalsteinsson<sup>2</sup>, Anne Ferguson-Smith<sup>2</sup>, Giovanna Marazzi<sup>1</sup>, David Sassoon<sup>1</sup> (<sup>1</sup>Stem Cells and Regenerative Medicine, Institute of Cardiometabolism and Nutrition (ICAN), UMRS 1166 INSERM, University of Pierre and Marie Curie Paris VI, France; <sup>2</sup>Department of Genetics, University of Cambridge, UK)  
*Pw1/Peg3 regulates skeletal muscle growth and satellite cells self-renewal*
- 2:15 Poster Blitz 3
- 2:25 **Carmen Birchmeier** (Max Delbruck Institute, Berlin, Germany)  
*Divergent and conserved roles of Notch signaling in development of craniofacial and trunk muscle*
- 2:55-3:25 Break
- 3:25 **22** **Peter Currie**<sup>1,2</sup> (<sup>1</sup>Australian Regenerative Medicine Institute; <sup>2</sup>EMBL Australia, Australia)  
*Regulation of muscle stem cells during organ growth*
- 3:55 **23** **Michael A. Rudnicki** (Ottawa Hospital Research Institute, Canada)  
*Molecular regulation of muscle stem cell asymmetric division*
- 4:25 **19** **Michael Hicks**<sup>1,2</sup>, Julia Hiserodt<sup>1</sup>, Katrina Paras<sup>1</sup>, Wakana Fujiwara<sup>1</sup>, Haibin Xi<sup>1,2</sup>, Majib Jan<sup>1,2</sup>, Ascia Eskin<sup>2,3</sup>, Stan Nelson<sup>2,3</sup>, Melissa Spencer<sup>2</sup>, Ben Van Handel<sup>4</sup>, April Pyle<sup>1,2</sup> (<sup>1</sup>Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research, <sup>2</sup>Center for Duchenne Muscular Dystrophy, and <sup>3</sup>Department of Human Genetics University of California, Los Angeles, USA; <sup>4</sup>Novogenix Laboratories, USA)  
*Maturation of human pluripotent stem cells towards skeletal muscle progenitor cells using directed differentiation to deliver CRISPR/Cas9 gene editing therapies for DMD*
- 4:45-6 PM **Panel Discussion** Merrill Hill  
**Turning CRISPR into CRISPR/Gene Therapy**
- 6-7 PM Dinner
- 7:30-10 PM **Poster session 3** Fred Farr Forum  
*Muscle Ageing ▪ Musculoskeletal Interactions ▪ Regulation of Muscle Mass ▪ Stem and Satellite Cells*
- 7:30-8:45 **Even** number board authors presentation
- 8:45-10 **Odd** number board authors presentation

### **Friday, June 10**

- 7-8:30 AM Breakfast
- 8 AM-5 PM Meeting Registration
- 8:30 AM-12 PM **Plenary Session 8** Merrill Hill  
**Neuromuscular and myotendinous junctions**  
*Chair: Kevin Campbell*
- 8:30 **Thomas Rando**, Stanford Medical School  
*Molecular regulation of stem cell quiescence and activation*
- 9:00 **24** Gribble Katherine<sup>1</sup>, Juliane Bremer<sup>1</sup>, John Kuwada<sup>2</sup>, **Michael Granato**<sup>1</sup> (<sup>1</sup>University of Pennsylvania, USA; <sup>2</sup>University of Michigan, USA)  
*A novel role for the Agrin receptor Lrp4 in peripheral nerve regeneration*
- 9:30 **25** Viviana Pérez<sup>1,3</sup>, Francisca Bronfman<sup>2,3</sup>, Margarita Calvo<sup>2,3</sup>, Felipe Court<sup>2,3</sup>, Claudio Cabello-

Verrugio<sup>4</sup>, Marco Fuenzalida<sup>5</sup>, Ariel Ionescu<sup>6</sup>, Eran Perlson<sup>6</sup>, **Juan Pablo Henríquez**<sup>1,3</sup>  
 (1Universidad de Concepción, Chile; 2P. Universidad Católica de Chile; 3Millenium Nucleus in  
 Regenerative Biology, Chile; 4Universidad Andrés Bello, Chile; 5Universidad de Valparaíso,  
 Chile; 6Tel Aviv University, Israel)

*Presynaptic neurotrophin co-receptor p75 is required for the maturation of the neuromuscular  
 junction*

9:45 **26** Ortal Kraft-Sheleg<sup>1</sup>, Shelly Zaffryar-Eilot<sup>1</sup>, Olga Genin<sup>2</sup>, Wesal Yaseen<sup>1</sup>, Sharon  
 Soueid-Baumgarten<sup>1</sup>, Ofra Kessler<sup>3</sup>, Tatyana Smolkin<sup>3</sup>, Gal Akiri<sup>3</sup>, Gera Neufeld<sup>3</sup>, Yuval  
 Cinnamon<sup>2</sup>, **Peleg Hasson**<sup>1</sup> (1The Rappaport Faculty of Medicine and Research Institute,  
 Technion – Israel  
 Institute of Technology, Israel; 2Institute of Animal Sciences, The Volcani Center, Israel;  
 3Cancer Research and Vascular Biology Center, Technion – Israel Institute of Technology,  
 Israel)

*Localized LoxL3-dependent fibronectin oxidation regulates myofiber stretch and integrin-  
 mediated adhesion*

10-10:30 Break

10:30 **27** Joana Esteves de Lima<sup>1,2,3</sup>, Marie-Ange Bonnin<sup>1,2,3</sup>, **Delphine Duprez**<sup>1,2,3</sup> (1CNRS UMR  
 7622, IBPS-Developmental Biology Laboratory, France; 2Sorbonne Universités, UPMC Univ  
 Paris, IBPS-Developmental Biology Laboratory, Paris, France; 3Inserm U1156, Paris, France)  
*Mechanobiology of skeletal muscle during development*

11:00 **28** **Irina Kramerova**<sup>1</sup>, Natalia Ermolova<sup>1</sup>, Ascia Eskin<sup>1</sup>, Andrea Hevener<sup>1</sup>, Oswald  
 Quehenberger<sup>2</sup>, Aaron Armando<sup>2</sup>, Ronald Haller<sup>3</sup>, Stanley Nelson<sup>1</sup>, Melissa Spencer<sup>1</sup>  
 (1University of California, Los Angeles; 2University of California, San Diego; 3UT Southwestern  
 Medical Center, USA)

*Failure to up-regulate transcription of genes necessary for muscle adaptation underlies limb  
 girdle muscular dystrophy 2A (calpainopathy)*

11:15 **29** **Peter Houweling**<sup>1,2</sup>, Marshall Hogarth<sup>2,3</sup>, Kristen Thomas<sup>2</sup>, Heather Gordish-Dressman<sup>3</sup>, Luca  
 Bello<sup>3,4</sup>, Elena Pegoraro<sup>4</sup>, Eric Hoffman<sup>3</sup>, Stewart Head<sup>5</sup>, Kathryn North<sup>1,2</sup> (1Murdoch Childrens  
 Research Institute, Australia; 2Institute for Neuroscience and Muscle Research, Australia;  
 3Children's National Medical Centre, USA; 4University of Padova, Italy; 5University of New  
 South Wales, Australia)

*a-Actinin-3 is a novel genetic modifier of Duchenne muscular dystrophy (DMD)*

11:30 **Ronen Schweitzer** (Oregon Health and Science University, USA)  
*Regulation of musculoskeletal integration and tendon elongation*

12-1 PM Lunch

12-1 PM Poster Session 3 tear-down

1-3 PM **Panel Discussion** Merrill Hill  
**Therapeutic Approaches for Muscle Diseases**

3-3:30 PM Break

3:30-4:30 PM **Closing Keynote Address** Merrill Hill  
**30 Steve Hauschka** (University of Washington, USA)  
*54 Years of Myogenesis and Counting: Unresolved myogenic questions from stem cells to  
 gene regulation*

6:30 - ? PM **Closing Dinner**  
**Announcement and Celebration of Best Poster Winners**

**Saturday, June 11**

Departure

**POSTER SESSIONS**

Poster Session 1

Tuesday, June 7, 7:30-10 PM

Fred Farr Forum

Program Number in *italics*. Poster Board Number: Bxx

Set-up: Monday, June 6, 8:30-9:30 PM

Tear down: Wednesday, June 8, 12-1 PM

7:30-8:45 PM Even number board authors presentation

8:45-10 PM Odd number board authors presentation

***Muscle Diseases and Therapies***

- 32 B1** *Exercise-like effects by Estrogen-related receptor gamma in muscle do not prevent insulin resistance in db/db mice* **Pierre-Marie Badin**<sup>1</sup>, Isabelle Vila<sup>2</sup>, Danesh Sopariwala<sup>1</sup>, Vikas Yadav<sup>1</sup>, Sabina Lorca<sup>1</sup>, Katie Louche<sup>3</sup>, Eun-Ran Kim<sup>1</sup>, Qingchun Tong<sup>1</sup>, Min Sup Song<sup>2</sup>, Cedric Moro<sup>2</sup>, Vihang Narkar<sup>1</sup> (<sup>1</sup>University of Texas Medical School at Houston, US; <sup>2</sup>University of Texas MD Anderson Cancer Center, Houston, US; <sup>3</sup>Institut National de la Santé et de la Recherche Médicale, Inserm UMR 1048, France)
- 33 B2** *Brown and beige fat promote rotator cuff muscle regeneration through paracrine signaling* Anna Bryniarski, **Gretchen Meyer** (Washington University in St. Louis, USA)
- 34 B3** *Osteopontin ablation ameliorates muscular dystrophy by shifting macrophages to a pro-regenerative phenotype* **Joana Capote**<sup>1</sup>, Irina Kramerova<sup>1</sup>, Leonel Martinez<sup>1</sup>, Sylvia Vetrone<sup>3</sup>, Elisabeth Barton<sup>2</sup>, Lee Sweeney<sup>2</sup>, Carrie Miceli<sup>1</sup>, Melissa Spencer<sup>1</sup> (<sup>1</sup>University of California, Los Angeles, USA; <sup>2</sup>University of Florida, Gainesville, USA; <sup>3</sup>Whittier College, USA)
- 35 B4** *A reduction in Selenoprotein S (SEPS1) amplifies the inflammatory profile of fast twitch skeletal muscle and reduces fibre size distribution in the mdx dystrophic mouse* **Craig Wright**<sup>1</sup>, Giselle Keefe<sup>1</sup>, Alex Addinsall<sup>2</sup>, Natasha McCrae<sup>2</sup>, Sof Andrikopoulos<sup>3</sup>, Nicole Stupka<sup>2</sup> (<sup>1</sup>Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University, Waurn Ponds, VIC, Australia; <sup>2</sup>School of Medicine, Deakin University, Waurn Ponds, VIC, Australia; <sup>3</sup>Department of Medicine - Austin Health, The University of Melbourne, Heidelberg, VIC, Australia)
- 36 B5** *Lymphoid regulators of muscle inflammation and regeneration during muscular dystrophy* **Armando Villalta**<sup>1</sup>, Wendy Rosenthal<sup>2</sup>, Leonel Martinez<sup>3</sup>, Amanjot Kaur<sup>2</sup>, Tim Sparwasser<sup>4</sup>, James G. Tidball<sup>3</sup>, Marta Margeta<sup>2</sup>, Melissa Spencer<sup>3</sup>, Jeffrey A Bluestone<sup>2</sup> (<sup>1</sup>University of California Irvine, USA; <sup>2</sup>University of California San Francisco, USA; <sup>3</sup>University of California Los Angeles, USA; <sup>4</sup>Twincore, Germany)
- 37 B6** *Single-cell based analysis of functional populations in aged and dystrophic muscle* **Lorenzo Giordani**<sup>1</sup>, Fabien Le Grand<sup>1,2</sup> (<sup>1</sup>Centre de Recherche en Myologie, 105, bld de l'hôpital - G.H. Pitié-Salpêtrière, Paris, France; <sup>2</sup>Institut National de la Santé et de la Recherche Médicale (INSERM), France)
- 38 B7** *Development of a High-throughput Screen for Drugs to Treat Limb Girdle Muscular Dystrophy Type 2A* **Jian Liu**<sup>1</sup>, Irina Kramerova<sup>1</sup>, Ascia Eskin<sup>2</sup>, Robert Damoiseaux<sup>3</sup>, Carrie Miceli<sup>4</sup>, Stanley Nelson<sup>2</sup>, Melissa Spencer<sup>1</sup> (<sup>1</sup>Department of Neurology, University of California, Los Angeles, USA; <sup>2</sup>Department of Human Genetics, University of California, Los Angeles, USA; <sup>3</sup>California Nanosciences Institute, University of California, Los Angeles, USA; <sup>4</sup>Department of Microbiology, Immunology and Molecular Genetics, University of California, Los Angeles, USA)
- 39 B8** *Loss of Anoctamin 5 leads to membrane-associated defects in a mouse model of Limb-Girdle Muscular Dystrophy* **Ryan Johnson**<sup>1</sup>, Danielle Griffin<sup>1</sup>, Eric Pozsgai<sup>1</sup>, Kristin Heller<sup>1</sup>, Jared Whitlock<sup>2</sup>, Zarife Sahenk<sup>1</sup>, Criss Hartzell<sup>2</sup>, Louise Rodino-Klapac<sup>1</sup> (<sup>1</sup>The Research Institute at Nationwide Childrens Hospital, USA; <sup>2</sup>Emory University School of Medicine, USA)



- 40 **B9** *A tunable phenotypic FSHD-like mouse model* **Takako Jones**, Peter Jones (University of Massachusetts Medical School, USA)
- 41 **B10** *PAX3 and PAX7 target genes are globally repressed in skeletal muscle in Facioscapulohumeral muscular dystrophy* **Peter Zammit**<sup>1</sup>, Maryna Panamarova<sup>1</sup>, Robert White<sup>1</sup>, Frédéric Relaix<sup>2</sup>, Simone Severini<sup>3</sup>, Christopher Banerji<sup>1,3</sup> (<sup>1</sup>King's College London, UK; <sup>2</sup>Paris Est-Creteil University, France; <sup>3</sup>University College London, UK)
- 42 **B11** *Genetic reduction of the extracellular matrix protein versican modulates the function and pathology of fast and slow hindlimb muscles from dystrophic mdx mice* Natasha R. McRae<sup>1</sup>, Leonard G. Forgan<sup>1</sup>, Chris van der Poel<sup>2</sup>, Daniel R McCulloch<sup>1</sup>, **Nicole Stupka**<sup>1</sup> (<sup>1</sup>School of Medicine, Deakin University, Australia; <sup>2</sup>School of Life Science, La Trobe University, Australia)
- 43 **B12** *Genetic reduction of versican improves fatigability and strength of diaphragm muscles from dystrophic mdx mice* **Natasha McRae**<sup>1</sup>, Alex Addinsall<sup>1</sup>, Chris van der Poel<sup>2</sup>, Nicole Stupka<sup>1</sup> (<sup>1</sup>Deakin University, Australia; <sup>2</sup>La Trobe University, Australia)
- 44 **B13** *The contribution of nuclear and cytoplasmic CELF1 protein to muscle wasting in myotonic dystrophy type 1* **Diana C. Cox**, Thomas A. Cooper (Baylor College of Medicine Departments of Pathology and Immunology and Biochemistry and Molecular Biology, Houston, TX, USA)
- 45 **B14** *An inducible mouse model expressing expanded CUG RNA repeats recapitulates skeletal muscle phenotypes of myotonic dystrophy type 1* **Ginny Morriss**, Thomas Cooper (Baylor College of Medicine, USA)
- 46 **B15** *The transcriptional landscape of inherited skeletal muscle disease in zebrafish* **Jane Patrick**, Samantha N. Carruthers, Neha Wali, Ian M. Sealy, John E. Collins, Elisabeth M. Busch-Nentwich (Wellcome Trust Sanger Institute, UK)
- 47 **B16** *Regulation of skeletal muscle development and disease by an actin-dependent transcriptional circuit* **Bercin K. Cenik**, Ning Liu, Beibei Chen, Svetlana Bezprozvannaya, Rhonda Bassel-Duby, Eric N. Olson (UT Southwestern Medical Center, USA)
- 48 **B17** *Is the epidermal growth factor signalling pathway a regulator of skeletal muscle fibre type plasticity?* **Margherita Ciano** (Imperial College London, UK)
- 49 **B18** *Exosome-driven EMT causes skeletal muscle degeneration and fibrosis in the mouse model of the lysosomal disease sialidosis* **Alessandra d'Azzo**, Diantha van de Vlekkert (St. Jude Children's Research Hospital, USA)
- 50 **B19** *Locus colocalization is essential for the formation of the PAX3-FOXO1 fusion gene in alveolar rhabdomyosarcoma.* Irina Lagutina<sup>1</sup>, Virginia Valentine<sup>1</sup>, Fabrizio Picchione<sup>1</sup>, Frank Harwood<sup>1</sup>, Marcus Valentine<sup>1</sup>, Barbara Villarejo-Balcells<sup>2</sup>, Jaime Carvajal<sup>2,3</sup>, **Gerard Grosveld**<sup>1</sup> (<sup>1</sup>St Jude Children's Research Hospital, USA; <sup>2</sup>The Institute of Cancer Research, UK; <sup>3</sup>Centro Andaluz de Biología del Desarrollo, Spain)
- 51 **B20** *Insights into the origins and pathogenesis of embryonal rhabdomyosarcoma.* Catherine J. Drummond, Matthew R. Garcia, Daniel J. Devine, Jennifer Peters, Victoria Frohlich, David Finkelstein, **Mark E. Hatley** (St. Jude Children's Research Hospital, USA)
- 52 **B21** *Novel Roles for EPH-RTKs in Rhabdomyosarcoma* **Veronica LaCombe**, Morgan Seibert, DDW Cornelison (University of Missouri, USA)
- 53 **B22** *Dietary flavonoids prevent ubiquitin ligases-mediated muscle wasting in tumor-bearing mice* **Katsuya Hirasaka**<sup>1</sup>, Takeshi Nikawa<sup>2</sup>, Yao Wang<sup>1</sup>, Takayuki Uchida<sup>2</sup>, Reiko Nakao<sup>3</sup>, Shigeto Taniyama<sup>1</sup>, Katsuyasu Tachibana<sup>1</sup> (<sup>1</sup>Graduate School of Fisheries and Environmental Sciences, Nagasaki University, Japan; <sup>2</sup>Department of Nutritional Physiology, Institute of Medical Nutrition, Tokushima University Medical School, Japan; <sup>3</sup>National Institute of Advanced Industrial Science and Technology, Japan)
- 54 **B23** *Culture Media for Expansion and Differentiation of Human Skeletal Muscle Myogenic Progenitors* **Robert Judson**<sup>1</sup>, Kimberly Feng<sup>1</sup>, Crystal Chau<sup>1</sup>, Arthur Sampaio<sup>1</sup>, Terry Thomas<sup>1</sup>, Allen Eaves<sup>1,2</sup>, Stephen Szilvassy<sup>1</sup>, Sharon Louis<sup>1</sup> (<sup>1</sup>STEMCELL Technologies Inc., Vancouver, BC, Canada; <sup>2</sup>Terry Fox Laboratory,

- BC Cancer Agency, Vancouver, BC, Canada)
- 55 B24** *Derivation of myogenic cells from human induced pluripotent stem (iPS) cells using a stirred bioreactor* **Yuko Miyagoe-Suzuki** (National Institute of Neuroscience, Japan)
- 56 B25** *Precise genome editing in human induced pluripotent stem cell models of FKRP-deficient muscular dystrophy* Beatrice Lana<sup>1</sup>, Jihee Kim<sup>1</sup>, David Ryan<sup>2</sup>, Evangelos Konstantinidis<sup>1</sup>, Derek Stemple<sup>2</sup>, Francesco Muntoni<sup>3</sup>, **Yung-Yao Lin**<sup>1</sup> (<sup>1</sup>Blizard Institute, Queen Mary University of London, 4 Newark Street, London E1 2AT, UK; <sup>2</sup>Wellcome Trust Sanger Institute, Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 1SA, UK; <sup>3</sup>UCL Institute of Child Health, 30 Guilford Street, London WC1N 1EH, UK)
- 57 B26** *Cytosolic Ca<sup>2+</sup> dynamics through the SR is associated with pathology of muscular dystrophy* **Jun Tanihata** (Department of Molecular Therapy, National Institute of Neuroscience, National Center of Neurology and Psychiatry, Japan)
- 58 B27** *Integrative therapeutics: a novel approach to discover new treatments for muscle disease* **Sahar Tavakoli**<sup>1</sup>, Leonard Zon<sup>1,3,4</sup>, Amy Wagers<sup>1,2,4</sup> (<sup>1</sup>Harvard Department of Stem Cell and Regenerative Biology, USA; <sup>2</sup>Joslin Diabetes Center, USA; <sup>3</sup>Boston Children's Hospital, USA; <sup>4</sup>Harvard Medical School, USA)
- B28**
- 60 B29** *Impaired satellite cells differentiation in children with cerebral palsy* **Andrea Domenighetti**<sup>1,2</sup>, Margie Mathewson<sup>3</sup>, Henry Chambers<sup>3,4</sup>, Richard Lieber<sup>1,2</sup> (<sup>1</sup>Rehabilitation Institute of Chicago, USA; <sup>2</sup>Northwestern University, Chicago, USA; <sup>3</sup>UC San Diego, USA; <sup>4</sup>Children's Hospital and Health Center, San Diego, USA)
- 61 B30** *Effects of dietary soy protein on skeletal muscle volume and strength in humans with various physical activities* **Takeshi Nikawa**<sup>1</sup>, Rie Hashimoto<sup>1</sup>, Katsuya Hirasaka<sup>2</sup>, Chiaki Yano<sup>1</sup>, Kana Aibara<sup>1</sup>, Ayako Ohno (Maita)<sup>1</sup>, Kazuhito Akama<sup>3</sup> (<sup>1</sup>Department of Nutritional Physiology, Tokushima University Graduate School, Japan; <sup>2</sup>Graduate school of Fisheries Science and Environmental Studies, Nagasaki University, Japan; <sup>3</sup>Faculty of Life and Environmental Science, Shimane University, Japan)
- 62 B31** *GAA deficiency in Pompe disease is alleviated by exon inclusion in iPS cell-derived skeletal muscle cells* **Erik van der Wal**<sup>1</sup>, Atze J. Bergsma<sup>1</sup>, Joon Pijnenburg<sup>1</sup>, Tom J.M. van Gestel<sup>1</sup>, Holm Zaehres<sup>2</sup>, Marcos J. Araúzo-Bravo<sup>2</sup>, Hans R. Schöler<sup>2</sup>, Ans T. van der Ploeg<sup>1</sup>, WWM Pim Pijnappel<sup>1</sup> (<sup>1</sup>Erasmus Medical Center, The Netherlands; <sup>2</sup>Max Planck Institute for Molecular Biomedicine, Germany)
- 63 B32** *The satellite cell paradox in Pompe disease: an increased regenerative potential combined with a failure to respond to disease-mediated damage* **Gerben Schaaf**, Tom van Gestel, Stijn in t Groen, Ans van der Ploeg, WWM Pim Pijnappel (Erasmus MC Dept of Pediatrics, The Netherlands)
- 64 B33** *Development of a CRISPR/Cas9-mediated gene editing platform to restore the reading frame for 60% of Duchenne muscular dystrophy patients* **Courtney Young**, Michael Hicks, Natalia Ermolova, Haruko Nakano, Majib Jan, Shahab Younesi, Atsushi Nakano, Stanley Nelson, Carrie Miceli, Melissa Spencer, April Pyle (University of California, Los Angeles, USA)

**Poster Session 2    Wednesday, June 8, 7:30-10 PM    Fred Farr Forum**

Program Number in *italics*.    Poster Board Number: Bxx

**Set-up: Wednesday, June 8, 12-1 PM    Tear down: Thursday, June 9, 12-1 PM**

7:30-8:45 PM    Even number board authors presentation

8:45-10 PM    Odd number board authors presentation

**Early Muscle Development/Myogenesis**

- 65 B1** *Analyses of muscle diversification processes by cell specific approaches in Drosophila* **Benjamin Bertin**, Yoan Renaud, Krzysztof Jagla, Guillaume Junion (GreD, INSERM U1103, CNRS UMR6293, University of Clermont Ferrand, France)

- 66 B2 *The cellular pathways that direct myotube pathfinding* Brenna Clay, **Aaron Johnson** (University of Colorado, Denver, USA)
- 67 B3 *Understanding the role of the novel protein CG1674 in muscle structure and function in *Drosophila melanogaster** **Marilyn Cisneros**, Richard Cripps (University of New Mexico, USA)
- 68 B4 *Defining the regulatory network of fiber specific alternative splicing in *Drosophila* muscle development* **Sandy Oas** (University of New Mexico, USA)
- 69 B5 *Anchoring of the Muscle Nuclei to the Plasma Membrane is Mediated by ?? Amphiphysin-MSP300/Nesprin Complex* **Adriana Reuveny**, Talila Volk (Weizmann Institute of Science, Israel)
- 70 B6 *Differential usage of nuclear import pathways among myonuclei* **Alicia Cutler**, Anita Corbett, Grace Pavlath (Emory University, USA of America)
- 71 B7 *Epigenetic Mechanisms of Histone Deacetylase 1 and 2 regulate Skeletal Muscle Differentiation* **Hosouk Joung**<sup>1,2</sup>, Hyun-Ki Min<sup>1,2</sup>, Gwang Hyeon Eom<sup>1</sup>, Hyun Kook<sup>1,2</sup> (<sup>1</sup>Department of Pharmacology, Chonnam National University Medical School, Gwangju 501-746, South Korea; <sup>2</sup>Brain Korea 21 Project, Center for Biomedical Human Resources, Chonnam National University, Gwangju 501-746, South Korea)
- 72 B8 *PKN2 and Cdo Interact to Activate AKT and Promote Myoblast Differentiation* **Sang-Jin Lee**<sup>1</sup>, Jong-Sun Kang<sup>2</sup>, Gyu-Un Bae<sup>1</sup> (<sup>1</sup>Research Center for Cell Fate Control, College of Pharmacy, Sookmyung Women's University, Republic of Korea; <sup>2</sup>Department of Molecular Cell Biology, Sungkyunkwan University School of Medicine, Samsung Biomedical Research Institute, Republic of Korea)
- 73 B9 *Loss of HuR in striated muscle mediates changes in muscle fibers type composition and oxidative capacity* **Brenda Janice Sanchez**<sup>1</sup>, Patricia L. Hallauer<sup>3</sup>, Erzsebet Kovacs<sup>2</sup>, Derek Hall<sup>1</sup>, Jennifer F. Ma<sup>1</sup>, Sergio Di Marco<sup>1</sup>, Imed-Eddine Gallouzi<sup>1</sup> (<sup>1</sup>Dept. of Biochemistry McGill University, Canada; <sup>2</sup>Rosalind & Morris Goodman Cancer Research Centre, Canada; <sup>3</sup>Montreal Neurological Institute, Canada)
- 74 B10 *Spatiotemporal control of BAI3 signaling during myoblast fusion* **Noumeira Hamoud**<sup>1,3</sup>, Ariane Pelletier<sup>1</sup>, Artur Kania<sup>1</sup>, Michel Bouvier<sup>2,3</sup>, Jean-Francois Cote<sup>1,3</sup> (<sup>1</sup>Institut de Recherches Cliniques de Montréal (IRCM), Canada; <sup>2</sup>Institut de Recherches en Immunologie et Cancérologie (IRIC), Canada; <sup>3</sup>Université de Montréal, Canada)
- 75 B11 *Investigating microRNA-target interactions in skeletal muscle during chick development* **Camille Viaut**, Andrea Münsterberg (School of Biological Sciences, University of East Anglia, Norwich, NR4 7TJ, United Kingdom)
- 76 B12 *IGF regulation of limb muscle development* Rabeea Mohammed, Helen Anderton, **Dylan Sweetman** (University of Nottingham, UK)
- 77 B13 *Vezatin, an AChR-associated protein, is essential for myogenic differentiation.* **Natasha Permaul**, Matthew Friese, Thomas Neubert, Steven Burden (Skirball Institute of Biomolecular Medicine, New York University Medical School, USA)
- 78 B14 *Abl2 kinase regulates myoblast fusion* **Jennifer Lee** (Skirball Institute of Biomolecular Medicine, NYU Medical Center, USA)
- 79 B15 *The muscle-less jerboa foot as a novel system to understand muscle degeneration* **Mai Tran** (UC, San Diego, USA)
- 80 B16 *The emergence of vertebrate head muscle stem cells* Julia Meireles Nogueira<sup>1,2</sup>, Katarzyna Hawrot<sup>1</sup>, Colin Sharpe<sup>1</sup>, Anna Noble<sup>1</sup>, William M. Wood<sup>3</sup>, Erika C. Jorge<sup>2</sup>, David J. Goldhamer<sup>3</sup>, Gabrielle Kardon<sup>4</sup>, **Susanne Dietrich**<sup>1</sup> (<sup>1</sup>University of Portsmouth, UK; <sup>2</sup>Universidade Federal de Minas Gerais, Brazil; <sup>3</sup>University of Connecticut, USA; <sup>4</sup>University of Utah, USA)
- 81 B17 *Evolution and development of muscles in the head/trunk interface of vertebrates* **Rie Kusakabe**, Shigeru Kuratani (Evolutionary Morphology Laboratory, RIKEN, Japan)
- 82 B18 *Understanding Skeletal Myogenesis from Early Human Embryos to Enhance Skeletal Muscle Progenitor Cell Specification from Human Pluripotent Stem Cells* **Haibin Xi**<sup>1</sup>, Wakana Fujiwara<sup>1</sup>, Simone Liebscher<sup>2</sup>, Ben Van Handel<sup>3</sup>, Katja Schenke-Layland<sup>1,2,4</sup>, April Pyle<sup>1</sup> (<sup>1</sup>University of California Los Angeles, USA; <sup>2</sup>Eberhard Karls University Tübingen, Germany; <sup>3</sup>CarthroniX Inc., USA; <sup>4</sup>Fraunhofer

### **Muscle Regeneration**

- 83 B19** *Role Of p53 During Muscle Stem Cells Activation* **Francesca Boscolo Sesillo**, Alessandra Sacco (Sanford Burnham Prebys Medical Discovery Institute, USA)
- 84 B20** *Regulating the satellite cell population proportional to the severity of a muscle injury* **Adam Cadwallader**, Tiffany Antwine, Bradley Olwin (University of Colorado Boulder, USA)
- 85 B21** *Deciphering the functional interactions between distinct subpopulations of Fibro-Adipogenic Progenitors and Satellite Cells* **Usue Etzaniz**<sup>1</sup>, Barbora Malecova<sup>1</sup>, Sole Gatto<sup>1</sup>, Pier Lorenzo Puri<sup>1,2</sup> (<sup>1</sup>Development, Aging and Regeneration Program, Sanford Burnham Prebys Medical Discovery Institute, La Jolla, CA, USA; <sup>2</sup>IRCCS Fondazione Santa Lucia, Rome, Italy)
- 86 B22** *Integration of Inflammation and Myogenesis during Skeletal Muscle Repair* **Cherie Alissa Lynch** (Arizona State University, USA)
- 87 B23** *Lysyl oxidase is required for muscle regeneration* **Ravit Gabay**, Shelly Zaffryar-Eilot, Peleg Hasson (The Rappaport Faculty of Medicine and Research Institute, Technion – Israel Institute of Technology, Israel)
- 88 B24** *Effects of  $\beta$ catenin activation in FAPs on skeletal muscle homeostasis* **Marcela Low**, Andrew Wu, Elena Groppa, Jack Yuan, Fabio Rossi (The Biomedical Research Centre, University of British Columbia, Canada)
- 89 B25** *Cellular dynamics of regeneration reveals role of two distinct Pax7 stem cell populations in larval zebrafish muscle repair* **Tapan Pipalia**<sup>1</sup>, Jana Koth<sup>1,2</sup>, Shukolpa Roy<sup>1</sup>, Christina Hammond<sup>1,3</sup>, Koichi Kawakami<sup>4</sup>, Simon Hughes<sup>1</sup> (<sup>1</sup>King's College London, UK; <sup>2</sup>Oxford University, UK; <sup>3</sup>University of Bristol, UK; <sup>4</sup>National Institute of Genetics and SOKENDAI, Japan)
- 90 B26** *Study of the multiple functions of Nfix in skeletal muscle regeneration: a focus on macrophage biology* **Marielle Saclier**<sup>1</sup>, Giuliana Rossi<sup>1</sup>, Stefania Antonini<sup>1</sup>, Stefania Monteverde<sup>1</sup>, Chiara Bonfanti<sup>1</sup>, Rémi Mounier<sup>2</sup>, Bénédicte Chazaud<sup>2</sup>, Graziella Messina<sup>1</sup> (<sup>1</sup>Department of Biosciences, University of Milan, Via Celoria 26, 20133 Milan, Italy; <sup>2</sup>CGPhyMC, CNRS UMR5534, Villeurbanne; and Université Claude Bernard Lyon1, Villeurbanne, France)
- 91 B27** *Regulator of G Protein Signaling-12 (RGS12) in satellite cell-mediated skeletal muscle regeneration* **Adam Schroer**, Junaith Mohamed, Vincent Setola, Stephen Alway, David Siderovski (West Virginia University, USA)
- 92 B28** *MMP-13 is required for efficient myoblast migration and muscle regeneration in a mouse skeletal muscle* **Lucas Smith**<sup>1</sup>, Boshi Zhang<sup>2</sup>, Du Chung<sup>2</sup>, Bryan Wheeler<sup>2</sup>, Hanqin Lei<sup>3</sup>, Elisabeth Barton<sup>3</sup> (<sup>1</sup>Department of Medicine, University of Pennsylvania, USA; <sup>2</sup>Department of Anatomy and Cell Biology, University of Pennsylvania, USA; <sup>3</sup>Department of Applied Physiology and Kinesiology, University of Florida, USA)

### **Neuromuscular Junctions**

- B29**
- 94 B30** *The muscle-derived Wnt receptor Frizzled-9 regulates the morphology and activity of the post-natal neuromuscular junction* **Jorge Ojeda**<sup>1,2</sup>, Francisca Bermedo-García<sup>1,2</sup>, Rocío Tejero<sup>3</sup>, Mario López<sup>3</sup>, Lucía Tabares<sup>3</sup>, Juan Pablo Henríquez<sup>1,2</sup> (<sup>1</sup>Universidad de Concepción, CHILE; <sup>2</sup>Millenium Nucleus in Regenerative Biology, CHILE; <sup>3</sup>Universidad de Sevilla, ESPAÑA)
- 95 B31** *Preloading induced stress relaxation and membrane current changes in denervation intact smooth muscle strip* **Xia Li** (Hai Nan Medical College, Hai Nan Island China)

### **Transcription and Chromatin Regulation**

- 96 B32** *MiRNAs as regulators of metabolism in skeletal muscle fibers* **Francesco Chemello**<sup>1</sup>, Francesca Grespi<sup>1</sup>, Alessandra Zulian<sup>3</sup>, Pasqua Cancellara<sup>3</sup>, Etienne Hebert-Chatelain<sup>1</sup>, Paolo Martini<sup>1</sup>, Camilla Bean<sup>1</sup>, Paolo Laveder<sup>1</sup>, Enrico Alessio<sup>1</sup>, Paolo Bernardi<sup>3</sup>, Chiara Romualdi<sup>1</sup>, Carlo Reggiani<sup>3</sup>, Luca Scorrano<sup>1,4</sup>, Gerolamo

Lanfranchi<sup>1,2,5</sup>, **Stefano Cagnin**<sup>1,2,5</sup> ( <sup>1</sup>Department of Biology, University of Padova, Italy; <sup>2</sup>CRIBI Biotechnology Centre, University of Padova, Italy; <sup>3</sup>Department of Biomedical Sciences, University of Padova, Italy; <sup>4</sup>Venetian Institute of Molecular Medicine, Italy; <sup>5</sup>CIR-Myo Interdepartmental Research Center of Myology, University of Padova, Italy)

- 97 B33** *Regulation of muscle fiber-type differentiation by Pbx homeodomain proteins* Gist H. Farr III<sup>1</sup>, Nathan Johnson<sup>1</sup>, **Lisa Maves**<sup>1,2</sup> ( <sup>1</sup>Seattle Children's Research Institute, USA; <sup>2</sup>University of Washington, USA)
- 98 B34** *Pervasive Recruitment of Myogenic Factors by REST/NRSF Transcriptional Complexes Repress Non-Myogenic Lineage Programs during Myogenic Differentiation* **Vahab Soleimani**<sup>1</sup>, Hang Yin<sup>3</sup>, Hong Ming<sup>2</sup>, Zenghui Wu<sup>1</sup>, Florian Bentzinger<sup>2</sup>, Marie-Claude Sincennes<sup>2</sup>, David Wilson<sup>2</sup>, Michael Rudnicki<sup>2</sup> ( <sup>1</sup>McGill University, Canada; <sup>2</sup>University of Ottawa, Canada; <sup>3</sup>University of Georgia, USA)

### Poster Session 3

Thursday, June 9, 7:30-10 PM

Fred Farr Forum

Program Number in *italics*. Poster Board Number: **Bxx**

Set-up: Thursday, June 9, 12-1 PM

Tear down: Friday, June 10, 12-1 PM

7:30-8:45 PM **Even** number board authors presentation

8:45-10 PM **Odd** number board authors presentation

### **Muscle Ageing**

- 99 B1** *Skeletal muscle control of systemic metabolism: a role for Transcription Factor E-B (TFEB) signaling* **Constanza Cortes**<sup>1,2</sup> ( <sup>1</sup>University of California San Diego, USA; <sup>2</sup>Sanford Consortium for Regenerative Medicine, USA)
- 100 B2** *Prmt7 deficiency causes reduced skeletal muscle oxidative metabolism and age-related obesity* **Hyeon-Ju Jeong**, Jong-Sun Kang (Sungkyunkwan University School of Medicine, Republic of Korea)
- 101 B3** *Improvement of muscle strength and regenerative capacity in aged mice through application of a novel PGC-1 $\alpha$  inducer* **Hye-Been Kim**, Hyeon-Ju Jeong, Jong-Sun Kang (Sungkyunkwan University School of Medicine, Republic of Korea)
- 102 B4** *Maintenance of a robust neuromuscular system as a novel strategy to protect skeletal muscle from sarcopenia* **Alice Pannérec**, Margherita Springer, Jérôme Feige (Nestlé Institute of Health Sciences, Switzerland)

### **Musculoskeletal Interactions**

- 103 B5** *Extracellular ATP as a mediator of musculoskeletal homeostasis at the masticatory system* Manuel Arias-Calderón<sup>1</sup>, Camilo Morales<sup>1</sup>, Julián Balanta<sup>1</sup>, Carolina Beato<sup>1</sup>, Fernán Gómez<sup>1</sup>, Nathalie Vicencio<sup>1</sup>, Carolina Verdejo<sup>1</sup>, John López<sup>1</sup>, Nadia Hernández<sup>1</sup>, Paola Llanos<sup>1</sup>, Mariana Casas<sup>2</sup>, **Sonja Buvinic**<sup>1</sup> ( <sup>1</sup>Institute for Research in Dental Sciences, Faculty of Dentistry, Universidad de Chile, Chile; <sup>2</sup>ICBM, Faculty of Medicine, Universidad de Chile, Chile)
- 104 B6** *Mechanical and molecular signals underlying tendon cell differentiation* **Ludovic Gaut**<sup>1,2,3,4,5</sup>, Marie-Ange Bonnin<sup>1,2,3</sup>, Nicolas Robert<sup>1,2,3</sup>, Mathias Mericskay<sup>3,4,5</sup>, Delphine Duprez<sup>1,2,3</sup> ( <sup>1</sup>CNRS UMR 7622, IBPS-Developmental Biology Laboratory, F-75005, Paris, France; <sup>2</sup>Inserm U1156, F-75005 Paris, France; <sup>3</sup>Sorbonne Universités, UPMC Univ Paris 06, IBPS, F-75005 Paris, France; <sup>4</sup>CNRS UMR 8256, IBPS-Biological Adaptation and Ageing Laboratory, F-75005, Paris, France; <sup>5</sup>Inserm U1164, F-75005 Paris, France)
- 105 B7** *Measuring molecular tension at developing muscle attachment sites* **Sandra B. Lemke**, Katharina Austen, Carleen Kluger, Carsten Grashoff, Frank Schnorrer (Max Planck Institute of Biochemistry, Germany)
- 106 B8** *TGF $\beta$  signaling via Smad2/3 contributes to multiple aspects of tendon repair following Achilles rupture* **Yue Lu**, Sally Johnson (Virginia Tech, USA of America)

## Regulation of Muscle Mass

- 107 B9** *Acute p21 suppression in the skeletal muscle tissue causes proliferation of multiple cell types, fiber neof ormation, and increases in strength and endurance* Maria Grazia Biferi<sup>1</sup>, Carmine Nicoletti<sup>2</sup>, Germana Falcone<sup>1,3</sup>, Eleonora MR Puggioni<sup>1</sup>, Nunzia Passaro<sup>1</sup>, Alessia Mazzola<sup>1</sup>, Deborah Pajalunga<sup>1</sup>, Germana Zaccagnini<sup>4</sup>, Emanuele Rizzuto<sup>2</sup>, Alberto Auricchio<sup>5,6</sup>, Lorena Zentilin<sup>7</sup>, Gabriele De Luca<sup>1</sup>, Mauro Giacca<sup>7</sup>, Fabio Martelli<sup>4</sup>, Antonio Musio<sup>8,9</sup>, Antonio Musarò<sup>2,10</sup>, **Marco Crescenzi**<sup>1</sup> (<sup>1</sup>Italian National Institute of Health, Italy; <sup>2</sup>Sapienza University of Rome, Italy; <sup>3</sup>Institute of Cell Biology and Neurobiology, National Research Council, Italy; <sup>4</sup>Policlinico San Donato, Italy; <sup>5</sup>Federico II University of Naples, Italy; <sup>6</sup>Telethon Institute of Genetics and Medicine, Italy; <sup>7</sup>International Centre for Genetic Engineering and Biotechnology, Italy; <sup>8</sup>Tumour Institute of Tuscany, Italy; <sup>9</sup>Institute of Biomedical and Genetic Research, National Research Council, Italy; <sup>10</sup>Italian Institute of Technology, Italy)
- 108 B10** *The inhibitory core of the myostatin prodomain: implications for myogenesis* **Yutaka Ohsawa**<sup>1</sup>, Yuta Fukai<sup>1</sup>, Tatsufumi Murakami<sup>1</sup>, Shin-ichiro Nishimatsu<sup>2</sup>, Yoshihide Sunada<sup>1</sup> (<sup>1</sup>Neurology, Kawasaki Medical School, Japan; <sup>2</sup>Molecular and Developmental Biology, Kawasaki Medical School, Japan)
- 109 B11** *PKA and mTOR mediate the inhibitory actions of calcitonin gene-related peptide (CGRP) on autophagy-lysosomal system in denervated skeletal muscles of rodents* **Juliano Machado**<sup>1</sup>, Leandro H. Manfredi<sup>3</sup>, Wilian A. Silveira<sup>2</sup>, Dawit A.P. Gonçalves<sup>1</sup>, Danilo Lustrino<sup>4</sup>, Lilian C. Heck<sup>2</sup>, Elza A. Filippin<sup>1</sup>, Neusa M. Zanon<sup>2</sup>, Maria A.R. Garófalo<sup>1</sup>, Luiz C.C. Navegantes<sup>2</sup> (<sup>1</sup>Department of Biochemistry and Immunology, Ribeirão Preto Medical School - University of São Paulo, Ribeirão Preto, SP, Brazil; <sup>2</sup>Department of Physiology, Ribeirão Preto Medical School - University of São Paulo, Ribeirão Preto, SP, Brazil; <sup>3</sup>Federal University of Fronteira Sul, Chapecó, SC, Brazil; <sup>4</sup>Department of Physiology, Federal University of Sergipe, São Cristóvão, SE, Brazil)
- 110 B12** *Requirement of Myomaker-mediated satellite cell fusion for overload-induced skeletal muscle hypertrophy* **Qingnian Goh**, Douglas Millay (Cincinnati Children's Hospital Medical Center, USA)
- 111 B13** *The role of the Warburg effect-associated enzymes Phgdh and Pkm2 in myotube hypertrophy* Lian Stadhouders<sup>1</sup>, Ilse Vogel<sup>1</sup>, Gerard de Wit<sup>1</sup>, Carla Offringa<sup>1</sup>, Willem Hoogaars<sup>1</sup>, Sebastian Gehlert<sup>2</sup>, Henning Wackerhage<sup>3</sup>, **Richard Jaspers**<sup>1</sup> (<sup>1</sup>Laboratory for Myology, MOVE Research Institute Amsterdam, Vrije Universiteit Amsterdam, The Netherlands; <sup>2</sup>Department of Molecular and Cellular Sport Medicine, German Sport University Cologne, Germany; <sup>3</sup>Faculty of Sport and Health Sciences, Technical University of Munich, Germany)
- 112 B14** *Pitx2 is Required for Postnatal Myofiber Maintenance* **Chrissa Kioussi** (Oregon State University, USA)
- 113 B15** *Regulation of Hspb7 by MEF2 and AP-1 in muscle atrophy* **J McDermott**<sup>1</sup>, S Tobin<sup>1</sup>, A Blais<sup>2</sup>, D Yang<sup>2</sup>, J Girgis<sup>2</sup>, A Farahzad<sup>1</sup> (<sup>1</sup>York University, Canada; <sup>2</sup>University of Ottawa, Canada)
- 114 B16** *HDAC4 modulates the response of skeletal muscle to long term denervation* **Eva Pigna**<sup>1</sup>, Elena Simonazzi<sup>1</sup>, Emanuela Greco<sup>1</sup>, Eric N Olson<sup>2</sup>, Sergio Adamo<sup>1</sup>, Viviana Moresi<sup>1</sup> (<sup>1</sup>Sapienza University of Rome, Department of Anatomical, Histological, Forensic & Orthopedics Sciences, Histology & Medical Embryology Section, Italy; <sup>2</sup>UT Southwestern Medical Center, Department of Molecular Biology, TX, USA)
- 115 B17** *RNA-seq and metabolomic analyses of Akt1-mediated muscle growth reveals regulation of regenerative pathways and changes in the muscle secretome* **Chia-Ling Wu**, Kenneth Walsh (Molecular Cardiology and Whitaker Cardiovascular Institute, Boston University School of Medicine, USA)
- 116 B18** *A physiological role of skeletal muscle-derived adiponectin in C2C12 differentiation* **Katsumasa Goto**<sup>1</sup>, Rika Ito<sup>1,2</sup>, Shingo Yokoyama<sup>1</sup>, Takao Sugiura<sup>2</sup>, Hirofumi Miyata<sup>2</sup>, Yoshinobu Ohira<sup>3</sup>, Toshitada Yoshioka<sup>4</sup> (<sup>1</sup>Graduate School of Health Sciences, Toyohashi SOZO University, Japan; <sup>2</sup>Yamaguchi University, Japan; <sup>3</sup>Doshisha University, Japan; <sup>4</sup>Hirosaki Gakuin University, Japan)

## Stem and Satellite Cells

- 117 **B19** *Are there intrinsic differences between satellite cells on fast or slow myofibers?* **Laura Arnold** (The University of Missouri, USA)
- 118 **B20** *Hedgehog signaling regulates satellite cell function.* **Caroline E Brun**<sup>1,2</sup>, Marie-Claude Sincennes<sup>1,2</sup>, Fabien P Chevalier<sup>1,2</sup>, Natasha Mercier<sup>1,2</sup>, Michael A Rudnicki<sup>1,2</sup> (<sup>1</sup>Medicine Regenerative Program, Ottawa Hospital Research Institute, Canada; <sup>2</sup>Department of Cellular and Molecular Medicine, University of Ottawa, Canada)
- 119 **B21** *GATA4 and GATA6 are required for skeletal muscle regeneration through regulating satellite cell fate by antagonizing MyoD* **Atsushi Asakura**, Tomohide Takaya, Yusaku Kodaka, Michael Baumrucker, Yoko Asakura (Stem Cell Institute, Paul and Sheila Wellstone Muscular Dystrophy Center, Department of Neurology, University of Minnesota Medical School, USA)
- 120 **B22** *Unraveling STAT3 mechanisms of action in muscle stem cells* **David Sala**, Alessandra Sacco (Sanford Burnham Prebys Medical Discovery Institute, USA)
- 121 **B23** *Evaluation of novel extracellular matrix proteins to maintain the differentiation potential of mouse and human satellite cells during long-term cell culture expansion* Christopher Penton<sup>1</sup>, Vasudeo Badarinarayana<sup>1</sup>, Elaine Powers<sup>1</sup>, Joy Prisco<sup>1</sup>, Ronald Allen<sup>1,2</sup>, **Paul August**<sup>1</sup> (<sup>1</sup>Sanofi, USA; <sup>2</sup>University of Arizona, USA)
- 122 **B24** *Characterizing the quiescent satellite cell transcriptome* **Jeffrey Ehmsen**<sup>1</sup>, Ruifa Mi<sup>1</sup>, Riki Kawaguchi<sup>2</sup>, Giovanni Coppola<sup>2</sup>, Ahmet Hoke<sup>1</sup> (<sup>1</sup>Johns Hopkins School of Medicine, USA; <sup>2</sup>University of California, Los Angeles, USA)
- 123 **B25** *Rapid satellite cell responses to the local environment are mediated by post-transcriptional mechanisms* **Kate Gadek**<sup>1</sup>, Jason Doles<sup>1,2</sup>, Bradley Olwin<sup>1</sup>, Melissa Hausburg<sup>1,3</sup> (<sup>1</sup>University of Colorado at Boulder, USA; <sup>2</sup>Mayo Clinic, USA; <sup>3</sup>Ampio Pharmaceuticals, USA)
- 124 **B26** *Satellite Cell Behavior Following Neonatal Brachial Plexus Injury (NBPI)* **Sia Nikolaou**, Liangjun Hu, Roger Cornwall (Cincinnati Children's Hospital Medical Center, USA)
- 125 **B27** *Protection of the stem cell state of muscle stem cells in vivo* Federica Berti<sup>1</sup>, Michal Kováč<sup>1,2</sup>, Ricky-Lee Harris<sup>1</sup>, Frank R. Schubert<sup>1</sup>, Matt Guille<sup>1</sup>, **Susanne Dietrich**<sup>1</sup> (<sup>1</sup>University of Portsmouth, UK; <sup>2</sup>Slovak University of Agriculture in Nitra, Slovak Republik)
- 126 **B28** *iPSC modeling of human skeletal myogenesis and muscle disease* Meng-Jiao Shi<sup>1</sup>, Jennifer Chen<sup>1</sup>, Jing Yan<sup>1</sup>, Emily Rozsahegyi<sup>1</sup>, Carrie Spencer<sup>1</sup>, Leslie Caron<sup>2</sup>, Alex Kiselyov<sup>3</sup>, Uli Schmidt<sup>3</sup>, Haowin Zhou<sup>5</sup>, Anne Bang<sup>5</sup>, Kathryn Wagner<sup>4</sup>, **Charles Emerson**<sup>1</sup> (<sup>1</sup>Umass Medical School, Worcester, MA, USA; <sup>2</sup>enea Biocells, Sydney, Australia; <sup>3</sup>Genea Biocells, San Diego, CA, USA; <sup>4</sup>Kennedy Krieger Institute, Baltimore, MD, USA; <sup>5</sup>Sanford-Burnham Medical Research Institute, San Diego, CA, USA)
- 127 **B29** *Receptor tyrosine kinase Tie2, a direct target of Notch signaling, maintains adult muscle stem cell quiescence* **Qiang Gan**<sup>1,2</sup>, Antoine de Morrée<sup>1,2</sup>, Thomas Rando<sup>1,2</sup> (<sup>1</sup>VA Palo Alto Health Care System, Palo Alto, USA; <sup>2</sup>Department of Neurology and Neurological Sciences, School of Medicine, Stanford University, USA)
- 128 **B30** *The intracellular control of Thyroid hormone signaling in the biological activity of muscle stem cells and in Duchenne Muscular Dystrophy* **Monica Dentice**, Raffaele Ambrosio, Daniela Di Girolamo, Maria Angela De Stefano, Tommaso Porcelli, Giuseppina Mancino, Caterina Miro, Emery Di Cicco, Domenico Salvatore (University of Naples, Italy)
- 129 **B31** *A unique Twist-dependent progenitor cell contributes to adult skeletal muscle* **Ning Liu**, Glynnis Garry, Svetlana Bezprozvannaya, Stephen Li, Efrain Sanchez-Ortiz, Beibei Chen, Rhonda Bassel-Duby, Eric Olson (UT Southwestern Medical Center, USA)
- 130 **B32** *ERK/CaMKII crosstalk: A novel mechanism controlling myogenesis.* **Tamar Eigler**, Eldad Tzahor (Weizmann Institute of Science, Israel)
- 131 **B33** *Semaphorin 3A promotes activation of Pax7, Myf5, and MyoD through inhibition of*

*emerin expression* **Mulan Qahar**<sup>1</sup>, Wataru Mizunoya<sup>1</sup>, Ryuichi Tatsumi<sup>1</sup>, Seong-Kyu Choe<sup>2</sup>, Mako Nakamura<sup>1</sup> (<sup>1</sup>Faculty of Agriculture, Kyushu University, Japan; <sup>2</sup>Department of Microbiology, Wonkwang University School of Medicine, Korea)

**B34** *An engineered muscle stem cell niche supported by muscle resident cells is capable of de novo myogenesis that regenerates volumetric muscle loss injuries in murine and humanized models.* **Marco Quarta**<sup>1,2,3</sup>, Melinda Cromie<sup>1,2,3</sup>, Robert Chacon<sup>1,2,3</sup>, Justin Blonigan<sup>1,2,3</sup>, Victor Garcia<sup>1,2,3</sup>, Igor Akimenko<sup>1,2,3</sup>, Mark Hamer<sup>1,2,3</sup>, Merel Stok<sup>4</sup>, Joseph B Shrager<sup>5</sup>, Thomas A. Rando<sup>1,2,3</sup> (<sup>1</sup>Department of Neurology and Neurological Sciences, Stanford University School of Medicine, USA; <sup>2</sup>Paul F. Glenn Laboratories for the Biology of Aging, Stanford University School of Medicine, USA; <sup>3</sup>Center for Tissue Regeneration, Restoration and Repair, Veterans Affairs Hospital Palo Alto, USA; <sup>4</sup>Erasmus MC, Department of Pediatrics, Rotterdam, The Netherlands; <sup>5</sup>Division of Thoracic Surgery, Department of Cardiothoracic Surgery, Stanford University School of Medicine and VA Palo Alto Health Care System, Stanford, USA)

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