

Society for Muscle Biology

Frontiers in Myogenesis Meeting

**Skeletal Muscle: Development,
Regeneration and Disease**

**Costa Rica Marriott Hotel Hacienda Belen
San José, Costa Rica
September 23-28, 2019**

PROGRAM BOOK

Organizers

**Alessandra Sacco (Sanford Burnham Prebys Medical
Discovery Institute, USA)**

Peter Zammit (King's College London, UK)

Fabio Rossi (University of British Columbia, Canada)

Executive Officer: Ida Chow (SMB, USA)

ACKNOWLEDGMENTS

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Society for Muscle Biology

Frontiers in Myogenesis Meeting

“Skeletal muscle: development, regeneration and disease”

Organizers: Alessandra Sacco, Fabio Rossi, Peter Zammit

Costa Rica Marriott Hotel Hacienda Belen, San José, Costa Rica

September 23-28th 2019

Meeting Registration: Area de Foto Marriott

Plenary and Poster Sessions: JVC

Breakfast: Hacienda Kitchen

Lunch and Dinner: Porte Cochere

Coffee Breaks: JVC Foyer

Bold italics: Program Abstract # (please see full abstracts in Abstracts Book online)

Poster session assignments are listed at the end of the Program

Monday, September 23

2:00pm – Meeting Registration

6:00pm Poster Session 1 set-up

3:00pm Housing Check-in

6:00pm – Dinner

7:30pm

7:30pm – Welcome Introduction – Conference Organizers

7:40pm

Alessandra Sacco, Fabio Rossi, Peter Zammit

7:40pm – ***** THE EMBO LECTURE*****

8:40pm

Pura Muñoz-Cánoves – Pompeu Fabra University (UPF), Barcelona, Spain

1

“Muscle stem cell aging and rejuvenating strategies”

8:40pm – Opening Reception

10:00pm

Tuesday, September 24

7:00am –
8:30am

Breakfast

8:30am –
10:15am

Session 1 – Mechanisms of skeletal muscle development *Sponsored by International Society of Differentiation*

Chair: Krzysztof Jagla – INSERM, University of Clermont, Clermont-Ferrande, France

Co-Chair: Jordan Blondelle – University of California, San Diego, USA

8:30am –
9:00am

Peter Currie – Monash University, Melbourne, Australia

“Defining the in vivo dynamics of muscle stem and progenitor cell action during growth and injury”

2

9:00am –
9:30am

Gabrielle Kardon – University of Utah, Salt Lake City, USA

“Inspired by the diaphragm: development of the diaphragm and congenital diaphragmatic hernias”

3

9:30am –
9:45am

Amelia Aranega – University of Jaén, Jaén, Spain

“Stage-specific effects of Pitx2 in somite-derived muscle development”

4

9:45am –
10:00am

Matthieu Dos Santos – INSERM, Institut Cochin, Paris, France

“Genetic control of skeletal muscle fiber type”

5

10:00am –
10:15am

Duc Dong – Sanford Burnham Prebys Medical Discovery Institute, La Jolla, USA

“Mechanisms driving in vivo lineage conversion of vertebrate skeletal muscle into early endoderm-like cells”

6

10:15am –
10:45am

Coffee Break

Sponsored by International Society of Differentiation

10:45am –
12:15pm

Session 2 – Mechanisms of myoblast fusion and nuclear positioning

Chair: Helen Blau – Stanford University, Stanford, USA

Co-Chair: Huascar Pedro Ortuste Quiroga – Toyohashi Sozo University, Toyohashi, Japan

10:45am – 11:15am	7	Elizabeth Chen – UT Southwestern Medical Center, Dallas, USA <i>“Dynamin captures and bundles actin filaments to drive invasive membrane protrusions in myoblast fusion”</i>
11:15am – 11:30am	8	William Roman – University of Lisbon, Lisbon, Portugal <i>“Mechanism of myofiber self-repair facing minor injuries”</i>
11:30am – 11:45am	9	Michael Petrany – Cincinnati Children’s Hospital Medical Center, Cincinnati, USA <i>“Divergent cell-specific consequences of myomaker expression in dystrophic skeletal muscle”</i>
11:45am – 12:15pm	10	Edgar Gomes – University of Lisbon, Lisbon, Portugal <i>“Nuclear positioning during skeletal muscle development”</i>
12:15pm – 1:45pm		Lunch and Meet the Speakers
1:45pm – 5:45pm		Session 3 – Muscle stem cell regulation Chair: So-Ichiro Fukada – Osaka University, Osaka, Japan Co-Chair: Marine Theret – University of British Columbia, Vancouver, Canada
1:45pm – 2:15pm	11	Frédéric Relaix – INSERM, Paris, France <i>“Regulation of muscle stem cell quiescence and activation”</i>
2:15pm – 2:45pm	12	Tom Cheung – The Hong Kong University of Science and Technology, Hong Kong, China <i>“Post-transcriptional regulation of quiescence exit”</i>
2:45pm – 3:00pm	13	Ryo Fujita – McGill University, Montreal, Canada <i>“The adhesion G-protein coupled receptor GPR116 is required for muscle stem cell quiescence and self-renewal”</i>
3:00pm – 3:30pm	14	Andrew Brack – University of California, San Francisco, USA <i>“Muscle stem cell heterogeneity and the niche”</i>
3:30pm – 3:45pm	15	Yu Xin (Will) Wang – Stanford University, Stanford, USA <i>“Spatial mapping of muscle regeneration at the single cell level using CODEX”</i>

3:45pm –
4:15pm

Coffee Break

4:15pm –
4:45pm

16

Colin Crist – McGill University, Montreal, Canada

“Selective mRNA Translation Regulates Satellite Cell Activity”

4:45pm –
5:00pm

17

Hugo Olguin – Pontifical Catholic University of Chile, Santiago, Chile

“Looking under the hood of satellite cell fate control: mechanisms underlying the interplay between ubiquitin ligase Nedd4 and deubiquitinase USP7 in muscle progenitors”

5:00pm –
5:15pm

18

Lucia Latella – IRCCS Fondazione Santa Lucia, Rome, Italy

“Role of STAT3-mediated autophagy in driving muscle regeneration during aging”

5:15pm –
5:45pm

19

Helen Blau – Stanford University, Stanford, USA

“Rejuvenating Stem Cell Function to Increase Muscle Strength”

5:45pm –
6:00pm

Poster Blitz

70 Anthony Patelunas – *Single-cell analysis of mouse embryonic and fetal limb muscle populations*

88 Abigail Leinroth – *Single Cell and Reporter Analysis of Skeletal Muscle Interstitial Cells Identifies Unique Non-myogenic Mesenchymal Cell Populations*

64 Cynthia McKee – *Klotho influences myogenesis during postnatal growth and during muscle regeneration*

75 Diego Jaime – *The MuSK-BMP pathway is necessary for maintaining a sub-population of Type IIb muscle fibers*

76 Jianming Liu – *Control of myonuclear positioning by skeletal muscle CIP*

78 Andrea De Micheli – *Single-cell analysis of the muscle stem cell hierarchy identifies heterotypic communication signals involved in skeletal muscle regeneration*

6:00pm –
7:30pm

Dinner

7:30pm –
10:00pm

Poster Session 1

10:00pm

Poster Session 1 Tear down

Wednesday, September 25

7:00am – Breakfast
8:30am Poster Session 2 Set-up

8:30am – **Session 4 – Signaling pathways in muscle stem cell fate decisions**
10:00am

Chair: Atsushi Asakura – University of Minnesota, Minneapolis, USA

Co-Chair: Andrea Ulloa-Fernandez – Technological Institute of Costa Rica, Cartago, Costa Rica

8:30am – **Carmen Birchmeier** – Max Delbrueck Center for Molecular Medicine in the
9:00am Helmholtz Association, Berlin, Germany

20 *“Single-nucleus transcriptomics of the skeletal muscle reveals functional compartmentalization in syncytial cells and its disruption in a dystrophy model”*

9:00am – **Yusuke Ono** – Kumamoto University, Kumamoto, Japan

9:30am **21** *“Positional memory governs satellite cell function in adult muscles”*

9:30am – **Dawn Cornelison** – University of Missouri, Columbia, USA

9:45am **22** *“EphA7 promotes myogenic differentiation via cell-cell contact”*

9:45am – **Daniel Kopinke** – University of Florida, Gainesville, USA

10:00am **23** *“Ciliary Hedgehog signaling controls fatty fibrosis and muscle repair”*

10:00am – Coffee Break
10:30am

10:30am – **Session 5 – Epigenetic control of muscle stem cells**
12:00pm

Chair: Vittorio Sartorelli – National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), Bethesda, USA

Co-Chair: Tapan Sharma – University of Massachusetts Medical School, Worcester, USA

10:30am – **Jeff Dilworth** – Ottawa Hospital Research Institute, Ottawa, Canada

11:00am **24** *“Promoter-proximal stalling of RNA-Polymerase II is required for repopulation of the satellite cell niche after muscle injury”*

11:00am – 11:15am	25	Chiara Mozzetta – University La Sapienza and CNR, Rome, Italy <i>“H3K9 methylation controls Fibro-Adipogenic Progenitors identity and skeletal muscle repair”</i>
11:15am – 11:30am	26	Aster Juan – National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), Bethesda, USA <i>“The Polycomb group protein Ezh1 regulates skeletal muscle stem cell quiescence and regenerative potential”</i>
11:30am – 12:00pm	27	Pier Lorenzo Puri – Sanford Burnham Prebys Medical Discovery Institute, La Jolla, USA <i>“MYOD-directed re-wiring of 3D chromatin architecture during nuclear reprogramming toward skeletal myogenesis”</i>
12:00pm – 1:30pm		Lunch Career Development Workshop (Cabildo) – Sign up is required “An Introduction to K Awards: the Who, When, What, and How of Career Grants” – Gabrielle Kardon
1:30pm – 3:45pm		Session 6 – Induced pluripotent stem cells to generate myogenic progenitors <i>Sponsored by Lymn Foundation</i> Chair: April Pyle – University of California, Los Angeles, USA Co-Chair: Congshan Sun – Johns Hopkins School of Medicine, Baltimore, USA
1:30pm – 2:00pm	28	Rita Perlingeiro – University of Minnesota, Minneapolis, USA <i>“iPS cells: potential for cell therapy, disease modeling and drug discovery in muscular dystrophies”</i>
2:00pm – 2:30pm	29	Olivier Pourquié – Harvard Medical School, Cambridge, USA <i>“In vitro modeling of human muscle development and disease”</i>
2:30pm – 3:00pm	30	Radbod Darabi – University of Texas Health Science Center, Houston, USA <i>“Reporter hESCs for PAX7 and MYF5 provide valuable insights into myogenic differentiation of hPSCs as well as transcriptional regulation of skeletal myogenesis”</i>
3:00pm – 3:15pm	31	Charles Emerson, Jr – University of Massachusetts Medical School, Worcester, USA <i>“iPSC-induced skeletal myoblast lineages for disease modeling and therapeutics”</i>

3:15pm – 3:30pm	32	Michael Hicks – University of California, Los Angeles, USA <i>“Skeletal Muscle Niche Dynamics in Development and Disease”</i>
3:30pm – 3:45pm	33	Sonia Albin – Paris Diderot University, Paris, France <i>“Human Duchenne Muscular Dystrophy iPSC-derived myotubes as an in vitro model for studying epigenetic alterations controlling the fibrotic response: role of epigenetic regulator SETDB1”</i>
3:45pm – 4:15pm		Coffee Break
4:15pm – 6:00pm		Session 7 – Bioengineering approaches for skeletal muscle modeling Chair: Benjamin Cosgrove – Cornell University, Ithaca, USA Co-Chair: Carolina Centeno-Cerdas – Technological Institute of Costa Rica, Cartago, Costa Rica
4:15pm – 4:45pm	34	Francesco Saverio Tedesco – University College London, London, UK <i>“Human iPSC Cell-Derived Artificial Skeletal Muscles for Complex Disease Modeling of Muscular Dystrophies”</i>
4:45pm – 5:15pm	35	Penney Gilbert – University of Toronto, Toronto, Canada <i>“96-well human skeletal muscle microtissue platform for disease modeling and drug testing”</i>
5:15pm – 5:30pm	36	Florian Bentzinger – University of Sherbrooke, Sherbrooke, Canada <i>“In-vivo Transcriptomic Profiling of Systemic Aging using Encapsulated Skeletal Muscle Progenitors”</i>
5:30pm – 5:45pm	37	Alexander Loiben – Cornell University, Ithaca, USA <i>“Engineering combinatorial biomimetic environments to control muscle stem and progenitor cell regulatory phenotypes and to enhance muscle cell transplantation therapies”</i>
5:45pm – 6:00pm	38	Niels Geijsen – Hubrecht Institute, Utrecht, Netherlands <i>“Efficient, non-viral in vivo gene editing of skeletal muscle”</i>
6:00pm – 6:15pm		Poster Blitz 109 Romeo Blanc – <i>The aged inflammatory niche prevents stem cell contribution to muscle regeneration</i>

115 Pirkka-Pekka Laurila – *Sphingolipid depletion reverses age-associated muscle dysfunction and improves muscle regeneration*

92 Jeremy Salas – *Nedd4-1 deletion impairs mitochondrial mass and muscle fiber size upon injury and regeneration*

99 Kodai Nakamura – *Estrogen-ERbeta pathway controls muscle mass and regeneration in female mice*

91 Marine Theret – *Role of the TGFb-Activated Kinase 1 in muscle-resident fibro/adipogenic progenitors, a key modulator of the inflammatory environment*

95 Claudia Abboud – *Enhancing endogenous repair in muscular dystrophy through cellular reprogramming*

6:15pm –
7:30pm

Dinner

7:30pm –
10:00pm

Poster Session 2

10:00pm

Poster Session 2 Tear down

Thursday, September 26

7:00am – Breakfast
8:30am Poster Session 3 Set up

7:00am – **Free Time Activities**
2:30pm

12:00pm – Lunch
1:30pm

3:00pm – Coffee Break
3:30pm

3:30pm – **Session 8 – Role of the microenvironment in skeletal muscle repair and disease**
5:30pm

Chair: Rachelle Crosbie-Watson – University of California, Los Angeles, USA

Co-Chair: Margaret Hung – Icahn School of Medicine at Mount Sinai, New York City, USA

3:30pm – **Benedicte Chazaud** – Institut NeuroMyoGene, University Claude Bernard
4:00pm Lyon, INSERM, Lyon, France

39 *“Recovery macrophages stimulate myogenic stem cell fusion during post-injury skeletal muscle regeneration”*

4:00pm – **Clarissa Henry** – University of Maine, Orono, USA

4:30pm **40** *“Roles for glycosylation in modulating ECM during neuromuscular development and homeostasis”*

4:30pm – **Mafalda Loreti** – Sanford Burnham Prebys Medical Discovery Institute, La
4:45pm Jolla, USA

41 *“The extracellular matrix protein Tenascin-C is required to maintain the muscle stem cell pool and to promote regenerative potential”*

4:45pm – **David Goldhamer** – University of Connecticut Stem Cell Institute, Storrs, USA

5:15pm **42** *“Therapeutic approaches to prevent FAP-directed heterotopic ossification in FOP”*

5:15pm – **Nasim Kajabadi** – University of British Columbia, Vancouver, Canada

5:30pm **43** *“A tissue damage independent murine model to study muscle mass loss in Duchenne Muscular Dystrophy (DMD)”*

5:30pm –
5:45pm

Poster Blitz

132 Ivan Flores – Macrophage-mediated delivery of transgenic LIF reduces fibrosis and inflammation in mdx mice

129 Emmeran Le Moal – *Targeting Endogenous Repair: A New Pharmacological Approach for the Treatment of Muscular Dystrophy*

139 Elizabeth Kilroy – Zebrafish as a model to understand how strength training and inactivity impact Duchenne Muscular Dystrophy

142 Congshan Sun – Human pluripotent stem cell-derived PAX7::GFP+ cells can be engrafted to become quiescent satellite-like cells upon transplantation

147 Sören Hüttner – Functional investigation of the role of Trps1 during myogenesis and in rhabdomyosarcoma

148 Johanna Pruessner – Developing a suicide gene therapy for alveolar rhabdomyosarcoma

6:00pm –
7:30pm

Dinner

7:30pm –
10:00pm

Poster Session 3

10:00pm

Poster Session 3 – Tear down

Friday, September 27

7:00am –
8:30am

Breakfast

8:30am –
9:00am

Business Meeting – *Nominations and election of the three organizers for the 2022 meeting; complete evaluation forms; discuss future sites and scheduling*

9:00am –
12:30pm

Session 9 – Muscular Dystrophy: pathology and therapy

Chair: Lisa Maves – Seattle Children's Research Institute, Seattle, USA

Co-Chair: Ator Ashoti – Hubrecht Institute, Utrecht, Netherlands

9:00am –
9:30am

44

Eric Olson – University of Texas Southwestern Medical Center, Dallas, USA
“Correction of Duchenne Muscular Dystrophy by Genome Editing”

9:30am –
10:00am

45

Pascal Bernatchez – University of British Columbia, Vancouver, Canada
“The humanization of rodent muscular dystrophy: are plasma lipids part of the problem?”

10:00am –
10:15am

46

Helge Amthor – Versailles Saint-Quentin-en-Yvelines University, Versailles, France
“Restoration of dystrophin at critical sites of expression following exon skipping”

10:15am –
10:45am

47

Dongsheng Duan – University of Missouri, Columbia, USA
“CRISPR editing therapy for Duchenne muscular dystrophy in murine and canine models”

10:45am –
11:15am

Coffee Break

11:15am –
11:45am

48

Michael Kyba – University of Minnesota, Minneapolis, USA
“Exploring mechanisms of FSHD with chronic or transient DUX4 expression in mice”

11:45am –
12:15pm

49

Stephen Tapscott – Fred Hutchinson Cancer Research Center, Seattle, USA
“Consequences of DUX4 expression in vitro and in vivo”

12:15pm -
12:30pm **50** **Christopher Banerji** – King’s College London, London, UK
“PAX7 and DUX4 in Facioscapulohumeral Muscular Dystrophy: a tale of two proteins and two cell fates”

12:30pm –
2:00pm **Lunch and Meet the Speakers**

2:00pm –
4:00pm **Session 10 – Modifiers of muscle homeostasis and disease**

Chair: Armando Villalta – University of California, Irvine, USA

Co-Chair: Lara Rodriguez Outeriño – University of Jaén, Jaén, Spain

2:00pm –
2:30pm **Elizabeth McNally** – Northwestern University Feinberg School of Medicine,
Chicago, USA
51 *“Modifiers of myopathy”*

2:30pm –
2:45pm **52** **Zoe White** – University of British Columbia, Vancouver, Canada
“Plasma cholesterol is a key regulator of muscle homeostasis and damage in Muscular Dystrophy”

2:45pm –
3:00pm **53** **Simone Spuler** – Charité Universitätsmedizin, Berlin, Germany
“Human muscle satellite cells regenerate muscle independent of PAX7”

3:00pm –
3:15pm **54** **Maximiliano D’Angelo** – Sanford Burnham Prebys Medical Discovery
Institute, La Jolla, USA
“Nuclear pore complexes in the regulation of muscle homeostasis”

3:15pm –
3:30pm **55** **Ekaterina Korotkevich** – University of California, San Francisco, USA
“Competition of mitochondrial genomes within mouse skeletal muscle fiber”

3:30pm –
4:00pm **56** **Foteini Mourkioti** – University of Pennsylvania, Philadelphia, USA
“Telomere length regulation of muscle stem cells in chronic injuries”

4:00pm –
4:30pm **Coffee Break**

4:30pm –
6:15pm **Session 11 – Muscle-related cancer**

Chair: Julia von Maltzahn – Leibniz Institute on Aging, Jena, Germany

Co-Chair: Johanna Pruessler – King’s College London, London, UK

4:30pm – 5:00pm	57	Janet Shipley – The Institute of Cancer Research, London, UK <i>“Histone modifications and potential for differentiation therapy of rhabdomyosarcomas”</i>
5:00pm – 5:15pm	58	Daniela Palacios – IRCCS Fondazione Santa Lucia, Rome, Italy <i>“Epigenetic reprogramming in rhabdomyosarcoma”</i>
5:15pm – 5:45pm	59	Thomas Braun – Max Planck Institute for Heart and Lung Research, Bad Nauheim, Germany <i>“Loss of muscle stem cells quiescence in Suv4-20h1 mutants is associated with genomic instability and rhabdomyosarcoma formation”</i>
5:45pm – 6:15pm	60	Joe Chakkalakal – University of Rochester Medical Center, Rochester, USA <i>“Satellite cell contributions to pediatric skeletal muscle growth and cancer survivorship”</i>
6:15pm – 6:30pm		Closing Remarks
6:30pm – 7:00pm		Awards for Junior Scientists, Best Posters and Best Image Competition
7:00pm – 9:00pm		Closing Banquet
9:00pm – late		Entertainment

Saturday, September 28

Departure

Poster Session Assignments (JVC)

Program numbers are in ***bold italics***. Poster board numbers are in **bold**.

Poster Session 1

Tuesday, September 24, 7:30 pm – 10:00 pm

Set up: Monday, September 23, 2 – 6 pm

Tear down: Tuesday, September 24, 10 pm

- 61** **B1** *USP7 inhibition results in down-regulation of muscle-specific gene expression and differentiation impairment.* **Natasha Blanco**, Natalia González, Marcela Sjöberg, Hugo Olgún (Pontificia Universidad Católica de Chile, Chile)
- 62** **B2** *Bromodomain function of mammalian SWI/SNF (mSWI/SNF) chromatin remodeling enzymes is crucial for skeletal muscle differentiation.* **Tapan Sharma**, Anthony N Imbalzano (Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School, Worcester MA, USA)
- 63** **B3** *Functional properties of a novel mechanosensitive Ca²⁺-permeable channel in mouse derived satellite cells* **Huascar Pedro Ortuste Quiroga**¹, Tomohiro Yamashita¹, Arisa Higawara¹, Shingo Yokoyama¹, Yoshiro Suzuki², Makoto Tominaga², Katsumasa Goto¹ (¹Graduate School of Health Sciences, Toyohashi SOZO University, Japan; ²Division of Cell Signaling, National Institute for Physiological Sciences, Japan)
- 64** **B4** *Klotho influences myogenesis during postnatal growth and during muscle regeneration.* **Cynthia McKee**, Steven S. Welc, Michelle Wehling-Henricks, Catherine Lindsay, Giuseppina Samengo, James G. Tidball (University of California, Los Angeles, United States)
- 65** **B5** *Investigating the role of mechanical tension during sarcomere self-organisation in human iPSC-derived muscle fibers* **Qiyan Mao**^{1,2}, Ziad Al Tanoury^{4,5,6}, Benjamin Friedrich⁷, Olivier Pourquié^{4,5,6}, Frank Schnorrer^{1,2,3} (¹L'Institut de Biologie du Développement de Marseille, France; ²Aix Marseille Université, France; ³Centre national de la recherche scientifique, France; ⁴Department of Pathology, Brigham and Women's Hospital, United States; ⁵Department of Genetics, Harvard Medical School, United States; ⁶Harvard Stem Cell Institute, United States; ⁷Center for Advancing Electronics Dresden, Technische Universität Dresden, Germany)
- 66** **B6** *mRNA transport and stability interplay to localize mRNA in skeletal muscle* **Mafalda R Pimentel**, Helena Pinheiro, Edgar Gomes (Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, Portugal)
- 67** **B7** *Phosphorylation of MLC2 by PKC δ is required for flight muscle maturation in Drosophila* **Pooneh Vaziri** (San Diego State University, United States)
- 68** **B8** *HSP70-specific nuclear transporter Hikeshi in myogenic differentiation* **Tomohiro Yamashita**¹, Huascar Pedro Ortuste Quiroga¹, Arisa Hagiwara¹, Shingo Yokoyama², Yoshitaka Ohno², Takao Sugiura³, Yoshinobu Ohira⁴, Toshitada Yoshioka⁵, Katsumasa Goto^{1,2} (¹Grad Sch Health Sci, Toyohashi SOZO Univ, Toyohashi, Japan; ²Sch Health Sci, Toyohashi SOZO Univ, Toyohashi, Japan; ³Yamaguchi Univ, Yamaguchi, Japan; ⁴Doshisha Univ, Kyoto, Japan; ⁵Hirosaki Gakuin Univ, Hirosaki, Japan)

- 69 **B9** *The Core Enhancer and Distal Regulatory Region are not necessary for MyoD expression during embryonic myogenesis* **Cory Jubinville**, James Camp, Masakazu Yamamoto, David Goldhamer (University of Connecticut, USA)
- 70 **B10** *Single-cell analysis of mouse embryonic and fetal limb muscle populations* **Anthony Patelunas**, Marmar Moussa, Ion Mandoiu, David Goldhamer (University of Connecticut, United States)
- 71 **B11** *MyoD induced enhancer RNA interacts with hnRNPL protein via CAAA motif to activate target gene transcription during myogenic differentiation* **Yu Zhao** (Department of Orthopaedics and Traumatology, Li Ka Shing Institute of Health Sciences, The Chinese University of Hong Kong, Hong Kong, China)
- B12** *WITHDRAWN*
- 73 **B13** *FGF signals direct myotube guidance by regulating Rho/Rac activity* **Aaron Johnson**, Shuo Yang, Allison Weske (Washington University School of Medicine, USA)
- 74 **B14** *Expression of helix-loop-helix transcription factor Ascl4 induces myogenic program in embryonic stem cells* **Atsushi Asakura**, Yusaku Kodaka, Shuichi Watanabe, Hikaru Ito, Mayank Verma, Tomohide Takaya, Yoko Asakura, Michael Kyba (Stem Cell institute, Paul & Sheila Wellstone Muscular Dystrophy Center, Department of Neurology, University of Minnesota Medical School, USA)
- 75 **B15** *The MuSK-BMP pathway is necessary for maintaining a sub-population of Type IIb muscle fibers* **Diego Jaime**, Lauren A. Fish, Justin R. Fallon (Brown University, USA)
- 76 **B16** *Control of myonuclear positioning by skeletal muscle CIP* **Jianming Liu** (Boston Children's Hospital, USA)
- 77 **B17** *New muscle identity code components identified by TRAP control shape and size of muscle subsets in Drosophila* **Krzysztof Jagla**, Benjamin Bertin, Yoan Renaud, Teresa Jagla, Guillaume Lavergne, Cristiana Dondi, Jean Philippe Da Ponte, Guillaume Junion (GRoD - INSERM U1103, CNRS UMR6293, Université de Clermont Auvergne, 28, Place Henri Dunant, 63000 Clermont-Ferrand, France, France)
- 78 **B18** *Single-cell analysis of the muscle stem cell hierarchy identifies heterotypic communication signals involved in skeletal muscle regeneration* **Andrea J. De Micheli**^{1,2}, Paula Fraczek¹, Sharon Soueid-Baumgarten¹, Hiranmayi Ravichandran², Iwijn De Vlaminck¹, Olivier Elemento^{2,3}, Benjamin D. Cosgrove¹ (¹Meinig School of Biomedical Engineering, Cornell University, Ithaca NY, USA; ²Englander Institute for Precision Medicine, Weill Cornell Medicine, New York NY, USA; ³WorldQuant Initiative for Quantitative Prediction, New York NY, USA)
- 79 **B19** *Multiplexed RNAscope and immunofluorescence on whole-mount skeletal myofibers and their associated stem cells* **Allison Kann**, Robert Krauss (Icahn School of Medicine at Mount Sinai, United States)
- 80 **B20** *The Roles of β -, γ -, and α -catenins in Satellite Cell Regulation* **Margaret Hung**, Robert S. Krauss (Icahn School of Medicine at Mount Sinai, United States)
- 81 **B21** *Myogenin has distinct function in satellite cells isolated from different muscles* **Rio Arimatsu**¹, Yuriko Nishi¹, Ken Kobayashi¹, Ryuichi Tatsumi², Koichi Ojima³, Takanori Nishimura¹, Takahiro Suzuki¹ (¹Research Faculty of Agriculture, Graduate School of Agriculture, Hokkaido University, Japan; ²Department of Animal & Marine Bioresource Sciences, Graduate School of Agriculture, Kyushu University, Japan; ³Animal Products Research Division, Institute of Livestock and Grassland Science, NARO, Japan)

- 82 **B22** *Netrin-1 synthesized in satellite cells may promote fast myofiber-type commitment during myogenic differentiation phase* **Takahiro Suzuki**¹, Aika Mori¹, Yuriko Nishi¹, Rio Arimatsu¹, Takahiro Maeno¹, Ken Kobayashi¹, Koichi Ojima², Ryuichi Tatsumi³, Takanori Nishimura¹ (¹Research Faculty of Agriculture, Graduate School of Agriculture, Hokkaido University, Japan; ²Animal Products Research Division, Institute of Livestock and Grassland Science, NARO, Japan; ³Department of Animal & Marine Bioresource Sciences, Graduate School of Agriculture, Kyushu University, Japan)
- 83 **B23** *Impact of polluted air on muscle stem cell response.* **Audrey Der Vartanian**^{1,2}, Marianne Gervais^{1,2}, Sophie Lanone³, Patrice Coll⁴, Frédéric Relaix^{1,2,5,6,7,8} (¹Inserm, IMRB U955-E10, 94000, Créteil, FRANCE; ²Faculté de Médecine, Université Paris Est Créteil, 94000, Créteil, FRANCE; ³Inserm, IMRB U955-E4, 94000, Créteil, FRANCE; ⁴Laboratoire Interuniversitaire des Systèmes Atmosphériques (LISA), UMR CNRS 7583, UPEC, Créteil, FRANCE; ⁵Ecole Nationale Vétérinaire d'Alfort, 94700, Maisons-Alfort, FRANCE; ⁶Etablissement Français du Sang, 94017, Créteil, FRANCE; ⁷APHP, Hôpital Henri Mondor, DHU Pepsy & Centre de Référence des Maladies Neuromusculaires GNMH, 94000, Créteil, FRANCE; ⁸Correspondence, frederic.relaix@inserm.fr)
- 84 **B24** *miR-106b inhibition as therapeutic tool enhancing muscle regeneration in muscular dystrophies.* **Lara Rodríguez-Outeiriño**^{1,2}, Francisco Hernández-Torres^{1,2}, Felicitas Ramírez^{1,2}, Diego Franco^{1,2}, Amelia Eva Aránega^{1,2} (¹Department of Experimental Biology, Faculty of Experimental Sciences. University of Jaen., Spain; ²Fundación Medina. Granada., Spain)
- 85 **B25** *Role of Laminin-2 in the Muscle Stem Cell Niche* **Simon Dumontier**, Emmeran Le Moal, Jasmin Collette-Tremblay, C. Florian Bentzinger (Department of physiology-pharmacology, Université de Sherbrooke, Canada)
- 86 **B26** *Elucidation of post-transcriptional regulatory functions of Dhx36 in skeletal muscle stem cells and muscle regeneration* **Huating Wang**, Xiaona Chen, Jie Yuan, Guang Xue, Hao Sun (The Chinese University of Hong Kong, Hong Kong SAR)
- 87 **B27** *Effect of skeletal muscle cell secretome in mesenchymal stromal cells myogenic differentiation* **Silvia Elena Castro-Piedra**, Andrea Ulloa Fernandez, María Jose Campos Garay, Kimberly Castro Roldán, Gabriela Campos Quesada (Instituto Tecnológico de Costa Rica, Costa Rica)
- 88 **B28** *Single Cell and Reporter Analysis of Skeletal Muscle Interstitial Cells Identifies Unique Non-myogenic Mesenchymal Cell Populations* **Abigail P. Leinroth**¹, Joe V. Chakkalaka², Matthew J. Hilton¹ (¹Duke University, United States; ²University of Rochester, United States)
- 89 **B29** *Scleraxis positive tendon cells are required for correct muscle patterning in mammalian embryo* **Masafumi Inui**^{1,4}, Yudai Ono¹, Tempei Sato², Hiroshi Asahara^{2,3} (¹Laboratory of Animal Regeneration Systemology, Department of Life Science, School of Agriculture, Meiji University, Japan; ²Department of Systems BioMedicine, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University, Japan; ³Department of Molecular Medicine, The Scripps Research Institute, United States; ⁴Meiji University International Institute for Bio-Resource Research, Japan)
- B30** *WITHDRAWN*

Poster Session 2
Wednesday, September 25, 7:30 pm – 10:00 pm

Set up: Wednesday, September 25, 7 – 8:30 am

Tear down: Wednesday, September 25, 10 pm

- 91 B1** *Role of the TGF β -Activated Kinase 1 in muscle-resident fibro/adipogenic progenitors, a key modulator of the inflammatory environment.* **Marine Theret**^{1,2}, Melina Messing^{1,2}, Mark Hamer^{1,2}, Kelly McNagny^{1,2}, Fabio Rossi^{1,2} (¹The Biomedical Research Centre, University of British Columbia, 2222 Health Sciences Mall, Vancouver, BC, V6T 1Z3, Canada; ²Faculty of Medicine, The University of British Columbia, 317-2194 Health Sciences Mall, Vancouver, BC, V6T 1Z3, Canada)
- 92 B2** *Nedd4-1 deletion impairs mitochondrial mass and muscle fiber size upon injury and regeneration* **Jeremy Salas**, Verónica Eisner, Hugo Olgún (Pontificia Universidad Católica de Chile, Chile)
- 93 B3** *Deficient Skeletal Muscle Regeneration after Injury Induced by a Clostridium perfringens Strain Associated with Gas Gangrene* **Marietta Flores-Díaz**¹, Ana Mariel Zuñiga-Pereira¹, Carlos Santamaría², José María Gutiérrez¹, Alberto Alape-Girón^{1,3} (¹Instituto Clodomiro Picado, Facultad de Microbiología, Universidad de Costa Rica, Costa Rica; ²Laboratorio de Biología Molecular, Hospital Nacional de Niños, Costa Rica; ³Departamento de Bioquímica, Escuela de Medicina, Universidad de Costa Rica, Costa Rica)
- 94 B4** *Hox11 Gene Function in Adult Muscle Homeostasis and Regeneration* **Deneen Wellik**, Emma Snyder-White, Anna Miller, Chakrapani Vemulawada (University of Wisconsin-Madison, USA)
- 95 B5** *Enhancing endogenous repair in muscular dystrophy through cellular reprogramming* **Clauda Abboud**¹, Christoph Lepper², Florian Bentzinger¹ (¹Faculté de médecine et des sciences de la santé (FMSS), University of Sherbrooke, Sherbrooke, QC, Canada; ²Carnegie Institution for Science, Department of Embryology, Baltimore, Maryland, USA)
- 96 B6** *Nitric oxide donor, Molsidomine: dose effects on endogenous nitric oxide signalling in rat muscle tissue following contusion injury* **Nicholas Woudberg**, Tracey Ollewagen, Kathryn H. Myburgh (Stellenbosch University, South Africa)
- 97 B7** *Integration of Inflammation and Myogenesis during Skeletal Muscle Repair: The Role of the Transcription Factor Mohawk* **Cherie Alissa Lynch**, Erik Rogers, Douglas Anderson, Jeanne Wilson-Rawls, Alan Rawls (Arizona State University, USA)
- 98 B8** *Tissue Engineering, Tissue Banking and Interinstitutional collaboration: the road towards regenerative medicine in Costa Rica* **Carolina Centeno-Cerdas**^{1,2}, Nefertiti Chaves-Solano³, Andrea Ulloa-Fernández¹, Silvia Castro-Piedra¹, Johan Morales-Sánchez¹, Montserrat Jarquín-Cordero¹, Leonardo Lesser⁴, Teodolito Guillén⁵, Ricardo Starbird⁶, Jorge M. Cubero-Sesin⁷, José-Tomás Egaña-Erazo⁸, Laura A. Calvo-Castro¹ (¹Instituto Tecnológico de Costa Rica, Centro de Investigación en Biotecnología, Escuela de Biología, Cartago, Costa Rica; ²Department of Plastic Surgery and Hand Surgery, University Hospital rechts der Isar, Technische Universität München, Germany; ³Tissue Bank, Trauma Hospital. Instituto Nacional de Seguros, Costa Rica; ⁴Centro de Investigación en Ciencias Atómicas, Nucleares y Moleculares (CICANUM), Universidad de Costa Rica, Costa Rica; ⁵Bio-Inspired

Materials and Processes group, Escuela de Ciencia e Ingeniería de los Materiales, Instituto Tecnológico de Costa Rica, Costa Rica; ⁶Escuela de Química, Instituto Tecnológico de Costa Rica, Costa Rica; ⁷Center for Materials Research and Extension, School of Materials Science and Engineering, Costa Rica Institute of Technology, Costa Rica; ⁸Institute for Biological and Medical Engineering, Schools of Engineering, Biological Sciences and Medicine, Pontificia Universidad Católica de Chile, Santiago, Chile)

- 99 B9 *Estrogen-ER β pathway controls muscle mass and regeneration in female mice* **Kodai Nakamura**¹, Daiki Seko^{1,2}, Ryo Fujita³, Yuriko Kitajima², Yuuki Imai⁴, Yusuke Ono¹ (¹Department of Muscle Development and Regeneration, Institute of Molecular Embryology and Genetics, Kumamoto University, Kumamoto, Japan; ²Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan; ³Department of Human Genetics, McGill University, Montreal, Quebec, Canada; ⁴Division of Integrative Pathophysiology, Proteo-Science Center, Graduate School of Medicine, Ehime University, Ehime, Japan)
- 100 B10 *Regulation of muscle regeneration by CREB/ CRTC transcription factors* **Rebecca Berdeaux**, Dmitry Akhmedov, Randi Fitzgibbon, Maria Mendoza Stetter (McGovern Medical School at The University of Texas Health Science Center at Houston (UTHealth), USA)
- B11 *WITHDRAWN*
- 102 B12 *Targeted Genome Engineering to Generate Therapeutic iPSC-Derived PAX7+ Myogenic Progenitors* **Hyunkee Kim**, James Kiley (University of Minnesota, United States)
- 103 B13 *Targeting Circadian Clock Regulators for Muscular Dystrophy Therapy* **Ke Ma**¹, Hongbo Gao¹, Xuekai Xiong¹, Somik Chatterjee² (¹Department of Diabetes Complications & Metabolism, Beckman Research Institute of City of Hope, Duarte, CA 91010, USA; ²Center for Diabetes Research, The Methodist Hospital Research Institute, Houston, TX, 77030, USA)
- 104 B14 *Calcitonin receptor signaling and muscle exercise* **So-ichiro Fukada**, Lidan Zhang (Osaka University, JAPAN)
- 105 B15 *Retinoic acid signaling regulates fate of mesenchymal progenitors during muscle regeneration and pathogenesis* **Akiyoshi Uezumi**¹, Madoka Ikemoto-Uezumi¹, Tamaki Kurosawa¹, So-ichiro Fukada², Takehiro Kasai³, Kinji Ohno³, Kunihiro Tsuchida⁴ (¹Tokyo Metropolitan Institute of Gerontology, Japan; ²Osaka University, Japan; ³Nagoya University, Japan; ⁴Fujita Health University, Japan)
- 106 B16 *The Impacts of Environmental Chemicals on Telomere Length and Adverse Effects in A549 Cells* **Adonay Kiflay** (University of Copenhagen, Denmark)
- 107 B17 *Proteomic analysis of skeletal muscles reveals extracellular proteins affecting satellite cell function during aging* **Svenja Schöler**, Joanna M. Kirkpatrick, Manuel Schmidt, Martin Hemberg, Julia von Maltzahn, Alessandro Ori (Leibniz Institute on Aging - Fritz-Lipmann Institute, Germany)
- 108 B18 *P38 α MAPK coordinates the activities of several metabolic pathways that together induce atrophy of denervated muscles.* **Eyal Bengal**, Maali Odeh, Yael Tamir-Livne, Tali Haas (Department of Biochemistry, Rappaport Faculty of Medicine, Technion-Israel Institute of Technology, P.O. Box 9649, Haifa 31096, Israel)
- 109 B19 *The aged inflammatory niche prevents stem cell contribution to muscle regeneration* **Romeo S. Blanc**, John Bachman, Nicole Paris, Joe Chakkalakal (University of Rochester, US)
- 110 B20 *The impact of denervation on satellite cell functionality* **Henriette Henze**, Svenja C.

- Schüler, Julia von Maltzahn (Leibniz Institute on Aging – Fritz Lipmann Institute (FLI), Germany)
- 111 B21 *Dysregulated cell signalling and reduced satellite cell potential in ageing muscle* **Gurtej Dhoot**¹, Biggy Simbi¹, Khalid Alyodawi², Ketan Patel² (¹RVC, university of London, UK; ²University of Reading, UK)
- 112 B22 *Oxidative muscles have better mitochondrial homeostasis than glycolytic muscles throughout life and maintain mitochondrial function during aging* **Annunziata Crupi**^{1,2}, Jordan Nunnelee¹, David Taylor¹, Amandine Thomas¹, Jean-Philippe Vit¹, Celine Riera¹, Roberta Gottlieb¹, Helen Goodridge¹ (¹Cedars Sinai, United States; ²University of Southern California, United States)
- 113 B23 *Identification and characterization of factors involved in skeletal muscle aging* **Hellen E. Ahrens**, Manuel Schmidt, Christina Picker, Christine Poser, Julia von Maltzahn (Leibniz Institute on Aging - Fritz Lipmann Institute (FLI), Beutenbergstraße 11, 07745 Jena, Germany)
- 114 B24 *An exercise-regulated long intergenic noncoding RNA improves muscle differentiation in ageing* **Martin Wohlwend**³, Kristine Williams², Pattarawan Pattamaprapanont², Pirkka-Pekka Laurila¹, Romain Barrès², Ulrik Wisløff³, Jose Bianco Moreira³, Johan Auwerx¹ (¹Ecole polytechnique fédérale de Lausanne, Switzerland; ²University of Copenhagen, Denmark; ³Norwegian University of Science and Technology, Norway)
- 115 B25 *Sphingolipid depletion reverses age-associated muscle dysfunction and improves muscle regeneration* **Pirkka-Pekka Laurila**^{1,2}, Peiling Luan¹, Martin Wohlwend¹, Johanna Tuhkanen², Maroun Bou Sleiman¹, Thomas Eichmann³, Jari Lahti², Johan Eriksson², Johan Auwerx¹ (¹École polytechnique fédérale de Lausanne, Switzerland; ²University of Helsinki, Finland; ³Karl-Franzens-Universität Graz, Austria)
- 116 B26 *Highly efficient differentiation of human pluripotent stem cells into transplant competent myogenic progenitors and functional myofibers* **Robert Judson**¹, Fayeza Islam¹, Uriel Pena¹, Nasim Kajabadi^{1,3}, Mark Hamer³, Terry Thomas¹, Allen Eaves^{1,2}, Steve Szilvassy¹, Fabio Rossi³, Sharon Louis¹ (¹STEMCELL Technologies Inc, Vancouver, BC, CANADA; ²Terry Fox Laboratory, BC Cancer Agency, Vancouver, BC, CANADA; ³Department of Medical Genetics, University of British Columbia, Vancouver, BC, CANADA)
- 117 B27 *Control of C2C12 myoblast cells growth and their differentiation into myotubes by electrical impedance spectroscopy and electric field stimulation on a patterned gold electrode.* **Karla Ramírez-Sánchez**¹, Andrea Ulloa-Fernández², Silvia Castro-Piedra², Juan José Montero-Rodríguez³, Mónica Prado-Porras⁴, Esteban Avendaño⁵, Ricardo Starbird¹ (¹School of Chemistry, Costa Rica Institute of Technology, 159-7050 Cartago, Costa Rica, Costa Rica; ²School of Biology, Costa Rica Institute of Technology, 159-7050 Cartago, Costa Rica, Costa Rica; ³School of Electronic Engineering, Costa Rica Institute of Technology, 159-7050 Cartago, Costa Rica, Costa Rica; ⁴Microbiology Department, Centro de Investigación en Enfermedades Tropicales (CIET), Universidad de Costa Rica, San Pedro, Costa Rica, Costa Rica; ⁵Physic Department, Centro de Investigación en Ciencia e Ingeniería de Materiales (CICIMA), Universidad de Costa Rica, San Pedro, Costa Rica, Costa Rica)
- 37 B28 *Engineering combinatorial biomimetic environments to control muscle stem and progenitor cell regulatory phenotypes and to enhance muscle cell transplantation therapies* **Alexander Loiben**¹, Kun Ho Kim¹, Sharon Baumgarten-Soueid¹, Victor Aguilar¹, Jonathan Chin Cheong¹, Ruth Kopyto¹, Paula Fraczek¹, Ishita Jain², Gregory Underhill², Benjamin Cosgrove¹ (¹Cornell University, United States;

- ²University of Illinois at Urbana-Champaign, United States)
- 33** **B29** *Human Duchenne Muscular Dystrophy iPSC-derived myotubes as an in vitro model for studying epigenetic alterations controlling the fibrotic response: role of the epigenetic regulator SETDB1* **Sonia Albini**¹, Alice Granados¹, Roberta Rapone¹, Chiara Nicoletti², Luca Caputo², Vittorio Sartorelli⁴, Pier Lorenzo Puri², Fabien Le Grand³, Slimane AIT-SI-ALI¹ (¹Université Paris Diderot Paris 7 - CNRS, USA; ²Sanford Burnham Prebys Medical Discovery Institute - La Jolla (CA), France; ³Sorbonne Universités, UPMC Univ Paris 06, France; ⁴National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), NIH, Bethesda, MD , USA)
- 120** **B30** *Atypical PKC λ regulates genomic stability in muscle satellite cells* **Daiki Seko**^{1,2}, Kiyoshi Yoshioka^{1,2}, Yasuo Kitajima¹, Tomonori Hirose³, Shigeo Ohno³, Yusuke Ono¹ (¹Department of Muscle Development and Regeneration, Institute of Molecular Embryology and Genetics, Kumamoto University, Kumamoto, Japan; ²Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan; ³Department of Molecular Biology, Graduate School of Medical Science, Yokohama City University, Yokohama, Japan)

Poster Session 3

Thursday, September 26, 7:30 pm – 10:00 pm

Set up: Thursday, September 26, 7 am – 8:30 am

Tear down: Thursday, September 26, 10:00 pm

- 121 B1** *Deregulation of ACTN1: a new pathogenic mechanism at stake in nemaline myopathy?* **Jordan Blondelle**¹, Jane T. Seto², Majid Ghassemian⁴, Jeffrey D. Singer³, Stephan Lange¹ (¹Division of Cardiology, School of Medicine, UCSD, La Jolla, USA; ²Neuromuscular Research, Murdoch Children's Research Institute, Royal Children's Hospital, Parkville, Australia; ³Department of Biology, Portland State University, Portland, USA; ⁴Department of Chemistry and Biochemistry, UCSD, La Jolla, USA)
- 122 B2** *Therapeutic potential of slow muscle programming for muscular dystrophy and related diseases* **Gordon Lynch**¹, Karen Martins¹, Stefan Gehrig¹, Timur Naim¹, Jennifer Trieu¹, Rene Koopman¹, James Ryall¹, Gregory Steinberg², Justin Hardee¹ (¹Centre for Muscle Research, Department of Physiology, The University of Melbourne, Australia; ²Department of Biochemistry and Biomedical Sciences, McMaster University, Canada)
- 123 B3** *CRISPR-engineered human stem cells for modelling Duchenne Muscular Dystrophy* **Amaia Paredes-Redondo** (Blizard Institute, Queen Mary University of London, United Kingdom)
- 124 B4** *Characterization of R-DMDdels52, a preclinical rat model of Duchenne muscular dystrophy.* **Peggy Lafuste**^{1,2}, Melissa Goddard^{1,2}, Marie Lo³, Tianxiang Yang^{1,2}, Fantin Lowenstein^{1,2}, Baptiste Périou^{1,2}, Bernadette Drayton^{1,2}, Frédéric Relaix^{1,2} (¹Inserm, IMRB U955-E10, Créteil, F-94010, France.; France; ²University Paris Est, Faculty of Medicine, F-94000, Créteil, France, France; ³UMRS 974 INSERM UPMC, Myology Institute, Pitié Salpêtrière, Paris, F-75013, France, France)
- 125 B5** *A genome-wide CRISPR screen to identify modifiers of Dux4 cytotoxicity* **Ator Ashoti**¹, Limone Francesco², Melissa van Kranenburg¹, Menno Creyghton¹, Mirna Baak¹, Judith Vivie¹, Mauro Muraro¹, Kevin Eggan², Niels Geijsen¹ (¹Hubrecht Institute, Netherlands; ²Harvard stem cell institute, USA)
- 126 B6** *Critical roles for GSK3- β and calpain-1 in mediating desmin filament loss and myofibril destruction in atrophy* **Shenhav Cohen**, Dina Aweida, Inga Rudesky, Alexandra Volodin, Eitan Shimko (Technion Institute of Technology, Israel)
- 127 B7** *Mechanisms of muscle stem cell homeostasis during development of muscle contractures in cerebral palsy* **Andrea A. Domenighetti**^{1,4}, Lydia A. Sibley¹, Wendy Gross¹, Austin Menezes¹, Henry G. Chambers², Vineeta T. Swaroop³, Richard L. Lieber^{1,4} (¹Shirley Ryan AbilityLab, Chicago IL, United States; ²Rady Children's Hospital and Health Center, San Diego CA, United States; ³Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago IL, United States; ⁴Department of Physical Medicine & Rehabilitation, Northwestern University, Chicago IL, United States)
- 128 B8** *GADD45A is a protective modifier of neurogenic skeletal muscle atrophy* **Jeffrey Ehmsen**¹, Riki Kawaguchi², Giovanni Coppola², Ahmet Hoke¹ (¹Johns Hopkins School of Medicine, USA; ²University of California, Los Angeles, USA)
- 129 B9** *Targeting Endogenous Repair: A New Pharmacological Approach for the Treatment of Muscular Dystrophy.* **Emmeran Le Moal**¹, Jasmin Collette-Tremblay¹, Junio Dort², Nicolas Dumont², Joris Michaud³, Kien Tran¹, Hugo Giguère¹, Jerome N Feige³, Eric Marsault¹, Mannix Auger-Messier¹, C. Florian Bentzinger¹

(¹Département de pharmacologie-physiologie - Institut de pharmacologie de Sherbrooke - Centre de Recherche du Centre Hospitalier Universitaire de Sherbrooke - Faculté de médecine et des sciences de la santé Université de Sherbrooke., Canada; ²CHU Sainte-Justine Research Center University of Montreal., Canada; ³Nestlé Research Ecole Polytechnique Federale de Lausanne (EPFL) Innovation Park Lausanne., Switzerland)

- 130 B10** *Single nucleus RNA-sequencing of mouse skeletal muscle reveals transcriptional heterogeneity of myonuclei* **Michael Petrany**, Casey Swoboda, Kashish Chetal, Nathan Salomonis, Douglas Millay (Cincinnati Children's Hospital Medical Center, United States)
- 131 B11** *Novel human FKRP iPSC model and large-scale screening identify a compound for functional glycosylation of α -dystroglycan* **Yung-Yao Lin**¹, Jihee Kim¹, Beatrice Lana¹, Silvia Torelli², David Ryan³, Francesco Catapano², Pierpaolo Ala², Christin Luft⁴, Elizabeth Stevens², Evangelos Konstantinidis¹, Sandra Louzada³, Beiyuan Fu³, Amaia Paredes-Redondo¹, A. W. Edith Chan⁵, Fengtang Yang³, Derek L. Stemple³, Pentao Liu³, Robin Ketteler⁴, David L. Selwood⁵, Francesco Muntoni² (¹Centre for Genomics and Child Health, Blizard Institute, Barts and the London School of Medicine and Dentistry, Queen Mary University of London, 4 Newark Street, London E1 2AT, United Kingdom; ²UCL Great Ormond Street Institute of Child Health, 30 Guilford Street, London WC1N 1EH, United Kingdom; ³Wellcome Trust Sanger Institute, Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 1SA, United Kingdom; ⁴MRC Laboratory for Molecular Cell Biology, University College London, Gower Street, London WC1E, United Kingdom; ⁵The Wolfson Institute for Biomedical Research, University College London, Gower Street, London WC1E 6BT, United Kingdom)
- 132 B12** *Macrophage-mediated delivery of transgenic LIF reduces fibrosis and inflammation in mdx mice* **Ivan Flores**, Steven S. Welc, Michelle Wehling-Henricks, James G. Tidball (University of California, Los Angeles, United States of America)
- 133 B13** *Breaking down the regulation of muscle length in growth and disease* **Sia Nikolaou**, Liangjun Hu, Roger Cornwall (Cincinnati Children's Hospital Medical Center, USA)
- 134 B14** *Intracellular calcium response of a primary culture of mouse skeletal muscle* **Andrea Ulloa-Fernández**¹, Silvia Elena Castro-Piedra¹, Katherine Hidalgo-Rodríguez², Gabriela Campos-Quesada¹, Kimberly Castro-Roldán¹, José Arturo Molina-Mora³, Rodrigo Mora-Rodríguez³, Laura Monturiol-Gross² (¹Instituto Tecnológico de Costa Rica, Centro de Investigación en Biotecnología, Escuela de Biología, Cartago, Costa Rica; ²Instituto Clodomiro Picado, Facultad de Microbiología, Universidad de Costa Rica, San José, Costa Rica; ³Centro de Investigación en Enfermedades Tropicales, Facultad de Microbiología, Universidad de Costa Rica, San José, Costa Rica)
- 135 B15** *Novel epigenetic small molecule approaches and single-cell epigenetic analysis for DMD* **Lisa Maves**^{3,4}, Jean-Baptiste Dupont^{1,2}, Gist H. Farr III³, Melanie Morris³, Arianna Gomez³, Thao Pham³, David Mack² (¹I-Stem, INSERM/UEVE UMR 861, Corbeil-Essonnes, France; ²Institute for Stem Cell and Regenerative Medicine, University of Washington, Seattle, Washington, USA; ³Center for Developmental Biology and Regenerative Medicine, Seattle Children's Research Institute, Seattle, Washington, USA; ⁴Department of Pediatrics, University of Washington, Seattle, Washington, USA)
- 136 B16** *Generation and correction of DMD Δ Ex51 mutations in mice and human cells by genomic editing* **Francesco Chemello**^{1,2}, Yi-Li Min^{1,2}, Cristina Rodriguez-Caycedo^{1,2}, Efrain Sanchez-Ortiz^{1,2}, Alex A. Mireault^{1,2}, John M. Shelton³, John R.

McAnally^{1,2}, Rhonda Bassel-Duby^{1,2}, Eric N. Olson^{1,2} (¹Department of Molecular Biology, Hamon Center for Regenerative Science and Medicine, University of Texas Southwestern Medical Center, USA; ²Sen. Paul D. Wellstone Muscular Dystrophy Cooperative Research Center, University of Texas Southwestern Medical Center, USA; ³Department of Internal Medicine, University of Texas Southwestern Medical Center, USA)

- 137 B17** *Regulatory T cells suppress novel skeletal muscle macrophages identified by single-cell RNA sequencing* **Armando Villalta**, Jenna Kastenschmidt, Gerald Coulis, Ali Mannaa, Nicholas Pervolarakis, Kai Kessenbrock (University of California Irvine, United States)
- 138 B18** *Expansion of laminin $\alpha 2$ in Duchenne muscular dystrophy impairs muscle stem cell function* **Kristen Stearns-Reider**¹, Michael Hicks¹, Katherine Hammond¹, Alok Maity¹, Yerbol Kurmangaliyev¹, Jesse Chin¹, Adam Steig¹, Nicholas Geisse³, Sophie Hohlbauch³, Stefan Kaemmer⁴, Lauren Schmitt², Thanh Pham², Ken Yamauchi¹, Bennett Novitch¹, Roy Wollman¹, Kirk Hansen², April Pyle¹, Rachelle Crosbie¹ (¹UCLA, United States; ²University of Colorado, Denver, USA; ³Asylum Research, United States; ⁴JPK Instruments, Germany)
- 139 B19** *Zebrafish as a model to understand how strength training and inactivity impact Duchenne Muscular Dystrophy* **Elisabeth Kilroy**¹, Kaylee Brann¹, Tashawna Spellan¹, Alex Lewis¹, Claire Schaffer¹, Devon Varney¹, Grace Zientara¹, Amélie Germond², Clarissa Henry¹ (¹University of Maine, United States; ²IUT de Quimper - Institut de l'Université de Bretagne Occidentale, France)
- 140 B20** *Precise gene editing in primary human muscle stem cells* **Helena Escobar**^{1,2}, Stefanie Mützel², Andreas Marg^{1,2}, Janine Kieshauer², Simone Spuler^{1,2} (¹Charité Universitätsmedizin Berlin, Germany; ²Max Delbrück Center for Molecular Medicine, Germany)
- 141 B21** *Analysis of Gene-Edited Dystrophin Following Chronic Injury* **Dileep Karri**^{1,2}, Yi-Li Min^{1,2,4}, John Shelton³, Alex Mireault^{1,2}, Rhonda Bassel-Duby^{1,2}, Eric Olson^{1,2} (¹Department of Molecular Biology, Hamon Center for Regenerative Science and Medicine, University of Texas Southwestern Medical Center, USA; ²Sen. Paul D. Wellstone Muscular Dystrophy Cooperative Research Center, University of Texas Southwestern Medical Center, USA; ³Department of Internal Medicine, University of Texas Southwestern Medical Center, USA; ⁴Exonics Therapeutics, USA)
- 142 B22** *Human pluripotent stem cell-derived PAX7::GFP+ cells can be engrafted to become quiescent satellite-like cells upon transplantation* **Congshan Sun** (Johns Hopkins School of Medicine, USA)
- 143 B23** *Effects of exercise on the efficacy of microdystrophin gene therapy.* **Shelby Hamm**¹, Daniel Fathalikhani¹, Kate Bukovec¹, Adele Addington¹, Haiyan Zhang¹, Justin Perry¹, Alex Mansueto¹, Ryan McMillan¹, Mike Lawlor², Kirsten Coleman³, David Brown¹, Carl Morris⁴, Pat Gonzalez⁴, Robert Grange¹ (¹Virginia Tech, USA; ²Medical College of Wisconsin, USA; ³University of Florida, USA; ⁴Solid Biosciences, Inc., USA)
- 151 B24** *Epigenetic tuning of miR in FAP-derived Extracellular Vesicles promotes regeneration and inhibits fibrosis in dystrophic muscles.* M. Sandonà^{1,2}, S. Consalvi^{1,3}, L. Tucciarone^{1,2}, M. De Bardi¹, M. Scimeca^{4,5,6}, D. Angelini¹, V. Buffa⁷, A. D'Amico⁸, E. Bertini⁸, S. Cazzaniga⁹, P. Bettica⁹, M. Bouché², A. Bongiovanni⁷, P.L. Puri^{1,3}, and **V. Saccone**¹
- 145 B25** *Ribitol rescues functional alpha-dystroglycan glycosylation in a novel patient specific FKR- associated Walker Warburg Syndrome iPS cell model* **Carolina Ortiz**

- Cordero**^{1,2}, Alessandro Magli², Nelio Oliveira², Anne Bang³, Rita C. Perlingeiro^{1,2}
 (¹Department of Integrative Biology and Physiology, University of Minnesota, United States; ²Lillehei Heart Institute, Department of Medicine, University of Minnesota, United States; ³Sanford Burnham Prebys Medical Discovery Institute La Jolla, United States)
- 146 B26** *Straightjacket/α2δ3 deregulation is associated with cardiac conduction defects in Myotonic Dystrophy type 1* **Krzysztof Jagla**¹, Emilie Plantié¹, Masayuki Nakamori², Yoan Renaud¹, Aline Huguet³, Caroline Choquet⁴, Cristiana Dondi¹, Lucile Miquerol⁴, Masanori Takahashi², Geneviève Gourdon³, Guillaume Junion¹, Teresa Jagla¹, Monika Zmojdian¹ (¹GReD, CNRS UMR6293, INSERM U1103, University of Clermont Auvergne, 28, Place Henri Dunant, 63000 Clermont-Ferrand, France; ²Department of Neurology, Osaka University Graduate School of Medicine, 2-2 Yamadaoka, Suita, Osaka 565-0871, Japan; ³Imagine Institute, Inserm UMR1163, 24, boulevard de Montparnasse, 75015 Paris, France; ⁴Aix-Marseille Univ, CNRS UMR 7288, IBDM, Marseille, France)
- 147 B27** *Functional investigation of the role of Trps1 during myogenesis and in rhabdomyosarcoma* **Sören Hüttner**, Björn von Eyss, Julia von Maltzahn (Leibniz Institute on Aging – Fritz Lipmann Institute (FLI), Germany)
- 148 B28** *Developing a suicide gene therapy for alveolar rhabdomyosarcoma* **Johanna Pruessler**, Peter Zammit (Randall Centre for Cell and Molecular Biophysics, King's College London, United Kingdom)
- 149 B29** *A genetic screening strategy to uncover rhabdomyosarcoma differentiation factors* **Martyna Sroka**^{1,2}, Osama El Demerdash¹, Joseph Milazzo¹, Kenneth Chang¹, Xiaoli Wu^{1,3}, Lukas Benjamin¹, Christopher Vakoc¹ (¹Cold Spring Harbor Laboratory, USA; ²Watson School of Biological Sciences, USA; ³Stony Brook University, USA)
- 150 B30** *Genetic Screening Identifies MYOD1 as a Potent and Specific Dependency in Rhabdomyosarcoma* **Cristian Lopez-Cleary**^{1,2,3}, Xiaoli Wu^{2,3}, Martyna Sroka^{3,4}, Christopher Vakoc³ (¹Stony Brook University Medical Scientist Training Program, USA; ²Stony Brook University Graduate Program in Genetics, USA; ³Cold Spring Harbor Laboratory, USA; ⁴Watson School of Biological Sciences, USA)