Alternative Muscle Club Meeting 2018

Meeting Program

Monday,
October 1st, 2018

UC San Diego
San Diego State University
SDSU Heart Institute
SBP Sanford Burnham Prebys Medical Discovery Institute

We gratefully acknowledge the support of the following organizations and people, who helped to make this meeting happen

Involved Institutions

UC San Diego

San Diego State University

SDSU Heart Institute

SBP Sanford Burnham Prebys Medical Discovery Institute

Organizational and Corporate Sponsors

Parent Project Muscular Dystrophy — Leading the Fight to End Duchenne

OLYMPUS

Surf Diva

eppendorf

ThermoFisher Scientific

StemoniX

ACEA Biosciences, Inc.

MYOKARDIA

PPMD - Carol Gregorio, Patricia Furlong
StemoniX - Ryan Gordon, Oivin Guicherit, Fabian Zanella
ACEA - Leyna Zhao, Jeff Li, Jeff Xue, Yama Abassi
MyoKardia - Elizabeth Cerutti
Olympus - Craig Rappaport
Thermo Fisher - Tracy Padgett, John Blessinger
Eppendorf - Victoria Kelley
Surf Diva - Coco Tihanyi, Izzy Tihanyi, Erica Savage

Credits

WELCOME NOTE

Thank you for attending the Alternative Muscle Club 2018!

We like to welcome all attendees to the 6th iteration of the Alternative Muscle Club in San Diego. This years meeting will be at Telemedicine and Medical Education Building on the campus of UCSD.

With ~100 attendees from California and San Diego, we are certain that this years AMC meeting will be another great success. *Prof. Christopher Glembotski* from the *SDSU Heart Institute* has kindly agreed to sponsor this years **Young Investigator Awards**, and the **poster prizes**. We will also have another '**Jean Hanson Award**' winner to promote diversity in science. This award is sponsored by *StemoniX*.

We would also like to extend our gratitude to the institutional support we receive, and to our corporate sponsors and the charitable organizations that help us to organize this meeting!

The AMC has always been a meeting for young scientists with a strong emphasis on career support and networking. Therefore, we are continuing the **Translational Medicine Workshop** that is run in collaboration with the *Parent Project Muscular Dystrophy* and the *Eureka Institute*. We also added two more career events: the '**Alternative Career Paths**' workshop and a '**Patenting and Innovation Panel**' to this years meeting, which may be of interest to a lot of graduate students, postdoctoral fellows and young faculty.

Most importantly we hope that you enjoy this years AMC. We are sure that the scientific breadth and quality of the research and its participants will make for an exciting meeting!
With kind regards,

Jessica Wang *Lauren Elisa Schultz* *Chao Chen*
Erik Blackwood *David Sala Cano* *Mai Tran*
Alice Zemljic-Harpf *Fang Xi* *Stephan Lange*

the meeting organizers.

MEETING OUTLINE

TIME	TOPIC	WHERE?
8:30am-9:00am	Registration, Breakfast, Poster hanging	*MET Building Courtyard*
9:00am-9:05am	Welcome Address	*MET Building* *Conference Room 145*
9:05am-10:05am	***Podium Session 1***	*MET Building* *Conference Room 145*
10:05am-10:20am	Coffee Break	
10:20am-11:20am	***Podium Session 2***	*MET Building* *Conference Room 145*
11:20am-12:00pm	***Keynote by Prof. Alessandra Sacco*** ***Eureka Network-Duchenne (END)*** ***Translational Medicine Workshop***	*MET Building* *Conference Room 145*
12pm-2:00pm	Lunch break & Poster session	*MET Building Courtyard*
	Poster Session *odd numbered posters:12:30pm-1:15pm* *even numbered posters: 1:15pm-2pm*	*MET Building Courtyard*
2:00pm-2:55pm	***Career Development Panels:*** *Alternative Career Paths* *Patenting and Innovation*	*MET Conference Room 145* *BRF2 Room 1207*
2:55pm-3:55pm	***Podium Session 3***	*MET Building* *Conference Room 145*
3:55pm-4:10pm	Coffee Break / poster removal	
4:10pm-5:10pm	***Podium Session 4***	*MET Building* *Conference Room 145*
5:10pm-5:25pm	*Jean Hanson Award presentation*	*MET Building* *Conference Room 145*
5:25pm-5:35pm	*Award Ceremony*	*MET Building* *Conference Room 145*
from 5:45pm	**Reception / Networking /** **Social Mixer**	*Walk to* *The LOFT @ UCSD*

SCIENTIFIC PODIUM SESSIONS

REGISTRATION

MET COURTYARD

8:30am-9:00am **Registration** / Coffee / Social
Poster presenters: Please hang up your posters!
Presenters for Session 1, please set up your computers.

PODIUM SESSION 1

MET Conference Room 145

Session Chairs: Erik Blackwood & Fang Xi

9:00am-9:05am **Welcome address**

9:05am-9:20am Anup Sarraki
Harnessing the Therapeutic Potential of the Adaptive ATF6 Branch of the Unfolded Protein Response

9:20am-9:35am Daniel Smith
Genetic Approaches to investigating the role of the Drosophila and human UNC-45 chaperone in muscle development.

9:35am-9:50am Julius Bogomolovas
Towards understanding molecular relevance of small heat shock protein - BAG3 interaction in heart.

9:50am-10:05am Georg Vogler
High-throughput cardiac in vivo platform to functionally validate genome-wide candidate genes for congenital heart disease .

15 minutes break

morning

PODIUM SESSION 2

MET CONFERENCE ROOM 145

Session Chairs: David Sala Cano & Mai Tran

10:20am-10:35am Francesca Boscolo
Muscle stem cells mediates rhabdomyosarcoma development in a mouse model for muscular dystrophy.

10:35am-10:50am Luca Caputo
Transcription factor-directed re-wiring of chromatin architecture.

10:50am-11:05am Michael Hicks
ERBB3 and NGFR mark distinct skeletal muscle progenitor cells in human development enabling hPSC muscle maturation

11:05am-11:20am Vitor Martins
The acetyltransferases p300 and CBP are not required for insulin-stimulated glucose uptake in skeletal muscle.

KEYNOTE & WORKSHOP

11:20am-12:00pm

KEYNOTE BY PROF. ALESSANDRA SACCO

MET CONFERENCE ROOM 145

EUREKA NETWORK-DUCHENNE (END) TRANSLATIONAL MEDICINE WORKSHOP

Alice Zemljic-Harpf

LUNCH & SCIENTIFIC POSTER SESSION

MET COURTYARD

12:00am-2:00pm Lunch

12:30pm-2:00pm **Poster Session**
Odd numbered posters: 12:30pm-1:15pm
Even numbered posters: 1:15pm-2pm

CAREER DEVELOPMENT PANELS:

MET CONFERENCE ROOM 145

2:00pm-2:55pm ***Alternative Career Paths Panel***
Christian Carson (Becton Dickinson)
Allison Komiyama (AcKnowledge Regulatory Strategies, LLC)
Mark Lewis (Swift Biosciences)
Craig Rappaport (Olympus)

BRF2 ROOM 1207

2:00pm-2:55pm ***Patenting & Innovation Panel***
Farah Sheikh (UC San Diego)
Cory Bentley (RIFT Biotherapeutics)
John R. Wetherell (Pillsbury Winthrop Shaw Pittman LLP)
Devora Rossi (UC San Diego)

PODIUM SESSION 3

MET CONFERENCE ROOM 145

Session Chairs: Jessica Wang and Chao Chen

2:55pm-3:10pm Alice Zemljic-Harpf
The cardioprotective role of kappa-opioid receptor activation by U50,488H.

3:10pm-3:25pm Lei Mi-Mi
Leiomodin-2: Regulator of cardiac thin filament length and contractile force.

3:25pm-3:40pm Yasser Aboelkassem
Tropomyosin Torsional Stiffness Effects on Cooperative Activation of Cardiac Thin Filament using Stochastic Computational Modeling.

3:40pm-3:55pm Tongbin Wu
HSPB7 is indispensable for heart development by modulating actin filament assembly.

15 minutes break

Please remember to take down your posters!

afternoon

afternoon

PODIUM SESSION 4

MET CONFERENCE ROOM 145

Session Chairs: Lauren Elisa Schultz and Alice Zemljic-Harpf

4:10pm-4:25pm Brett Colson
N-terminal extension in cardiac myosin binding protein-C regulates myofilament binding.

4:25pm-4:40pm Alina Bilal
Novel AAV9 Constructs Using SLN and PLN Promoters Act as Specialized Tools for Cardiac Chamber-specific Transduction.

4:40pm-4:55pm Irene Tobias
AMPK activation in human skeletal muscle is fiber type-specific following acute high intensity interval exercise.

Biotech industry highlight:
4:55pm-5:10pm Amanda Rickard - Genea Biocells
GBC0905: A Novel Targeted Therapeutic Agent to Treat Facioscapulohumeral Muscular Dystrophy (FSHD).

AMC Award Session and Ceremony

MET CONFERENCE ROOM 145

5:10pm-5:25pm **JEAN HANSON AWARD** FOR DIVERSITY IN SCIENCE AWARD
SUPPORTED BY *STEMONIX*

Alexander Alvarez
Acoustoelectric Imaging for High Resolution Mapping of the Cardiac Activation Wave in Swine.

5:25pm-5:35pm **YOUNG INVESTIGATOR AWARDS &**
POSTER AWARDS
SUPPORTED BY *PROF. GLEMBOTSKI, SDSU HEART INSTITUTE*

RECEPTION / NETWORKING / SOCIAL EVENT

THE LOFT @ UCSD

starting at 5:45pm **Reception**

Please remember to take your posters and personal items from the room!

evening

SCIENTIFIC POSTER SESSION

Posters should be mounted on the poster boards in the MET courtyard before 10am. There will be a formal poster session after lunch, from **12:30pm-2pm**, although AMC attendees are welcome to browse and discuss posters whenever they wish. Posters must be taken down before 5pm. *Please note that we cannot save any posters that remain hung up after that time*.

POSTER AWARDS

An independent jury of senior scientists selects the four best poster presentations during our poster session for the "AMC Poster Award". The winners will be announced at the end of the Scientific Sessions at 5:30pm.
We gratefully acknowledge *Prof. Glembotski from the SDSU Heart Institute* for sponsoring the poster and young investigator awards this year.

*Presenters of **odd numbered posters** should be at their poster. 12:30pm-1:15pm*
*Presenters of **even numbered posters** should be at their poster 1:15pm-2pm*

SECTION 1 - MUSCLE/CARDIAC VASCULATURE, CARDIAC FIBROBLASTS, SMOOTH MUSCLE

POSTER NO. **NAME / TITLE**

1. Jaimie Mayner
   Understanding How Non-coding Loci Drive Cell Heterogeneity in iPSC-Derived Smooth Muscle Cells

2. Hilda Carolina Delgado De la Herrán
   Formation of Multinucleated Variant Endothelial Cells (MVEC) in Coronary Artery Endothelium cultured under Hyperinsulinemia and Hyperglycemia.

SECTION 2 - MUSCLE STRUCTURE, FUNCTION & SIGNALING

3. Alejandra Garate
   Induction of Muscle Atrophy and Loss of Muscle Function by Gulf-War Illness Associated Chemicals: Underlying Mechanisms

4. Alicia Romero
   Investigating how muscle wasting negatively impacts the outcome of Salmonella infection

5. Pamela Duran
   Mechanical Impact of Parturition-related Strains on Skeletal Sphincteric Muscles.

6. Rhye-Samuel Kanassatega
Human Cardiac Myosin-Binding Protein-C N-terminal Domains Cooperatively Impact Actin Structural Dynamics

7. Jim Nguyen
Ablation of MARPs does not attenuate Gαq-induced cardiomyopathy.

8. Yaeren Hernandez
Titin's role in Skeletal Muscle Function; Sarcogenesis and Passive Tension

9. Jin Zhang
Human Induced Pluripotent Stem Cells Recapitulate Disease Variability and as a Novel Platform to Test Therapeutics in Arrhythmogenic Right Ventricular Cardiomyopathy

10. Leyna Zhao
Pharmacological Evaluation of Disease Relevant iPSC-derived Cardiomyocyte Models

11. Leyna Zhao
Functional Maturation of Human iPSC-derived Cardiomyocytes and Assessment of Inotropic Compounds

12. Yan Liang
A New Interaction Between Desmoplakin and the COP9 Signalosome Subunit 6 Reveals A New Mechanism Underlying Sudden Death

13. Natalie Gilmore
Acute inhibition of the S-nitrosoglutathione reductase (GSNOR) in isolated fast-twitch muscle delays the contractile recovery post-fatigue.

14. Leonardo Nogueira
Overexpression of Perm1 in skeletal muscles recovers the denervation-induced decrease in mitochondrial proteins but did not alter the changes in muscle contractility.

15. Katja Birker
A novel role for MICOS complex CHCHD6 in establishing cardiac structure and function, with possible implications for hypoplastic left heart syndrome

16. Andy Fedoriouk
Regulation of Selenoproteins by Activating Transcription Factor 6 during Cardiac Oxidative Stress

17. Lauren Schultz
Examining how a Mutation in Leiomodin3 Leads to the Development of Nemaline Myopathy

18. Tania Maria Larrinaga
In vivo mutant screen as a tool for deciphering the physiological function of leiomodin2 domains.

19. Mert Colpan.
Regulation of Actin Dynamics at Thin Filament Pointed Ends in the Heart.

20. Jonathan Okerblom
Human-like Cmah loss aggravates inflammation- and age-mediated cardiac dysfunction in mice.

21. Moises M Bustamante Pozo
Unmasking of Estrogen Dependent Left Ventricular Dysfunction in Aged Female Rats: A Potential Model of Early Stage HFpEF

22. Stephan Lange
Loss of obscurin/Obsl1 results in diastolic heart-failure.

SECTION 3 ***- MUSCLE REGENERATION***

23. Mafalda Loreti
The extracellular matrix protein Tenascin-C promotes muscle stem cell expansion and regenerative potential

24. Michael Hicks
ERBB3 and NGFR mark distinct skeletal muscle progenitor cells in human development enabling hPSC muscle maturation.

25. Alex Andre
Crosstalk between Skeletal Muscle and Innate Immune Cells in Response to Injury.

26. Alissa Lynch
Integration of Inflammation and Myogenesis during Skeletal Muscle Repair: The Role of the Transcription Factor Mohawk.

27. Use Etxaniz
Denervation-activated STAT3–IL-6 signaling in fibro-adipogenic progenitors promotes myofibers atrophy and fibrosis.

28. Megan Monsanto
CardioClusters: Enhancing Stem Cell Engraftment and Myocardial Repair

29. Oscar Echeagaray
In situ transcriptome characteristics are lost following culture adaptation of adult cardiac stem cells

SECTION 4 ***- MUSCLE DEVELOPMENT***

30. Michael Stec
The Fbxw7-PGC-1α-Irisin axis in myofibers regulates postnatal muscle development.

31. Joanna Palade
Molecular analysis of muscle progenitor cells on extracellular matrix coatings and hydrogels.

32. Lizhu Lin
Loss of ETS1 causes congenital heart defects through an autonomous defect in neural crest cell specification and migration

SECTION 5 - ***LATE BREAKING POSTERS***

33. to be added