FSH SOCIETY
2018 International Research Congress & Research Planning Meetings

June 8–9, 2018 | Flamingo Hotel & Resort
DEAR COLLEAGUES,

Welcome to the FSH Society 2018 International Research Congress & Research Planning Meetings!

This workshop brings together clinicians, scientists, industry and patient representatives, and policy makers to discuss the latest developments in facioscapulohumeral muscular dystrophy (FSHD). For more than two decades, this gathering has provided the FSHD community with a forum to present and discuss new findings, reinforce collaborative efforts, facilitate new initiatives, and coordinate research, therapeutic, and clinical activities.

Exceptional scientific progress has been made in recent years and months in our understanding of the disease. This is a critically important time for the community to convene and discuss new data and advances in FSHD; develop strategies to verify and independently corroborate the findings; discuss focusing efforts and resources in the preclinical gap and translational phase of research; improve diagnostic techniques and criteria for FSHD; and consider and evaluate with industry how to move forward with accelerating new and existing therapies.

Over the two days, we will revisit the priority areas identified at the most recent 2016 meeting and discuss what we have achieved, evaluate the gaps that need addressing, and decide where we need to focus and invest intellectual, scientific, and financial resources. By the end of day two we should be able to identify whether any of the previous year’s priority areas should change or be modified, and outline a new list/set of priority areas to be considered.

This meeting is organized by the FSH Society and sponsored by Acceleron, Association Français Contre les Myopathies Muscular Dystrophy Association, FSHD Canada Foundation, Fulcrum Therapeutics, Genea Biocells, Genomic Vision, Muscular Dystrophy Association, NIH NICHD UMass Senator Paul Wellstone MD Cooperative Research for FSHD, Sanofi US Services Inc., Ultragenyx, and University of Nevada, Reno. We thank our sponsors for their generous financial support.

Friday platform and poster presentations are considered confidential scientific presentations that contain unpublished data and should not be photographed or incorporated in newsletters or used in any other manner without the permission of the reporting scientists. There is an assumption of confidentiality for Saturday’s discussions as in other scientific meetings. Saturday’s discussion will be recorded as in past years to help generate a full set meeting transcripts.

It is truly a pleasure to come together to accelerate solutions for FSHD. Thank you for your extraordinary efforts and hard work on behalf of patients and their families.

Sincerely,

Members of the 2018 IRC Meeting Organizing Committee
Daniel Paul Perez, FSH Society,

 Wifi network: FSH Society
 Password: curefshd
Friday, June 8, 2018—El Dorado Ballroom

**BREAKFAST**
7:00–7:55 a.m.  
El Dorado Ballroom Foyer & Carson City Ballroom

**WELCOME**
7:55 8:00 a.m.  
Opening remarks  
James Chin, Mark Stone, 2018 IRC Meeting Organizing Committee

**REVIEW OF 2017**
8:00–8:10 a.m.  
Review 2017/2018 priorities stated by FSHD workshop in 2016  
Moderators: Michael Altherr, Stephen Tapscott, others TBD

**PLATFORM SESSION 1—8:10–9:25 a.m.**
Genetics, epigenetics, and related syndromes and diseases, cancers, and BOSMA Arhinia)  
Moderators: Silvère van der Maarel and Marnie Blewitt

8:10–8:25 a.m.  
Brand (presenter)/Talkowski: Lessons in oligogenetics and pleiotropy: identical SMCHD1 alleles can be associated with arhinia, Bosma syndrome, FSHD2, comorbidities, or no phenotype at all

8:25–8:40 a.m.  
Mohassel/Shaw (presenter): Deep neuromuscular phenotyping of arhinia patients with SMCHD1 mutations reveals a mild myopathy distinct from FSHD2

8:40–8:55 a.m.  
Jansz/Blewitt (presenter): The epigenetic repressor, FSHD2 gene and FSHD1 modifier SMCHD1 functions by mediating long range chromatin interactions

8:55–9:05 a.m.  
Nguyen/Magdinier (presenter): Genetic variability and identification of complex genotypes in FSHD patients by molecular combing

9:05–9:15 a.m.  
Lemmers (presenter)/van der Maarel: Cis D4Z4 repeat duplications associated with FSHD2

9:15–9:25 a.m.  
Campbell (presenter)/Tapscott: Identifying mechanisms that regulate DUX4 and the D4Z4 macrosatellite repeats

9:25–9:35 a.m.  
Discussion

**PLATFORM SESSION 2—9:35–11:00 a.m.**
The role of DUX4 in development and disease
Moderators: Peter Zammit and Stephen Tapscott

9:35–9:45 a.m.  
de Morrée (presenter)/Rando: U1 snRNA controls alternative polyadenylation of Pax3 in muscle stem cells

9:45–10:00 a.m.  
Banerji (presenter)/Zammit: Dynamic transcriptomic and morphological analysis of FSHD atrophic myogenesis reveals a correctable defect in mitochondrial biogenesis

10:00–10:15 a.m.  
Kyba (presenter)/Aihara: Structural and functional studies on DUX4 in human myogenesis

10:15–10:30 a.m.  
Eidahl (presenter)/Harper: Regulation of facioscapulohumeral muscular dystrophy candidate protein DUX4

10:30–10:40 a.m.  
DeSimone (presenter)/Emerson: Identification of a DUX4-interacting protein and the hyaluronic acid pathway as novel therapeutic targets for FSHD

10:40–10:50 a.m.  
Mariot/Dumonceaux (presenter): Myostatin expression in neuromuscular diseases: challenges and hopes

10:50–11:00 a.m.  
Saad (presenter)/Harper: The natural microRNA miR-675 reduces DUX4 expression and toxicity in vitro

11:00–11:15 a.m.  
Discussion
Friday, June 8, 2018—El Dorado Ballroom

**PLATFORM SESSION 3—11:15–12:20 p.m.**
Preclinical studies in FSHD, including cellular (myoblasts/iPS) and animal models
Moderators: Peter Jones and Michael Kyba

11:15–11:30 a.m.
Chen/Hayward (presenter): Single-cell transcriptome heterogeneity in myogenic cells from individuals with FSHD

11:30–11:45 a.m.
van den Heuvel (presenter)/van der Maarel: Single-cell RNA-sequencing in facioscapulohumeral muscular dystrophy disease etiology and development

11:45 a.m.–12:00 p.m.
Giesige (presenter)/Harper: AAV.RNAi and follistatin gene therapy development in the TIC-DUX4 Mouse Model of FSHD

12:00–12:10 p.m.
Daman (presenter)/Emerson: An FSHD cell xenograft assay for drug development

12:10–12:20 p.m.
Chen (presenter)/Yokota: Systemic delivery of LNA gapmers targeting DUX4 improved muscle function in FLEXDUX4 mice

12:20–12:30 p.m.
Discussion

**LUNCH AND POSTER VIEWING**
12:30–2:00 p.m.
Lunch in Carson City Room; posters in El Dorado Ballroom Foyer

**PLATFORM SESSION 4—2:00–3:00 p.m.**
Clinical studies and clinical trial
Moderators: Jeffrey Statland and Baziel van Engelen

2:00–2:15 p.m.
Horlings (presenter)/van Engelen: Clinical outcome measures, muscle imaging and (epi)genetic testing in a large cohort of FSHD patients

2:15–2:30 p.m.
Sacconi (presenter)/van der Maarel: FSHD1 and FSHD2 form a disease continuum

2:30–2:40 p.m.
Hamel (presenter)/Statland: MRI correlates to electrical impedance myography in facioscapulohumeral muscular dystrophy

2:40–2:50 p.m.
Zhang (presenter)/Zhang: Accurate molecular diagnosis of facioscapulohumeral muscular dystrophy in a cohort of 37 Chinese patients

2:50–3:00 p.m.
Zheng (presenter)/Kong: A case of first trimester prenatal diagnosis for FSHD1 using Karyomapping and single-molecule optical mapping

3:00–3:15 p.m.
Discussion

**PLATFORM SESSION 5—3:15–4:20 p.m.**
Industry aspects and therapy development (screens)
Moderators: Peter Jones and George Padberg

3:15–3:25 p.m.
Statland (presenter)/Attie: Preliminary results from a dose-escalation phase 2 study to evaluate ACE-083, a local muscle therapeutic, in patients with facioscapulohumeral muscular dystrophy
3:25–3:40 p.m.
Rojas (presenter)/Cacace: Pharmacological inhibition of DUX4 expression rescues FSHD pathophysiology in FSHD skeletal muscle myotubes

3:40–3:50 p.m.
Hupper/Clarke (presenter): A low molecular weight compound screen in FSHD patient myotubes identifies modulators of Dux4 activity and novel mechanisms of action

3:50–4:00 p.m.
Cruz/Clarke (presenter): Protein kinase A activation inhibits DUX4 gene expression in myotubes from patients with FSHD

4:00–4:10 p.m.
Lu-Nguyen (presenter)/Popplewell: In vivo assessment of antisense therapy for Facioscapulohumeral muscular dystrophy

4:10–4:20 p.m.
Rickard/Schmidt (presenter): GBC0905: A novel targeted therapeutic agent to treat facioscapulohumeral muscular dystrophy

4:20–4:30 p.m.
Discussion

ASSEMBLY SESSION

4:20–4:30 p.m.
Discussion and review of Saturday’s (day 2) agenda
Moderators: 2018 IRC Meeting Organizing Committee

ADJOURN

5:00 p.m.

Saturday, June 9, 2018—El Dorado Ballroom

REGISTRATION & BREAKFAST
7:30–8:30 a.m.
El Dorado Ballroom Foyer & Carson City Ballroom

PLANNING AND PROBLEM-SOLVING SESSION
Moderated discussion sessions with entire group of attendees based on data presented at day 1. Co-chairs and organizers will meet end of day Friday and/or Saturday morning before the session to help identify specific topics of interest to lead the discussion. The goals are to 1) help identify and troubleshoot bottlenecks; and 2) define the research/clinical priorities for the next year 2018–2019.

WELCOME
8:30–8:35 a.m.
2018 IRC Meeting Organizing Committee

PLANNING AND PROBLEM-SOLVING SESSION(S)
8:35–11:15 a.m.
International "lab meeting." Discussion to identify and troubleshoot bottlenecks, and define the research/clinical priorities going forward
Moderators: Michael Altherr, 2018 IRC Meeting Organizing Committee, and others TBD

11:15–11:45 a.m.
Finalizing listing of items, areas, and priorities

LUNCH
11:45 a.m.–12:45 p.m.
Lunch located in Carson City Ballroom; posters should be taken down.

ADJOURN
12:45 p.m.
AUTHORS AND TITLES

30  Calandra/Deidda (presenter)
Large-scale methylation analysis in facioscapulohumeral muscular dystrophy (FSHD)

31  Cammish/Orrell (presenter)
The UK FSHD Patient Registry: a key tool in the facilitation of clinical research

32  Chang
Testing the potential for comorbidity of FSHD with arhinia using inducibility of DUX4 expression in dermal fibroblasts

33  Choi
Establishment of FSHD-PAX7 genetic reporter lines to study function of muscle stem cells in FSHD

34  Choi/Lim (presenter)
Modular platform for the myogenesis of human embryonic stem cells by using multiple genetic reporter lines

35  Ciskewski/Popplewell (presenter)
Novel epigenetic mechanisms regulating DUX4 expression

36  Claus
Direct interaction of DUX4/4c with the multifunctional protein C1QBP

37  Coulis
Overexpression of DUX-4 induces muscle Tregs: a potential role for the immune system in FSHD

38  Denny
High-density lipoproteins protect against DUX4-mediated damage in a lentiviral model of FSHD

39  Dion/Robin (presenter)
Implication of SMCHD1 in D4Z4 epigenetic dynamics: lesson from iPSCs

40  Han
Longitudinal study of Kinect-based upper extremity reachable workspace in FSHD

41  Hiramuki
A mapping study of SMCHD1 identifies the region of nuclear localization, dimerization, and protein cleavage

42  Homma
DUX4 alters mRNA splicing of TDP-43 target

43  Jones, T
The FLExDUX4 transgenic mouse can be used to develop FSHD-like mouse models with pathophysiology ranging in severity

44  Kazakov
Some problems connected with AD FSHD classification

45  Lopez
Autologous stem cell treatment in FSHD. preliminary report

46  Lunt
No evidence for altered incidence of cancer in FSHD
Maruyama
Development of LNA and 2'-MOE gapmers to treat facioscapulohumeral muscular dystrophy

Mueller
Xenografting human muscle stem cells into mice to study FSHD

Pakula
The role of estrogen regulation in FSHD-1

Rashnonejad
AAV.U7-snRNA-mediated exon skipping of the toxic DUX4 gene as a promising therapeutic approach for facioscapulohumeral muscular dystrophy

Robertson
Measurement of evidence of DUX4 as a proof of concept biomarker for FSHD clinical trials

Sansson/Sacconi (presenter)
Self-report questionnaire vs. clinical evaluation form in the French National FSHD Registry: a statistical comparison

Teveroni/Moretti (presenter)
Set-up of an in vivo model of facioscapulohumeral muscular dystrophy (FSHD) based on human perivascular cells

van der Stoep
Evaluation of FSHD1 testing in diagnostics using FiberVision molecular combing technology

FSH SOCIETY 2018 INTERNATIONAL RESEARCH CONGRESS & RESEARCH PLANNING MEETINGS

Co-chairs:
Marnie Blewitt, PhD, Walter + Eliza Hall Institute of Medical Research
Peter L. Jones, PhD, University of Nevada, Reno
Michael Kyba, PhD, Lillehei Heart Institute, University of Minnesota
Jeffreyy Statland, MD, University of Kansas
Stephen J. Tapscott, MD, PhD, Fred Hutchinson Cancer Research Center
Silvère van der Maarel, PhD, Leiden University Medical Center
Baziel van Engelen, MD, PhD, Radboud University Nijmegen Medical Centre
Peter Zammit, PhD, King’s College London

Organizers:
Daniel Paul Perez & FSH Society Scientific Advisory Board
The FSH Society is an independent, non-profit 501(c)(3) and tax-exempt U.S. corporation organized to address issues and needs specifically related to facioscapulohumeral muscular dystrophy (FSHD). Contributions and financial donations are acknowledged for tax purposes. All inquiries should be addressed to: FSH Society, Daniel Paul Perez, 450 Bedford Street, Lexington, MA 02420. Phones: (781) 301-6650 and (781) 275-7781; fax: (781) 862-1116, email: daniel.perez@fshsociety.org, website: http://www.fshsociety.org

The FSH Society would like to thank our Gold Sponsors:

- ACCELERON
- Fulcrum Therapeutics
- AFMTELETHON
- UMMS Wellstone Center for FSHD
- UMASS Medical School
- MDA
- NIH

The FSH Society would like to thank our Silver Sponsors:

- Genea Biocells
- University of Nevada, Reno School of Medicine
- Ultragenyx Pharmaceutical
- ED & BETTY SCHECHTER MEMORIAL RESEARCH FUND
- FSHD CANADA FOUNDATION
- Genomic Vision

The FSH Society would like to thank our Bronze Sponsors:

- Sanofi Genzyme
- KIICHI ARAHATA MEMORIAL FUND