



# Virtually “muscling” in pandemic: first virtual European Muscle Conference (September 20–22, 2021)

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## Abstract

A report on the first virtual European Muscle Conference.

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The outbreak of the COVID-19 pandemic in January 2020 affected our lives, severely limiting personal contacts and thus organization of traditional scientific gatherings. To face the safety problems, the board of the European Society for Muscle Research (ESMR) decided to postpone for a year the 49th European Muscle Conference (EMC), which was supposed to take place in September 2020 in Prague, Czechia, hoping that in the fall of 2021 organization of the meeting would be possible. Unfortunately, in April 2021 it turned out that participation in the traditional meeting could be too risky due to the unpredictability of the pandemic. In the meantime, the board members were receiving signals from the muscle community indicating that the Conference is very missed. Under these circumstances, in early May 2021, the ESMR board decided to organize the virtual meeting in partnership with the Polish Biochemical Society and with Prof. Jolanta Rędownicz from the Nencki Institute of Experimental Biology, Polish Academy of Sciences, Warsaw, as the head of the Local Organizing Committee. The meeting was scheduled for September 20–22, shorter than usually, and operated via the Zoom meeting platform (meaning that all the participants could be seen and participate in the discussion) from the premises of the Nencki Institute. An exemplary view of the EMC participant screen is presented in Fig. 1. In order to accommodate the time zones, the sessions were staged in the afternoons and evenings, Central European Time, so

colleagues from other continents could also actively participate. The sessions were organized by ESMR board members (who in most of the cases chaired the sessions), such that the topics were most familiar with their interests. Nine scientific sessions, three per day, were assembled by the end of May 2021 with 26 talks delivered by the invited speakers, who enthusiastically and almost immediately accepted invitations. Here is the list of the sessions and the invited speakers:

- (1) Breaking news on the skeletal muscle sarcomere, chaired by Kristina Djinovic-Carugo (ESMR board member) from the University of Vienna, Austria.

Invited speakers: Stefan Raunser, Frank Schnorrer, and K. Djinovic-Carugo.

- (2) Cardiac/smooth muscle ultrastructure and regulation, chaired by Steven Marston (ESMR board member) from Imperial College, London, United Kingdom.

Invited speakers: Vitold Galkin and Charlotte Scarff.

- (3) Cytoskeleton and (mechano)signalling, chaired by Elisabeth Ehler (ESMR board member) from King’s College London, United Kingdom.

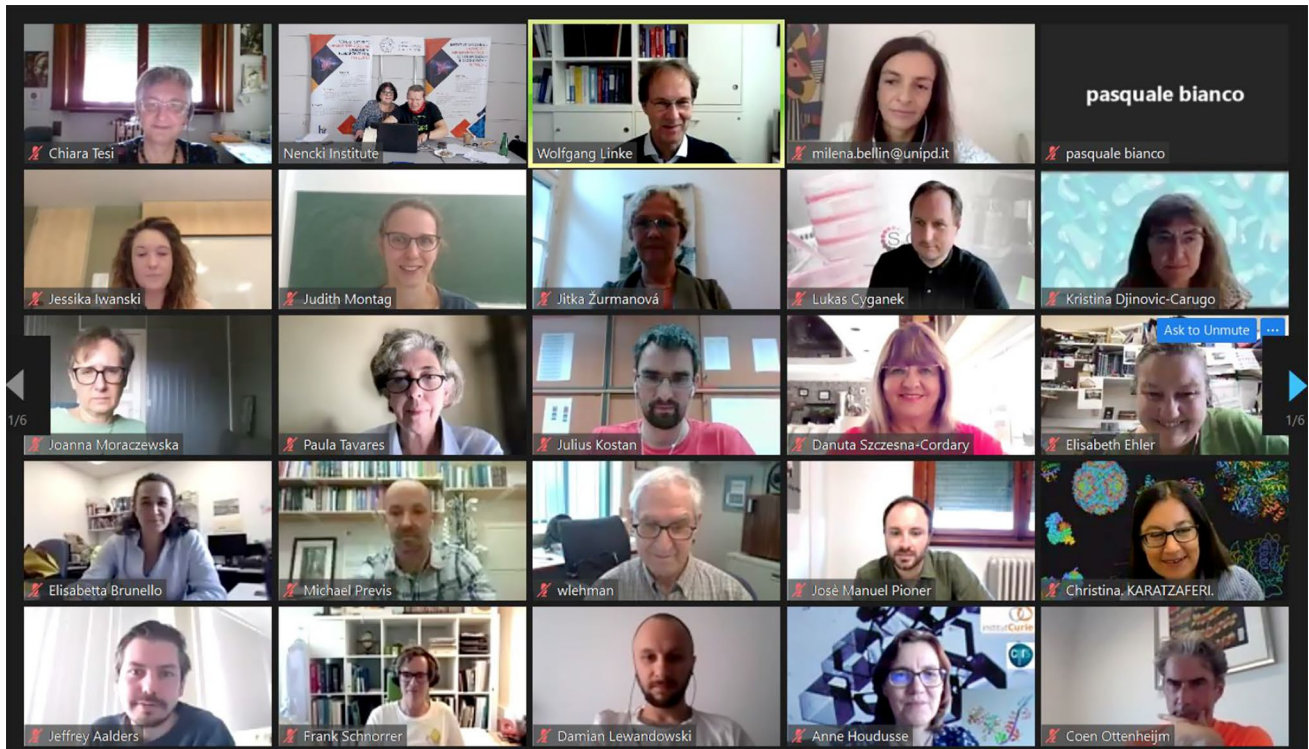
Invited speaker: Benjamin Prosser.

- (4) Small molecule modulators of sarcomere protein function, chaired by Chiara Tesi (ESMR board member) from the University of Florence, Italy.

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**Fig. 1** An example of the Zoom meeting print screen visible by a meeting participant. The print screen was retrieved on Wednesday, September 22 during one of the sessions. The discussion was also

possible via the chat tool. Upper row, second picture from the left—the Warsaw meeting headquarters. All the persons visualized in the screen agreed to have their pictures presented in the figure

Invited speakers: Suman Nag, Anne Houdusse, and Thomas Kampourakis.

- (5) Regulation and kinetics of thick-thin filament interaction, chaired by Joanna Moraczewska from Kazimierz Wielki University in Bydgoszcz, Poland.

Invited speakers: Luca Fusi, Massimo Reconditi, and Michael J. Previs.

- (6) Myopathies: Mechanisms, modeling, medication, chaired by Coen Ottenheijm (ESMR board member) from Amsterdam University Medical Centre, Netherlands.

Invited speakers: Carsten Bonnemann, Henk Granzier, and Jim Dowling.

- (7) Novel insight into pathomechanisms of cardiomyopathy and heart failure, chaired by Pieter de Tombe from the University of Illinois at Chicago, USA.

Invited speakers: James Ware, Ines Falcao-Pires, and Wolfgang Linke.

- (8) Muscle in a dish: New models for the study of muscle function and dysfunction, chaired by Wolfgang Linke (ESMR president) from the University of Muenster, Germany.

Invited speakers: Sasha Mendjan, Milena Bellin, and Lukas Cyganek.

- (9) Muscle and beyond, chaired by Jolanta Rędownicz (ESMR board member) from the Nencki Institute, Warsaw, Poland.

Invited speakers: Ruediger Rudolf, Urszula Sławińska, and Laszlo Csernoch.

Thanks to Elisabeth Ehler, a continuation of the newly established Jean Hanson Keynote Lecture series was possible, with Eric N. Olson from UT Southwestern Medical Center, Dallas, USA delivering the Second Jean Hanson Keynote Lecture.

The webpage was opened in the beginning of June, and by the end of July over 280 scientists (nearly half of them were young researchers) from all over the world had registered to the Conference. Over 130 abstracts were submitted, excluding those of the invited speakers, and 27 of them were selected by the board to be presented as orals during the

sessions (with a high fraction authored by young researchers). During the meeting, active participation through discussion with top muscle scientists was encouraged.

The Conference opening was preceded by two 30-min presentations of two long-standing EMC supporters, namely Aurora Scientific and IonOptix.

The organizers also managed to set up an interactive virtual poster session. The more, all the poster presenters had a chance to show their data to all the participants in 2-min flash talks. Young researchers presenting the posters and flash-talks (38 candidates), as well as selected short talks (11 candidates), were eligible to participate in the Marcus C. Schaub Award contest. The awards were financed in a great fraction by Aurora Scientific and IonOptix. The award committee, chaired by Christina Karatzaferi from the University of Thessaly, Greece, granted five and four awards for the poster and oral presentations, respectively. The first prize winners were Zhexin Wang from Max Planck Institute of Molecular Physiology, Dortmund, Germany (in the poster category) and Marta Gawor from the Nencki Institute, Warsaw, Poland (in the talk category).

There was also time for the general assembly meeting and evening discussions, during which two new initiatives were proposed and discussed. The first was the organization of an ESMR webinar series and the second the initiation of the young muscle investigator forum/platform. Implementation of these initiatives will depend on the activity of interested ESMR members.

The organizers paid also tribute to several prominent muscle researchers who passed away since the last EMC in Canterbury in 2019. Short biographic notes of John M. Squire, Hanna Strzelecka-Gołaszewska, Terence C. Tao, Richard Tregear and Gerda Vrbova, written by their students and collaborators, were placed both on the conference webpage (Gone but not Forgotten section) and in the published conference materials (see below).

The first virtual EMC turned out to be a success according to the participants: they appreciated both the scientific merit of all the talks and presentations, as well as the organizational aspects. However, the organizers are aware that some important topics, such as muscle metabolism and bioenergetics or muscle development, were underappreciated. This was not done deliberately but simply there was not enough time to assemble the sessions covering all muscle biology; the organizers apologize for this oversight. Importantly, such topics are included in the program of the 49th EMC in Prague, which will take place on 22–26 September 2022. Please, go to <https://www.emc2022prague.eu/> for more details on the meeting, which will be organized again in the traditional in-person format.

The conference materials (including the detailed programme and abstracts) were published as a supplement to *Acta Biochimica Polonica* (a quarterly of the Polish Biochemical Society) and are downloadable at <https://ojs.ptbioch.edu.pl/index.php/abp/issue/view/150>.

**Author contributions** MJR and WAL wrote the manuscript

## Declarations

**Conflict of interest** The authors declare no competing interests.

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