



LTM

Laboratorio
di Tecnologia Medica

30

years of

orthopaedic bioengineering

On the occasion of the 30th anniversary of its foundation, the LTM celebrates **30 years of academic and industrial research in the field of orthopaedic bioengineering**

Researchers and alumni who work or have worked at LTM during these years will talk about the evolution and current state of art of the research on **Experimental Biomechanics, Medical Imaging, Computational Biomechanics and In Silico Medicine**

MONDAY

30 NOVEMBER 2020

9:00-17:00

Online Conference
on Microsoft Teams

**Free participation
connect to
www.tinyurl.com/30yLTM**



PROGRAM

30 November 2020

9:00 Welcome

9:00-9:30 The Australian Session

Saulo Martelli - Damage tolerance and toughness of elderly human femora

Egon Perilli - Combining bone and joint micro-CT imaging with gait analysis

9:30-10:00 Welcome address

Marco Viceconti - 30 years of orthopaedic bioengineering research

10:00-11:00 Experimental Biomechanics

Massimiliano Baleani - Preclinical testing of orthopaedic devices: strengths and challenges

Saverio Affatato - Tribology of joint replacements

Luca Cristofolini - Measuring strain in hard and soft tissue

Cecilia Persson - The Bone Factory: from cementing to 3D-printing

11:00-11:30 Coffee Break

11:30-12:15 Medical Imaging as a measurement tool

Fabio Baruffaldi - Medical imaging research at LTM

Gianluca Tozzi - Full field methods to investigate bone mechanics

Andrea Malandrino - Extracellular matrix dynamics due to active cell forces

12:15-13:15 Lunch break



13:15 - 14:15 Biomechanics of human movement

Maria Cristina Bisi - Quantitative assessment of neuromotor development in children

Simone Tassani - Biomechanical approach to stability, posture and breathing

Francesca Bottin - Simulating maximal isometric leg extension

Giorgio Davico - Development of personalised models for children with cerebral palsy

14:15 - 15:15 Computational bone biomechanics

Enrico Schileo - Bone strength and strain estimates from CT images

Lorenzo Grassi - Predicting bone strength from DXA images

Fulvia Taddei - Biomechanics of massive skeletal reconstructions

Benedikt Helgason - Predicting bone strength at impact

15:15 - 15:45 Coffee Break

15:45 - 16:00 The American session

Riccardo Lattanzi - Magnetic Resonance Imaging of the musculoskeletal system

16:00 - 16:45 In Silico Medicine

Nino la Mattina - Toward phase III In Silico Trials for bone drugs

Cristina Curreli - Credibility assessment of computational models to support medical decisions

Enrico Dall'Ara - Predicting bone remodelling

16:45 - ...The remote Spritz session



SPEAKERS

Marco Viceconti - Chair of Industrial Bioengineering, Alma Mater Studiorum-University of Bologna and Director, Laboratorio di Tecnologia Medica, IRCCS Istituto Ortopedico Rizzoli

Massimiliano Baleani - Experimental Biomechanics Group Lead, Laboratorio di Tecnologia Medica, IRCCS Istituto Ortopedico Rizzoli

Saverio Affatato - Tribology Group Lead, Laboratorio di Tecnologia Medica, IRCCS Istituto Ortopedico Rizzoli

Fabio Baruffaldi - In Silico Medicine Group, Laboratorio di Tecnologia Medica, IRCCS Istituto Ortopedico Rizzoli

Luca Cristofolini - Chair of Industrial Bioengineering, Alma Mater Studiorum-University of Bologna

Cecilia Persson - Professor, Section Dean Engineering, Dept. of Materials Science and Engineering, Uppsala University

Gianluca Tozzi - Zeiss Global Centre, School of Mechanical and Design Engineering, University of Portsmouth

Egon Perilli - Associate Professor, Biomedical Engineering, Medical Device Research Institute, College of Science and Engineering, Flinders University, Adelaide, Australia

Andrea Malandrino - Associate Professor, Dept. of Materials Science and Engineering, Universitat Politècnica de Catalunya, Barcelona

Riccardo Lattanzi - Associate Professor of Radiology, Electrical and Computer Engineering - Center for Advanced Imaging Innovation and Research (CAI2R), New York University

Saulo Martelli - Associate Professor in Bioengineering and ARC Future Fellow, School of Mechanical, Medical and Process Engineering, Queensland University of Technology

Maria Cristina Bisi - Assistant Professor (junior), Bioengineering, DEI Department of Electrical, Electronic and Information Engineering, Alma Mater Studiorum-University of Bologna

Simone Tassani - Assistant Professor, Dept. of Information and Communication Technologies (DTIC), Universitat Pompeu Fabra, Barcelona

Enrico Schileo - Bioengineering and Computing (BIC) Laboratory - IRCCS Istituto Ortopedico Rizzoli, Bologna

Lorenzo Grassi - Researcher, Dept. of Biomedical Engineering, Lund University, Sweden

Fulvia Taddei - Director of Bioengineering and Computing (BIC) Laboratory - IRCCS Istituto Ortopedico Rizzoli, Bologna

Benedikt Helgason - PD, Group Leader Bone Pathologies and Treatment, Institute for Biomechanics (D-HEST), ETH-Zürich

Enrico Dall'Ara - Dept. of Oncology and Metabolism and Insigneo institute for in silico medicine, University of Sheffield

Cristina Curreli - Research fellow, Industrial Bioengineering, Alma Mater Studiorum-University of Bologna, and Laboratorio di Tecnologia Medica, IRCCS Istituto Ortopedico Rizzoli

Giorgio Davico - Research fellow, Industrial Bioengineering, Alma Mater Studiorum-University of Bologna, and Laboratorio di Tecnologia Medica, IRCCS Istituto Ortopedico Rizzoli

Antonino Amedeo La Mattina - Research fellow, Industrial Bioengineering, Alma Mater Studiorum-University of Bologna, and Laboratorio di Tecnologia Medica, IRCCS Istituto Ortopedico Rizzoli

Francesca Bottin - PhD student, Industrial Bioengineering, Alma Mater Studiorum-University of Bologna, and Laboratorio di Tecnologia Medica, IRCCS Istituto Ortopedico Rizzoli