



INTERNATIONAL SUMMER SCHOOL ON WEARABLE SENSORS IN SPORT

14-16 JUNE 2022



**Department of Movement,
Human and Health Sciences,
University of Rome "Foro Italico"**

Introduction

The future of sports monitoring will be more and more based on data collected with wearable sensors during both training and competitions. The technological development is also going to influence the way research is performed in the field of sport, bridging the gap between laboratory- and field-based studies. On the other hand, several challenges currently limit the benefits of using wearables in sport, including sensor validity, data management, feature extraction, data interpretation, and informed decision making. The need to be up to date on technological progresses, the choice of relevant variables, data processing procedures and platforms, and data visualisation strategies is thus indisputable. In the 2022 edition of the International Summer School on Wearable Sensors in Sport we will tackle these topics by focusing on the specific needs and challenges presented by different sports disciplines, i.e., endurance sports, team sports, water sports and strength and conditioning. Top-level scientists will provide a clear picture of what to measure, why and how in each of these contexts. They will also make us aware that the weakest link in our ability to effectively use wearable devices is not technology – but our understanding of the (still debated) basic concepts underlying training and its outcomes. The School aims at reinforcing this link and providing you with invaluable tools to boost your career in the field of sport. After the success of last year's edition, our willingness to provide high-quality education in the field of sports wearables is even stronger: we look forward to seeing you at the 2nd edition of the International Summer School on Wearable Sensors in Sport!

Welcome from the school chairs

Elena Bergamini

Andrea Nicolò

Foro Italico

The University of Rome “Foro Italico” is the only Italian and one of the few European vocational universities entirely devoted to sport and exercise science. Despite being a relatively small institution, the University enjoys a relevant international status, thanks to its history, facilities, the quality of its teaching and continuing-education activities, the strong emphasis on research and scientific achievement, as well as the consistent strategy of internationalization. The University has a significant presence in international organizations such as the International Federation of Sport Medicine, the European College of Sport Sciences, the American College of Sports Medicine and the European Network of Sport Sciences and Employment.



June 14th 2022

All time are CEST

Andrea Nicolò and Elena Bergamini	Opening and presentation of the technical sponsors	9:00	9:30
The impact of wearables on athletes' performance			
Jean-Benoit Morin	GPS in sports: old tech, new uses in team sports and athletics	9:30	10:30
Endurance sports (part I)			
Stephen Seiler	A "pair of Threes" for effective endurance training monitoring	10:30	11:30
Coffee break		11:30	11:50
Andrea Zignoli	How to analyse performance in endurance sports	11:50	13:15
Lunch break		13:15	14:15
The impact of wearables on athletes' health			
Yannis Pitsiladis	How wearables can protect the health of athletes during training and sporting competition and enhance the brand	14:15	15:15
Endurance sports (part II)			
Marco Altini	How to measure heart rate variability in endurance sports	15:15	16:30
Coffee break		16:30	16:50
Felipe Mattioni Maturana	Nutritional status and continuous glucose monitors in sport	16:50	18:05
Session recap and closing remarks		18:05	18:20

The lectures will be recorded and made available on demand (on Microsoft Teams) for the attendees, for two months after the School.

June 15th 2022

All time are CEST

Team sports			
Mathieu Lacombe	What should we measure in team sports?	9:00	10:00
Ezio Preatoni	Assessing the biomechanics of Rugby Union contact events: can science and technology impact injury prevention?	10:00	11:00
	Coffee break	11:00	11:30
Mauro Mandorino	How to process soccer training data	11:30	13:00
	Lunch break	13:00	14:00
Water sports			
Paola Zamparo	What could we measure in water sports?	14:00	15:00
Giuseppe Vannozzi	Wearable sensors in water sports: potentials and challenges	15:00	16:00
	Coffee break	16:00	16:30
Silvia Fantozzi	Processing of inertial sensors data in water sports	16:30	18:00
	Session recap and closing remarks	18:00	18:20

The lectures will be recorded and made available on demand (on Microsoft Teams) for the attendees, for two months after the School.

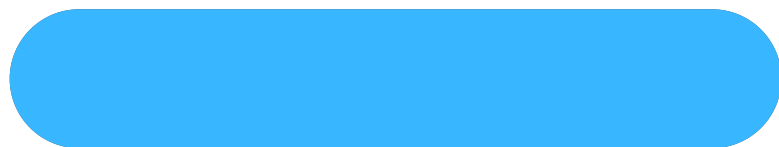
June 16th 2022

All time are CEST

Strength and conditioning			
Marco Cardinale	What should we measure in strength and conditioning?	9:00	10:00
Alessandro Del Vecchio	Sensing and decoding the neural drive to muscles: implications for strength and conditioning	10:00	11:00
	Coffee break	11:00	11:30
Lorenzo Rum	How to process para-power lifting data	11:30	13:00
	Lunch break	13:00	14:00
Methodological hints for a successful career in the field of sport			
Samuele Marcora	The training process and outcomes framework	14:00	15:00
Franco Impellizzeri	Can we predict injury risk in sport?	15:00	16:00
	Coffee break	16:00	16:20
Louis Passfield	Validity of the training-load concept	16:20	17:20
Samuele Marcora, Franco Impellizzeri and Louis Passfield	Challenges and debates about training load monitoring	17:20	18:00
Elena Bergamini and Andrea Nicolò	Closing remarks and acknowledgements	18:00	18:20

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Costs



Non-member
120 €



Member
95 €



Student
Non-member
85 €



Student
Non-member
60 €

Members are those who are affiliated to the following scientific societies/institutions:

- IEEE – Institute of Electrical and Electronics Engineers
- SIAMOC – Società Italiana di Analisi del Movimento in Clinica
- GNB – Gruppo Nazionale di Bioingegneria
- SISMES – Società Italiana Scienze Motorie e Sportive
- Student/staff of Erasmus+ Partner Universities of the University of Rome “Foro Italico” (check partners on University of Rome “Foro Italico” official website)

Sponsors



Speakers



Jean-Benoit
Morin



Stephen
Seiler



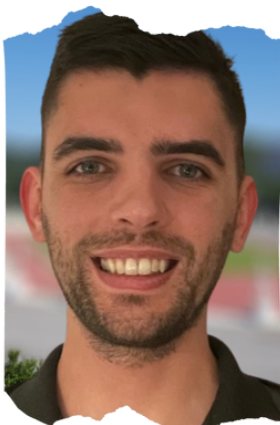
Andrea
Zignoli



Yannis
Pitsiladis



Marco
Altini



Felipe
Mattioni
Maturana



Mathieu
Lacome



Ezio
Preatoni



Mauro
Mandorino



Paola
Zamparo



Giuseppe
Vannozzi



Silvia
Fantozzi



Marco
Cardinale



Alessandro
Del Vecchio



Lorenzo
Rum



Samuele
Marcora



Franco
Impellizzeri



Louis
Passfield

School Chairs

Elena Bergamini



Elena Bergamini received the joint Ph.D. in Biongingeering and Biomécanique et Ingénierie pour la Santé at the University of Bologna (Italy) and Arts et Métiers ParisTech (France) in 2011. Since 2011 she has been with the University of Rome "Foro Italico", where she is currently Associate Professor. Her research concerns the development and application of methods for the quantification of persons' motor function, both in clinical and sports contexts, with reference to the use of wearable magneto-inertial sensors. From 2017 to 2021 Elena has been secretary of the Directory Board of the Italian Society of Human Movement Analysis in Clinics (SIAMOC) and, since 2020, she is Chair of the Sensors for Biomechanics technical committee within the IEEE Italy Sensors Chapter.

Andrea Nicolò



Andrea Nicolò received his Ph.D. in Sports, Exercise and Ergonomics (2015) from the University of Rome "Foro Italico", and he is currently an Assistant Professor at the same University. His research focuses on endurance physiology and performance, with special attention to the mechanisms and practical applications underlying the control of breathing during exercise. He has worked for different research projects funded by major national and international sports companies, with the aim of developing new exercise tests and training metrics or validating training devices and related algorithms. He is the chair of the "Sports Sensors" technical committee of the IEEE Sensors Council Italy Chapter, and, for the second edition, a co-chair of the International Summer School on Wearable Sensors in Sport.

Organizing Committee

Massimo Sacchetti - University of Rome "Foro Italico"

Lorenzo Rum - University of Rome "Foro Italico"

Emiliano Schena - Università Campus Bio-Medico di Roma

Carlo Massaroni - Università Campus Bio-Medico di Roma

Eduardo Palermo - Sapienza University of Rome

Gaspere Pavei - University of Milan

Informations

Host: Teleconference via Microsoft Teams

Location: University of Rome "Foro Italico"

Duration: 3 days for a total of 24 hours

Language: English

For more info, application and keep up to date, scan the QR code below using your smartphone camera or reach the website:

<https://r8.ieee.org/italy-sensors/isswss22/>

The deadline for subscription is June 6th.



SCAN ME





Enjoy the school!