Barbara Pellegrini

Education

- June 2012 Phd in "Physical Exercise and Human Movement Science " doctoral school in "Translational and Biomedical Science", Università degli Studi di Verona
- November 1999 Degree in Physics, Università degli Studi di Trento
- July 1992: Diploma di Liceo scientifico, Istituto A. Maffei, Riva del Garda

Professional experience

- November 2001 to July 2011 - Full time Graduate Technician at CeBiSM, Università degli Studi di Trento.
- July 2011 to present, Full time Assistant Professor M-EDF/02 – metodi e didattiche delle attività sportive, Università degli Studi di Verona, Department of Neurological and Movement Science

Work experience and research interests

I have worked on different areas of exercise physiology and sport science. At the beginning of my scientific activity, in 2000 I was involved in the application of mathematical methods to the evaluation of heart rate variability and baroflex regulation. From 2000 I was involved in the analysis of limb physiological tremor aimed to the understanding of the performance related parameter in air rifle shooting. In 2003 I conducted a research to evaluate the adaptation of locomotion to uphill path in elderly. Since then I have been involved in many research session aimed at the investigation of different aspect of human locomotion. From 2005 I have conducted several project aimed in deepen the knowledge of the biomechanics and energetic of cross country skiing. More recently, my research interests include Nordic Walking. I have participated to many different projects in collaboration with sport Federations and with many different international research groups.
From 2010 to now, I am involved in special projects aimed in testing sport garments and equipment for the main Sport Companies.
At present, my main research interests Research activity in the field of biomechanics and physiology of sport activity and locomotion, with special focus on cross country skiing and Nordic Walking

Teaching activity

2013 to present: Lecturer at the course "Tecnica e didattica del Nordic Walking" by the Master degree in Sport Science and Adapted Physical Activity", Università degli Studi di Verona

2014 to present: Lecturer at the course "Ricerca applicata allo sport" by the Master degree in Sport Science and Adapted Physical Activity", Università degli Studi di Verona

2015 to present: Lecturer at the course "Tecnologie e metodiche per la valutazione funzionale" Master's degree in Sport Science and Physical Performance, Università degli Studi di Verona

Supervisor of a PHD student 2013-2015 and
Supervisor of more than 15 degree and master degree Students

Main skills

I have a 17-year experience working in a physiology of exercise and biomechanics of locomotion setting, working both in laboratory environment as well as outdoor. I have gained the following competence and skills:
Good skills in conducting research project in the fields of human exercise.

The principal area of expertise is the analisys of different movement related parameters, as kinematic, force, neuromuscular and metabolic data
Very good knowledge in the use of the main methodology and equipment- 3d motion capture system , surface EMG system, Force platform and Baropodometric System. Portable ergospirometric systems.
Good skills in processing biomechanical and physiological data the data to extract parameters of interest .Skills includes spectral and cross spectral analysis, PCA analysis,
Deep knowledge of the kinematic, mechanical and metabolic aspect of human movement in exercise and sport
Good command of Microsoft Office™ tools, Matlab, and Labview. Godds skill in writing software script aimed in data acquisition and analysis.

Publications

- 2001 to present , speaker at more than 16 national and international scientific congress ,
- Authors and co-authors of more than 60 abstracts at national and International congress

Papers in extenso

1. Zoppirolli C, Boccia G, Bortolan L, Schena F, Pellegrini B. Functional significance of extent and timing of muscle activation during double poling on-snow with increasing speed. Eur J Appl Physiol. 2017 Aug 24.
2. Nardello F, Bombieri F, Tinazzi M, Schena F, Pellegrini B. Metabolic and kinematic parameters during walking with poles in Parkinson's disease. J Neurol. 2017 Aug;264(8):1785-1790.
3. Fornasiero A., Savoldelli A., Modena R., Boccia G., Pellegrini B., Schena F.Physiological and anthropometric characteristics of top-level youth cross-country cyclists. Journal of Sport Science 2017 Jul 3; 1-6
4. Pellegrini B, Zoppirolli C, Boccia G, Bortolan L, Schena F Cross-country skiing movement factorization to explore relationships between skiing economy and athletes' skills..Scandinavian Journal of Medicine & Science in Sport 2017 jun 26
5. Boccia G, Dardanello D, Tarperi C, Festa L, La Torre A, Pellegrini B, Schena F, Rainoldi A. Fatigue-induced dissociation between rate of force development and maximal force across repeated rapid contractions. Hum Mov Sci. 2017 Jun 5;54:267-275.
6. Boccia G, Dardanello D, Tarperi C, Rosso V, Festa L, La Torre A, Pellegrini B, Schena F, Rainoldi A Decrease of muscle fiber conduction velocity correlates with strength loss after an endurance run..Physiol Meas. 2017 Feb;38(2):233-240
7. Bombieri, F., Schena, F., Pellegrini, B., Barone, P., Tinazzi, M., Erro, R.,Walking on four limbs: A systematic review of Nordic Walking in Parkinson disease. .Parkinsonism and Related Disorders 201 738, 8-12.
8. Pellegrini B, Peyré-Tartaruga LA, Zoppirolli C, Bortolan L, savoldelli, A, Schena F., Minetti A.E., Schena F. Mechanical Energy Patterns in Nordic Walking: Comparisons with Conventional Walking..Gait & Posture. 2017 Jan;51:234-238
9. Vernillo G, Savoldelli A, Skafidas S, Zignoli A, La Torre A, Pellegrini B, Giardini G, Trabucchi P, Millet GP, Schena F An Extreme Mountain Ultra-Marathon Decreases the Cost of Uphill Walking and Running..Front Physiol. 2016 Nov 8;7:530. eCollection 2016.
10. Zoppirolli C, Pellegrini B, Modena R, Savoldelli A, Bortolan L, Schena F Changes in upper and lower body muscle involvement at increasing double poling velocities: an ecological study.Scand J Med Sci Sports. 2016 Oct 10. doi: 10.1111/sms.12783.
11. Zoppirolli C, Pellegrini B, Bortolan L, Schena F.Hum Mov Sci.Effects of short-term fatigue on biomechanical and physiological aspects of double poling in high-level cross-country skiers. 2016 Jun;47:88-97. doi: 10.1016/j.humov.2016.02.003
12. Boccia G, Dardanello D, Zoppirolli C, Bortolan L, Cescon C, Schneebeli A, Vernillo G, Schena F, Rainoldi A, Pellegrini B.Central and peripheral fatigue in knee and elbow extensor muscles after a long-distance cross-country ski race. Scand J Med Sci Sports. 2016 Jun 12. doi: 10.1111/sms.12718
13. Pellegrini B, Peyré-Tartaruga LA, Zoppirolli C, Bortolan L, Bacchi E, Figard-Fabre H, Schena F.Exploring Muscle Activation during Nordic Walking: A Comparison between Conventional and Uphill Walking. PLoS One. 2015 Sep 29;10(9):e0138906. doi: 10.1371/journal.pone.0138906
14. Zoppirolli C, Pellegrini B, Bortolan L, Schena F.Energetics and biomechanics of double poling in regional and high-level cross-country skiers. Eur J Appl Physiol. 2015 May;115(5):969-79. doi: 10.1007/s00421-014-3078-4
15. Vernillo G, Savoldelli A, Pellegrini B, Schena F "Validity of the SenseWear Armband™ to Assess Energy Expenditure in Graded Walking". J Phys Act Health. 2014 Feb 5. [Epub ahead of print]
16. Pellegrini B, Zoppirolli C, Bortolan L, Holmberg H-C., Schena F. "Biomechanical and energetic determinants of technique selection in classical cross-country skiing" Hum Mov Sci. 2013 Dec;32(6):1415-29.

17. Vernillo G, Savoldelli A, Zignoli A, Trabucchi P, Pellegrini B, Millet GP, Schena F. “Influence of the world's most challenging mountain ultra-marathon on energy cost and running mechanics” Eur J Appl Physiol. 2014 May;114(5):929-39. doi: 10.1007/s00421-014-2824-y. Epub 2014 Jan 30.
18. Schena F, Pellegrini B, Tarperi C, Calabria E, Salvagno GL, Capelli C. “Running Economy During a Simulated 60-km Trial” Int J Sports Physiol Perform. 2013 Oct 1. [Epub ahead of print]
19. Zoppirolli C, Pellegrini B, Quaglia D, Bortolan L, Holmberg H-C., Schena F. The effectiveness of stretch-shortening cycling in extensor muscles of the arm during elite cross-country skiing with the double-poling technique. J Electromyogr Kinesiol. 2013 Dec;23(6):1512-9.
20. Brighenti A, Bortolan L, Pellegrini B, Schena F., "Effect of new type of compression garments on submaximal and maximal cycling performance in the heat (32°C)", Sport Sciences for Health; Dec 2013, Vol. 9 Issue 3, p127
21. Impellizzeri M.F. Bizzini M., Dvorak J., Pellegrini B., Schena F., Junge A., “Physiological and performance responses to the FIFA 11+ (part 2): a randomised controlled trial on the training effects” J Sports Sci. 2013 Jul 16. [Epub ahead of print]
22. Andersson E, Stöggl T, Pellegrini B, Sandbakk O, Ettema G, Holmberg HC.. “Biomechanical analysis of the herringbone technique as employed by elite cross-country skiers.” Scandinavian Journal of Medicine & Science in Sports, 2012 Dec 4. doi: 10.1111/sms.12026. [Epub ahead of print]
23. Fabre N, Mourot L, Zerbini L, Pellegrini B, Bortolan L, Schena F. “A Novel Approach for Lactate Threshold Assessment Based on RPE” Int J Sports Physiol Perform. 2013 May;8(3):263-70. Epub 2012 Sep 5.
24. Bernardi M, Janssen T, Bortolan L, Pellegrini B, Fischer G, Schena F. “Kinematics of cross-country sit skiing during a Paralympic race”. J Electromyogr Kinesiol. 2013 Feb;23(1):94-101. doi: 10.1016/j.jelekin.2012.07.004. Epub 2012 Aug 17.
25. Zerbini L, Brighenti A, Pellegrini B, Bortolan L, Antonetti T, Schena F. “Effects of acute hypoxia on the oxygen uptake kinetics of older adults during cycling exercise” Appl Physiol Nutr Metab. 2012 Aug;37(4):744-52. Epub 2012 Jun 8.
26. Fabre N; Zerbini L;Pellegrini B; Bortolan L; Schena F.“Anaerobic threshold assessment through the ventilatory method during roller-ski skating testing: right or wrong?” J Strength Cond Res. 2012 Feb;26(2):381-7.
27. Fabre N., Balestreri F., Pellegrini B., Schena F. “The modified DMax method is reliable to predict the second ventilatory threshold in elite cross-country skiers”, J Strength Cond Res. 2010 Jun;24(6):1546-52.
28. Pellegrini B., Bortolan L., Schena F. "Poling force analysis in diagonal stride at different grades in cross-country skiers". Scand J Med Sci Sports. 2011 Aug;21(4):589-97.
29. Bortolan L., Pellegrini B., Schena F., “Assessment of the reliability of a custom built Nordic Ski Ergometer for cross-country skiing power test”,The Journal of Sports Medicine and Physical Fitness. 48(2): 177-182, 2008
30. Zory r., Vuillerme N., Pellegrini B., Schena F., Rouard A. “Effect of fatigue on double pole kinematics in sprint cross-country skiing” Human Movement Science, Feb;28(1):85-98, 2009
31. Pellegrini B., Schena F. “Characterization of arm-gun movement during air pistol aiming phase” The Journal of Sports Medicine and Physical Fitness. 45(4): 467-475 2005
32. Pellegrini B., Faes L., Nollo G., Schena F. “Quantifying the contribution of arm postural tremor to the outcome of goal-directed pointing task by displacement measures” Journal of Neuroscience Methods, 2004, 139(2): 185-193
33. Cavina-Pratesi C, Bricolo E, Pellegrini B, Marzi CA. “At what stage of manual visual reaction time does interhemispheric transmission occur: controlled or ballistic?” Exp Brain Res. 2004 Mar;155(2):220-30
34. Nollo G, Faes L, Porta A, Pellegrini B , Ravelli F, Del Greco M, Disertori M, Antolini R. Evidence of unbalanced regulatory mechanism of heart rate and systolic pressure after acute myocardial infarction. Am.J.Physiol Heart Circ.Physiol 2002; 283: H1200-H1207.

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