

## 1. Full name and date

- Ardigò Luca Paolo

## 2. Education and degrees awarded

- Ph.D. in Biomechanics, Exercise and Sport Sciences Department, Institute for Biophysical and Clinical Research into Human Movement, Manchester Metropolitan University, 23/02/2007, Prof Alberto Enrico Minetti;
- B.Sc./M.Sc. in Biology, Università degli Studi di Milano, 25/02/1993, Prof Alberto Enrico Minetti

## 3. Other education and training, qualifications and skills

- ECDL, Manchester Metropolitan University, 31/03/2004;
- Microsoft Office;
- LabVIEW (LabVIEW Core 2);
- MatLab (user)

## 4. Linguistic skills

- Italian;
- ZAF (German), Goethe Institut Mailand, 12/06/1986;
- English (CAE level)

## 5. Current position

- Assistant Professor in Sport Science, School of Exercise and Sport Science, Department of Neurosciences, Biomedicine and Movement Sciences, University of Verona Via Felice Casorati, 43 37131 Verona (Italy). From 03/2005 (current). Main activities: research) bioenergetics and biomechanics of human movement and locomotion, exercise and sport performance evaluation and portable devices for measuring physical activity and metabolic expenditure; teaching) human locomotion and environmental interferences, principles and methods of training (exercise and sport performance evaluation) and bioenergetics measurement techniques.
- Established researcher.

## 6. Previous work experience

- Senior Research Technician in Physiology/Biomechanics, Exercise and Sport Sciences Department, Institute for Biophysical and Clinical Research into Human Movement, Manchester Metropolitan University (UK). From 04/2002 To 03/2005. Part time (.5). Technician and researcher duties within the project “Performance comparison between young and elderly subjects” (post funded within a BBSRC-supported project, principal investigator Marco Narici).
- Research Associate in Biomechanics, Istituti Ortopedici Rizzoli, Movement Analysis Laboratory, Bologna (Italy). From 08/2001 To 12/2001. Researcher duties within the project “Molecular and biomechanical study about boneprosthesis integration and advanced therapeutic strategies” (Technical Director: Alberto Leardini BE).
- Senior Research Technician in Biology, Human Movement Laboratory, Fondazione Salvatore Maugeri, Pavia (Italy). From 03/2000 To 02/2001. Technician and researcher duties within activity of Human Movement Laboratory (studies about human movement and locomotion with universities, hospitals and private companies) (Technical Directors: Alberto Minetti and Marco Narici).

- Research Associate in Physiology/Biomechanics, Human Movement Laboratory, Fondazione Salvatore Maugeri, Pavia (Italy). From 03/1999 To 02/2000. Researcher duties within the project “Biomedical and ergonomic study of physical activity as critical capacity outcome” (Technical Directors: Alberto Minetti and Marco Narici).
- Research Associate in Physiology/Biomechanics, Human Movement Laboratory, Fondazione Salvatore Maugeri, Pavia (Italy). From 03/1998 To 02/1999. Researcher duties within the project “Biomechanical research about body motion” (Technical Directors: Alberto Minetti and Marco Narici).
- Research Associate in Physiology/Biomechanics, Institute of Advanced Biomedical Technologies, Italian National Research Council, Segrate (Italy). From 03/1997 To 02/1998. Researcher duties within the project “Exercise physiology in heart transplants” (Technical Director: Claudio Marconi).

## 7. Research funding as well as leadership and supervision

- In May 2004: AUD 2000 ISB Travel Grant as partial contribute to expedition expenses (Studies: Human locomotion on snow: determinants of economy and speed of skiing across the ages and Modern cross-country skiing: metabolism of classical technique and skating; Testing Venue: Vuokatti, Finland).
- In 2007: EUR 50,000 Italian Strategic Research Project “Effect of high intensity physical training on cardiopulmonary responses, gas exchanges and muscular oxygen extraction in heart rate failure subjects during exercise” (Main Investigators: M. Pagani and C. Capelli).
- In 2010: EUR 10,000 funding for a 1-year postdoc job (50% of whole employee’s wage) by my department, Department of Neurosciences, Biomedicine and Movement Sciences, as a result of the yearly departmental ranking (based on members’ scientific production).
- From October 2011 until March 2012: EUR 4,000 COOPERINT (‘for International Cooperation’) scholarship from the University of Verona, for a 6-month research period at the Vrije Universiteit, Institute for Fundamental and Clinical Human Movement Sciences, Amsterdam, The Netherlands, for my then 2<sup>nd</sup> year Ph.D. Student Gabriela Fischer (thesis title: Biomechanical and Physiological adaptations to Handcycling; Dutch Supervisor: T.W.J. Janssen).
- In 2018: EUR 11,900 funding for a 1-year postdoc job (50% of whole employee’s wage) by my department, Department of Neurosciences, Biomedicine and Movement Sciences, as a result of the yearly departmental ranking (based on members’ scientific production).
- From 1 January 2007 until 31 December 2009, I supervised ALONE (even if only as an assistant professor) successfully Francesca Nardello, Ph.D. student (thesis title: Human Locomotion: Centre of Mass and Symmetry; external examiner Omar Mian). From 1 January 2010 until 31 December 2012, I supervised ALONE (even if only as an assistant professor) successfully Gabriela Fischer, Ph.D. student (thesis title: Biomechanical and Physiological adaptations to Handcycling; external examiner Thomas Janssen). From 1 October 2015 until 30 September 2018, I supervised ALONE (even if only as an assistant professor) successfully Thomas Fugslang (thesis title: Design, manufacturing and testing human powered boats for disabled people; external examiner Nicola Petrone).

## 8. Teaching interests

Within a university, I think I could integrate myself in a complementary way. My future plans include further teaching about human passively-assisted locomotion modes, in particular different wheeled ones (e.g., alternative-design bikes, handbikes and handbike-propelled boats). I would be interested in going on with teaching about off-the-shelf portable devices for measuring physical activity and metabolic expenditure for pathological subjects/sedentary people/sportsmen

performance evaluation. I would be interested in going on with teaching about different team sports' fundamental skills in athletes and exercise/core stability/repeated sprint ability in obese/elderly/pathological subjects. Finally, I would teach more in depth the eventual relationships between cognitive and motor abilities in children and teenagers. I am fully available to teach on other topics about physiology, biomechanics and sport science, as well.

I DO BELIEVE I CAN ADAPT MY TEACHING AND LEARNING TO AN EDUCATION SYSTEM.

#### 9. Merits in teaching and pedagogical competence

- Since my Ph.D. course years (2001÷2004) and later since I work for the School of Exercise and Sport Science, Department of Neurosciences, Biomedicine and Movement Sciences, University of Verona (1 March 2005), I taught up to 200 student cohorts several physiology and biomechanics modules at B.Sc. (course in exercise and sport science; 200 students; classes, laboratories and e-learning), M.Sc. (courses in exercise and sport science and adapted physical activity; 60 students; classes, small scientific projects and e-learning) and Ph.D. (course in exercise and sport science; 10 students; classes) level:

(biomechanics area)

- biomechanics laboratories;
- neuroanatomy and neurophysiology;
- preparatory kinesiology;
- biomechanics II;
- human locomotion and environmental interferences;

(physiology area)

- functional evaluation;
- training techniques I;
- techniques and methodologies of sports I;
- principles and techniques of physical conditioning;
- new methods for the evaluation of the energy expenditure in exercising humans in ecological conditions;

(sport science area)

- fitness monitoring;
- physical activities and techniques for wellness;
- monitoring and evaluation of adapted physical activity;
- physical activity in adulthood and old age.

Currently, I teach:

- human locomotion and environmental interferences;
- principles and techniques of physical conditioning (especially about the exercise and sport performance evaluation);
- new methods for the evaluation of the energy expenditure in exercising humans in ecological conditions.

#### Detailed list:

Academical Year 2021/2022

M.Sc. course in adapted physical activity; New methods for the evaluation of the energy expenditure in exercising humans in ecological conditions, CFU (viz., "teaching unit") 3

B.Sc. course in exercise and sport science; Principles and techniques of physical conditioning, CFU 2

Academical Year 2020/2021

M.Sc. course in adapted physical activity; New methods for the evaluation of the energy expenditure in exercising humans in ecological conditions, CFU (viz., "teaching unit") 3

B.Sc. course in exercise and sport science; Principles and techniques of physical conditioning, CFU 2

Academical Year 2019/2020

M.Sc. course in adapted physical activity; New methods for the evaluation of the energy expenditure in exercising humans in ecological conditions, CFU 3

B.Sc. course in exercise and sport science; Principles and techniques of physical conditioning, CFU 2

Academical Year 2018/2019

B.Sc. course in exercise and sport science; Principles and techniques of physical conditioning, CFU 2

Academical Year 2017/2018

M.Sc. course in adapted physical activity; New methods for the evaluation of the energy expenditure in exercising humans in ecological conditions, CFU 3

B.Sc. course in exercise and sport science; Principles and techniques of physical conditioning, CFU 2

Academical Year 2016/2017

B.Sc. course in exercise and sport science; Principles and techniques of physical conditioning, CFU 2

Academical Year 2015/2016

M.Sc. course in adapted physical activity; New methods for the evaluation of the energy expenditure in exercising humans in ecological conditions, CFU 3

B.Sc. course in exercise and sport science; Principles and techniques of physical conditioning, CFU 2

Academical Year 2014/2015

M.Sc. course in adapted physical activity; New methods for the evaluation of the energy expenditure in exercising humans in ecological conditions, CFU 3

Academical Year 2013/2014

M.Sc. course in adapted physical activity; Principles and techniques of physical conditioning, CFU 3

Ph.D. course in exercise and sport science (Program in Neuroscience, Psychological and Psychiatric Sciences); New methods for the evaluation of the energy expenditure in exercising humans in ecological conditions, hours 6 (in English)

Academical Year 2011/2012

M.Sc. course in adapted physical activity; Adapted human locomotion, CFU 3

Academical Year 2010/2011

M.Sc. course in adapted physical activity, Movement and sport biomechanics, CFU 6

B.Sc. course in exercise and sport science; Principles and techniques of physical conditioning, CFU 3

Academical Year 2009/2010

B.Sc. course in exercise and sport science; Training techniques I, CFU 3

M.Sc. course in adapted physical activity; Monitoring and evaluation of adapted physical activity, CFU 1

M.Sc. course in exercise and sport science; Techniques and methodologies of sports I, CFU 3

Academical Year 2008/2009

B.Sc. course in exercise and sport science; Biomechanics II, CFU 5

Academical Year 2007/2008

B.Sc. course in exercise and sport science, Physical activity in adulthood and old age, CFU 2

B.Sc. course in exercise and sport science; Biomechanics II, CFU 5

M.Sc. course in adapted physical activity; Monitoring and evaluation of adapted physical activity, CFU 1

B.Sc. course in exercise and sport science; Preparatory kinesiology [Group A], CFU 2

B.Sc. course in exercise and sport science, Preparatory kinesiology [Group B], CFU 2

Academical Year 2006/2007

B.Sc. course in exercise and sport science; Physical activity in adulthood and old age, CFU 2

M.Sc. course in adapted physical activity; Physical activities and techniques for wellness, CFU 1

M.Sc. course in adapted physical activity; Monitoring and evaluation of adapted physical activity, CFU 1

B.Sc. course in exercise and sport science; Preparatory kinesiology [Group A], CFU 2

B.Sc. course in exercise and sport science; Preparatory kinesiology [Group B], CFU 2

Master in team sports and youth level: physical and technical training; Functional evaluation, hours 10

Academical Year 2005/2006

B.Sc. course in exercise and sport science, Physical activity in adulthood and old age, CFU 2

M.Sc. course in adapted physical activity; Physical activities and techniques for wellness, CFU 1

M.Sc. course in adapted physical activity, Monitoring and evaluation of adapted physical activity, CFU 1

B.Sc. course in exercise and sport science; Neuroanatomy and neurophysiology, hours 4

Academical Year 2004/2005

B.Sc. course in exercise and sport science; Fitness monitoring, hours 4

- Since I work for the School of Exercise and Sport Science, Department of Neurosciences, Biomedicine and Movement Sciences, University of Verona (1 March 2005):

B.Sc. (course in exercise and sport science)

Biomechanics, Physiology and Sport science areas modules

multiple choice questions, open questions, oral exams

M.Sc. (courses in exercise and sport science and adapted physical activity)

Biomechanics, Physiology and Sport science areas modules

oral exams, small whole scientific projects

I would be available to apply for a local teaching fellowship.

- Currently, I am component of:

- Teachers' Committee of the Ph.D. course in exercise and sport science (Program in Physical Exercise and Human Movement), Department of Neurosciences, Biomedicine and Movement Sciences, University of Verona;

- Teachers' Committee of the Ph.D. course in exercise and sport science (Program in Neuroscience, Psychological and Psychiatric Sciences), Department of Neurosciences, Biomedicine and Movement Sciences, University of Verona;
- Council of the degree courses in Exercise and Sport Science, University of Verona:  
B.Sc. course in exercise and sport science;  
M.Sc. course in exercise and sport science;  
M.Sc. course in adapted physical activity.

Council of the Department of Neurosciences, Biomedicine and Movement Sciences, University of Verona.

From 1 January 2007 until 31 December 2010, I was component of the University Administration BOARD, University of Verona.

- Since I work for the School of Exercise and Sport Science, Department of Neurosciences, Biomedicine and Movement Sciences, University of Verona (1 March 2005), I supervised successfully several B.Sc. and M.Sc. students (an average of six *per* academic year).  
Some titles:
  - Metabolic mechanisms and their selective contributions to speed kayak performance. Giacomo Barzon, B.Sc. thesis, 2021;
  - Effects of core stability training in subjects with chronic lower back pain. Eugenio Spezia, B.Sc. thesis, 2020;
  - Effects of Music on Exercise and Sports: Latest Advances. Giulia Binda, B.Sc. thesis, 2020;
  - The biomechanics of paddling in kayaking. Francesca Leonardi, B.Sc. thesis, 2020;
  - A low-cost method for estimating energy expenditure during soccer refereeing: an update. Marco Targhetta, M.Sc. thesis, 2020;
  - Nordic Walking Data Analysis. Margherita Giacomuzzi, M.Sc. work, 2012;
  - Nuclear magnetic resonance for images and symmetry of the human body. Alessandra Cappa, B.Sc. thesis, 2009;
  - Analysis of Cardiovascular Responses and Perception of Effort with Different Types of Ergometer for Cardiofitness. Fabiana Infortuna, B.Sc. 2007;
  - Doms: Muscle Injury From Exercise. Francesca Fiorentin, B.Sc. thesis, 2007;
  - Kinematic Analysis of Endurance and Sprint Running. Daniela Guerra, B.Sc. thesis, 2007;
  - Two Different Ways to Use an Elliptical Trainer: Metabolic Adaptations to Load Variation. Alessia Tonin, B.Sc. thesis, 2005;
  - Biomechanical and Bioenergetic Analysis of the Sports Activity of the Football Referee. Andrea Zuliani, B.Sc. thesis, 2005;
  - Metabolic Evaluation Of An Elliptical Trainer. Massimo Venturelli, M.Sc. work, 2005.
- My teaching experience at both undergraduate and postgraduate level allowed me to develop effective teaching. I always completed traditional learning and media with on-line material. I also believe that several e-learning education systems – VLE included – may be effective to deliver learning to population with difficulties to cope with traditional learning. I commit to further learn any kind of VLE and other technology enhanced learning.

- I am able to use for on-line teaching purpose the following applications: Moodle, Zoom, Panopto, Google Hangouts Meet and Wooclap. I commit to learn and use further software for on-line teaching as necessary, both on appointment and as changes in duties and techniques demand.
- My research and teaching experience witnesses my ability to work as part of a team in the delivery of teaching, the development of new *curriculum*, learning materials, external and collaborative projects across a university as appropriate to my knowledge about physiology, biomechanics and sport science.
- I also believe university should be open to the society needs. I think university should assist students in seeking employment once they graduate. Learning makes people better. The best possible teaching should always be developed and provided to allow successful learning.
- I commit to attend further training in health and safety as necessary, both on appointment and as changes in duties and techniques demand.
- I deeply agree with the need of developments in research, theory and practice as a *basis* for preparing and supporting students at both undergraduate and postgraduate levels.
- I am already used to contribute to university activities and initiatives including open days, graduation ceremonies, postgraduate awards, etc. and to undertake administrative activities. I already experienced successful teamwork. I really enjoy working on interdisciplinary activities, as witnessed by heterogeneous research output as well. I really believe in my personal continuous professional development. The search for a job in a relevant university can be considered a way to pursue that goal.
- I think higher education should finalize students' education path into their adult life. They may become experts about the prescriptive use of exercise for public health, testing and training elite athletes to allow them to improve performance or lots of other topics. Yet, one thing they should really get from their university experience is to be able to face any issue with curiosity, autonomy and method. Without preconceptions. That attitude could help them to become valid experts about specific topics but maybe better people as well. Knowledge is limited. To date, the teaching of science students should advance further than the acquisition of knowledge and prompt as main goal creative thinking. That would make future excellent scientists able to explore the environment and give self-explanations of things happening around them, answer questions we neither imagine at present.
- I was awarded Italian nationwide qualification (equivalent to German Habilitation) for associate professorship in physiology valid until 10/05/2028 (<https://asn18.cineca.it/pubblico/miur/esito-abilitato/05%252FD1/2/1>) and, being bibliometrically eligible to apply for qualification for full professorship in physiology, I will apply for that as well. I was already deemed as eligible as associate professor in physiology at two national selection procedures. Furthermore, I was awarded Italian nationwide qualification for associate professorship in exercise and sport science valid until 10/04/2026 (<https://asn16.cineca.it/pubblico/miur/esito-abilitato/06%252FN2/2/1>) and for full professorship in exercise and sport science valid until 27/04/2027 (<https://asn16.cineca.it/pubblico/miur/esito-abilitato/06%252FN2/1/4>). THE ITALIAN NATIONWIDE QUALIFICATION IS THE HIGHEST FORMAL PEDAGOGIC QUALIFICATION AVAILABLE IN ITALY IN ADDITION TO BEING THE ONLY ALWAYS PRESENT ESSENTIAL REQUIREMENT TO APPLY FOR FULL AND ASSOCIATE PROFESSORSHIPS.

## 10. Other academic merits

- Ph.D. (course in exercise and sport science)

- 01/2012 external examiner Dr. Carlo M. Biancardi (School of Medicine and Surgery, Department of Pathophysiology and Transplantation, University of Milan, Italy; supervisor Prof Alberto E. Minetti)
- 12/2015 external examiner Dr. Gary A. Doyle (School of Health, Sport and Bioscience, University of East London, UK; supervisor Dr Ryan Mahaffey)
- 07/11/2018 external examiner Dr. Stephen Cleary (School of Health and Human Performance, Dublin City University, Ireland; supervisor Dr. Davide Susta)
- 20/07/2021 external examiner Dr. Sergio Sebastián Amat (Faculty of Education, University of Alicante, Alicante, Spain; supervisor Prof. Basilio Pueo)
- M.Sc. (course in human movement sciences)  
28/08/2020 and 30/08/2021 external examiner Mr. Antonio Henrique Leal do Nascimento (Graduate Program in Human Movement Sciences, Universidade Federal do Rio Grande do Sul, Brasil; supervisor Prof. Leonardo A. Peyré-Tartaruga)  
27/11/2020 external examiner Mr. André Ivaniski Mello (Graduate Program in Human Movement Sciences, Universidade Federal do Rio Grande do Sul, Brasil; supervisor Prof. Leonardo A. Peyré-Tartaruga)
  - I am member of Albo Revisori MIUR (the Reviewers' Registry of the University Research Ministry) and REPRISE (Register of Expert Peer- Review for Italian Scientific Evaluation), lists of potential reviewers for research projects to be funded by the University Research Ministry or universities. I am reviewer for the National Agency for the Evaluation of the University System and the Research (ANVUR). I assess professors for South Africa's National Research Foundation. I peer-review technical and scientific projects for the National Centre of Science and Technology Evaluation (Republic of Kazakhstan) and the Qatar National Research Fund. I am member of the Awards Committee, Medicine & Science in Team Sports Interest Group, American College of Sports Medicine.
  - I am **Associate Editor** of *Frontiers in Physiology – Exercise Physiology* (*Frontiers in Physiology* 2021 Outstanding Associate Editor Award – Specialty Section Exercise Physiology), **Guest Associate Editor** in *Frontiers in Sports and Active Living – Elite Sports and Performance Enhancement* and *Frontiers in Psychology – Movement Science and Sport Psychology*, **Review Editor** for *Frontiers in Psychology – Quantitative Psychology and Measurement* and *Frontiers in Applied Mathematics and Statistics – Quantitative Psychology and Measurement*, **Academic Editor** of PLoS ONE, **Editor** for PeerJ, **Editor** of *Annals of Applied Sport Science*, **Editorial Board Member** and **Section Board Member** of *Symmetry*, **Editor** of *Motriz. Journal of Physical Education. UNESP* and **Section Associate Editor** of *International Journal of Environmental Research and Public Health*.

In the past, I acted as editor for the following special issues:

1. **Research Topic Editor**, “*Human Ultra-Endurance Exercise*”, *Frontiers in Physiology – Exercise Physiology Research*/*Frontiers in Sports and Active Living – Exercise Physiology Research Topic*;
2. **Research Topic Editor**, “*Children's Exercise Physiology*”, *Frontiers in Physiology – Exercise Physiology Research*/*Frontiers in Sports and Active Living – Exercise Physiology Research Topic*;
3. **Research Topic Editor**, “*Physiology and Performance in Beach Sports*”, *Frontiers in Sports and Active Living – Exercise Physiology Research Topic*;
4. **Research Topic Editor**, “*Decision-making in youth sports*”, *Frontiers in Psychology – Movement Science and Sport Psychology*/*Frontiers in Sports and Active Living – Movement Science and Sport Psychology Research Topic* and

5. **Guest Editor, “*Biomechanics Energetics of Natural Assisted Human Comparative Movement Locomotion*”,** Symmetry Special Issue.

At present, I act as editor for the following special issues:

6. **Research Topic Editor, “*Children's Exercise Physiology, Volume II*”,** Frontiers in Physiology – Exercise Physiology Research/Frontiers in Sports and Active Living – Exercise Physiology Research Topic;

7. **Research Topic Editor, “*Training Methodology: A Multidimensional Approach For Team Sports*”,** Frontiers in Psychology – Movement Science and Sport Psychology/Frontiers in Sports and Active Living – Movement Science and Sport Psychology Research Topic;

8. **Research Topic Editor, “*Structural and Mechanistic Determinants of Endurance Performance*”,** Frontiers in Physiology – Exercise Physiology Research/Frontiers in Sports and Active Living – Exercise Physiology Research Topic;

9. **Research Topic Editor, “*Rising Stars in Exercise Physiology*”,** Frontiers in Physiology – Exercise Physiology Research/Frontiers in Sports and Active Living – Exercise Physiology Research Topic;

10. **Guest Editor, “*Micro-Electro-Mechanical Systems (MEMS) and Wearables for Sports Performance Analysis and Injury Prevention*”,** Sensors Special Issue;

11. **Guest Editor, “*Biomechanics Energetics of Natural Assisted Human Comparative Movement Locomotion II*”,** Symmetry Special Issue;

12. **Guest Editor, “*Wearables and Smartphone Applications in Sports*”,** Applied Sciences Special Issue and

13. **Guest Editor, “*Researching Sports Biomechanics for Disabled People*”,** as **Guest Editor**, Sports Special Issue.

I provide scientific advice to the New Scientist.

- I am habitual reviewer for journals: BMC Sports Science Medicine and Rehabilitation, Archives of Budo, Bone, Journal of Sports Engineering and Technology, Diagnostics, Acta Neuropsychiatrica, Sport Medicine and Health Science, Healthcare, The Foot, BMC Musculoskeletal Disorders, BMC Public Health, Science and Sports, Sustainability, Complexity, Journal of Applied Physiology, Endocrine, Chronobiology International, Irish Journal of Medical Science, Journal of Men’s Health, Frontiers in Human Neuroscience, Journal of Science in Sport and Exercise, Frontiers in Sports and Active Living, Heliyon, Computers and Electrical Engineering, Mathematics, International Journal of Environmental Research and Public Health, Science and Medicine in Football, Journal of Visualized Experiments, Education Sciences, International Journal of Sports Science and Coaching, IEEE Access, Human Movement, Sports Medicine – Open, Advances in Rehabilitation, Translational Sports Medicine, Journal of Functional Morphology and Kinesiology, Motriz, Journal of Physical Education, BMJ Open Sport & Exercise Medicine, Journal of Sleep Research, Medical Problems of Performing Artists, Sleep Medicine and Disorders: International Journal, Human Power, Frontiers in Psychology Quantitative Psychology and Measurement, International Journal of Exercise Science, Journal of Biomechanics, International Journal of Performance Analysis in Sport, IEEE Journal of Biomedical and Health Informatics, Physiology & Behavior, Journal of International Medical Research, Orthopedic Reviews, PeerJ, Symmetry, Frontiers in Physiology Integrative Physiology, Frontiers in Physiology Exercise Physiology, Sensors, Children, The Physician and Sportsmedicine, Journal of Aging and Physical Activity, JMIR mHealth and uHealth, Research Quarterly for Exercise and Sport, Applied Sciences, Sports Medicine International

Open, Annals of Applied Sport Science, Journal of Sports Medicine and Physical Fitness, Biology Open, Biology Letters, Biology of Sport, Applied Physiology Nutrition and Metabolism, International Journal of Sports Physiology and Performance, an International Journal, Engineering Science and Technology, Journal of Sport and Health Science, Sports, Human Movement Science (Elsevier Outstanding Reviewer), Research in Sports Medicine, Supportive Care in Cancer, Journal of NeuroEngineering and Rehabilitation, SpringerPlus, Journal of Electromyography and Kinesiology (Elsevier Recognized Reviewer), Sport Sciences for Health, American Journal of Human Biology, Journal of Sports Sciences, Journal of Science and Medicine in Sport, European Journal of Applied Physiology and Occupational Physiology, Gait & posture (Elsevier Outstanding Reviewer), The Journal of Strength and Conditioning Research, Ergonomics, The Gerontologist, Journal of Sports Medicine and Doping Studies, Sports Medicine, Scandinavian Journal of Medicine and Science in Sports (Certified Reviewer), PLoS ONE and Medicine & Science in Sports & Exercise. I am one of the top 1 *per* cent of peer reviewers in Clinical Medicine (98<sup>th</sup> absolute) according to Publons Peer Reviewers Awards 2018.

- *Research interests*

Within a university, I think I could integrate myself in a complementary way. My future plans include further research about human passively-assisted locomotion modes, in particular different wheeled ones (e.g., alternative-design bikes, handbikes and handbike-propelled boats). I would be interested in going on with research about off-the-shelf portable devices for measuring physical activity and metabolic expenditure for pathological subjects/sedentary people/sportsmen performance evaluation. I would be interested in going on with research about different team sports' fundamental skills in athletes and exercise/core stability/repeated sprint ability in obese/elderly/pathological subjects. Finally, I would study more in depth the eventual relationships between cognitive and motor abilities in children and teenagers. I am fully available to research on other topics about physiology, biomechanics and sport science, as well. After meeting with and talking to other staff members, I may find other common interests. I am interested in the built environment, as well.

I DO BELIEVE I CAN ADAPT MY RESEARCH TO AN EDUCATION SYSTEM.

- Invited lectures

- Storia delle carrozzine da pallacanestro: meccanica e metabolismo. Scienze Motorie, Verona, 19/09/2005;
- The best choice for locomotion in mountain environment: walking, running or cycling? Mountain & Sport. Rovereto, 11/11/2005;
- Evoluzione e prestazione dello sci di fondo. Sci Nordico VARESE, Varese, 18/03/2011;
- GUYA TREKKING 2009. 3rd Mountain, Sport & Health. Rovereto, 12/11/2009;
- Ciclismo su Handbike. Una modalità di propulsione umana. Assemblea annuale 2013 dei Soci di Propulsione Umana, Milano, 03/02/2013;
- Ciclismo su Handbike. Una modalità di propulsione umana. Sci Nordico VARESE, Varese, 21/02/2013;
- Gestione di un trekking non-stop estremo: Affi 2013. Sci Nordico VARESE, Varese, 24/02/2014;
- Inquinamento atmosferico: peggio la maratona o le auto? Sci Nordico VARESE, Varese, 15/01/2015;
- ATTIVITÀ FISICA, ANDAMENTO SONNO-VEGLIA E SPESA METABOLICA NELLA VELA D'ALTURA L'esperienza della 500x2. Circolo Velico Riminese, Rimini, 30/01/2015;

- Aspetti di bioenergetica e biomeccanica della corsa. IL RUNNING & IL RUNNER. ASPETTI TECNICI & FISIOLOGICI. Università degli Studi eCampus, Novedrate, 14/05/2015.
- Doping sonoro. Gli effetti psicofisici e fisiologici della musica a diversi bpm su prestazione di resistenza e su prestazione ad alta intensità. Sci Nordico VARESE, Varese, 09/04/2020.
- Gli effetti della musica sulla prestazione esplosiva e su quella di resistenza. 3BTRAINING, 02/04/2021.
- Locomozione ottimale in salita e Mountain Bike. 3BTRAINING, 23/07/2021.
- Trekking estremo non-stop: esperti vs. principianti. 3BTRAINING, 03/09/2021.
- La corsa dalla A alla Z (o quasi) – parte 1. 3BTRAINING, 15/09/2021.
- La corsa dalla A alla Z (o quasi) – parte 2. 3BTRAINING, 22/09/2021.

#### **11. Scientific and societal impact of research (Scopus 28/08/2021)**

- One book and 91 publications, 10 most cited publications according to a Scopus 10/02/2020

	Publication Year	Document Title	Volume	Issue	Citations
1	2006	Metabolic cost, mechanical work, and efficiency during walking in young and older men Mian O.S., Thom J.M., Ardigo L.P., Narici M.V., Minetti A.E. Acta Physiologica	186	2	216
2	1999	The relationship between mechanical work and energy expenditure of locomotion in horses Minetti A.E., Ardigo L.P., Reinach E., Saibene F. Journal of Experimental Biology	202	17	163
3	1994	Mechanical determinants of the minimum energy cost of gradient running in humans. Minetti A.E., Ardigo L.P., Saibene F. Journal of Experimental Biology	195		143
4	1994	The transition between walking and running in humans: metabolic and mechanical aspects at different gradients MINETTI A.E., ARDIGO L.P., SAIBENE F. Acta Physiologica Scandinavica	150	3	130
5	1993	Mechanical determinants of gradient walking energetics in man. Minetti A.E., Ardigo L.P., Saibene F. The Journal of Physiology	472	1	117
6	2007	Gastrocnemius muscle-tendon behaviour during walking in young and older adults Mian O.S., Thom J.M., Ardigo L.P., Minetti A.E., Narici M.V. Acta Physiologica	189	1	70
7	2014	Walking and running on treadmill: The standard criteria for kinematics studies Padulo J., Chamari K., Ardigo L.P. Muscles, Ligaments and Tendons Journal	4	2	53
8	1995	Metabolic and mechanical aspects of foot landing type, forefoot and rearfoot strike, in human running ARDIGO' L.P., LAFORTUNA C., MINETTI A.E., MOGNONI P., SAIBENE F. Acta Physiologica Scandinavica	155	1	53
9	2013	A Paradigm of Uphill Running Padulo J., Powell D., Milia R., Ardigo L.P. PLoS ONE	8	7	52
10	1994	Pygmy locomotion Minetti A.E., Saibene F., Ardigo L.P., Atchou G., Schena F., Ferretti G. European Journal of Applied Physiology and Occupational Physiology	68	4	47

- Since year 2008, I sit on the board of Sci Nordico Varese, the cross-country skiing club of my town. I am its scientific responsible as well. I am member of Propulsione Umana ("Human Propulsion"), the Italian national association member of WHPVA (World Human Powered Vehicle Association).

### **Congresses organization**

– As Propulsione Umana officer for relations with schools and universities, on 22/08/2013, in my current hometown, Varese, within the first fair of the electrically-powered bicycle, in its turn within the European mobility week, I organized the first human propulsion symposium (a poster session), entitled "Human powered vehicles: ideas, projects, prototypes".

– I was member as well of the Scientific Advisory Committee of the 3<sup>rd</sup> International Electronic Conference on Environmental Research and Public Health (ECERPH-3)—\*Public Health Issues in the Context of COVID-19 Pandemic\*. The e-conference was held from 25 November to 9 December 2020 on sciforum.net, a platform service for hosting international electronic conferences for scientific communities.

My experience with my local skiing club, the national human powered vehicle association, some national sport federations and the university marathon centre witnesses my interpersonal skills including the ability to communicate complex information to audiences with a mixed level of understanding.

In Verona, I work with my three “historic” Ph.D. students Francesca Nardello, Gabriela Fischer and Thomas Fuglsang (8 papers published, 4 under submission); Prof. Carlo Capelli (5 papers published) and Prof. Paola Zamparo (2 papers published, 1 under submission).

At Italian level, I work with my former Ph.D. supervisor, Prof. Alberto Minetti, University of Milan (22 papers published, 2 under submission); and Prof. Johnny Padulo, University of Milan (63 papers published and 6 under submission).

At international level, I work with Dr. Omar Mian, University College London (4 papers published and working on a still un-submitted manuscript); Dr. Prue Cormie, Australian Catholic University (1 paper published); Prof. Karim Chamari, Aspetar Doha (11 papers published); Prof. Nick Maffulli, Queen Mary University of London (3 papers published); Prof. Keith George, Liverpool John Moores University (1 paper published); Dr. Pierre Samozino, University of Savoie Le Bourget du Lac (2 papers published); Prof. Hans-Christer Holmberg, Mid Sweden University (working on 1 still un-submitted manuscript); Prof. Boye Welde, University of Tromsø (1 paper published and working on 5 still un-submitted manuscripts); and Prof. Thomas Stöggl, University of Salzburg (1 paper published and working on 5 still un-submitted manuscripts).

### **Prae-doc supervision**

In 2020/2021, I supervised Mr. Paolo Tecchio for a temporary research fellowship on a project named “Elastic recovery of the tendon as a determinant of locomotion efficiency in uphill and downhill walking and running”.

I investigate in both laboratory (e.g., school’s physiology, fitness and biomechanics data collection area) and ecological environments (e.g., field pitch, athletics track, mountain paths and cross-country ski tracks).

## **12. Other merits**

13. Since my M.Sc., since about 1992, I deal with biomechanics and bioenergetics of human/comparative, natural movement/locomotion with 1 book, 2 ebooks, 1 book chapter, 73

68 regular and 5 short papers published, 1 accepted and 20 under submission. Since my Ph.D., since about 2001, I also deal with biomechanics and bioenergetics of human assisted movement/locomotion with 1 book, 25 papers published and 6 under submission. Since my senior lectureship, since about 2005, I also deal with portable devices for measuring physical activity and metabolic expenditure with 5 papers published and 3 under submission. Over years, I researched about several different specific populations: children, elderly, Pygmies, dwarfs, Himalayan porters, obese people, paraplegics, cancer patients and horses. I dealt with studies about testing and training for the following different activities/sports: forward/backward walking, nordic walking, mountain trekking, sprint/endurance running, track/road/mountain-bike/cyclo-cross cycling, handbiking, downhill/cross-country skiing, swimming, waterpolo, kayaking, offshore sailing, duathlon, triathlon, table tennis, karate, judo, taekwondo, wrestling, fencing, parkour, dancing, piano playing, football playing/refereeing, volleyball, beach volley, handball and able-bodied/wheelchair basketball.

At present, following some studies and a Ph.D. student supervision about handbiking, I am LEADING an international team involved in a technologic-scientific-social project for designing and manufacturing a handwaterbike (<https://www.facebook.com/thehandwaterbike/>). A first prototype has already been built and tested.

– There are some internet links to videos showing the boat navigating:

<http://www.youtube.com/watch?v=GoV9Wch5YR4>

<http://www.youtube.com/watch?v=A7hPTYq7KVg>

<http://www.youtube.com/watch?v=DPzKzg4-LtY&feature=youtu.be>

- the same technologic-scientific-social project could be easily reproduced at a university;
- at present, I am in the process of selling the first two pieces to a private company based in Alghero (Sardinia);
- the next step could be to design a handwaterbike assemble-it-yourself kit for larger sales;
- we could go to national and/or international innovation fairs;
- we aim to design and manufacture a second prototype with more performing solutions;
- I just supervised a 3-year Ph.D. student for studies about the handwaterbike including its engineering development.

*Evidence of relevant professional experience/knowledge in the areas of physiology, biomechanics and sport science*

Over the years I constantly dealt with human exercise and sport physiology with particular reference to bioenergetics and biomechanics. I completed several studies with strong practical applications about responses to exercise/sport in different populations: sedentary people, sportsmen, elderly and disabled people. Especially since I work for the University of Verona, I *focus* on both faces of same exercises/sport actions: metabolic expenditure and physical activity. These two issues should always be faced together to better investigate exercise and sport

I published 2 books, 2 ebooks, 1 book chapter and 123 papers (94 times over 123 papers as submitting, first and/or last author) on peer-reviewed journals (1 in 2022, 21 in 2021, 13 in 2020, 7 in 2019, 10 in 2018, 7 in 2017, 12 in 2016, 70 since 2016, 1 accepted for publication and 29

currently under submission), have an *h*-index of 28 (3,120 [three thousands, hundred and twenty] citations, Google Scholar, 28/08/2021).

During the 90's, I performed several performance assessments for professional football teams (Milan AC, Serie A, and Venezia Calcio SS, Serie B) and the Under 18 Italian ice hockey national team. In year 2000, I dealt with studies about human movement and locomotion with hospitals and private companies. Since its foundation in year 2007, I am member of Centre for Marathon Training, University of Verona.

After my graduate/post-graduate (not Ph.D., yet) period at the Institute of Advanced Biomedical Technologies/National Research Council, where I did a university research work within a small research team, I moved to the Human Movement Laboratory/Fondazione Salvatore Maugeri, a private state-agreed hospital dealing with research, too. There, the team was larger and collaboration with other hospital's departments was frequent. I experienced about the same situation at the Movement Analysis Laboratory/Istituti Ortopedici Rizzoli (state hospital). During my English Ph.D. experience, I had the possibility both to study within a more efficient and larger (than in Italy) university system and to work together with a research group different from my Ph.D. supervisor's one within UK nationally (UK, BBSRC) and internationally (EU) funded research projects.

I took also part to international scientific expeditions to Cameroun (twice, once about pygmy locomotion and another time about high altitude running), France (for an ESA-funded bed-rest study), Finland (about cross-country skiing) and Nepal (twice, both times about high altitude load carrying) with ORGANIZATIONAL duties, too.

I always ran laboratories by myself or almost by myself. Since year 1991, I am user of motion capture systems (ELITE, Smart, Vicon, ProReflex) and force platforms (Kistler, AMTI) for research/clinical purpose. Since year 2003, I am user of portable motion capture system Xsens Xbus Master. Since year 2005 I am user of Dartfish system for research purpose. Since year 1995, I am user of sEMG systems for research/clinical purpose. Since year 1991, I am user of laboratory/portable metabographs (Sensormedics, Medgraphics, K4b2, K5, Quarkb2) for research/clinical purpose.

Over years, I already ran different laboratories (e.g., @Institute of Advanced Biomedical Technologies/Italian National Research Council) often by myself or almost by myself. At the School of Exercise and Sport Science/University of Verona (4<sup>th</sup> among Sport Science Schools and Departments 2020 according to <http://www.shanghairanking.com/Special-Focus-Institution-Ranking/Sport-Science-Schools-and-Departments-2020.html>), I significantly contributed to start and development of the biomechanics data collection area.

During the academical year 2005/2006, I organised several faculty scientific seminars within a course called "Seminari di Scienze Motorie del Martedì" ("Tuesday's Motor Sciences Seminars"). Since 1 March 2005, I am component of the public relations commission of my research department (Department of Neurosciences, Biomedicine and Movement Sciences). From year 2006 until 30 September 2012, I edited a bimonthly newsletter about my research department (Department of Neurosciences, Biomedicine and Movement Sciences) scientific achievements.

*Notes about grant application and potential additional human resources at a university*

Over recent years, I applied successfully for a total amount of about € 78,000 made of € 52,000 of external grants and € 26,000 of internal grants (in addition to three 3-year Ph.D. studentships, but excluding my personal research funds personally assigned to me every year on the *basis* of my previous year's scientific production). In case of successful application at a university, I might take with me a post-doc researcher funded by Brasil University Ministry for studies about sport science.

## Publications

### *Published books*

1. Biomechanics Energetics of Natural Assisted Human Comparative Movement Locomotion.

Ardigò LP (ed.)

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### *Published ebooks*

1. Biomechanics Energetics of Natural Assisted Human Comparative Movement Locomotion.

Ardigò LP (ed.)

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### **Participations in international/national congresses**

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