

Alberto E. Minetti

CV Summary

Distinguished Professor of Physiology (Chiamata per Chiara Fama, CUN 2006, to succeed Giovanni Cavagna, Emeritus Professor of Physiology), Department of Physiopathology and Transplantation, Faculty of Medicine, University of Milano, **Italy**.

ASN Commission Reviewer for Full and Associate Professorship applications, 2018-2020.

Honorary Research Professor at **Accademia dei Lincei, 'Beniamino Segre Centre'**, 2015-2018.

Honorary Professor of Computer Science in Medicine, Faculty of Health Sciences, University of Southern Denmark, Odense, Denmark, 2012-2016.

Doctor in Medicine (M.D.) and Specialist in **Biostatistics** at the University of **Milan**, Italy.

IgNobel Prize for Physics 2013, Sounders Theatre, **Harvard**, US.

Teaching experience: Milan University: Chair of **Human Physiology**, 'Professore a Contratto' (University of Milan and Udine: **Biostatistics** and **Biomathematics**), Course Leader (Manchester Metropolitan University: **Biomechanical Measurements Techniques**, **Neuromuscular Control MSc**, **Distance Learning Biomechanics BSc**) and Path Leader (**Biomechanics**). Other details at: www.albertominetti.it

Internationally based scientific activity: research fellow at C.N.R. **Milan**, Italy; C.N.R.-N.A.T.O. Research Grant at **Geneva** University with Prof. P. E. di Prampero; EU - Capital Mobility Research Grant at **Leeds** University with Prof. R. McN. Alexander; Professor of Biomechanics, **Manchester** Metropolitan University 1999-2005.

90+ **Keynote** and **Invited Lectures** at **International Congresses** on **Biomechanics** and **Physiology**.

Author of **C.N.R. patent** n° 21564 A/89 on a Computational Algorithm for **Locomotion Mechanics**.

Founder and past President of "Kairos Physiomechanics Srl", academic Spin-off Company of the University of Milan, developing software/hardware solution for research and teaching in Biomechanics.

Ordinary Member of: Italian Physiological Society (**SIF**), Italian Society of Natural Sciences (Convenor of the Centro Studi Ottimizzazione Biologica), **International Society of Biomechanics**, **The Physiological Society**, **Society of Experimental Biology**.

Editorial activity: **Journals Nature, Science, Proceedings of the Royal Society B (Member of the Editorial Board 2005-2008, Associate Editor 2009-2010)**, Journal of Physiology, Journal of Applied Physiology, Journal of Experimental Biology, Journal of Theoretical Biology, European Journal of Physiology (Pflügers Archiv), Acta Physiologica Scandinavica, European Journal of Applied Physiology, Equine Veterinary Journal, Journal of Zoology, Journal of Biomechanical Engineering, International Journal of Sport Medicine, Sport Engineering, Funding Bodies BBSRC, ANVUR Referee, The Horserace Betting Levy Board, St Thomas & Guys Hospital Fund, Christian Doppler Research Association, the Leverhulme Trust, CNPq.

MD/MSc/PhD Thesis supervisor: Italy - Computer Science, Biology, Medicine, UK - Biomechanics, Physiology. Former **Coordinator of the Physiology Department**, Istituto Tecnologie Biomediche Avanzate, **C.N.R.**, Milan, Italy.

Attracted Funds (BTS, Italian Ministry of Education, HEFCE, JREI, BBSRC, SRIF, etc.) for about € **2.1 M**.

PUBLICATIONS

- **264** published research papers in exercise physiology and biomechanics (**87** of which in **SCI rated** journals, Impact Factor sum = 253.2, average = 3.6), **1 book** and 6 papers in computer science, 1 internationally extended patent. The **60%** of the SCI rated production is **first author**, with **10 (16%)** papers **single author**. H-index = **34**.
- Papers are **published in** journals as: Nature, Journal of Physiology, Proceedings of the Royal Society B, Journal of Applied Physiology, Journal of Experimental Biology, Journal of Theoretical Biology, European Journal of Physiology (Pflügers Archiv), etc..
- Many **papers** have been **reviewed** in: Nature, Scientific American, New Scientist, Discover, Nature Science Update (On-Line), National Geographic, The Times, etc..

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KAIROS Physiomechanics (ex Spin Off Company) Website: www.kairos-physiomech.com

CURRICULUM VITAE ET STUDIORUM

Name: **Alberto Enrico MINETTI**

Place and date of birth: Milan, Italy, 20/4/1955

Citizenship: Italian

Status: Married (1983), two sons (1987, 1994)

Residence: address Via Malpighi 3 – 20129 Milano- Italy
mobile phone +39-347-3657357
E-Mail aminetti@mac.com

Electronic address: E-Mail: alberto.minetti@unimi.it
Personal/Professional Website: www.albertominetti.it
University Spin Off Website: www.kairos-physiomech.com

Actual position: University Professor, Chair of Physiology,
Department of Pathophysiology and Transplantation, Faculty of Medicine
University of Milano,
Via Mangiagalli 32, 20133 Milano, Italy
voice +39-02-50315427 fax +39-02-50315430

Honorary Professor of Computer Science in Medicine, Faculty of Health
Sciences, University of Southern Denmark, Odense, Denmark.

Founder and President of Kairos Physiomechanics Srl, an academic spin-off
Company of the University of Milan

Member of the Medical Board at the Italian Winter Sports Federation
(F.I.S.I.)

Certified Evaluator at ANVUR (Agenzia Nazionale di Valutazione del
Sistema Universitario e della Ricerca) for academic recruitment.

Member of ANS (Abilitazione Scientifica Nazionale) Commission for
Physiology, MIUR, 2019

Education: Doctor in Medicine (M.D.) at the University of Milan, Italy (1980).

Specialist Degree (4 years) in Biomedical Statistics, University of Milan
(1987).

Grade 5 Jazz Piano (Distinction), Associated Board of the Royal Schools of
Music, UK, 2003.

Grade 8 (Classic) Piano (Distinction), Associated Board of the Royal
Schools of Music, UK, 2004.

[Certified LabVIEW Associate Developer](#), National Instruments, IT, 2009.

Professional experience:

July 1973	Scientific degree at the "Leonardo da Vinci" secondary school, Milan, Italy.
November 1980	Graduated with full honours in Medicine and Surgery, University of Milan.

1980-1982	'Internal physician' at the Institute of Human Physiology University of Milan.
1982-1984	Won a three-year grant to carry out research at the "Centro Studi di Fisiologia del Lavoro Muscolare", C.N.R., Milan.
1985-1999	Research Fellow at the "Centro Studi di Fisiologia del Lavoro Muscolare" (since 1989 "Istituto di Tecnologie Biomediche Avanzate") C.N.R., Milan.
1986	C.N.R.-N.A.T.O. junior grant (No.: 215.18) at the "Département di Phisiologie", Geneva University, Switzerland, with attributed final prize.
1986-1991	Obtained the position of "Professore a Contratto" to lecture Biomathematics and Biostatistics" at the Faculty of Medicine and Surgery of the University of Udine.
1987	Completed a Specialist Course (4 years) in Biomedical Statistics at the Faculty of Medicine and Surgery of the University of Milan.
1989	Lecturer of "Mathematical methods applied to Medicine" as part of the 2nd year Mathematics Course at the Specialist Course in Medical Statistics, Faculty of Medicine and Surgery, University of Milan.
1990	Author of a C.N.R. patent entitled "Method for the automatic analysis of the energetics in human locomotion" (software, patent n° 21564 A/89), successively licensed to a motion analyzer manufacturer.
1990	Aeritalia-Matra consultant for setting-up of the scientific instrumentation of space lab Anthrolab (research in Biomechanics and Exercise Physiology).
1993-1994	Grant of the European Community to spend 10 months at the Dept. of Pure and Applied Biology, University of Leeds, as a research fellow with Prof. R. McNeill Alexander for mathematical modelling of terrestrial locomotion.
1996 - 1999	Design and research organization of the Centre of Motor Activities, Fondazione Salvatore Maugeri, Pavia.
1997 - 1999	Coordinator of the Department of Physiology, Istituto Tecnologie Biomediche Avanzate, C.N.R. Segrate (Milano).
1999 to date	Coordinator of the 'Centro Studi Ottimizzazione Biologica', Italian Natural Science Society, Natural History Museum (Milan).
1999 - 2005	Professor of Biomechanics and Physiology of Exercise, Institute for Biophysical and Clinical Research into Human Movement, Manchester Metropolitan University Cheshire, UK.
Sept-Dec 2005	Research Sabbatical at the Physiology Department, Medical School, Milan University.
Fall 2005	Winner of a 2 year Professorial Grant (Professore Ordinario) in the 'Ritorno dei Cervelli' initiative of the Italian Ministry of Education.
Jan 2006 -	Distinguished Professor of Physiology (Chiamata per Chiara Fama), Istituto di Fisiologia Umana I, University of Milan, Italy.
Oct 2006	Scouted as Italian Innovator Scientist for the Book 'Italian Applications', F. Pedrocchi Ed, Hublab Edition, Milano, pp 34-35, 2006
April 2007	Visiting Professor and Curriculum Assessor at the Technology University of Malaysia, Johor Barhu.
February 2008	Visiting Professor at the University of Porto Alegre, Brasil.

March 2008	founded an academic Spin Off of the University of Milan named 'Kairos Physiomechanics Srl', with Aurion Srl as external partner.
November 2008	Visiting Professor at the University of Uruguay, Montevideo.
March 2009	co-founder and member of the steering committee of the Human Power Vehicles Association Italy (HPV-Italia).
2011-2015	Director of 'Laboratorio Analisi', Department of Pathophysiology and Transplantation, University of Milan.
2012-2016	Honorary Professor of Computer Science in Medicine, Faculty of Health Sciences, University of Southern Denmark, Odense, Denmark.
2013	Ig Nobel Prize for Physics, Saunders Theatre, Harvard, US.
2015-2018	Honorary Research Professor at the Centre 'Beniamino Segre', Accademia Nazionale dei Lincei, Rome, Italy.
2017	Attestation of APR (Aeromobile a Pilotaggio Remoto) Pilot, ENAC.

Research expeditions:

- 1978 – Morococha (Peru) 4950 m a.s.l.: high altitude respiratory physiology
- 1991 – Abong Mbang (Cameroon): Pygmies locomotion biomechanics
- 2004 – Buea (Cameroon): high altitude energetics of running races
- 2004 – Vuokatti (Finland): historic ski energetics and mechanics
- 2004 – Khumbu Valley (Nepal) 2600-5050 m a.s.l.: physiological adaptation to carry heavy loads in hypoxia
- 2006 – Khumbu Valley (Nepal) 2600-3500 m a.s.l.: physiological adaptation to carry heavy loads in hypoxia

Foreign languages: Italian (mother tongue), fluent spoken, read and written English, knowledge of French (reading).

Programming languages: LabView (National Instruments), BASIC, Pascal, MIDI BASIC, HTML, Mathematica, knowledge of FORTRAN, C and Assembler, Quartz, Micro:bit Scratch.

Current software used:

- Office Suite (Microsoft Corp)
- Mathematica (Wolfram Research), Graphing Calculator (Pacific Tech)
- Working Model 2D (Knowledge Revolution)
- SYSTAT (Systat Inc), StatView (SAS Institute Inc)
- NIH Image (NIH)
- LabView (National Instruments)
- Graph III (Cricket Software)
- Photoshop (Adobe)
- Infini-D (Specular)
- WebWacker (The ForeFront Group Inc.)
- Cyberdog (Apple Computer)
- Pagemill (Adobe), iWeb (Apple Inc.)
- Fluent, Gambit CFD (Fluent Technology)

Operative systems:

- Digital mod. MINC 11-23
- Apple Inc. MacOS up to the latest OS X
- Microsoft MS-DOS/Windows
- Olivetti mod. PE-28 e M380
- Matrox graphics library 2-3D
- Raspberry Raspbian

Fields of interest:

- Physiology and Biomechanics of Locomotion and Exercise
- Archaeo-physiology and -mechanics
- Mathematical Models in Biomedicine
- Muscular Energetics and Mechanics
- Computer Science in Medicine
- [Fractal Geometry and Chaos Theory](#)
- Respiratory Physiology
- Computational Fluid Dynamics

Present collaborations:

- Dr. Graham Askew (Leeds University, UK)
- Dr. Federico Formenti (University of Oxford, UK)
- Dr. Luca Ardigó (University of Verona)
- Prof. Paola Zamparo (University of Verona)
- Prof. Leonardo Tartaruga (University of Porto Alegre, Brazil)
- Prof. Carlo Biancardi (Università di Montevideo, Uruguay)

Society affiliations and Scientific Committees:

- Italian Physiological Society - Florence, ordinary member since 1984
- Italian Society of Natural Sciences - Milan, ordinary member since 1993
- Marie Curie Fellowship Association – member since 1993
- The Physiological Society, Oxford, UK, ordinary member since 1994
- The International Society of Biomechanics, ordinary member since 2004
- The society of Experimental Biology since 2008
- VO2max.NET, Member of the Scientific Board – Physiology Section, since 2002
- Centro Interuniversitario di Ricerca in Bioingegneria e Scienze Motorie, Rovereto (Trento) – Council Member, since 2006
- Jury Member for the Young Investigator Award for Podium Presentations at the XXI ISB Congress (International Society of Biomechanics) in Taipei, Taiwan 2007.

Editorial Activity (Referee or Member of the Editorial Board):

- Nature
- Science
- Proceedings of the Royal Society B (**Member of the Editorial Board** 2005-2008, **Associate Editor** 2009-2010)
- Proceedings of the Royal Society A
- Biology Letters (Royal Society, London)
- Royal Society Open Science (London)
- Journal of Physiology (London)
- Journal of Applied Physiology
- Journal of Experimental Biology
- Journal of Comparative Physiology A
- Medicine and Science in Sport and Exercise
- Journal of Biomechanics
- Journal of Theoretical Biology
- Journal of Human Evolution
- Medical Engineering & Physics
- Plos ONE
- European Journal of Physiology, Pflügers Archiv
- Acta Physiologica Scandinavica
- European Journal of Applied Physiology
- Canadian Journal of Applied Physiology
- International Journal of Astrobiology
- Journal of NeuroEngineering and Rehabilitation
- Neurorehabilitation and Neural Repair
- Experimental Brain Research
- Applied Bionics and Biomechanics

- Equine Veterinary Journal
- Journal of Zoology
- Journal of Biomechanical Engineering
- International Journal of Sport Medicine
- Human Movement Science (**Member of the Editorial Board** 2003-2010)
- Journal of Sports Medicine and Physical Fitness (**Member of the Editorial Board** 2012-)
- Journal of Science Education and Technology
- Sport Engineering Journal
- Obesity
- Coaching and Sport Science Journal (**Member of the Editorial Board** 2006-)
- Journal of Clinical Rheumatology and Musculoskeletal Medicine (**Member of the Editorial Board** 2009-)
- Journal of Medical Case Reports

Peer reviewer for funding bodies:

- Charitable Funds:
 - The Horserace Betting Levy Board, UK
 - St Thomas & Guys Hospital Fund, UK
 - The Leverhulme Trust, UK
 - Help the Aged, UK
- BBSRC, UK
- Christian Doppler Forschungsgesellschaft, Austria
- Fond National de la Recherche Scientifique, Belgium
- The Belgian Science Policy Office (BELSPO)
- National Council for Scientific and Technological Development (CNPq) of Brazil, reviewer of research proposals submitted to INCT Program (National Institutes of Science and Technology).

Academic activity:

- Teaching "Human Physiology" at the Faculty of Medicine and Surgery of the University of Milan (2006-), 80 contact hours/year + Tutorials (20 hours).
- Member of the supervisory committee at the Doctorate School of Physiology (2007-) and Doctorate School of Biomedical Research (2011-).
- Teaching at the Specialist Course of Sport Medicine (2007-) and Pediatric Surgery (2013-).
- Lecturer in "Biomathematics" (full course as a "Professore a Contratto") at the Faculty of Medicine and Surgery of the University of Udine (1985-1990), 25 contact hours/year.
- Lecturer in "Medical Statistics" (full course as a "Professore a Contratto") at the Faculty of Medicine and Surgery of the University of Udine (1985-1990), 50 contact hours/year.
- Lecturer in "Mathematical methods in Medicine" (as a "Professore a Contratto") at the Specialist Course in medical Statistics of the Faculty of Medicine and Surgery of the University of Milan (1987), 10 contact hours/year.
- Teaching "Fundamental Methods in Biomedical Research: Basic Mathematics, Statistics and Computer Programming" at the Doctorate School in Applied Research, University of Milan, 2017, 20 contact hours/year.
- Thesis supervisor/Director of Studies at the Department of Computer Science of the University of Milan:
 - 3D synthesis of natural landscapes
 - Modelling and rendering of natural landscapes in 3D
 - Automated recognition and analysis of NMR slices of human quadriceps for the evaluation of muscle hypertrophy
 - 3D reconstruction and volume estimation of human quadriceps muscle.
 - walking and running in virtual environments: treadmill on demand accompanied by 3D interactive landscaping
- Director of Studies for Postgraduate Studentships:
 - John Buckley (PhD completion December 2000) - currently Research Fellow, UK
 - Tom McKee (MPhil by research February 2002) - retired as Chief Technician, UK
 - Paola Zamparo (PhD completion January 2003) - currently Associate Professor, Italy
 - Omar Mian (PhD completion March 2006) - currently Research Fellow, UK
 - Marc Barberis – Leeds University (External advisor - PhD completion in 2006)
 - Federico Formenti (PhD completion January 2007) - currently Senior Lecturer, UK
 - Luca Ardigo' (PhD completion October 2007) - currently Lecturer, Italy
 - Elena Seminati (PhD completion November 2010) - currently Research Fellow, UK
 - Dario Cazzola (PhD completion November 2010) - currently Lecturer, UK
 - Carlo Biancardi (PhD completion December 2011) - currently Adjunct Professor, Uruguay

- Gaspere Pavei (PhD completion December 2014) - currently Research Fellow, Italy
 Riccardo Telli (PhD completion December 2014)
 Jorge Storniolo (PhD completion December 2018)) - currently Research Fellow, Italy
 Alex Moorhead (PhD completion December 2018)
- Thesis supervisor at the Faculty of Natural Sciences, Dept. of Biology of the University of Milan:
 - Mechanics and energetics of grade walking, running and gait transition. Luca Ardigó
 - Thesis supervisor at the Faculty of Medicine, Dept. of Human Physiology of the University of Milan:
 - Centre of mass Biomechanics during walking before and after knee surgery. Luca Pulici
 - Thesis supervisor at the Faculty of Medicine, Master in Sport Medicine, University of Milan:
 - Ascending (short) stairs by walking or running? the mechanical and metabolic reasons of the spontaneous choice. Fabrizio Rapuzzi
 - External/Internal Examiner for PhD Viva:
 - Richard Ferguson (MMU, Alsager)
 - Vicky Goosey (MMU, Alsager)
 - Danielle Preedy (University of Bristol)
 - Fabio Borrani (University of Montpellier)
 - Jamie Pringle (MMU, Alsager)
 - Gil Scaglioni (University of Dijon)
 - Alessandra Ferri (University of Dijon)
 - Neil Reeves (MMU, Alsager)
 - Martin Twiste (Salford University)
 - Chris Morse (MMU, Alsager)
 - Jonas Rubenson (University of Western Australia)
 - Guillaume Bastien (University of Louvain-la-Neuve)
 - Karim Zameziati (Université Jean Monnet – Saint Etienne)
 - Adrian Gray (the University of Queensland, Australia)
 - Prof. G. M. O. Maloiy's DSc thesis (University of Nairobi)
 - Unit Leader for the MSc course 'Biomechanical Measurement Techniques', Department of Exercise and Sport Science, Manchester Metropolitan University, 30 contact hours/year.
 - Unit Leader and Co-teaching the MSc course 'Variability in Neuromuscular systems', Department of Exercise and Sport Science, Manchester Metropolitan University, 30 contact hours/year.
 - Unit Leader of the BSc Distance Learning Course Biomechanics, Department of Exercise and Sport Science, Manchester Metropolitan University
 - External Examiner at the University of Strathclyde, Glasgow, for the MSc in Medicine and Science in Sports and Exercise, Courses: Biomechanical Analysis of Sport Techniques, Exercise in Cardiac Disease, Exercise in Medical Conditions, and Drugs in Sports.
 - Seminars organizer at the Institute of Biophysical and Clinical Research into Human Movement, Manchester Metropolitan University (yearly scheduled from 1999 to 2005).

Administrative activity:

- Coordinator of the Physiology Department, Institute of Advanced Biomedical Technology, National Research Council, Milan, Italy (1995-1999)
- Biomechanics Research Program Leader, Department of Exercise and Sport Science, Manchester Metropolitan University (1999-2005)
- Biomechanics Pathway Leader, Master of Science in Exercise and Sport Science, Department of Exercise and Sport Science, Manchester Metropolitan University (2001-2005)
- Member of the Faculty Information Systems Committee, Manchester Metropolitan University (1999-2005)
- Member of the Faculty Research Development Committee, Manchester Metropolitan University (2000-2004)
- Member of the Executive Committee of the 'Institute of Biophysical and Clinical Research into Human Movement', Manchester Metropolitan University (2001-2004).
- Member of the Faculty Research Committee, Manchester Metropolitan University (2004-2005).
- Member of the Research Committee, Pathophysiology and Transplants Department, University of Milan (2012-2016).
- Chair of the Research Committee, Department of Pathophysiology and Transplants, University of Milan (2017-).
- Member of the Steering Committee, Department of Pathophysiology and Transplants, University of Milan (2017-).

Attracted funds:

- BTS srl company (Milan, Italy): 30 millions Italian Lira (~£ 10,000) for licensing the National Research Council patent (C.N.R. n° 21564 A/89): “A computational method for the mechanical work estimation of locomotion”: (authors: A. E. Minetti and I. Consani), 1990.
- Italian Ministry of Education: 56 millions Italian Lira grant (~£ 20,000) for the project: “Optimisation of energetics, mechanics and motor control from single muscle to the integrated system, in humans” (P. Cerretelli, M. V. Narici and A. E. Minetti), 1998.
- HEFCE Capital Bid, UK, £ 209,000 for the project: Human motor performance in health and disease, proponents A. E. Minetti and M. V. Narici, 2000.
- Manchester Metropolitan University, £ 19,000 funded PhD Studentship, 2000.
- Institut des Sciences du sport, Switzerland, SF 55600 for the project: Energetic constraints of mountain running, proponents G. Ferretti and A. E. Minetti, 2000.
- BBSRC Capital Bid, £ 120,116, for the project: A model for predicting the metabolic energy costs of bipedal and quadrupedal gaits from foot contact parameters, proponents R. H. Crompton, M.M. Gunther and A.E. Minetti, 2000.
- SRIF bid £ 460,000 for the development of the Centre of Biophysical and Clinical Studies in Human Movement, proponents: A.J. Sargeant, A.E. Minetti, M.V. Narici, L. Burwitz, K. Davids, 2001.
- BBSRC Capital Bid, £ 226,708, for the project: Structural and functional changes of muscle-tendon in ageing: implications for locomotion, proponents C.M. Maganaris, A.E. Minetti and M. V. Narici, 2001.
- Manchester Metropolitan University, £ 19,000 funded PhD Studentship, 2002.
- BBSRC Capital Bid, £ 207,064, for the project: An optimization model of the metabolic cost of bipedal and quadrupedal gaits, proponents R. H. Crompton, A.E. Minetti, M.M. Gunther and Sellers WI, 2002.
- Manchester Metropolitan University, £ 19,000 funded PhD Studentship, 2003.
- Manchester Metropolitan University, £ 75,000 funded PostDoctoral Fellowship, 2003.
- Manchester Metropolitan University, £ 7,000 funded Scientific Expeditions (Cameroon, Finland, Nepal), 2004.
- Italian Ministry of Foreign Affairs, £ 3,000 funded Nepal Expedition, 2004.
- Ev-K2-CNR Committee, Italy, € 3,500 funded Nepal Expedition, 2004.
- Italian Ministry of Education, € 38,000 for equipment and 2 years salary, 2005.
- Ev-K2-CNR Committee, Italy, € 1,000 funded congress attendance, 2005.
- Italian Ministry of Foreign Affairs, € 5,000 funded Nepal Expedition, 2006.
- Ev-K2-CNR Committee, Italy, € 6,000 funded Nepal Expedition, 2006.
- Ev-K2-CNR Committee, Italy, € 1,000 funded congress attendance, 2007.
- University of Milan, Italy, € 15,000 funded research equipment, 2007.
- Italian Ministry of University and Research, PRIN: ‘Quantitative description and classification of gait patterns in locomotion physiopathology: symmetry and dynamics of the 3D trajectory of the body centre of mass, measured by optoelectronic devices’, € 19,135 funded research, 2008.
- Italian Ministry of Welfare: Tuition course in LabView (National Instruments Inc. US), € 24,000, 2008.
- UniALA and Fondazione Cariplo, 6 month PostDoc Visiting from Latin America, € 9,372, 2009.
- Italian Ministry of Welfare: Progetto Formativo di Innovazione (PWI), Fixo Fase II Program, € 7,000, 2010.
- Regione Lombardia: “Dote ricerca applicata” DOLO (Discesa con Orttesi per la Locomozione degli Obesi), € 11,000, 2010.
- Regione Lombardia: “Dote ricerca applicata” PADANS (Prevenzione Assistita del Danno Articolare Nello Sport), € 11,000, 2010.

Invited Lectures and Committees:

- “Modelling terrestrial locomotion”, Symposium in honour of R. McNeill Alexander at the Society of Experimental Biology, Edinburgh, March 1999.
- “Mechanics of human locomotion”, 4th ECSS Annual Congress, Rome, Italy, June 1999.
- “The relationship between energetics and mechanics of locomotion”, XVIIth Congress of the International Society of Biomechanics (ISB), Calgary, Canada, July 1999.
- “The energy cost of walking in the elderly before and after strength training”, Symposium on 'Responses to training in the elderly', Maugeri Foundation, Pavia, Italy, December 1999.
- “Antagonist muscles characteristics help to reduce the mechanical variability during joint stiffening”, International Symposium 'Variability in the movement system: New horizons', Manchester Metropolitan University', October, 2000.
- “Transmission efficiency in human locomotion”, 51st Autumn Meeting of the Italian Physiological Society, Catania, Italy, September, 2000.
- “Running on gradients: mechanics, energetics and results from races”, BASES Annual Conference, Liverpool, September, 2000.

- "Individual economy and general mechanics in cross-country skiing", International Congress on Ski Science, St. Cristoph, Austria, January, 2000.
- "Energetics and mechanics of human walking at oscillating speeds", Symposium on 'Intermittent Locomotion: Integrating the Physiology, Biomechanics and Behavior of Repeated Activity', Annual meeting of The Society for Comparative and Integrative Biology, Atlanta, USA, January 2000.
- "Is Short stature associated with changes in locomotory energetics and biomechanics", Symposium on 'Are children better 'mechanical machines' than adults', 48th Annual meeting of American College of Sport Medicine, Baltimore, USA, June 2001.
- "Walking on other planets", Symposium on 'Space Physiology and Biomechanics', International Society of Biomechanics, Zurich, Switzerland, July 2001.
- "Biomechanics of Locomotion" and "Symposium on Locomotion Efficiency", Scuola di Fisiologia e Biofisica (Società Italiana di Fisiologia), Rovereto, Trento, September 2001.
- "Jumping in ancient Olympics: the effect of halteres", 8th Congress of the European College of Sport Science, Athens, July 2002.
- "Mechanics and Energetics of Locomotion", Organizer and Chair of the Symposium and speech about "The evolution of technologically-assisted human locomotion", World Congress of Biomechanics, Calgary July 2002.
- "The metabolic equivalent of internal work in cycling", in the Symposium on "Cycling Biomechanics", World Congress of Biomechanics, Calgary July 2002.
- "Estimating the mechanical work of locomotion", Meeting of the Society of Experimental Biology, Southampton 2003.
- Symposium Special Event "PalaeoEnergetics and ArchaeoBiomechanics", Organizer, Chair and Speaker, American College of Sport Medicine, San Francisco 2003.
- "Paradigmi meccanici della locomozione umana", International Congress on: "Upper motor neuron syndrome: spasticity and related movement disorders", Lecco 2003.
- Keynote Lecture on "Mechanical Paradigms in Locomotion", International Society of Biomechanics, Dunedin 2003.
- Lezione "Paradigmi meccanici della locomozione terrestre in bipedi e quadrupedi", XXII Scuola Annuale Bioingegneria della Postura e del Movimento, Bressanone, September 22– 25 2003
- "The long jump in ancient Olympics: the effect of halteres", 8th International Congress of the European Committee for Sports History, Olympia (Greece), September 25– 28 2003.
- "Passively augmented performance in terrestrial, aquatic and aerial human locomotion", Symposium in honour of Roger Woledge of the Society of Experimental Biology, Heriot-Watt University, Edinburgh 2004.
- Summer Science Exhibition, Royal Society, London, July 2004.
- "Economy and Efficiency of Walking in the Elderly", Keynote Lecture, 6th World Congress on Aging and Physical Activity, London, Ontario, Canada, August 3-7, 2004.
- "Biomechanics of Locomotion", Annual Scientific Meeting of the Institute of Physics and Engineering in Medicine, University of York, September 6-8 2004.
- "Making muscle work more efficiently/economically: internal and external strategies for overcoming the physiological and anatomical limitations of human actuators.", Anatomical Society's symposium on 'The Anatomy of Exercise', Cardiff, July 5th 2005.
- Member of the International Program Committee of BioMech 2005 (IASTED), Benidorm, September 7-9, 2005.
- Invited Colloquium, Department of Biology, Northeastern University, Boston (MA), September 19, 2005.
- Introductory Keynote Lecture in Physiology and Biomechanics, The 11th conference of the 'Association des Chercheurs en Activités Physiques et Sportives – ACAPS', Paris, October 26-28, 2005.
- Lettura Magistrale 'Effects of terrain type, load, adaptation and hypoxia on walking along mountain paths: Dolomites to Himalaya experiments' at the Congress' Mountain and Sport', CEBISM, Rovereto (Italy), 11-12/11/2005.
- Invited lecture on 'The evolution across the ages of passive tools for human powered locomotion.' at the Musée des Arts et Métiers, Paris, March 29-30th 2006.
- Invited Lecture on "Effetto della semplice ipertrofia sulla potenza meccanica ottenibile dal muscolo" at the Convegno 'Ipertrofia ed Esercizio Muscolare', Federazione Italiana Fitness, Padova 13/5/2006.
- Invited Lecture on "Ausilii passivi per migliorare la prestazione motoria e locomotoria" IEFAS, Facoltà di Scienze Motorie Università degli Studi di Milano, 23/5/2006.
- Invited Lecture on "Ausilii passivi per migliorare la prestazione motoria e locomotoria", Facoltà di Scienze Motorie Università di Ferrara, 20/6/2006.
- Keynote Lecture and Symposium Chair at ISBS (International Society of Biomechanics in Sports), Salzburg, July 14-18, 2006.
- Invited Lecture at the Symposium "Comparative Muscle Physiology and Human Movement", at IMEC (International Muscle Energetics Conference), Banff, July 22-27, 2006.
- Invited Chair, Session 'Muscle Energetics', 5th World Congress of Biomechanics, München, 29/7-4/8/2006.

- Invited Lecture at Convegno 'Ottimizzazione e recupero della capacità motoria nelle malattie endocrino-metaboliche', Istituto Auxologico Italiano, Villa Caramora (Verbania-Intra) 22-23/9/2006.
- Lettura Magistrale "Descrizione matematica della traiettoria 3D del centro di massa corporeo: uno strumento per la fisiologia e la patologia della locomozione" VII° Congresso della Società Italiana di Analisi del Movimento in Clinica (SIAMOC 2006), 20/10/2006.
- Invited 'Lettura Magistrale' about "Le Nuove Frontiere della Tecnologia: i Tessuti Intelligenti" at the XXXI Congress of the Federazione Medico Sportiva Italiana, Napoli 31/11-3/12/2006.
- Lettura Magistrale 'Il cammino a 4 arti (con bastoni): energetica e biomeccanica di un "apparente" ritorno alle origini' 1st National Congress on 'NORDIC WALKING - camminare con bastoni, Scienza e tecnica per fitness e salute" Rovereto, 16 giugno 2007.
- Invited Tutorial in 'Human Locomotion', the XXI ISB Congress (International Society of Biomechanics) in Taipei, Taiwan 2007.
- Jury Member of the Young Investigator Awards, the XXI ISB Congress (International Society of Biomechanics) in Taipei, Taiwan 2007.
- Invited Lecture on 'Predizioni teoriche del cambiamento di potenza indotto dalla sola ipo-ipertrofia muscolare' at XVII Congresso Internazionale di Riabilitazione Sportiva e Traumatologia, Simposio Satellite: Atrofia-Ipertrofia dal Recupero Funzionale all'Allenamento, Bologna 19/4/2008.
- Invited Lecture at the "8th World Congress on Computational Mechanics WCCM8", Venice, Italy 30/6-4/7/2008.
- Invited Lecture 'Bipedal running on water: a matter of a certain gravity' at the 2008 Gordon Research Conference 'Theoretical Biology & Biomathematics', Il Ciocco Hotel and Resort Lucca (Barga), Italy, June 22-27, 2008,
- Invited Lecture at the Annual Meeting of the Society for Experimental Biology (SEB) in Marseilles, France 5-10 July, 2008.
- Invited Lecture 'Fisiologia e costo energetico del movimento nell'attività fisica in montagna' at the 'XIII° Corso Di Aggiornamento per Medici di Trekking e Spedizioni, CAI Bergamo October 18th 2008.
- Introductory Conference 'Postal horses: a physiological optimization story', Italian Society of Natural History, Milan, December 2008.
- Seminario 'La traiettoria 3D del centro di massa corporeo nella fisiologia e patologia della locomozione', Corso di Laurea in Fisioterapia, Udine January 29th 2009.
- Conference 'Skyscraper Running', Facoltà di Scienze Motorie, Milano February 9th 2009.
- Invited Plenary Lecture 'Born to Move? Adaptability to locomotion' at the European College of Sport Science (ECSS) in Oslo, Norway 24-27 June, 2009.
- Invited Lesson at the Elite PhD Course in Biomechanics, University of Copenhagen, Denmark, November 2009.
- Invited Lecture on 'Limiti gravitari alla locomozione terrestre e al volo' at the XXXVII Seminario sull'Evoluzione Biologica: 'Forza di gravità ed evoluzione', Accademia Nazionale dei Lincei, Roma 2010.
- Invited Lecture on 'The energetics and mechanics of natural and artificial locomotion', ECSS (European College of Sport Science), Antalya (Turkey), 2010.
- Invited Lecture on 'La Locomozione dei Mammiferi' at the event 'M'ammalia', Museo di Storia Naturale, Milano, November 5th 2010.
- Keynote Lecture on 'Mathematical description and real time analysis of the 3D trajectory of the body centre of mass: tools for physiology, biomechanics and pathology of human locomotion' at the XVIII Congresso Brasileiro de Ciências do Esporte – CONBRACE August 31st 2011.
- Invited Lecture on Measured and predicted mechanical work in human locomotion. Danish Biomechanics Society Symposium. Odense Denmark, October 14th 2011.
- Lecture 'Macchina locomotrice a propulsione umana ed autoveicoli a combustione interna: più analogie che differenze'. Museo di Storia Naturale, Milano, October 27, 2011.
- Invited Lecture 'Mechanics, energetics and the trajectory of the body centre of mass in locomotion', SOFAMEA (Société Francophone d'Analyse du Mouvement chez l'Enfant et l'Adulte), Nice, 12/1/2012.
- Seminario "La locomozione naturale e assistita: dagli sci preistorici ai veicoli a propulsione muscolare" at the Liceo "Vittorio Veneto" (Secondary Scientific School) in Milan, 17/1/2012.
- Keynote Lecture at the conference on 'Physics in Sports, University Paris-Sud, April 3-6, 2012.
- Lettura Magistrale 'Metodologia biomeccanica nella fisiopatologia della locomozione umana' (Biomechanical methods for the pathophysiology of human locomotion), Policlinico San Donato, November 19th 2012.
- Invited Lecture on 'Modeling gait energetics for healthy and clinical cases: center of mass analysis' at the PhD Course Measures in clinical and experimental musculoskeletal research-evaluating the patients perspective. Institute of Clinical Research, University of Southern Denmark, Odense, Denmark, December 4th 2012.
- Ig Nobel Prize Conference 'Bipedal running on water: a matter of certain gravity', MIT, Cambridge, US, September 14th 2013.
- 'Running on Water: a matter of certain gravity', Perugia Science Fest 2013 - September 27/29, 2013.

- Lecture invitata dal titolo 'Fuori Ambiente' all'evento 'Il Respiro nell'Acqua', Società Italiana di Scienze Naturali, Museo di Storia Naturale di Milano, 26/10/2013.
- Invited Lecture titled 'La Fisiologia della Placca Neuromuscolare' all'evento 'La gestione del blocco neuromuscolare', Progetto Educazionale Lombardia, StarHotel Ritz, Milano, 15/4/2014.
- Invited Lecture 'The role of negative external and positive internal mechanical work in human locomotion energetics' at the Symposium 'Metabolic Energy Use in Movement: Basic Principles to Human Health', VIIth World Congress of Biomechanics, Boston, July 2014.
- Invited Lecture 'Giant strides are what you'll take, skipping on the Moon' at the International Calgary Running Symposium, Calgary, August 2014.
- Invited Lecture 'Energetics and mechanics of different forms of locomotion' at the 1st International Autumn School on Movement Science, Berlin School of Movement Science (BSMS), Berlin October 2014.
- Comunicazione invitata dal titolo 'L'importanza del potenziamento muscolare' al Convegno 'Lo Sci Alpino Moderno: Novità in Ortopedia, Traumatologia e Prevenzione', Milano 10-11 ottobre 2014.
- Invited Keynote Lecture 'Skipping and Running in simulated low-gravity: hints for next bipedal traverses'. International Congress of Medicine in Space and Extreme Environments (ICSM), September 16th-19th Berlin 2014.
- Lecture invitata dal titolo 'La Biomeccanica dei Sentieri di Montagna' all'evento 'Mondo Verticale', Società Italiana di Scienze Naturali, Museo di Storia Naturale di Milano, 1/11/2014.
- TV Lecture on 'The science of soccer' (A tutto campo), [Nautilus, Rai Cultura, 12/2/2015](#).
- Keynote Lecture 'Human locomotion in low gravity: repertoire and new gaits', Tryst Innovation Festival at the Indian Institute of Technology, Delhi 27/2-2/3 2015.
- Invited Lecture titled 'La Fisiologia della Placca Neuromuscolare' all'evento 'La gestione del blocco neuromuscolare', Progetto Educazionale Lombardia, StarHotel Ritz, Milano, 17/4/2015.
- Invited Seminar titled 'Legged locomotion: mechanical, energetic and gravity-related aspects in humans and animals', Advanced Robotics Group, Istituto Italiano di Tecnologia, Genova, 11/6/2015.
- Invited Lecture titled "19th century British jumpers reinvented halteres and extended Olympians' range by *ante litteram* rocket propulsion" at the 'Latin American Crosstalk in Biophysics and Physiology', Salto Grande, Uruguay, 28/11/2015.
- Invited Lecture for 'Roger Woledge' Memorial Symposium 'Power amplification in bridging muscle to movement: the case of 19th century British jumpers and their *ante litteram* rocket propulsion', London, April 21-22, 2016.
- Invited Lecture 'Biomechanical and physiological issues of inclined (normal and nordic) walking, running and skipping' at ECSS (European College of Sport Science) Congress, Vienna, 2016.
- Invited Lecture titled 'La Fisiologia della Placca Neuromuscolare' all'evento 'La gestione del blocco neuromuscolare', Progetto Educazionale Lombardia, StarHotel Ritz, Milano, 6/5/2016.
- Keynote Lecture titled 'Concentric, isometric and eccentric contractions: which dominates alpine skiing?', International Congress on Science and Skiing VII (ICSS), St. Christoph, Austria, December, 2016.
- Invited Lecture titled "19th century British jumpers reinvented halteres and extended Olympians' range by *ante litteram* rocket propulsion" at the University of Rio Grande do Sul, Porto Alegre, Brazil, 20/12/2016.
- Keynote Lecture titled 'Human locomotion on snow: determinants of economy and speed of skiing across the ages', 1st Scientific conference SPE-BALKAN SKI, Kopaonik, Serbia, March 15-17, 2017.
- Invited Lecture titled 'Biomechanics and Energetics of Low Gravity Locomotion', Centre of Human & Aerospace Physiological Sciences, King's College, London, 25/1/2017.
- Keynote Lecture at the Symposium: Locomotion and Human Movement Energetics in Sports, 8th World Congress of Biomechanics, Dublin, Ireland, July 8-12, 2018.
- Keynote Lecture titled 'Energy balance of running: did we consider all determinants?', Physiology and Biomechanics of Sports Performance, Oslo, Norway, September 12, 2018
- Conferenza Lincea del Centro Interdisciplinare di Ricerca 'Beniamino Segre', Science and Technology Museum, Milan, September 28th, 2018.
- Invited Lecture at 'Festival Focus LIVE', Science and Technology Museum, Milan, November 9th, 2018.
- Conferenza Lincea del Centro Interdisciplinare di Ricerca 'Beniamino Segre', Istituto Lombardo Accademia di Scienze e Lettere, Milan, November 29th, 2018.
- Conferenza Invitata: La descrizione matematica della traiettoria 3D del baricentro corporeo durante la deambulazione come firma locomotoria in: fisiologia, sport, fisiopatologia. 6° Congresso Nazionale del Gruppo di Studio della Podopatia Diabetica, Trieste, 31/1-2/2 2019.
- Invited Keynote Lecture 'Frictional Internal Work in Locomotion'. Institute of Sport Science of the Humboldt-Universität, International Congress of Sport Science, Berlin, September 18th-20th 2019.

Computer Science exhibitions:

- "Matheikon", Graftal Group, Bellinzona 1/88, Zurich 12/88.

- "Geometria Frattale", Gallery "Il Quadrangolo", Milan, 3/88.
- "Spazio 5", Ente Fiera of Trieste, 10/88.
- "Variazioni Cosmiche", Vimercate, District of Milan, 11/88.
- "Geometria Frattale", permanent exhibition at the Department of Computer Science, University of Milan, 12/88 to date.
- "Geometria Frattale", permanent exhibition at the Research Area of C.N.R., Milan, 12/89 to date.
- "Immagini Frattali: dalle frontiere del caos", Institute for the Scientific and Technological Research of Trento.

Musical events:

- Giant Steps Jazz Quartet, 7th Nantwich Jazz and Blues Festival, April 13-22, Nantwich (UK) 2003.
- Giant Steps Jazz Quartet, 8th Nantwich Jazz and Blues Festival, April 8-12, Nantwich (UK) 2004.
- Giant Steps Jazz Quartet, 9th Nantwich Jazz and Blues Festival, March 27-29, Nantwich (UK) 2005.
- Progressive Jazz Quartet, Rosa Antico Club, Milan (Italy), June 30th 2008.
- Progressive Jazz Quartet, Santa Tecla Café, Milan (Italy), October 1st 2008.
- Progressive Jazz Quartet, Rosa Antico Club, Milan (Italy), April 16th 2009.
- Progressive Jazz Quartet, Arci Bitte, Milan (Italy), May 18th 2009.
- Progressive Jazz Quartet, Rosa Antico Club, Milan (Italy), January 12th 2010.
- Progressive Jazz Quartet, Rosa Antico Club, Milan (Italy), March 4th 2010.
- Progressive Jazz Quartet, Dept. Human Physiology, Milan (Italy), June 27th 2010.
- Progressive Jazz Quartet, 'Il Ritmo delle Città', Villa Scheibler, Milan (Italy), July 21st 2010.
- Progressive Jazz Quartet, Christmas concert, University of Milan, Milan (Italy), December 20st 2010.
- Oxford Trubadors, University of Milan, Milan (Italy), June 22nd 2011.
- Progressive Jazz Quartet, Panta Rei Club, Milan (Italy), June 23rd 2011.
- Progressive Jazz Quartet, Memo Music Club, Milan (Italy), December 22nd 2012.
- Progressive Jazz Quartet, Memo Music Club, Milan (Italy), April 4th 2013.
- Progressive Jazz Quartet, Memo Music Club, Milan (Italy), October 15th 2013.
- Ponte di Brera Duo, Piano City 2013 Milano, Spazio Crescendo, May 12th 2013.
- Progressive Jazz Quartet, Fabbrica Esperienza, Milan (Italy), February 22nd 2014.
- P92, Piano City 2014 Milano, Spazio Crescendo, May 18th 2014.
- Minetti-Barattini Jazz Piano Duo, Piano City 2015 Milano, Milano Musica, May 24th 2015.
- Pianismo di JAZZ@MILANO, Piano City 2016 Milano, Milano Musica KF, May 22nd 2016.
- Cossyra Jazz Groove, Monastir, Pantelleria, August 12th 2016.
- Etnografia delle percussioni nell'evoluzione del Jazz, MUDEC, Milan June 2017.
- Cossyra Jazz Groove, Atrio del Castello, Pantelleria, August 15th 2017.
- 'Soli Accompagnati', JAZZMI, ARCI Bellezza, Milan November 2017.
- Cossyra Jazz Groove, Atrio del Castello, Pantelleria, August 15th 2018.

Hobbies and sports:

Playing classical and jazz music (piano, electronic keyboards, double bass, electric bass, acoustic guitar, soprano saxophone, digital saxophone, flute, recorders), computerized and synthesis music, computer graphics, downhill skiing, trial-motorbike, windsurf, scuba diving (ESA OpenWater Certificate, 2006), volleyball. Amateur Radio Operator (ARI, identity code IW2GPB), Drone Pilot Certificate (ENAC 2017).

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a) *in extenso* papers published on peer reviewed SCI journals

1. Mognoni P., C. L. Lafortuna, G. Russo and A. E. Minetti. An analysis of world records in three types of locomotion. *Eur. J. Appl. Physiol.* 49: 287-299, 1982. (IF 1.4)
2. Lafortuna C. L., A. E. Minetti and P. Mognoni. Optimization of inspiratory airflow pattern in man. *I.R.C.S. Med. Sci.*, 11: 1095, 1983. (IF 0.4)
3. Lafortuna C. L., A. E. Minetti and P. Mognoni. Inspiratory flow pattern in humans. *J. Appl. Physiol.*, 57: 1111-1119, 1984. (IF 2.3)
4. Brancaccio D., A. E. Minetti, E. Sabbioni, R. Pietra, O. Bugiani, G. Como, and M. Gallieni. Minimal laboratory investigation of uremic patients. *Kidney International*, 28 (17): 108-111, 1985. (IF 4.4)
5. Minetti A. E., I. Brambilla and Lafortuna C. L.. Respiratory airflow pattern in patients with chronic airway obstruction. *Clinical Physiology* 7: 283-296, 1987. (IF 1.0)
6. Narici M. V., G. S. Roi, L. Landoni, A. E. Minetti, and P. Cerretelli. Changes in force, cross-sectional area and neural activation during strength training and detraining of the human quadriceps. *Eur. J. Appl. Physiol.* 59: 310-319, 1989. (IF 1.4)
7. Ferretti G., U. Boutellier, D. R. Pendergast, C. Moia, A. E. Minetti, H. Howald and P. E. di Prampero. Oxygen transport system before and after exposure to chronic hypoxia. *Int. J. Sports Medicine* Vol. 11, Suppl. 1, S15-20, 1990. (IF 1.4)
8. Minetti A. E., and F. B. Saibene. Mechanical work rate minimization and natural stride frequency of human walking: a mathematical model. *J. Exp. Biol.* 170: 19-34, 1992. (IF 2.0)
9. Narici M. V., L. Landoni, and A. E. Minetti. Assessment of human knee extensor muscle stress from in vivo physiological cross-sectional area and strength measurements. *Eur. J. Appl. Physiol.* 65: 438-444, 1992. (IF 1.4)
10. Minetti A. E., L. P. Ardigò and F. Saibene. Mechanical determinants of gradient walking energetics. *J. Physiol.* 472: 725-735, 1993. (IF 4.4)
11. Minetti A. E., and G. Belli. A model for the estimation of hidden mass displacement in periodic movements. *J. Biomech.* 27 (1): 97-102, 1994. (IF 1.8)
12. Minetti A. E., L. P. Ardigò and F. Saibene. The transition between walking and running in man: metabolic and mechanical aspects at different grades. *Acta. Physiol. Scand.* 150 (3): 315-323, 1994. (IF 1.6)
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14. Minetti A. E.. Contraction dynamics in antagonist muscles. *J. Theor. Biol.*, 169 (3): 295-304, 1994. (IF 1.6)
15. Minetti A. E., L. P. Ardigò and F. Saibene. Mechanical determinants of the minimum energy cost of gradient running. *J. Exp. Biol.* 195: 211-225, 1994. (IF 2.0)
16. Minetti A. E., C. Capelli, P. Zamparo, P. E. di Prampero and F. Saibene. Effects of stride frequency changes on mechanical power and energy expenditure of walking. *Med. Sci. Sports*

Exercise 27 (8): 1194-1202, 1995. (IF **2.6**)

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bioenergetics and biomechanics of historic bicycles. Proc. R. Soc. B 268: 1351-1360, 2001. (IF **3.19**)

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