



Paolo Taboga, Ph.D.

Assistant Professor – Director of Biomechanics Laboratory
Department of Kinesiology
California State University, Sacramento
6000 J Street, SLN 3002
Sacramento, CA 98819-6703

Resume: **Paolo Taboga**

Education

2013	Ph.D.	Biomedical and Biotechnological Sciences, University of Udine – Italy Thesis: Energetics and Mechanics of Running: The Influence of Body Mass and the Use of Running Specific Protheses
2008	Postgraduate degree	Innovation in Surgery, Politecnico di Milano – Italy Project: Development of statistical models and software for computer-assisted surgery
2006	M.S.	Biomedical Engineering, Politecnico di Milano – Italy Thesis: Joint constrained lower limb models for gait analysis

Honors/awards

2019: Invited speaker for the *Health and Human Science Interprofessional Research Colloquium*, California State University Sacramento. Biomechanics and Energetics of Running.

2015: *National Instruments Engineering Impact Awards 2015, best application in Advanced Research*: Boscariol P, Shojaei Barjuei E, Gasparetto A, Giovanelli N, Taboga P, Lazzer S. A wearable system for analyzing ground reaction forces in ultra-endurance races.

2014: *Invited speaker* for the Running symposium at the *World Congress of Biomechanics*, Boston. Start and curve running performance in sprinters with a unilateral leg amputation.

2010: Recipient of a *3 year scholarship* to attend the PhD course in Biomedical and Biotechnological Sciences by the University of Udine.

Professional experience

- 11/2017 – present: Director of Biomechanics Laboratory, Department of Kinesiology, California State University, Sacramento
- 08/2016 – present: Assistant Professor, Department of Kinesiology, California State University, Sacramento
- 01/2010 - present: Member of the executive board, Libertas Majano – Track and Field team, Majano, Italy
- 10/2013 – 07/2016: Postdoctoral Fellow, Department of Integrative Physiology, University of Colorado Boulder
- 01/2013 - 09/2013: Postdoctoral Fellow, Exercise Physiology Laboratory, University of Udine, Italy
- 10/2010 - 09/2013: Lecturer, Biomechanics Course - Integrated course of Bioengineering and Biomechanics of motor activities and sports, University of Udine, Italy
- 01/2009 - 02/2012: Technical advisor, ErgoCert – Certifying Body for Ergonomics, Udine, Italy



Paolo Taboga, Ph.D.

Assistant Professor – Director of Biomechanics Laboratory

Department of Kinesiology

07/2008 - 11/2008: Internship in Research and Development, Lima Lto - Medical Systems, San Daniele del Friuli, Italy

06/2006 - 07/2008: Technical Employee, Antonio Petruzzelli - Patent Attorney, Milan, Italy

09/2003 - 05/2006: Youth Team Track and Field Coach, As.P.E.S. Team, Milan, Italy

Teaching experience

2018 – present Instructor: Advanced Biomechanics California State University, Sacramento

2017 – present Instructor: Biomechanics California State University, Sacramento

2016 – present Instructor: Kinesiology California State University, Sacramento

2014 - 2016 Tutor: Biomechanics University of Colorado Boulder

2010 - 2013 Instructor: Biomechanics University of Udine – Italy



Paolo Taboga, Ph.D.

Assistant Professor – Director of Biomechanics Laboratory

Department of Kinesiology

Technical skills

Programming languages:

- Matlab
- Arduino
- LabVIEW

Statistical software:

- R-Studio

Motion capture and computational modeling:

- Vicon Nexus
- Visual 3D
- Simi-Motion 3D
- Kinovea

Test equipment:

- Metabolic assessments: ParvoMedics
- Electromyography: Noraxon
- Force plates: AMTI, Kistler
- Instrumented treadmills: Bertec, Treadmetrix
- Pressure sensors: X-Sensor
- Material testing: INSTRON

Journal referee

Journal of Applied Biomechanics

International Journal of Sports Medicine

Scandinavian Journal of Medicine and Science in Sports

Publications

Taboga P, Beck ON, Grabowski AM. Prosthetic shape, but not stiffness or height, affects the maximum speed of sprinters with bilateral transtibial amputations. *PLoS One*, 15(2), e0229035 (doi: 10.1371/journal.pone.0229035), 2020

Taboga P, Drees EK, Beck ON, Grabowski AM. Prosthetic model, but not stiffness or height, affects maximum running velocity in athletes with unilateral transtibial amputations. *Scientific Reports*, 10(1), 1763 (doi: 10.1038/s41598-019-56479-8), 2020

Triska C, Hoogkamer W, Snyder K, **Taboga P**, Arellano CJ, Kram R. The effects of course design (elevation undulations and curves) on marathon running performance: an a priori case study of the INEOS 1:59 Challenge in Vienna. *SportRxiv* (doi: 10.31236/osf.io/xrjvb), 2019

Taboga P, Kram R. Modelling the effect of curves on distance running performance. *PeerJ*, 7, e8222, (doi: 10.7717/peerj.8222), 2019

Floreani M, Rejc E, **Taboga P**, Ganzini A, Pisot R, Simunic B, Biolo G, Reggiani C, Passaro A, Narici M, Rittweger J, di Prampero PE, Lazzar S. Effects of 14 days of bed rest and following physical training on metabolic cost, mechanical work, and efficiency during walking in older and young healthy males. *PLoS One*, 13(3), e0194291. (doi: 10.1371/journal.pone.0194291), 2018

Bordignon M, Cutini M, Bisaglia C, **Taboga P**, Marcolin F. Evaluation of Agricultural Tractor Seat Comfort with a New Protocol Based on Pressure Distribution Assessment. *Journal of Agricultural Safety and Health*, 24(1), 13-26. (doi: 10.13031/jash.12209), 2018

Rejc E, Floreani M, **Taboga P**, Botter A, Toniolo L, Cancellara L, Narici M, Šimunič B, Pišot R, Biolo G, Passaro A. Loss of maximal explosive power of lower limbs after two weeks of disuse and incomplete recovery after retraining in older adults. *The Journal of Physiology*. (doi: 10.1113/JP274772), 2018

Beck ON, **Taboga P**, Grabowski AM. How do prosthetic stiffness, height and running speed affect the biomechanics of athletes with bilateral transtibial amputations? *Journal of the Royal Society Interface*, 14(131). (doi: 10.1098/rsif.2017.0230), 2017

Beck ON, **Taboga P**, Grabowski AM. Reduced prosthetic stiffness lowers the metabolic cost of running for athletes with bilateral transtibial amputations. *Journal of Applied Physiology*, 122 (4), 976-984. (doi: 10.1152/jappphysiol.00587.2016), 2017

Beck ON, **Taboga P**, Grabowski AM. Prosthetic model, but not stiffness or height, affects the metabolic cost of running for athletes with unilateral transtibial amputations. *Journal of Applied Physiology* (doi: 10.1152/jappphysiol.00896.2016), 2017

Giovanelli N, **Taboga P**, Rejc E, Lazzar S. Effects of strength, explosive and plyometric training on energy cost of running in ultra-endurance athletes. *European Journal of Sports Science*. (doi: 10.1080/17461391.2017.1305454), 2017

Taboga P, Grabowski AM. Axial and torsional stiffness of pediatric prosthetic feet. *Clinical Biomechanics*, 42, 47-48, (doi: 10.1016/j.clinbiomech.2017.01.005), 2017

Beck ON, **Taboga P**, Grabowski AM. Characterizing the Mechanical Properties of Running-Specific Prostheses. *PLoS One*, 11(12), e0168298, (doi:10.1371/journal.pone.0168298) 2016

Giovanelli N, **Taboga P**, Lazzer S. Changes in Running Mechanics During a Six Hours Running Race. *International Journal of Sports Physiology and Performance*, 1-20. (doi: 10.1123/ijsp.2016-0135), 2016

Kipp S, **Taboga P**, Kram R. Ground reaction forces during steeplechase hurdling and waterjumps. *Sports Biomechanics*, 16 (2), 152-165, (doi: 10.1080/14763141.2016.1212917), 2016

Taboga P, Kram R, Grabowski AM. Maximum speed curve running biomechanics of sprinters with and without unilateral leg amputations. *Journal of Experimental Biology*, 219 (6), 851-858, (doi: 10.1242/jeb.133488), 2016

Giovanelli N, **Taboga P**, Rejc E, Simunic B, Antonutto A, Lazzer S. Effects of an Uphill Marathon on Running Mechanics and Lower Limb Muscles Fatigue. *International Journal of Sports Physiology and Performance*, 11 (4), 522-529, (doi: 10.1123/ijsp.2014-0602), 2016

Lazzer S, Salvadego D, **Taboga P**, Rejc E, Giovanelli N, di Prampero PE. Effects of the Etna Uphill Ultramarathon on Energy Cost and Mechanics of Running. *International Journal of Sports Physiology and Performance* 10, no. 2, 238-247, (doi: 10.1123/ijsp.2014-0057), 2015

Taboga P, Grabowski AM, di Prampero PE, Kram R. Optimal Starting Block Configuration in Sprint Running; A Comparison of Biological and Prosthetic Legs. *Journal of Applied Biomechanics*, 30(3), (doi: 10.1123/jab.2013-0113), 2014

Hoogkamer W, **Taboga P**, Kram R. Applying the cost of generating force hypothesis to uphill running. *PeerJ*, 2, e482, (doi: 10.7717/peerj.482), 2014

Lazzer S, **Taboga P**, Salvadego D, Rejc E, Simunic B, Naric, M, Buglione A, Giovanelli N, Antonutto G, Grassi B, Pisot R, di Prampero, PE. Factors affecting metabolic cost of transport during a multi-stage running race. *Journal of Experimental Biology*, 217(Pt 5), 787-795, (doi: 10.1242/jeb.091645), 2014

Taboga P, Sepulcri L, Lazzer S, De Conti D, di Prampero PE. One leg lateral jumps-A new test for team players evaluation. *The Journal of Sports Medicine and Physical Fitness*, 53 (5): 524-532, 2013

Taboga P, Lazzer S, Fessehatsion R, Agosti F, Sartorio A, di Prampero PE. Energetics and mechanics of running men: the influence of body mass. *European Journal of Applied Physiology*, 112:4027-4033, (doi: 10.1007/s00421-012-2389-6), 2012

Taboga P, Marcolin F, Bordignon M, Antonutto G. Definition and validation of a comfort index calculation method for office seats. *La Medicina del Lavoro*, 103(1):58-67, 2012

Pavan EE, **Taboga P**, Frigo C. A mobile axis knee joint model for gait analysis applications; *Journal of Biomechanics* Vol. 39 Supplement 1, Pages S501-S502, (doi: 10.1016/S0021-9290(06)85054-2), 2006

Pavan EE, **Taboga P**, Frigo C. Feasibility of a new – joint constrained – lower limb model for gait analysis application. *Gait & Posture* Vol. 24 Supplement 2, Pages S20-S21, (doi: 10.1016/j.gaitpost.2006.11.018), 2006

Conference abstracts and presentations

Taboga P, Beck ON, Grabowski AM. Sprint biomechanics of athletes with bilateral transtibial amputations using different prosthetic configurations. Invited poster presentation at the International Research Forum on Biomechanics of Running-specific Prostheses. Tokyo, Japan. 2018

Taboga P, Beck ON, Grabowski AM. Top sprinting speed is influenced by prosthetic model, but not stiffness or height, for athletes with bilateral transtibial amputations. American Society of Biomechanics Annual Meeting Boulder, CO. 2017

Taboga P, Beck ON, Grabowski AM. Optimal running prostheses for sprinter with bilateral leg amputations. American Society of Biomechanics Annual Meeting. Columbus, OH. 2015

Taboga P, Beck ON, Grabowski AM. Optimal running prostheses for sprinter with unilateral leg amputations. American Society of Biomechanics Annual Meeting. Columbus, OH. 2015

Beck ON, **Taboga P**, Grabowski AM. Asymmetric forces increase the metabolic cost of running for unilateral amputees. American Society of Biomechanics Annual Meeting. Columbus, OH. 2015

Beck ON, **Taboga P**, Grabowski AM. Lower prosthetic stiffness minimizes the metabolic cost of running for individuals with bilateral leg amputations. American Society of Biomechanics Annual Meeting. Columbus, OH. 2015

Taboga P, Grabowski AM, Kram R. Straight and curve running biomechanics of sprinters with and without unilateral leg amputations. Calgary International Running Symposium. Calgary, AB. 2014

Taboga P, Grabowski AM, di Prampero PE, Kram R. Start and curve running performance in sprinters with a unilateral leg amputation. Invited speaker at the World Congress of Biomechanics. Boston, MA. 2014

Grabowski AM, Auyang A, Beck ON, Jeffers J, **Taboga P**. The metabolic effects of using leg prostheses during walking and running. World Congress of Biomechanics. Boston, MA. 2014

Taboga P, Grabowski AM, di Prampero PE, Kram R. Review of leg prostheses and the use of prosthetic ankle power. Rocky Mountain Regional American Society of Biomechanics Annual Meeting. Estes Park, CO. 2014

Taboga P, Lazzar S, Fessehatsion R, Agosti F, Sartorio A, di Prampero PE. Energetics and mechanics of running: the influence of body mass and obesity. Rocky Mountain Regional American Society of Biomechanics Annual Meeting. Boise, ID. 2012