

CURRICULUM VITAE – TODD COLIN PATAKY

CONTACT INFORMATION

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I am a Associate Professor in the Department of Bioengineering at Shinshu University (Ueda, Nagano, Japan) and am Director of the Applied Biomechanics Laboratory within Shinshu University's Fiber Engineering Research Institute. My research focusses on the analysis and simulation of stochastic processes in biomechanical systems. I am especially interested in analyses of spatiotemporally complex human movement data.

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RESEARCH INTERESTS

statistical parametric mapping, random field theory, computational biomechanics, probabilistic simulation, open source software development

EMPLOYMENT

Associate Professor Department of Bioengineering Fiber Engineering Research Institute, Shinshu University, Japan	2013-
Assistant Professor , Research Tenure Track Department of Bioengineering, Shinshu University, Japan	2009-2013
Postdoctoral Research Associate School of Biomedical Sciences, University of Liverpool, UK	2006-2009
Postdoctoral Research Fellow Department of Cognitive Neuroscience, ATR Research, Kyoto, Japan	2004-2006

EDUCATION

Ph.D. , Department of Kinesiology, The Pennsylvania State University, USA Minor: Mechanical Engineering	2001-2004
M.S. , Department of Kinesiology, The Pennsylvania State University, USA	1999-2001
B.Sc.(Hons) , Department of Kinesiology, University of Western Ontario, Canada Minor: Mathematics	1995-1999

AFFILIATIONS

International Society for Biomechanics
International Society of Biomechanics in Sports
International Foot and Ankle Biomechanics Community

LANGUAGES

English, Japanese

HONORS AND AWARDS	William Evans Fellow (NZD \$6,850)	2014
	“Implementing advanced statistics for biomechanics research” University of Otago, New Zealand (three-week research fellowship).	
	Young Investigator Award (bronze) (SGD \$400)	2010
	“Topological statistics for probabilistic finite element simulations”. 6th World Congress on Biomechanics, Singapore.	
	Nike Award for Athletic Footwear Research (USD \$25,000)	2009
	D’Août K, Pataky TC , De Clercq D, Aerts P. “The effects of habitual footwear use: foot shape and function in native barefoot walkers” 9th International Footwear Biomechanics Symposium, Stellenbosch, South Africa.	
COMPETITIVE GRANTS (PI)	JSPS Young Researcher Grant (Wakate A) (JPY ¥18,760,000)	2015–2017
	“Using neuroimaging statistics to model randomness in complex biomechanical systems”	
	JSPS Challenging Exploratory Research Grant (JPY ¥3,770,000)	2015–2017
	“Development of a randomness training system to improve golf putting performance”	
	JSPS Young Researcher Grant (Wakate B) (JPY ¥3,880,000)	2010–2012
	“Development of biomechanical imaging techniques based on neuroimaging statistics”	
	Royal Society International Short Visit Grant (GBP £2474)	2009
	Department of Mechanical Engineering, University of Porto, Portugal	
	Royal Society Conference Grant (GBP £928)	2007
	To attend Third Asian Pacific Conference on Biomechanics, Tokyo, Japan	
	JSPS Postdoctoral Fellowship (JPY ¥10,000,000)	2004–2006
	To study with a host researcher in Japan for two years.	
	ISB Conference Grant (USD \$2000)	2003
	To attend ISB Congress, Dunedin, New Zealand.	
COMPETITIVE GRANTS (CO-I)	International Strategic Partnership Fund (NZD \$86,250)	2014–2015
	“Combining novel sensors, computational modeling, advanced statistics and robots.” Joint-grant with Prof. Minoru Hashimoto (Shinshu University), Dr. Kimberlee Jordan (Callaghan Innovations, NZ), and A.Prof. Thor Besier (University of Auckland) to promote robotic research collaborations between New Zealand and Japan. Ref: INTNZJS-38379	
	Royal Society International Exchange Grant (GBP £11,850)	2014–2015
	“Hypothesis testing of bone loading via probabilistic finite element simulation” Joint-grant with Dr. Philip Cox of Hull-York Medical School. Ref: IE131030	
	Royal Society International Exchange Grant (GBP £12,000)	2012–2013
	“The role of foot pressure in directional control and turning” Joint-grant with Prof. Robin Crompton of the University of Liverpool.	
INTERNAL GRANTS	University of Liverpool Proof of Concept Grant (GBP £41,500)	2011
	“Pedobarographic Statistical Mapping” Business development and software engineering towards commercialization.	
	University of Liverpool Reach Out Travel Grant (GBP £600)	2008
	To attend EMED Scientific Meeting, Dundee, Scotland	
INDUSTRY COLLABORATIONS	Takahashi Industries.	2015
	Analysis of wearable accelerometer data for sensor system development.	
	Nike Golf.	2012–2015
	Analysis of golfing biomechanics data.	
	Department of Electrical Engineering and Electronics, University of Liverpool	2011
	Analysis of complex gait data for a sensor engineering project.	

INVITED TALKS (CONFERENCES)	Applications of continuum statistics [in Japanese] Invited Lecture Society of Instrument and Control Engineers, Central Symposium Center for Science and Technology Advancement, Nagano, Japan	2014.09.19
	Analysis and application of foot pressure distribution data [in Japanese] Keynote Lecture 6th Japanese Symposium on Biological Measurement Koriyama College of Applied Health, Japan	2011.11.19
	Functional biomechanical continuum analysis and applications Invited Lecture 6th International Conference on Technology and Medical Sciences University of Porto, Portugal	2010.10.22
	Footprint-based gait reconstruction of the 3.75 Ma Laetoli hominin Invited Lecture 2nd Congress of the International Foot and Ankle Biomechanics Community University of Washington, USA	2010.09.17
INVITED TALKS (INTERNAL)	Continuous human movement data analysis with statistical parametric mapping School of Sport Science, Exercise and Health, University of Western Australia	2015.02.27
	Random field theory applications in biomechanics School of Biomedical Sciences, University of Queensland, Australia	2014.08.29
	Topological statistics for the analysis of biomechanical continua Hull-York Medical School, York, UK	2013.03.11
	Valid statistics for scalar and vector trajectories and continua Liverpool John Moores University, UK	2013
	The importance of foot pressure: from evolution to energy harvesting Institute of Sport, Exercise and Active Living Victoria University, Melbourne, Australia	2012.04.17
	Foot pressure imaging: analysis and applications Kinesiology Department Graduate Colloquium The Pennsylvania State University, State College, USA	2011
	Topological statistical analysis of plantar pressure images Nike Sport Research Laboratory, Portland, USA	2010.09.14
	Recent advances in plantar pressure imaging for animal applications Royal Veterinary College, London, UK	2010
	Discrete vs. continuous analysis of n-dimensional biomechanical data University of Salford, Manchester, UK	2010.10.19
	Continuous analysis of continuous curves Liverpool John Moore's University, Liverpool, UK	2010.10.08
	Pedobarographic statistical parametric mapping (pSPM) Chemnitz University of Technology, Germany	2009
	Gait simulation and pressure image processing in human evolution University of Porto, Portugal.	2009
WORKSHOPS	1D Statistical Parametric Mapping University of Liverpool, UK	2015.06
	University of Leuven (KUL), Belgium	2015.03
	Ghent University, Belgium	2014.07
	University of Otago, New Zealand	2014.03

1. **Pataky TC** (2012). Plantar pressure distribution analysis and applications [in Japanese]. *Seitai Ohyoh Keisoku [Journal of Applied Bio-metrology]* 3: 1–10.
2. Crompton RH, **Pataky TC** (2009). Stepping out. *Science* 323: 1174:1175.

1. **Pataky TC**, Vanrenterghem J, Robinson MA (2015). Zero- vs. one-dimensional, parametric vs. non-parametric, and confidence interval vs. hypothesis testing procedures in one-dimensional biomechanical trajectory analysis. *Journal of Biomechanics* 48(7): 1277–1285.
2. Robinson MA, Vanrenterghem J, **Pataky TC** (2015). Statistical Parametric Mapping (SPM) for alpha-based statistical analyses of multi-muscle EMG time-series. *Journal of Electromyography and Kinesiology* 25(1): 14–19.
3. **Pataky TC** (2015). Correlation between maximum in-shoe plantar pressures and clubhead speed in amateur golfers. *Journal of Sports Sciences* 33(2): 192–197.
4. **Pataky TC**, Robinson MA, Vanrenterghem J (2015). Two-way ANOVA for scalar trajectories, with experimental evidence of nonphasic interactions. *Journal of Biomechanics* 48(1): 186–189.
5. **Pataky TC**, Robinson MA, Vanrenterghem J, Savage R, Bates KT, Crompton RH (2014). Vector field statistics for objective center-of-pressure trajectory analysis during gait, with evidence of scalar sensitivity to small coordinate system rotations. *Gait and Posture* 40(1): 255–258.
6. Phethean J, **Pataky TC***, Nester CJ, Findlow AH (2014). A cross-sectional study of age-related changes in plantar pressure distribution between 4–7 years: a comparison of regional and pixel-level analyses. *Gait and Posture* 39(1): 154–160. *Corresponding author.
7. **Pataky TC**, Savage R, Bates KT, Sellers WI, Crompton RH (2013). Short-term step-to-step correlation in plantar pressure distributions during treadmill walking, and implications for trackway analysis. *Gait & Posture* 38(4): 1054–1057.
8. De Ridder R, Willems T, Vanrenterghem J, Robinson MA, **Pataky TC**, Roosen P (2013). Gait kinematics of subjects with ankle instability using a multisegmented foot model. *Medicine & Science in Sports & Exercise* 45(11): 2129–2136.
9. **Pataky TC**, Slota GP, Latash ML, Zatsiorsky VM (2013). Is power grasping contact continuous or discrete? *Journal of Applied Biomechanics* 29(5):554–62.
10. **Pataky TC**, Robinson MA, Vanrenterghem J (2013). Vector field statistical analysis of kinematic and force trajectories. *Journal of Biomechanics* 46(14): 2394–2401.
11. Bates KT, Collins D, Savage R, Webster E, **Pataky TC**, McClymont J, D’Aout K, Sellers WI, Bennett MR, Compton RH (2013). The evolution of compliance in the human lateral mid-foot. *Proceedings of the Royal Society B - Biological Sciences* 280: 20131818.
12. Bates KT, Savage R, **Pataky TC**, Morse SA, Webster E, Falkingham PL, Ren L, Collins D, Bennett MR, McClymont J, Crompton RH (2013). Does footprint depth correlate with foot motion and pressure? *Journal of the Royal Society Interface* 10(83): 2013.0009.
13. Vanrenterghem J, Venables E, **Pataky TC**, Robinson MA (2012). The effect of running speed on knee mechanical loading in females during side cutting. *Journal of Biomechanics* 45(14): 2444–2449.
14. **Pataky TC** (2012). Spatial resolution in plantar pressure measurement revisited. *Journal of Biomechanics* 45(12): 2116–2124.
15. Giacomozzi C, Keijsers N, **Pataky TC**, Rosenbaum D (2012). International scientific consensus on medical plantar pressure measurement devices: technical requirements and performance. *Annali dell’Istituto Superiore di Sanità* 48(3): 259–271.
16. Cox PG, Rayfield EJ, Fagan MJ, **Pataky TC**, Jeffery N (2012). Functional evolution of the feeding system in rodents. *PLoS One* 7(4): e36299.
17. Panagiotopoulou O, **Pataky TC**, Hill Z, Hutchinson JR (2012). Statistical parametric mapping of the regional distribution and ontogenetic scaling of foot pressures during walking in Asian elephants (*Elephas maximus*). *Journal of Experimental Biology* 215(9): 1584–1593.

18. **Pataky TC**, Mu T, Bosch K, Rosenbaum D, Goulermas JY (2012). Gait recognition: highly unique plantar pressure patterns amongst 104 individuals. *Journal of the Royal Society Interface*. 9(69): 790-800.
19. Crompton RH, **Pataky TC**, Savage R, D'Août K, Bennett M, Day M, Bates K, Morse S, Sellers WI (2012). Human-like external function of the foot, and fully upright gait, confirmed in the 3.66 million year old Laetoli hominin footprints by topographic statistics, experimental footprint-formation and computer simulation. *Journal of the Royal Society Interface*. 9(69): 707-719.
20. **Pataky TC** (2012). One-dimensional statistical parametric mapping in Python. *Computer Methods in Biomechanics and Biomedical Engineering* 15(3): 295-301.
21. **Pataky TC**, Slota GP, Latash ML, Zatsiorsky VM (2012). Radial force distribution changes associated with tangential force production in cylindrical grasping, and the importance of anatomical registration. *Journal of Biomechanics* 45(2): 218-224.
22. **Pataky TC**, Maiwald C (2011). Spatiotemporal volumetric analysis of dynamic plantar pressure data. *Medicine & Science in Sports & Exercise*. 43(8): 1582-1589.
23. **Pataky TC**, Bosch K, Mu T, Keijsers NLW, Segers V, Rosenbaum D, Goulermas JY (2011). An anatomically unbiased foot template for inter-subject plantar pressure evaluation. *Gait & Posture* 33(3): 418-422.
24. Oliveira FPM, **Pataky TC**, Tavares JMRS (2010). Registration of pedobarographic image data in the frequency domain. *Computer Methods in Biomechanics and Biomedical Engineering* 13(6): 731-740.
25. Caravaggi P, **Pataky TC**, Gunther M, Savage R, Crompton R (2010). Dynamics of longitudinal arch support in relation to walking speed: contribution of the plantar aponeurosis. *Journal of Anatomy* 217(3): 254-261.
26. **Pataky TC** (2010). Generalized n-dimensional biomechanical field analysis using statistical parametric mapping. *Journal of Biomechanics* 43(10): 1976-1982.
27. Sellers WI, **Pataky TC**, Caravaggi P, Crompton RH (2010). Evolutionary robotic approaches in primate gait analysis. *International Journal of Primatology* 31(2): 321-338.
28. Mu T, **Pataky TC**, Findlow AH, Goulermas JY (2010). Automated nonlinear feature generation and classification of foot pressure lesions. *IEEE Transactions on Information Technology in BioMedicine* 14(2): 418-424.
29. Keijsers NLW, Stolwijk NM, **Pataky TC** (2010). Linear dependence of peak, mean, and pressure-time integral values in plantar pressure images. *Gait and Posture* 31(1): 140-142.
30. D'Août K, **Pataky TC**, De Clercq D, Aerts P (2009). The effects of habitual footwear use: foot shape and function in native barefoot walkers. *Footwear Science* 1(2): 81-94.
31. Oliveira FPM, Tavares JMRS, **Pataky TC** (2009). Rapid pedobarographic image registration based on contour curvature and optimization. *Journal of Biomechanics* 42(15): 2620-2623.
32. Caravaggi P, **Pataky TC**, Goulermas JY, Savage R, Crompton R (2009). An anatomically based inverse dynamic model of the windlass mechanism of the foot: evidence for early stance phase preloading of the plantar aponeurosis. *Journal of Experimental Biology* 212: 2491-2499.
33. **Pataky TC**, Keijsers NLW, Goulermas JY, Crompton RH (2009). Nonlinear spatial warping for between-subjects pedobarographic image registration. *Gait and Posture* 29(3): 477-482.
34. **Pataky TC**, Goulermas JY, Crompton RH (2008). A comparison of seven methods of within-subjects rigid body pedobarographic image registration. *Journal of Biomechanics* 41(14): 3085-3089.
35. **Pataky TC**, Caravaggi P, Savage R, Crompton RH (2008). Regional peak plantar pressures are highly sensitive to regional boundary definitions. *Journal of Biomechanics* 41(12): 2772-2775.
36. **Pataky TC** (2008). Assessing the significance of pedobarographic signals using random field theory. *Journal of Biomechanics* 41(11): 2465-2473.
37. **Pataky TC**, Goulermas JY (2008). Pedobarographic statistical parametric mapping: a pixel-level approach to foot pressure image analysis. *Journal of Biomechanics* 41(10): 2136-2143.

38. **Pataky TC**, Caravaggi P, Savage R, Parker D, Goulermas JY, Sellers WI, Crompton RH (2008). New insights into the plantar pressure correlates of walking speed using pedobarographic statistical parametric mapping (pSPM). *Journal of Biomechanics* 41(9): 1987-1994.
39. **Pataky TC**, Latash ML, Zatsiorsky VM (2008). Multi-finger ab-/adduction strength and coordination. *Journal of Hand Therapy* 21(4): 377-385.
40. **Pataky TC**, Savescu AV, Latash ML, Zatsiorsky VM (2007). A device for testing the intrinsic muscles of the hand. *Journal of Hand Therapy* 20(4): 345-350.
41. **Pataky TC**, Latash ML, Zatsiorsky VM (2007). Finger interaction during maximal radial and ulnar deviation efforts: experimental data and linear neural network modeling. *Experimental Brain Research* 179(2):301-312.
42. **Pataky TC** (2005). Soft tissue strain energy minimization: a candidate control scheme for intra-finger normal-tangential force coordination. *Journal of Biomechanics* 38(8): 1723-1727.
43. **Pataky TC**, Latash ML, Zatsiorsky VM (2005). Viscoelastic response of the finger pad to incremental tangential displacements. *Journal of Biomechanics* 38(7): 1441-1449.
44. Jordan K, **Pataky TC**, Newell K (2005). Grip width and the organization of force output. *Journal of Motor Behavior* 37(4): 285-294.
45. **Pataky TC**, Latash ML, Zatsiorsky VM (2004). Prehension synergies during nonvertical grasping. II. Modeling and optimization. *Biological Cybernetics* 91(4): 231-242.
46. **Pataky TC**, Latash ML, Zatsiorsky VM (2004). Prehension synergies during nonvertical grasping. I. Experimental observations. *Biological Cybernetics* 91(3): 148-158.
47. **Pataky TC**, Latash ML, Zatsiorsky VM (2004). Tangential load sharing among fingers during prehension. *Ergonomics* 47(8): 876-889.
48. **Pataky TC**, Zatsiorsky VM, Challis JC (2003). A simple method to determine body segment masses in vivo: reliability, accuracy, and sensitivity analysis. *Clinical Biomechanics* 18: 364-368.
49. Sternad D, DeRugy A, **Pataky TC**, Dean WJ (2002). Interaction of discrete and rhythmic movements over a wide range of periods. *Experimental Brain Research* 147(2): 162-174.

CONFERENCE
PAPERS

1. Castro MP, Pataky TC, Sole G, Vila-Boas JP (2015.05.07) Comparison of 3D ground reaction forces between genders using statistical parametric mapping. Presented at the 16th Congress of the Brazilian Society of Biomechanics, Florianopolis, Brazil.
2. Alexander CF, Robinson M, Reid S, Stannage K, Pataky TC, Donnelly CJ (2015.10.22) The use of vector field analysis for the assessment of clinical gait. Presented at the 69th American Academy for Cerebral Palsy and Developmental Medicine, Austin, Texas, USA.
3. Pataky TC, Lafortune M (2015.07.09) Effects of footwear on driver clubhead speed in amateur golfers: Classical vs. Bayesian inference. Presented at the 12th Footwear Biomechanics Symposium, Liverpool, UK.
4. Sole G, Pataky TC, Tengman E, Hager CK (2015.04.02) Analysing 3D knee kinematics using statistical parametric mapping during stair descent 20 years post-ACL rupture with and without reconstruction, World Congress for Physical Therapy, Singapore.
5. Robinson MA, Donnelly CJ, Vanrenterghem J, Pataky TC (2015.03.19). Vector field statistical analysis reveals important insight into knee joint moments. ACL Research Retreat VII, University of North Carolina at Greensboro, USA. [not yet accepted]
6. Pataky TC, Ball KA (2014.09). Using vector field statistics to assess correlations between golfers' handicap indexes and center of pressure velocity trajectories during driver swings. Presented at the World Scientific Congress of Golf, Gold Coast, Australia.
7. Pataky TC, Kimura K (2014.09). Dynamic weight sharing during putting: correlation with face angle variability as a proxy for skill. Presented at the World Scientific Congress of Golf, Gold Coast, Australia.

8. Lamb PF, Pataky TC, Stockl M (2014.09). A dynamic time-continuous assessment of x-factor changes during forced adaptations of swing effort. Presented at the World Scientific Congress of Golf, Gold Coast, Australia.
9. Pataky TC, Tanaka H, Hashimoto M (2014.04.09). Quantifying degree of foot use impairment in hemiplegic gait using center-of-pressure trajectory vector difference integrals. Presented at the 4th Congress of the International Foot and Ankle Biomechanics Community, Busan, Korea. [2014.04.08-2014.04.11]
10. Pataky TC, Tanaka H, Hashimoto M (2013.11.23). [Method for evaluating quantifying gait impairment severity using vector continuum analysis of center of pressure trajectories] (in Japanese). Presented at the 40th Congress of the Japanese Society for Clinical Biomechanics, Kobe, Japan.
11. Pataky TC, Robinson MA, Vanrenterghem J (2013.08.06). Kinematic and force trajectory analysis using vector field statistics. Presented at the 24th Congress of the International Society of Biomechanics, Natal, Brazil.
12. Pataky TC, Tanaka H, Hashimoto M (2013.08.01). Accuracy of an over-the-counter instrumented shoe: maximum pressures during walking. Presented at the 11th Footwear Biomechanics Symposium, Natal, Brazil.
13. Pataky TC (2013.07.09). Relation between maximum plantar pressure distribution and club-head speed in amateur golfers. Presented at the 31st Conference of the International Society of Biomechanics in Sports, Taipei, Taiwan.
14. Nakamura K, Pataky TC (2012.11.17). Free-throw recognition using plantar pressure distribution analysis and machine learning [in Japanese]. Presented at the 2012 Sports and Human Dynamics Symposium of the Japanese Society for Mechanical Engineering, Toyohashi, Aichi, Japan.
15. Pataky TC (2012.09.16). Python in gait biomechanics research. Presented at Python Conference Japan 2012, Tokyo, Japan. <http://www.youtube.com/watch?v=tRYpdm-e5Ro&feature=plcp>
16. Pataky TC (2012.04.12). Spatial resolution and peak-pressure-change measurement accuracy. Presented at the 3rd Congress of the International Foot and Ankle Biomechanics Community, Sydney, Australia.
17. Rosenbaum D, Bosch K, Pataky TC (2012.02). When is the child's foot matured? Longitudinal investigation of foot loading patterns between 1 and 10 years. Presented at the 2012 Annual Main Meeting of the Orthopaedic Research Society, San Francisco, USA.
18. Pataky TC (2011.11.19) Analysis and applications of foot pressure distribution data (in Japanese). Keynote lecture presented at the 6th Japanese Biological Measurement Conference. Koriyama, Japan.
19. Pataky TC (2011.10.24). Foot pressure. Presented at the 2011 Prince Edward Island BioPartnering Conference, Charlottetown, Canada.
20. Pataky TC (2011.09.16). Postural compensation in hand pressure images. Presented at the 5th European Conference of the International Federation for Medical and Biological Engineering, Budapest, Hungary.
21. Pataky TC, Mu T, Bosch K, Rosenbaum D, Goulermas JY (2011.07). Highly accurate biometric identification of 104 subjects using plantar pressure data. Presented at the 23rd Congress of the International Society of Biomechanics, Brussels, Belgium.
22. Panagiotopoulou O, Pataky TC, Hutchinson J (2011.07). Regional plantar pressure distribution during walking in hoofed mammals. Presented at the 2011 Annual Main Meeting of the Society for Experimental Biology, Glasgow, Scotland.
23. Pataky TC (2011.06.30). Spatially continuous analysis of in-shoe pressure data. Presented at the 10th Footwear Biomechanics Symposium, Tübingen, Germany.
24. Rosenbaum D, Bosch K, Pataky TC (2011). [Der Reifungsprozess des kindlichen Fußes: Plantare Druckverteilungsmessungen im Altersverlauf zwischen 1 und 10 Jahren] The developing foot: plantar pressure measurements between 1 and 10 years. Presented at the 7th Annual Meeting of German Society of Biomechanics, Murnau, Germany.
25. Pataky TC (2010). Topological statistics for probabilistic finite element simulations. Presented at the 6th World Congress on Biomechanics, Singapore.

26. Pataky TC (2010). Functional biomechanical continuum analysis and applications. Presented at the 6th International Conference on Technology and Medical Sciences, Porto, Portugal.
27. Pataky TC, Maiwald C (2010). Spatiotemporal volumetric analysis of dynamic pedobarographic data. Presented at the 2nd Congress of the International Foot and Ankle Biomechanics Community, Seattle, USA.
28. Pataky TC (2010). Real-time statistical analysis of plantar pressure data: a preliminary feasibility study. Presented at the 2nd Congress of the International Foot and Ankle Biomechanics Community, Seattle, USA.
29. Caravaggi P, Pataky TC (2010). Experience and feedback from Liverpool University with RScan pressure plates. Presented at Pressure Measurement Devices Workshop, Istituto Superiore Di Santa, Rome, Italy.
30. Olivera FPM, Pataky TC, Tavares JMRS (2010). Registration of pedobarographic images. Presented at Computer Methods in Biomechanics and Biomedical Engineering 2010, Valencia, Spain.
31. Olivera FPM, Pataky TC, Tavares JMRS (2010). Registration of pedobarographic data sets in frequency domain. Presented at the 2010 Summer School and Workshop on Imaging Sciences and Medical Applications, University of Coimbra, Portugal.
32. D'Août K, Pataky TC, De Clercq D, Aerts P (2009). Footwear influences foot anatomy and plantar pressure distribution. Presented at the 2009 Symposium of the Flemish Society for Kinesiology, Leuven, Belgium.
33. Olivera FPM, Tavares JMRS, Pataky TC (2009). A versatile matching algorithm based on dynamic programming with circular order preserving. Presented at the 2nd ECCOMAS Thematic Conference on Computational Vision and Medical Image Processing (VIP Image), Porto, Portugal.
34. D'Août K, Pataky TC, De Clercq D, Aerts P (2009). The effects of habitual footwear use: foot shape and function in native barefoot walkers. Presented at 9th Biennial International Society of Biomechanics Footwear Biomechanics Symposium, Stellenbosch, South Africa.
Winner of 2009 Nike Award for Athletic Footwear Research (US\$25,000).
35. Segers V, Pataky TC, De Clercq D (2009). A comparison of barefoot walking and running on plantar pressure variables. Presented at 9th Biennial International Society of Biomechanics Footwear Biomechanics Symposium, Stellenbosch, South Africa.
36. Vanrenterghem J, Chambers S, Garcia R, Hawken M, Lake M, Pataky TC (2009). Combining a dynamic balance protocol and statistical parametric mapping to better understand floor pedobarography in shod dynamic sports activities. Presented at the 4th International State-of-the-Art Congress "Rehabilitation: Mobility, Exercise & Sports", Amsterdam, The Netherlands.
37. Pataky TC, Goulermas JY, Caravaggi P, Crompton RH (2008). New insights into stance phase foot biomechanics using pedobarographic statistical parametric mapping. *Journal of Foot and Ankle Research* 1 (Suppl.1): O25. Presented at International Foot and Ankle Biomechanics Congress, Bologna, Italy.
38. Caravaggi P, Pataky TC, Savage R, Crompton RH (2008). Evidence for early stance phase pre-loading of the plantar aponeurosis. *Journal of Foot and Ankle Research* 1 (Suppl.1): O42. Presented at International Foot and Ankle Biomechanics Congress, Bologna, Italy.
39. Pataky TC, Savage R, Sellers WI, Crompton RH (2008). Reconstruction of the Laetoli footprints as records of foot pressure. Presented at IPS Post-Congress Symposium on Comparative Functional Morphology in Primates, Durham, UK.
40. Pataky TC, Parker D, Goulermas JY, Crompton RH (2008). Assessing gait asymmetries using pedobarographic statistical parametric mapping. Presented at EMED Scientific Meeting, Dundee, Scotland.
41. Pataky TC, Crompton RH (2007). Footprint-based gait reconstruction: inverse computation of foot kinematics. *Journal of Biomechanical Science and Engineering* 2(Suppl.1): S51. Presented at Third Asian Pacific Conference on Biomechanics, Tokyo, Japan.
42. Caravaggi P, Pataky TC (2007). Toward footprint-based gait reconstruction. *Foot and Ankle Biomechanics*, Leuven, Belgium.

43. Pataky TC, Caravaggi P, Sellers BL, Crompton RH (2007). Are footprints records of peak pressure history? Manchester Biomechanics Conference, Manchester, UK.
44. Pataky TC, Osu R, Imamizu H, Kawato M (2006). Oculomotor vs. somatomotor encoding in human cortex. Human Brain Mapping, 12th Annual Meeting, Florence, Italy.
45. Pataky TC, Imamizu H, Osu R, Kawato M, Kamitani Y (2006). Oculomotor vs. somatomotor encoding in human cortex. Mechanisms of Brain and Mind, Hokkaido, Japan.
46. Pataky TC, Franklin DW, Kawato M, Milner TE (2005). A systematic study of the reflex responses in the isometrically loaded multijoint human arm. Society for Neuroscience 35th Annual Meeting, Washington, DC, USA.
47. Zatsiorsky VM, Pataky TC, Latash ML (2004). Numerical optimization of finger forces during manipulation of hand-held objects. Computer Methods in Biomechanics & Biomechanical Engineering, Madrid, Spain.
48. Pataky TC, Latash ML, Zatsiorsky VM (2003). Finger pad viscoelastic response to shear load: finite element model validation. ASME, Washington, DC, USA.
49. Pataky TC, Latash ML, Zatsiorsky VM (2003). Numerical optimization predicts human manipulation performance when rotating an object through the gravity field. Digital Biology, Bethesda, USA.
50. Zatsiorsky VM, Latash ML, Gregory RW, Gao F, Pataky TC, and Shim JK (2003). Control of prehension. Progress in Motor Control-IV, Caen, France.
51. Pataky TC, Latash ML, Zatsiorsky VM (2003). Optimum finger forces in pronated and supinated postures. American Society of Biomechanics, Toledo, USA.
52. Pataky TC, Latash ML, Zatsiorsky VM (2003). Finger pad viscoelasticity under tangential load (2003). International Society of Biomechanics, Dunedin, New Zealand.
53. Pataky TC, Latash ML, Zatsiorsky VM (2002). Load sharing among fingers during static five finger prehension. World Congress for Biomechanics, Calgary, Canada.
54. Pataky TC, Latash ML, Zatsiorsky VM (2001). Using a force plate to measure limb segment masses. International Society for Biomechanics in Sport, San Francisco, USA.

STUDENT
CONFERENCE
PAPERS

1. Endo H, Hashimoto M, Pataky TC (2014.11.21). [Correlations between indicators of postural and walking stability] (in Japanese). Japanese Society of Clinical Biomechanics, Nara Prefectural New Public Hall.
2. Nakamura K, Pataky TC (2013.11.03). [Evaluation of differences between skilled and skilled basketball free-throw shooters using plantar pressure data] (in Japanese). Japanese Society of Mechanical Engineering, Sport and Human Dynamics Symposium, Kogakuin University.
3. Ohtani Y, Pataky TC, Nishikawa A (2013.05.22). Control of pneumatic five-fingered robot hand imitating grasping of human: analysis of grasping position and force of human hand [in Japanese]. Japanese Society of Mechanical Engineering, Robotics and Mechatronics Symposium, Tsukuba International Conference Center.
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SOFTWARE PROJECTS	SPM1D: one-dimensional statistical parametric mapping. Open-source Python package for the topological analysis of 1D datasets. http://www.spm1d.org	
	MUN104: plantar pressure foot template. Morphologically average plantar pressure profile of 104 individuals. http://www.tpataky.net/mun104	
PRESS	Shinano Mainichi (newspaper) “ Elephant foot disease identification ” [in Japanese], 14.01.2013. CBC Spark “ Gait fingerprinting ”, 13.01.2012. Wired Magazine “ Unique gait can give crooks away ”, 22.09.2011. New Scientist.com “ Why you are identifiable after just a few steps ”, 15.09.2011. Gizmodo “ Watch how you walk if you want to remain anonymous ”, 08.09.2011. Bioscholar “ Footprints can help identify people just like fingerprints ”, 08.09.2011. Discovery News “ Footprints ID people like fingerprints ”, 07.09.2011.	
INDUSTRY COLLABORATIONS	Nike, Inc. , USA <i>Unnamed research</i>	2015–
	Nike Golf, Inc. , USA <i>Unnamed research</i>	2011–
OTHER PROFESSIONAL ACTIVITY	Editorial Board, Footwear Science A subsidiary of the International Foot and Ankle Biomechanics Community	2014–
	Co-founder, i-FAB Pedobarography Group A subsidiary of the International Foot and Ankle Biomechanics Community	2010–2015
SOFTWARE	Python, Matlab, R, Blender, FEBio, ABAQUS, LabView, C, \LaTeX	