

Full Name and Title	Dr. Mark A. Robinson
Faculty, School Address	Faculty of Science, Sport and Exercise Science Byrom St Campus, Liverpool, L3 3AF
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Phone Number	0151 904 6267
Website	https://mark-a-robinson.uk
Title / Date of Current Appointment	Reader of Biomechanics, Sept. 2019
Higher Education:	2012 Doctor of Philosophy, LJMU. 2006 Postgraduate Certificate – Learning and Teaching in Higher Education, LJMU: Distinction 2004 MSc in Sports Biomechanics, LJMU: Merit 2003 BSc (Hons) in Sports Science, LJMU: 2:1
Membership of Professional Bodies	International Society of Biomechanics International Society of Biomechanics in Sports Fellow of the Higher Education Academy

APPOINTMENTS

2019 – Present	Reader + Programme Leader	LJMU
2016 – 2019	Senior Lecturer + Programme Leader	LJMU
2012 – 2016	Senior Lecturer + Level 4 Year Tutor	LJMU
2011 - present	Senior Lecturer	LJMU

In 2011 I was appointed a full-time member of academic staff in the School of Sport and Exercise Sciences. In 2012, I was appointed Level 4 year tutor role which involved developing and running induction, managing extension and deferral requests, admissions and student progression. The programme leader role involves substantial day-to-day administration and management of a large undergraduate programme n>600 students. I led the programme through revalidation in 2016, BASES undergraduate endorsement and NSS overall satisfaction has increased year on year: 69% in 2016, 84% in 2017, 90% in 2018. I was appointed a Reader of Biomechanics in 2019.

2005 -2011	Teaching Assistant & PhD student	LJMU
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Independently taking lectures, computer practicals, labs, marking, leading assessments, developing the curriculum.

CURRENT AND PAST CONTRIBUTIONS TO EDUCATION

CURRENT Undergraduate/Postgraduate Teaching.

BSc (Hons) Sport and Exercise Science

Current Module Leadership: 6102SPOSCI – Sports Biomechanics

Teaching: Includes lectures and labs (+ assessments)

L4 – Research Skills 1 Sports Maths (+ coursework marking)

L4 – Research Methods 1 - Sports Maths (+ exam marking)

L5 – Biomechanical Principles (+ exam marking)

L6 – Sports Biomechanics (+ coursework + exam marking)

L6 - Applied Placement discipline lead

L6 - Major Project dissertation supervisor

MSc Sport and Clinical Biomechanics

Current Module Leadership: 7115SPOSCI – Sports Biomechanics

Teaching: Includes lectures and labs (+ assessments)

L7 - Research Methods (+ second marking)

L7 - Technical Training in Biomechanics

L7 - Biomechanical Assessment (+ marking of 2 courseworks)

L7 - Project dissertation supervisor

Management and Organisation of UG, PG & Other Teaching

2018 – present: *Academic Misconduct Panel Member*

2016 – present: *Programme Leader for BSc Sport and Exercise Science*

2016 – present: *Member of FQAEC – Faculty of Science Quality Committee*

2016 *Sport & Exercise Science revalidation – led all paperwork sign-off*

2012 - 2016: *Level 4 Year Tutor – School of Sport and Exercise Science*

2011 - present: *Module leader on 5 UG and PG modules to date*

External Examining

External Examiner – Undergraduate Programme

2016 – 2020 BSc Health and Performance Science, MSc Coaching Science,
University College Dublin, Ireland

External Examiner – Research Students

MRes	Hayley Vincent	UCLAN	Nov 2015
	Kinetic and 3D kinematic analysis of netball movements: with and without prophylactic knee bracing		
MRes	Robert Burge	U. of Gloucestershire	Feb 2016
	The dose-response effect of dissociation training on measures of neuromuscular control during performance screening in male youth footballers		
PhD	Jonathan De Melker Worms	Manchester Met. U.	July 2016
	Effects of Fear and Attention on Human Balance Control		
PhD	Joe Moore	U. of Lincoln	Sept 2019
	Biomechanical Measures to Assess Recovery from Anterior Cruciate Ligament Injury and Reconstructive Surgery		

Not shown are 5 PhD examinations, 1 Prof-Doc examination, 4 MPhil examinations as internal examiner.

Educational Scholarship, Teaching Awards and Learning and Teaching Qualifications

Qualifications

2014 Fellow of the Higher Education Academy

2005 PG Cert. in Learning and Teaching in Higher Education Distinction

Teaching Awards/Nominations

2019 Teaching and Learning Excellence Award: Academic Leadership

2018 Doctoral Academy: "Outstanding Doctoral Supervisor" Nominee

2016/17 LSU Amazing Teaching Award "Amazing Teacher" Nominee

2016/17 LSU Amazing Teaching Award "Amazing Programme Team"
Shortlisted

2017/18 University Learning and Teaching Excellence Awards Individual
Teaching Award Faculty Nominee

2015/16/17 LSU Amazing Teaching Award "Academic Supervisor" Nominee

RESEARCH STUDENTS SUPERVISED

Current PhD Supervisions

1. P/T PhD Shane Malone (2016-present) Validation and Application of an integrated metabolic cost paradigm in elite Gaelic football using high frequency GPS Technology to assess match play and training load characteristics. *In Progress. 3rd*

2. F/T PhD Adam Sullivan (2018- present) Mapping internal and external physiological and mechanical load adaptation rates in academy football players. *In Progress. 2nd*

3. F/T PhD Seokwon Lee (2018- present) Reducing uncertainty in the measurement of knee joint loading during dynamic sporting activities. *In Progress. 2nd*

4. F/T PhD Irene Kyriakidou (2018- present) *In Progress. 2nd*

Current Prof. Doc. Supervisions

1. P/T Prof. Doc. Michael Lee (2015-present) *In Progress. DoS*

2. P/T Prof. Doc. Oliver Morgan (2017-present) *In Progress. DoS*

Completed Post-Graduate Supervisions

1. F/T PhD Hannah Shepherd (2016-2020) A biomechanical assessment of movement function in response to a gait modification intervention in Alkaptonuria. *In Progress. 2nd*

2. F/T PhD Elena Eusterweiman (2016-2020) Improvement of Finger Function In Systemic Sclerosis: Game-Based Intervention Informed By A 3D Assessment Of Hand Mobility. *In Progress. 2nd*

3. F/T PhD Radin Rafeeuddin (2013-2020) Neuromuscular screening for prediction of non-contact anterior cruciate ligament injury during dynamic tasks. *DoS*

4. P/T PhD Sean Sankey (2012-2019) The role of dynamic stability in the movement execution of highly dynamic tasks. *Completed. DoS*

5. F/T PhD Jasper Verheul (2016-2019) Predicting cumulative soft-tissue loading from accelerometers in football. *Completed. DoS*

6. F/T PhD Parunchaya Jamkrajang (2014-2018) Biomechanical and neuromuscular aspects of postural balance strategy in dynamic sport activities. *Completed. DoS*

7. F/T PhD Raihana Sharir (2013-2018) Identification of biomechanical risk factors for knee injury during dynamic activities: A Prospective Study. *Completed. DoS*
8. F/T Prof. Doc. Emma Foden (2016-2018) Towards the first iteration of an evidence based international classification system for physical disability cricket. *Completed. 2nd*
9. F/T PhD Niels Nedergaard (2013-2016) Player load monitoring in dynamic sports. *Completed. 2nd*
10. F/T PhD Paulo Barreira (2011-2016) Prevention of hamstring re-injury in professional football: Does a functional force profile in a treadmill sprint protocol identify the injured from the non-injured player? *Completed. 2nd*
11. F/T PhD Raja Azidin Firhad (2011-2015) Effect of soccer match-play on markers of anterior cruciate ligament injury risk. *Completed. 2nd*

RESEARCH

RESEARCH GRANTS AND CONTRACTS OBTAINED OVER THE PAST FIVE YEARS

2019 ISBS Post-doc Collaboration Award: Sina David CI	£ 2000
2018 ISBS Post-doc Collaboration Award: John Warmenhoven CI	£ 2000
June 2015-Oct 2017 Statistical Parametric Mapping - 2 day workshops. [LJMU x 2, Leuven x 2, Ghent, Cologne, Paal] PI	£12996
2017 Research Collaboration Grant. Dr Cyril Donnelly CI	AU\$ 20,000
2014 UEFA Research Grant Programme PI	EUR 20,000
November 2014 – November 2017 (Ministry of Education Thailand) Dual PhD studentship with Mahidol University (£16K tuition fees and £3K bench fees) CI	£ 19,000
2014-2017 (Liverpool FC) Biomechanical consultation and testing (on average 4 consultations per annum) PI	£ 6,000
2014 National Alkaptonuria Centre, Advanced gait analysis. CI	£ 30,000
November 2013 – October 2016 (Ministry of Education Malaysia) 2 PhD studentships ACL injury risk factors in dynamic activities (£66K tuition fees and £15K bench fees) 1 PI and 1 CI	£ 81,000
November 2011 – July 2015 (Ministry of Education Malaysia) PhD studentship knee joint loading mechanisms in dynamic activities (Col) (£33K tuition fees and £7.5K bench fees) CI	£ 40,500
March 2011 – July 2016 (Qualisys AB) Annually renewable contract for running workshops, consultation on product development and dissemination PI	£ 20,000
TOTAL	~ £ 247,000

PUBLICATIONS

Journal Articles

Research Theme #1: Research Methods in Biomechanics

1. Pataky, T.C., Vanrenterghem, J. & **Robinson, M.A.** (2019). Bayesian inverse kinematics vs. least-squares inverse kinematics in estimates of planar postures and rotations in the absence of soft tissue artifact. *Journal of Biomechanics*, 82, 324-329.
2. Pataky, T.C., **Robinson, M.A.**, Vanrenterghem, J. & Challis, J.H. (2019). Smoothing can systematically bias small samples of one-dimensional biomechanical continua. *Journal of Biomechanics*, 82, 330-336.

3. Hobbs, S.J., **Robinson, M.A.**, Clayton, H.M. (2018). A simple method of equine limb force vector analysis and its potential applications. *Peer J*, 6:e4399.
4. Pataky, T., **Robinson, M.A.**, Vanrenterghem, J. (2018). A computational framework for estimating statistical power and planning hypothesis-driven experiments involving one-dimensional biomechanical continua. *Journal of Biomechanics*, 66, 15-164.
5. Warmenhoven, J., Harrison, A., **Robinson, M.A.**, Vanrenterghem, Bargary, N., Smith, R., et al. (2018). A force profile analysis comparison between functional data analysis, statistical parametric mapping and statistical non-parametric mapping in on-water single sculling. *Journal of Science and Medicine in Sport*, 21, 1100-1105.
6. Pataky, T.C., **Robinson, M.A.**, Vanrenterghem, J. (2016) Region-of-interest analysis of one-dimensional biomechanical trajectories: bridging 0D and 1D theory, augmenting statistical power. *Peer J*, 4:e2652.
7. Pataky, T., Vanrenterghem, J. **Robinson, M.A.** (2016). The probability of false positives in zero-dimensional analyses of one-dimensional kinematic, force and EMG trajectories. *Journal of Biomechanics*, 49, 1468-1476.
8. Pataky, T., Vanrenterghem, J. **Robinson, M.A.** (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, 1277-1285.
9. **Robinson, M.A.**, Vanrenterghem, J. Pataky, TC. (2015). Statistical Parametric Mapping (SPM) for alpha-based statistical analyses of multi-muscle EMG time-series. *Journal of Electromyography & Kinesiology*, 25, 14-19.
10. Pataky, T., Vanrenterghem, J. **Robinson, M.A.** (2015) Two-way ANOVA for scalar trajectories, with experimental evidence of nonphasic interactions. *Journal of Biomechanics*, 48, 186-189.
11. Pataky, T., **Robinson M.A.**, Vanrenterghem, J., Savage, R., Bates, K., Crompton, R. (2014). Vector field statistics for objective center-of-pressure trajectory analysis, with evidence of scalar sensitivity to small coordinate system rotations. *Gait and Posture*, 40, 255-258.
12. Pataky, T., **Robinson, M.A.**, Vanrenterghem, J. (2013). Vector field statistical analysis of kinematic and force trajectories. *Journal of Biomechanics*, 46, 2394-2401.

Research Theme #2: Gait and Injury Biomechanics

1. Smeets, A., Malfait, B., Dingenen, B., **Robinson, M.A.**, Vanrenterghem, J., Peers, K., Nijs S., Vereecken, S., Staes, F., Verschueren, S. (2019). Is knee neuromuscular activity related to anterior cruciate ligament injury risk? A pilot study. *The Knee, In Press*.
2. Mansouri, M. Vivaldi, N, Donnelly, C.J., **Robinson, M.A.**, Vanrenterghem, J., Reinbolt, J. (2018). Synthesis of Subject-Specific Human Balance Responses using a Task-Level Neuromuscular Control Platform. *IEEE Transactions on Neural Systems & Rehabilitation Engineering*. 26(4), 865-873.
3. Donnelly, C.J., Alexander, C., Pataky, T.C., Stannage K., Reid, S and **Robinson M.A.** (2017). Vector-field statistics for the analysis of time varying clinical gait data. *Clinical Biomechanics*. 41, 87-91.
4. Rafeuddin, R., Sharir, R., Staes, F., Dingenen, B., George, K., **Robinson, M.A.**, Vanrenterghem, J. (2016). Mapping current research trends on neuromuscular risk factors of non-contact ACL injury. *Physical Therapy in Sports*, 22, 101-113.
5. Sharir, R., Rafeuddin, R., Staes, F., Dingenen, B., George, K., Vanrenterghem, J., **Robinson, M.A.** (2016). Mapping Current Research Trends on Anterior Cruciate Ligament Injury Risk Against The Existing Evidence: Biomechanical Risk Factors. *Clinical Biomechanics*, 37, 34-43.

6. Liew, B., Morris, S., **Robinson, M.A.**, Netto, K. (2016). Performance of a lateral pelvic cluster technical system in evaluating running kinematics. *Journal of Biomechanics*, 49, 1989-1993.
7. Malfait, B., Dingenen, B., Staes, F., Pataky, T., **Robinson, M.A.**, Vanrenterghem, J., Verschueren, S. (2016). Knee and hip joint kinematics predict quadriceps and hamstrings neuromuscular activation patterns in drop jump landings. *PloS One*. April 2016.
8. Malfait, B., Staes, F., de Vries, A., Smeets, A., Hawken, M., **Robinson, M.A.**, Vanrenterghem, J., Verschueren, S. (2015) Dynamic neuromuscular control of the lower limbs in response to unexpected single-planar versus multi-planar support perturbations in young, active adults. *PLoS One*. July 2015.
9. Bossuyt, S., García-Pinillos, F., Vanrenterghem, J. & **Robinson, M.A.** (2015). The utility of a high-intensity exercise protocol to prospectively assess ACL injury risk. *International Journal of Sports Medicine*. 37(02): 125-133.
10. De Ridder, R., Willems, T., Vanrenterghem, J., **Robinson, M.A.**, Palmans, T., & Roosen P. (2015). Multi-segmented foot landing kinematics in subjects with chronic ankle instability. *Clinical Biomechanics*, 30, 585-592.
11. Sankey, S., Azidin, R., **Robinson, M.A.**, Malfait, B., Deschamps, K., Verschueren, S., Staes, F., Vanrenterghem, J. (2015). How reliable are knee kinematics and kinetics during side-cutting manoeuvres? *Gait and Posture*, 41, 905-911.
12. Vanezis, A., **Robinson, M.A.**, Darras, N. (2015). The reliability of the ELEPAP clinical protocol for the 3D kinematic evaluation of upper limb function. *Gait and Posture*, 41, 431-439.
13. Barton GJ, King SL, **Robinson M.A.**, Hawken MB, Ranganath LR (2015) Age related deviation of gait from normality in alkaptonuria. *Journal of Inherited Metabolic Disease Reports*, 24, 39-44.
14. Dingenen, B., Malfait, B., Vanrenterghem, J., **Robinson, M.A.**, Verschueren, S. Staes, F. (2015) Can two-dimensional measured peak sagittal plane excursions during drop vertical jumps help identify three-dimensional joint loading? *The Knee*, 22, 73-79.
15. Azidin R., Sankey S., Drust B., **Robinson M.**, Vanrenterghem J. (2015). Effects of treadmill versus overground soccer match simulations on biomechanical markers of ACL injury risk in side cutting. *Journal of Sports Sciences*, 33, 1332-1341.
16. Barreira, P, Drust, B., **Robinson M.A.**, Vanrenterghem, J. (2015). Asymmetry after hamstring injury in English Premier League: Issue resolved, or perhaps not? *International Journal of Sports Medicine*. 36(07): 604.
17. De Ridder, R., Willems, T., Vanrenterghem, J., **Robinson, M.A.**, Roosen, P. (2015). Lower limb landing biomechanics in subjects with chronic ankle instability. *Medicine and Science in Sports and Exercise*, 47, 1225-1231.
18. Barton, G.J., De Asha, A., van Loon, E., Geijtenbeek, T., **Robinson, M.A.** (2014). Manipulation of visual feedback during gait with a time delayed adaptive Virtual Mirror Box. *Journal of Neuroengineering & Rehabilitation*. 11:101.
19. **Robinson, M.A.**, Donnelly, C.J., Tsao, J., Vanrenterghem, J. (2014). Impact of knee modelling approach on indicators and classification of ACL injury risk. *Medicine & Science in Sports & Exercise*, 46 (7), 1269-1276.
20. Malfait, B., Verschueren, S., **Robinson, M.A.**, Azidin R., Sankey, S., Vanrenterghem, J. (2014). How Reliable Are Lower Limb Kinematics and Kinetics during a Drop Vertical Jump? *Medicine and Science in Sports and Exercise*, 46, 678-685.

21. De Ridder, R., Willems, T., Vanrenterghem, J., **Robinson, M.A.**, Pataky, T., Roosen, P. (2013). Gait kinematics of subjects with chronic ankle instability using a multi-segmented foot model. *Medicine and Science in Sports and Exercise*, 45, 2129-2136.
22. Vanrenterghem, J., Venables, E., Pataky, T., **Robinson, M.** (2012). The effect of running speed on knee mechanical loading in females during side cutting. *Journal of Biomechanics*, 45, 2444-2449.
23. **Robinson, M.A.**, Vanrenterghem, J. (2012) An evaluation of anatomical and functional knee axis definition in the context of side-cutting. *Journal of Biomechanics*, 45, 1941-1946.
24. De Asha, A., **Robinson, M.A.**, Barton, G.J. (2012). A marker based kinematic method of identifying initial contact during gait. *Gait and Posture*, 36, 650-652.
25. Vanrenterghem, J., Gormley, D., **Robinson, M.A.** and Lees, A. (2010). Solutions for representing the whole-body centre of mass in side cutting manoeuvres based on data that is typically available for lower limb kinematics. *Gait and Posture*, 31, 517-521.

Research Theme #3: Sensors for Player Load Monitoring

1. Verheul, J., Lisboa, P., Gregson, W., Vanrenterghem, J., **Robinson, M.A.** (2019). Monitoring whole-body mechanical load: can ground reaction forces be estimated from segmental accelerations? *Journal of Science and Medicine in Sport*. In Press.
2. Verheul, J., Warmenhoven, J., Lisboa, P., Gregson, W., Vanrenterghem, J., **Robinson, M.A.** (2019). Identifying generalised segmental acceleration patterns that contribute to ground reaction force features across different running tasks. *Journal of Science and Medicine in Sport*.
3. Verheul, J., Posgon, M., Lisboa, P., Gregson, W., Vanrenterghem, J., **Robinson, M.A.** (2019). Optimising a two mass-spring-damper model to reproduce ground reaction forces for high-intensity running tasks. *Sports Biomechanics*
4. Nedergaard, N.J., Verheul, J., Drust, B., Etchells, T., Lisboa, P., **Robinson, M.A.**, Vanrenterghem, J. (2019). The generalizability of a mass-spring-damper model to estimate ground reaction forces during team sports movements. *Peer J*, 6:e6105.
5. Vanrenterghem, J., Nedergaard, N., **Robinson, M.A.**, Drust, B. (2017). Training Load Monitoring in Team Sports: A Novel Framework Separating Physiological and Biomechanical Load-Adaptation Pathways. *Sports Medicine*. 47(11), 2135-2142.
6. Nedergaard, N.J., **Robinson, M.A.**, Eusterwiemann, E., Drust, B., Lisboa, P., and Vanrenterghem, J. (2017). The Relationship Between Whole-Body External Loading and Body-Worn Accelerometry During Team-Sport Movements. *International Journal of Sports Physiology and Performance*, 12, 18 -26.
7. Barreira, P., **Robinson, M.A.**, Drust, B., Nedergaard, N., Azidin, R.M.F., Vanrenterghem, J. (2016). Mechanical Player Load™ using trunk-mounted accelerometry in football: Is it a reliable, task- and player-specific observation? *Journal of Sports Sciences*. 35 (17), 1674-1681.

Not listed: 6 additional journal articles including 4 first-authored articles relating to my PhD area of tetraplegic reaching, 2 book chapters, 17 Published Abstracts, 52 Conference Abstracts.

EVIDENCE OF ESTEEM, EXTERNAL VISIBILITY AND PROFESSIONAL ACTIVITIES

Associate Editor Role

Journal of Sports Sciences 2020-present

Editorial Board Membership

Journal of Sports Sciences 2017-present

Sports Biomechanics 2019-present

Invited Presentations and Symposia Organised

2019 Invited two-day workshop at XXVII Congress of the ISB, Calgary, *Canada*

2018 Invited workshop at VIII World Congress Biomechanics, Dublin, *Ireland*

2017 Invited seminar at XXVI Congress of the ISB 2017, Brisbane, *Australia*

2017 Invited Lecture on Statistical Parametric Mapping – UCLAN, *UK*.

2017 Invited one-day workshop on Statistical Parametric Mapping at 35th Int. Society of Biomechanics in Sports Conference. Cologne, *Germany*

2016 Invited two-day workshop on 'Human Movement Research Methods'. Doctoral School, Catholic University Leuven, *Belgium*.

2016 Invited two-day workshop on Statistical Parametric Mapping as part of doctoral school activity at Leuven Catholic University in *Belgium*.

2016 Invited presentation, 9th International Conference on the Developments on eSystems Engineering, *Liverpool/Leeds, UK*.

2016 Invited Presentation, Knee Injury Prevention in Football: Multi-disciplinary approach, Centre d'alt Rendiment Esportiu, *Barcelona, Spain*.

2016 Organiser BASES Biomechanics Interest Group Meeting

2015 Invited Presentation, Universiti Teknologi MARA, *Malaysia*

2015 Invited Presentation, Institut Sukan Negara, *Malaysia*

2015 Invited Presentation, 30th Anniversary of Sports Science Conference, Mahidol University, *Thailand*

2015 Invited symposium 'Knee Biomechanics' at XXV Congress of the International Society of Biomechanics, Glasgow, *UK*.

2015 Invited two-day workshop on Statistical Parametric Mapping as part of doctoral school activity at Leuven Catholic University, *Belgium*.

2014 Invited two-day workshop on Statistical Parametric Mapping as part of doctoral school activity at Ghent University, *Belgium*

2013 Invited symposium 'Assessment of knee loading' at XXIV Congress of the International Society of Biomechanics, Natal, *Brazil*.

Peer Review Summary

Publons Profile: <https://publons.com/a/1182276>

Performed 57 reviews for journals including *Journal of Biomechanics* and *The American Journal of Sports Medicine*; placing me in the 97th percentile for verified review contributions on Publons.com in September 2020.

6 reviews Journal of Biomechanics, Sports Biomechanics

5 reviews The American Journal of Sports Medicine

4 reviews Journal of Sports Sciences, Journal of Electromyography and Kinesiology, Journal of Applied Biomechanics

- 3 reviews Journal of Science and Medicine in Sport, European Journal of Sports Science, Sports Medicine
- 2 reviews International Journal of Sports Medicine, Human Movement Science, Gait & Posture, Medicine & Science in Sports & Exercise
- 1 review PeerJ, Scandinavian Journal of Medicine & Science in Sports, The Knee, International Journal of Sport Nutrition and Exercise Metabolism, Physical Therapy in Sport, Proc. of the IMechEng., Part P: Journal of Sports Eng. and Technology