

Dr. Ashokan Arumugam, PhD, MPT (Orthopaedics & Manual Therapy)

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1. EDUCATION, EXPERTISE AND SCHOLARLY ACHIEVEMENTS

(a) Field of Specialization

- Orthopaedic Physiotherapy
- Clinical Biomechanics/Kinesiology
- Manual Therapy

(b) Academic Qualifications

- 2014 **Doctor of Philosophy**, School of Physiotherapy, University of Otago, New Zealand.
PhD thesis: Effects of external pelvic compression on electromyographic activity of lumbopelvic and thigh muscles during two weight-bearing functional tasks and thigh muscle torque during isokinetic testing of the knee in sportsmen with and without hamstring injuries.
- 2008 **Master of Physiotherapy (Orthopaedics & Manual Therapy)**, Manipal College of Allied Health Sciences, Manipal University, Karnataka, India.
- 2004 **Bachelor of Physiotherapy**, PSG College of Physiotherapy, The TN Dr MGR Medical University, Tamil Nadu, India.

(c) Academic Honours and Awards

- 2018 **Wallenberg Foundation Travel Award** (SEK 12400) for attending the ISEK Congress 2018 and the ECSS congress 2018, Dublin, Ireland
- 2017 **Outstanding Reviewer**, Musculoskeletal Science & Practice, Elsevier, The Netherlands
- 2017 **Outstanding Reviewer**, Physical Therapy in Sport, Elsevier, The Netherlands
- 2016-2018 **Postdoctoral Fellowship**, Umeå University, Sweden
- 2013 **Scroll of Honour** received at Stride'13 conference, Saveetha University, India
- 2013 **University of Otago PhD Travel Grant** (NZ\$ 2000) for attending Stride'13 Conference, Saveetha University, India
- 2013 **Postgraduate publishing bursary** (monthly stipend of NZ\$2083 for 3 months)
- 2010 - 2013 **University of Otago Postgraduate/Doctoral Scholarship** (full tuition fee waiver and annual stipend of NZ\$ 25000 for 36 months)
- 2012 **Most Overs Award** from Department of Anatomy, Otago School of Medical Sciences, University of Otago, New Zealand

- 2011 **Outstanding New Demonstrator Award** from Department of Anatomy, Otago School of Medical Sciences, University of Otago, New Zealand
- 2010 **II prize in 3 Minutes Thesis Competition** held at School of Physiotherapy, University of Otago, New Zealand
- 2008 **Gold medallist in Master of Physiotherapy Part I Examinations**, Overall Topper in Musculoskeletal & Manual Therapy (Part I + Part II Examinations)
- 2007 **I prize in the Karnataka State Inter-Physiotherapy College Quiz Competition** organized by NITTE Institute of Physiotherapy, Mangalore, Karnataka, India
- 2004 **I prize in the Intercollegiate Quiz Competition on Physical Medicine and Rehabilitation** organized by K.M.C.H. College of Occupational therapy, Coimbatore, Tamil Nadu, India
- 1999-2004 **Awards received in Bachelor of Physiotherapy Examinations:**
 I Rank in Anatomy
 II Rank in Therapeutic Massage
 I Rank in Physical Therapy in Orthopaedics
 I Rank in Clinical Neurology for Physiotherapists and
 II Rank in Rehabilitation Medicine including Geriatric Rehabilitation

(d) Membership of Professional Bodies

- International Society of Electromyography and Kinesiology (2017 to date)
- Biomechanics Group at the Physiotherapy Section of Department of Community Medicine and Rehabilitation, Umeå University (2016 to date)
- Sweden’s University Teachers and Researchers Union (Sveriges Universitetslärare och Forskare, SULF) – Membership no. 10 049 072 (2017-2018)
- The Indian Association of Physiotherapists – Membership no. L 22252 (2005 to date)
- Registered with the Physiotherapy Board of NZ - Special purpose scope of practice for postgraduate study - 70-11830 (2010 to [July] 2014)
- Clinical Biomechanics Group at the School of Physiotherapy, University of Otago (2012 to [March] 2014)

(e) Language Proficiency

Language	Read	Write	Speak	Understand	Proficiency Level
English	Yes	Yes	Yes	Yes	Full Professional Proficiency
Tamil	Yes	Yes	Yes	Yes	Native Speaker
Hindi	Yes	Yes	Yes	Yes	Minimum Professional Proficiency
Kannada	No	No	Yes	Yes	Limited Working Proficiency
Malayalam	No	No	Yes	Yes	Limited Working Proficiency

2. CAREER DETAILS

(a) Academic Position Held

- 2019 **Assistant Professor**, Department of Physiotherapy, College of Health Sciences, University of Sharjah, Sharjah, United Arab Emirates.

Current Research Projects

1. Lower limb kinematics and kinetics of a novel one-leg double-hop test involving unanticipated/anticipated diagonal hops in individuals with unilateral anterior cruciate ligament reconstruction, healthy controls and athletes.
2. Brain activity patterns of individuals with unilateral anterior cruciate ligament reconstruction when performing a knee joint position sense test compared to healthy controls: a functional magnetic resonance imaging study.

Previous positions

- 2019 (Mar-Jul) **Assistant Professor**, Department of Physiotherapy, College of Health Sciences, **Gulf Medical University, Ajman, United Arab Emirates**
- 2016-2018 **Postdoctoral Research Fellow in Physiotherapy**, Department of Community Medicine and Rehabilitation, **Umeå University, Sweden**
- 2015-2016 **Assistant Professor of Physical Therapy**, Department of Physical Therapy, College of Applied Medical Sciences, **Majmaah University, Saudi Arabia**
- 2014-2015 Freelance Physical Therapy Practitioner & Healthcare Research Professional
- 2014 Visiting Faculty, RVS College of Physiotherapy, Coimbatore, India

Part-time (teaching/research) positions held while doing PhD at the University of Otago

- 2014/2 – 2014/3 Research Assistant, School of Physiotherapy, University of Otago
- 2011/2 - 2014/3 Senior Demonstrator, Department of Anatomy, University of Otago
(Physiotherapy, Medicine, Pharmacy and Physical Education courses)
- 2012/3 - 2012/6 Anatomy Tutor, Maori Centre, University of Otago
- 2011/6 - 2011/8 Research Assistant, School of Physiotherapy, University of Otago
- 2011/7 - 2011/11 Senior Demonstrator/tutor, School of Physical Education, University of Otago (Motor control and biomechanics for Physical Education Course)

Guest lectures

- 2017, 2015 Lectures on clinical reasoning in manual therapy, basics of neuromusculoskeletal examination, and hands-on manual therapy training and clinical case discussions for postgraduate students (Physiotherapy) at JSS college of Physiotherapy, Mysuru, Karnataka, India.
- 2016, 2011 Lectures and hands-on manual therapy techniques for assessing and treating neuromusculoskeletal disorders for postgraduate students (Physiotherapy) at the Manipal University, Karnataka, India and PSG College of Physiotherapy, Tamil Nadu, India
- 2012-2013 Online lectures on neuromusculoskeletal assessment, clinical reasoning and clinical cases to postgraduate students studying Physiotherapy at the Manipal University, Karnataka, India and PSG College of Physiotherapy, Tamil Nadu, India
- 2011 Lectures on manual therapy techniques for assessing and treating neuromusculoskeletal disorders to postgraduate students studying Physiotherapy at PSG College of Physiotherapy, Tamil Nadu, India

Research promotion at other institutions

- 2017 Invited as a guest researcher to promote research activities at the Centre for Sports Science, Medicine and Research, School of Allied Health Sciences, Manipal Academy of Higher Education, Karnataka, India (June 2018).
- 2014 Conducted an academic research development program to support and promote research culture among the academic staff and students at RVS College of Physiotherapy, Tamil Nadu, India (Aug-Nov 2014)

Full-time (clinical/teaching) positions held between 2004 and 2010

Length of service	Name & address of institution	Nature of work
July 2009 to June 2010	Kokilaben Dhirubhai Ambani Hospital & Medical Research Institute, Mumbai, India	(Orthopaedic and Manipulative) Physical Therapist & clinical instructor for Physiotherapy students/interns/trainees
August 2008 to June 2009	Tirupur Physiotherapy Clinic and Pain Relief Centre, Tirupur, Tamil Nadu, India	Orthopaedic and Manipulative Physical Therapist (Freelance Practitioner)
August 2005 to June 2008	Manipal College of Allied Health Sciences, Manipal University, India	Postgraduate Trainee involved in treating patients and teaching undergraduate Physiotherapy students
August 2004 to June 2005	Sri Kumaran Hospital, Tirupur, Tamil Nadu, India	Clinical Physical Therapist and fitness trainer

3. RESEARCH

(a) Research Interests

Anterior cruciate ligament injury, hamstring injury, biomechanics of the lower limb, surface electromyography, motion analysis, physical activity assessment and promotion, musculoskeletal/sports injury assessment and rehabilitation, systematic reviews and meta-analysis.

(b) Publications

Type of Publication	Number of Publications
Articles in International Refereed Journals	21
Conference Abstracts	11
Doctoral Thesis (online & print)	1

Citations Data - Google scholar

	Since 2010
Citations	156
h-index	6
i10-index	4

(c) Research Grants

- 2018 **Swedish Research Council for Sport Science Grant (Centrum för Idrottsforskning Grant)** for a research project on knee motor control after injury of the anterior cruciate ligament: clinical and laboratory-based assessment of functional performance, proprioception and associated brain activity
Principal Applicant: Häger, C
My role: Collaborator/co-worker
Funding Sources: The Swedish Research Council for Sport Science
Total Funding: 400000 SEK (Swedish Kronor)
Funding Competitive? Yes
- 2018 **Wallenberg Travel Grant** for attending the XXII Congress of the International Society of Electrophysiology and Kinesiology and the 23rd Annual Congress of the European College of Sports Science (July 2018) held in Dublin, Ireland
Principal Applicant: **Arumugam, A**
Funding Sources: Wallenberg Foundation, Sweden
Total Funding: 12400 SEK (Swedish Kronor)
Funding Competitive? Yes
- 2017-2021 **Swedish Scientific Research Council Grant** (K2014-99X-21876-04-4) for a research project on knee motor control after injury of the anterior cruciate ligament: clinical and laboratory-based assessment of functional performance, proprioception and associated brain activity
Principal Applicant: Häger, C
My role: Contributed as a team member in writing the application
Funding Sources: Swedish Scientific Research Council
Total Funding: 7 million SEK (Swedish Kronor)
Funding Competitive? Yes
- 2016-2017 **ALF grant** for a functional magnetic resonance imaging study of brain activity patterns of individuals with and without unilateral anterior cruciate ligament reconstruction when performing a knee joint position sense test
Principal Applicant: Häger, C
My role: Contributed as a team member in writing the application
Funding Sources: ALF funds (Västerbottens läns landsting ALF medel), Sweden
Total Funding: 120000 SEK (Swedish Kronor)
- 2010-2013 **Mark Steptoe Memorial Trust Grant** to cover the research cost related to my PhD
Principal Applicant: **Arumugam, A**
Co-applicants: Milosavljevic, S; Woodley, S; Sole G
Funding Sources: University of Otago Mark Steptoe Memorial Trust Award from School of Physiotherapy
Total Funding: 2000 NZD (New Zealand Dollar)
Funding Competitive? Yes
- 2012-2013 **Internal Grant** to cover the research costs related to my PhD
Principal Applicant: **Arumugam, A**
Co-applicants: Milosavljevic, S; Woodley, S; Sole G

Funding Sources: School of Physiotherapy, University of Otago, New Zealand
Total Funding: 910 NZD (New Zealand Dollar)

(d) List of Publications

1. **Arumugam A**, Strong A, Tengman E, Røijezon U, Häger C. (2019). Psychometric properties of knee proprioception tests targeting healthy individuals and those with anterior cruciate ligament injury managed with or without reconstruction: a systematic review protocol. *BMJ Open*, 2019;9:e027241. <http://dx.doi.org/10.1136/bmjopen-2018-027241> (**Impact factor – 2.413**)
2. **Arumugam A**, Markström JL, & Häger CK. (2019). Introducing a novel test with unanticipated medial/lateral diagonal hops that reliably captures hip and knee kinematics in healthy women. *Journal of biomechanics*, 82:70-79. <https://doi.org/10.1016/j.jbiomech.2018.10.015> (**Impact factor – 2.431**)
3. **Arumugam A**, Chandrasekaran B, Kumaran SD. (2019). Letter to the editor concerning the assessment of range and quality of neck movement using a smartphone-based application. *Musculoskeletal Science and Practice*; 43:e1. <https://doi.org/10.1016/j.msksp.2019.04.014>
4. **Arumugam A** (2018). Musculoskeletal imaging: Sacral osteosarcoma masquerading as posterior thigh pain. *Journal of Orthopaedic & Sports Physical Therapy*, 48:665-665. <https://doi.org/10.2519/jospt.2018.8032> (**Impact factor – 3.090**, ranked #8/65 in Rehabilitation, #12/77 in Orthopaedics).
5. **Arumugam A** (2018). Clinical versus radiological findings: A paradox in diagnosing minor hamstring injuries. *International Journal of Osteopathic Medicine*, 27:52-56. <https://doi.org/10.1016/j.ijosm.2017.11.004> (**Impact factor - 0.704**)
6. **Arumugam A**, Raja K, Venugopalan M, Chandrasekaran B, Sampath KK, Muthusamy H, Shanmugam N. (2016). Down syndrome – A narrative review with a focus on anatomical features. *Clinical Anatomy*, 29(5): 568-577. <http://dx.doi.org/10.1002/ca.22672> (**Impact factor - 1.908**, ranked #7/21 in Anatomy & Morphology)
7. **Arumugam A**, Aldhafiri F (2016). A researcher's ethical dilemma: Is self-plagiarism a condemnable practice or not? – An editorial. *Physiotherapy Theory and Practice*, 29:1-3. <https://doi.org/10.1080/09593985.2016.1185894> (**Impact factor - 1.129**)
8. **Arumugam A** (2016). Letter to the Editor regarding a study titled “A modified straight leg raise test to differentiate between sural nerve pathology and Achilles tendinopathy. A cross-sectional cadaver study” by Coppieters et al. (2015). *Manual Therapy*, 22: e3. <http://dx.doi.org/10.1016/j.math.2015.11.002> (**Impact factor - 2.330**, ranked #14/65 in Rehabilitation)
9. **Arumugam A**, Milosavljevic S, Woodley S, Sole G (2015). Effects of external pelvic compression on isokinetic strength of the thigh muscles in sportsmen with and without

hamstring injuries. *Journal of Science and Medicine in Sport*, 18(3): 283-288.
<http://dx.doi.org/10.1016/j.jsams.2014.05.009> (*Impact factor - 3.929*, ranked #8/81 in Sport Sciences)

10. **Arumugam A**, Milosavljevic S, Woodley S, Sole G. (2015). Effects of external pelvic compression on electromyographic activity of the hamstring muscles during unipedal stance in sportsmen with and without hamstring injuries. *Manual Therapy*, 20(3): 412-419. <http://dx.doi.org/10.1016/j.math.2014.10.011> (*Impact factor - 2.330*, ranked #14/65 in Rehabilitation)
11. **Arumugam A**, Milosavljevic S, Woodley S, Sole G. (2015). The effect of a pelvic compression belt on functional hamstring muscle activity in sportsmen with and without previous hamstring injury. *International Journal of Sports Physical Therapy*, 10(3): 291-302.
12. Rahman M, Chandrasekaran B, Venugopalan M, **Arumugam A** (2015). The effect of a circuit training program on functional performance in children with spastic cerebral palsy– A quasi-experimental pilot study. *International Journal of Health and Rehabilitation Sciences*, 4(4):227-38. <http://dx.doi.org/10.5455/ijhrs.0000000093>
13. **Arumugam A**. (2014). Editorial: Avoiding mistakes in writing a scientific manuscript – A novice’s perspective. *Journal of Yoga and Physical Therapy*, 4: e118.
<http://dx.doi.org/10.4172/2157-7595.1000e118>
14. **Arumugam A** (2014). Commentary on - Silder A, Sherry M, Sanfilippo J, Tuite M, Hetzel S, Heiderscheid B (2013). Clinical and morphological changes following 2 rehabilitation programs for acute hamstring strain injuries: A randomized clinical trial. *Journal of Orthopaedic and Sports Physical Therapy* 43: 284-299. *New Zealand Journal of Physiotherapy*, 42(1):47.
15. Ahmed O H, Claydon L S, Ribeiro D C, **Arumugam A**, Higgs C, David Baxter G (2013). Social media for physiotherapy clinics: considerations in creating a Facebook page. *Physical Therapy Reviews*, 18(1):43-48. <https://doi.org/10.1179/1743288X12Y.0000000039>
16. **Arumugam A**, Devan H (2013). Book review - Whittle’s gait analysis (5th ed). *Physical Therapy Reviews*, 18(6):463-466.
17. **Arumugam A**, Milosavljevic S, Woodley S, Sole G (2012). Evaluation of changes in pelvic belt tension during two weight-bearing functional tasks. *Journal of Manipulative and Physiological Therapeutics*, 35(5):390-395. <https://doi.org/10.1016/j.jmpt.2012.04.019> (*Impact factor - 1.426*, ranked #17/27 in Integrative & Complementary Medicine)
18. **Arumugam A**, Milosavljevic S, Woodley S, Sole G (2012). Effects of external pelvic compression on form closure, force closure, and neuromotor control of the lumbopelvic spine - a systematic review. *Manual Therapy*, 17(4):275-284.
<https://doi.org/10.1016/j.math.2012.01.010> (*Impact factor - 2.330*)

19. **Arumugam A**, Milosavljevic S, Woodley S, Sole G (2012). Can application of a pelvic belt change injured hamstring muscle activity? *Medical Hypotheses*, 78(2):277-82. <https://doi.org/10.1016/j.mehy.2011.10.045> (*Impact factor - 1.120*)
20. **Arumugam A**, Mani R, Raja k (2011). Interrater reliability of the cranio-cervical flexion test in asymptomatic individuals – a cross-sectional study. *Journal of Manipulative and Physiological Therapeutics*, 34(4):247-253. <https://doi.org/10.1016/j.jmpt.2011.04.011> (*Impact factor - 1.426*, ranked #17/27 in Integrative & Complementary Medicine)
21. **Arumugam A**, Mani R, Raja k, Cherian p (2010). Reliability and concurrent validity of the modified sphygmomanometer in cranio-cervical flexion test on asymptomatic individuals. *Indian Journal of Physiotherapy and Occupational Therapy*, 4(4):1-7.

(e) Manuscripts under review/preparation

1. **Arumugam A**, Markström JL, Häger CK. Within-session reliability of hip and knee biomechanics of a novel unanticipated/anticipated diagonal hop test in individuals with anterior cruciate ligament reconstruction. *Journal of Biomechanics* (under review).
2. **Arumugam A**, Jonsson P, Antti H, Häger C. Multivariate analysis of biomechanics of a novel one-leg double-hop test in individuals with anterior cruciate ligament reconstruction, athletes and controls. (Data analysis completed and manuscript in progress)
3. **Arumugam A**, Mikko S, Björklund M, Häger C. The effects of neuromuscular rehabilitation training on knee proprioception in persons with anterior cruciate ligament injury or reconstruction - a systematic review and meta-analysis. **PROSPERO 2018 registration:** http://www.crd.york.ac.uk/PROSPERO/display_record.php?ID=CRD42018107349
4. **Arumugam A**, Strong A, Tengman E, Røijezon U, Häger C. Psychometric properties of knee joint proprioception tests in healthy individuals and those with anterior cruciate ligament injury with or without reconstruction - A systematic review. **PROSPERO 2018 registration:** http://www.crd.york.ac.uk/PROSPERO/display_record.php?ID=CRD42018108014
5. **Arumugam A**, Häger C. Electromyographic analysis of thigh muscles during a novel double-hop test in individuals with anterior cruciate ligament reconstruction, athletes, and controls. (Data analysis ongoing and manuscript in progress)

(f) Other publications

Arumugam A (2014). Effects of external pelvic compression on electromyographic activity of lumbopelvic and thigh muscles during two weight-bearing functional tasks and thigh muscle torque during isokinetic testing of the knee in sportsmen with and without hamstring injuries [Thesis, Doctor of Philosophy]. Dunedin, New Zealand: University of Otago, <http://hdl.handle.net/10523/4780>

(g) Online - Blog:

Arumugam A, Vishal K (2018). Does the Nordic hamstring exercise prevent hamstring injury? (PEDro synthesis). *British Journal of Sports Medicine Blog*.

<http://blogs.bmj.com/bjbm/2018/05/01/does-the-nordic-hamstring-exercise-prevent-hamstring-injury/>

Chadrusekaran B, Arumugam A (2018). Can smartphones measure and influence physical activity? (PEDro synthesis). *British Journal of Sports Medicine Blog*.

<https://blogs.bmj.com/bjbm/2018/06/26/can-smartphone-based-motion-sensors-and-applications-measure-and-influence-physical-activity-pedro-synthesis/>

(h) Conference, Congress, Symposium or Colloquium – Oral/Poster Presentations

- **Arumugam A, Jonsson P, Antti H, Häger C.** Multivariate analysis of biomechanics of a novel one-leg double-hop test in individuals with anterior cruciate ligament reconstruction, athletes and controls. *An oral presentation at the World Confederation for Physical Therapy Congress held between 10th and 13th May 2019 in Geneva, Switzerland.*
- **Arumugam A, Svanberg F, Rutgersson J, Häger C.** Electromyographic analysis of thigh muscles during a novel double-hop test in individuals with anterior cruciate ligament reconstruction, athletes, and controls. *An oral presentation at World Confederation for Physical Therapy Congress held between 10th and 13th May 2019 in Geneva, Switzerland.*
- **Arumugam A, Chandrasekaran B, Rao C.** Effects of a technology-assisted physical activity program compared to a traditional physical activity program on physical activity levels, cardiometabolic disease risk, and cognitive performance among desk-based employees - A three-arm randomized controlled trial. *An oral presentation (Seminar SEM-09) at World Confederation for Physical Therapy Congress held between 10th and 13th May 2019 in Geneva, Switzerland.* (<https://www.wcpt.org/wcpt2019/programme/speakers/speaker-295>)
- **Arumugam A, Markström JL, Häger C.** Lower limb kinematics and kinetics of a novel one-leg double-hop test involving unanticipated/anticipated diagonal hops in individuals with unilateral anterior cruciate ligament reconstruction. *An oral presentation at the XXII Congress of the International Society of Electrophysiology and Kinesiology held between 30th June and 2nd July 2018 in Dublin, Ireland.*
- **Arumugam A, Jonsson P, Antti H, Häger C.** Multivariate analysis reveals effects of hop direction and leg on the biomechanics of a novel one-leg double-hop test for individuals with unilateral anterior cruciate ligament reconstruction. *A poster presentation at the XXII Congress of the International Society of Electrophysiology and Kinesiology held between 30th June and 2nd July 2018 in Dublin, Ireland.*
- **Arumugam A, Markström JL, Häger C.** A comparison of the effects of anticipation between legs on the biomechanics of a novel one-leg double-hop test involving medial diagonal hops in persons with anterior cruciate ligament reconstruction. *An oral presentation at the 23rd Annual Congress of the European College of Sports Science held between 4th and 7th July 2018 in Dublin, Ireland.*
- **Arumugam A.** Effects of pelvic compression on muscular activity and strength in athletes with hamstring injury. *An oral presentation at Orthopaedic Week - SOF conference held between 28th August and 1st September 2017 in Umeå, Sweden.*

- **Arumugam A.** Biomechanics of unanticipated and anticipated medial and lateral diagonal hops in individuals with and without anterior cruciate ligament injury. *An oral presentation at Research Days-2017 at the Physiotherapy Unit, Dept. of Community Medicine and Rehabilitation, Umeå university, Sweden.*
- **Arumugam A, Aldhafiri F.** The pitfalls of self-plagiarism: Implications for Physical Therapy Research. *An oral presentation at the 2nd International Conference on Sports Medicine and Fitness held between 18th and 20th April 2016 in Dubai, United Arab Emirates.*
- **Patel J, Arumugam A.** Exploring the relationship of rotator muscle strength and rotation range of motion of the shoulder with the duration of play or shoulder pain in volleyball players with and without unilateral shoulder pain. *An oral presentation by Patel J at the 2nd International Conference on Sports Medicine and Fitness held between 18th and 20th April 2016 in Dubai, United Arab Emirates.*
- **Arumugam A, Milosavljevic S, Woodley S, Sole G.** Isokinetic strength of the thigh muscles in sportsmen with unilateral hamstring injuries – A cross-sectional study. *An oral presentation at the Injuires Symposium on 4th and 5th May 2016 at Majmaah University, Kingdom of Saudi Arabia.*
- **Arumugam A, Milosavljevic S, Woodley S, Sole G.** Application of a pelvic belt may facilitate gluteus medius activity during walking in people with hamstring injuries and uninjured controls. *An oral presentation by Sole G in Physiotherapy New Zealand conference held between 19th and 21st September 2014 in Auckland, New Zealand (Proceeding of the Physiotherapy New Zealand conference p. 61.*
- **Arumugam A, Milosavljevic S, Woodley S, Sole G.** Effects of application of a pelvic compression belt on isokinetic strength of the thigh muscles in sportsmen with hamstring injuries – *An oral presentation in the Stride'13, an international Physiotherapy conference held in October 2013 at Saveetha University, Chennai, India. (Proceedings of the Stride'13, International Journal of Pharma and Bio Sciences, p. 4.*
[http://www.ijpbs.net/admin/upload/con_11.pdf)]
- **Arumugam A, Milosavljevic S, Woodley S, Sole G** – “Effects of application of a pelvic compression belt on isokinetic strength of the thigh muscles in healthy sportsmen” – *An oral presentation in the Physioforward conference held in April 2013 at the School of Physiotherapy, University of Otago, Dunedin, New Zealand. (Proceedings of the Physioforward Scientific Conference, p.25. [<http://www.otago.ac.nz/physio/otago050122.pdf>])*
- **Arumugam A, Milosavljevic S, Woodley S, Sole G** – “Can application of a pelvic belt change injured hamstring activity?” – *An oral presentation in the Postgraduate conference held in November 2011 at the School of Physiotherapy, University of Otago, Dunedin, New Zealand.*
- **Mani R, Arumugam A, Gupta N.** “Influence of tibial internal rotation on Ober's test in asymptomatic individuals” - *This paper won First Prize (poster) during the 46th Annual Conference of Indian Association of Physiotherapists held in January 2008 in Dehradun, India.*
- **Arumugam A, Maiya A.** “Design and development of a low-cost pressure biofeedback equipment” - *Presented this innovative idea as a poster in Philips PIC Innovation Day Conference held in October 2007 in Bangalore, India.*

Participation in Regional & International Conferences

Conference Type	Country: number of conferences
International/National Conferences, Symposiums and/or Colloquiums	Ireland: 2 Sweden: 2 New Zealand: 3 India: 3 United Arab Emirates: 1 Kingdom of Saudi Arabia: 1 Switzerland: 1

(i) Workshops, Seminars or Symposiums participated

- 2013 A workshop on Demonstrator Induction organized by Department of Anatomy, Otago School of Medical Sciences, and Higher Education Development Centre, University of Otago, New Zealand (20 Feb 2013; contact hours: 2)
- 2012 A Seminar on Subacromial Impingement Syndrome organized by Physiotherapy New Zealand – Otago Branch, New Zealand (20 Sep 2012; contact hours: 2)
- 2012 Training in Cardiopulmonary Resuscitation organized by St John, New Zealand (05 Sep 2012; contact hours: 8)
- 2011 A Workshop on Achieving External Funding organized by Centre for Physiotherapy Research, University of Otago, New Zealand (24 March 2011; contact hours: 8).
- 2011 A Workshop on Randomized Clinical Trials organized by Centre for Physiotherapy Research, University of Otago, New Zealand (10 March 2011; contact hours: 8).
- 2007 A National Workshop on Motor Control in Spinal and Peripheral Joint Pain conducted by Manipal University, India (3-4 Nov 2007; contact hours: 16).
- 2007 Rehabilitation of Elite Olympic Level Athletes at Army Sports Institute, Pune, Maharashtra, India (19-24 March 2007; contact hours: 35).
- 2007 A National Workshop on Work Related Dysfunctions: Assessment and Rehabilitation conducted by Manipal University, Karnataka, India (22-23 Dec 2007; contact hours: 16).
- 2007 Service training in Spinal Cord Injury Rehabilitation at Paraplegic Rehabilitation Centre for Armed Forces for the Soldiers, Sailors, and Airmen, Pune, India (12-18 Mar 2007; contact hours: 35).
- 2006 A National symposium on Physical Rehabilitation: Spinal Cord Injury Rehabilitation conducted by Manipal university, Karnataka, India (17-19 Feb 2006; contact hours: 24).
- 2006 A National Workshop on Pain and Movement conducted by Manipal university, Karnataka, India (6-8 Oct 2006; contact hours: 24).
- 2005 Exercise Evaluation and Prescription in the Sport and Special Populations – Recent trends conducted by Manipal University, Karnataka, India (28-30 Dec 2005; contact hours: 32).
- 2005 A Workshop on Clinical Application of Proprioceptive Neuromuscular Facilitation (PNF) Technique organized by K. Pandyarajah Ballal College of Physiotherapy,

- Mangalore, Karnataka, India (11-12 Feb 2005; contact hours: 20 hours)
- 2004 A Symposium on Shoulder Injury Rehabilitation organized by KG College of Physiotherapy, Coimbatore, and The TN Dr MGR Medical University, Chennai, Tamil Nadu, India (23 April 2004).
- 2004 A Symposium on Cognizance of the Overlooked – Spinal Cord Injury Rehabilitation organized by KMCH College of Occupational Therapy, Coimbatore, Tamil Nadu, India (6 Mar 2004).
- 2003 A Symposium on Physiotherapy in Cardio-respiratory Diseases organized by KG College of Physiotherapy, Coimbatore, Tamil Nadu, India (5 April 2003).

4. SERVICE

(a) Membership of Conference Committee

- Organizing Committee Member for the **2nd International Conference on Sports Medicine and Fitness** held from April 18 to 20, 2016 in **Dubai, UAE**.
Organizers: the OMICS International Group.

(b) Membership of Journal Editorial Boards

- BMC Musculoskeletal Disorders* (2019/7 to date), ISSN: 1471-2474
(<https://bmcmusculoskeletdisord.biomedcentral.com/about>)
- Journal of Yoga and Physical Therapy* (2014/8 to date), ISSN: 2157-7595
(<http://omicsonline.org/editorialboard-yoga-physical-therapy-open-access.php>)
- Austin Journal of Anatomy* (2015/4 to date), ISSN: 2381-8921
(<http://austinpublishinggroup.com/anatomy/editorialboard.php>)
- International Journal of Pharma and Bio Sciences* (2014/7 to date), ISSN: 0975-6299
(<http://www.ijpbs.net/editorial-board.html>)
- Physical Medicine & Rehabilitation – International* (2014/7 to date)
(<http://www.austinpublishinggroup.com/physical-medicine/editorialBoard.php>)
- International Journal of Multidisciplinary Research and Development* (2018/8 to date)
E-ISSN: 2349-4182, P-ISSN: 2349-5979 (<http://www.allsubjectjournal.com/board>)

International Editorial Advisory Board Member

- Indian Journal of Physiotherapy and Occupational Therapy* (2013/7 to date), ISSN Print: 0973-5666, ISSN Online: 0973-5674 (<http://www.ijpot.com/editorial.html>)

(c) Service as Reviewer

- 2016/12-2019/5 Peer Reviewer, Journal of Electromyography and Kinesiology
Single Blind, Elsevier
Number of Works Reviewed/Refereed: 6
- 2013/10-2018/8 Peer Reviewer, Journal of Orthopaedic and Sports Physical Therapy
Double Blind, Thomson Reuters, ScholarOne
Number of Works Reviewed/Refereed: 15

- 2015/2-2018/10 Peer Reviewer, Manual Therapy/Musculoskeletal Science and Practice
Double Blind, Elsevier
Number of Works Reviewed/Refereed: 8
- 2016/11-2019/2 Peer Reviewer, Physiotherapy Theory and Practice
Double Blind, Taylor & Francis Online
Number of Works Reviewed/Refereed: 5
- 2014/2-2018/5 Peer Reviewer, Physical Therapy in Sport
Double Blind, Elsevier
Number of Works Reviewed/Refereed: 3
- 2017/1-2017/12 Peer Reviewer, New Zealand Journal of Physiotherapy
Double Blind, Physiotherapy New Zealand
Number of Works Reviewed/Refereed: 2
- 2016/11-2017/5 Peer Reviewer, Archives of Physiotherapy
Double Blind, BioMed Central
Number of Works Reviewed/Refereed: 4
- 2015/10-2016/1 Peer Reviewer, Jacobs Journal of Anatomy
Double Blind, Open Access, Jacobs Publisher
Number of Works Reviewed/Refereed: 2
- 2015/6-2015/7 Peer Reviewer, Medical Sciences - Journal of Spine; Rheumatology:
Current Research; Yoga & Physical therapy
Open Access, OMICS Publishers
Number of Works Reviewed/Refereed: 4
- 2015/8-2015/9 Peer Reviewer, International Journal of Health and Rehabilitation Sciences
Double Blind, Global Network of Health Educators, ScopeMed
Number of Works Reviewed/Refereed: 1
- 2015/3-2015/3 Peer Reviewer, Annals of Sports Medicine and Research
Open Access, JSciMed Central
Number of Works Reviewed/Refereed: 1
- 2014/3-2014/4 Peer Reviewer, Medical Devices: Evidence and Research
Open Access, Dove Medical Press Ltd
Number of Works Reviewed/Refereed: 1
- 2011/12-2013/4 Peer Reviewer, Journal of Manipulative and Physiological Therapeutics
Double Blind, Elsevier. Number of Works Reviewed/Refereed: 5

(d) Invited Presentations - Workshops/Seminars

- 2019 A Seminar on Systematic Review Methods, Neuroplasticity Associated with Anterior Ligament Injury Reconstruction and Evidence-based Anterior Cruciate Ligament Reconstruction for Undergraduate and Postgraduate Physiotherapy, Physical Education and Yoga Therapy Students and Faculty of Annamalai University, Chidambaram, India (conducted on 03 January 2019; contact hours: 8)
- 2017 A workshop on “Clinical Reasoning and Neuromusculoskeletal Assessment and Treatment of Patients with Upper and Lower Extremity and Spinal Disorders

- (selected cases)” for undergraduate and postgraduate Physiotherapy students at JSS College of Physiotherapy, Karnataka, India (conducted on 23 and 24 June 2017; contact hours: 16)
- 2016 A workshop on “Basics of Neuromusculoskeletal Assessment and Assessing and Treating Neurodynamic Dysfunction using Neural Mobilization” for postgraduate Physiotherapy students at Manipal University, Karnataka, India (conducted on 01 and 02 October 2016; contact hours: 16).
- 2015 A workshop on “Neurodynamic Assessment and Treatment” for undergraduate students at RVS College of Physiotherapy, Coimbatore, Tamil Nadu, India (conducted on 10 and 15 April 2015; contact hours: 13 hours).
- 2015 A workshop on “Assessing and Treating Neuropathodynamics Using Neurodynamic Techniques” for undergraduate and postgraduate Physiotherapy students in Mangalore District at Yenepoya Physiotherapy College, Yenepoya University, Karnataka, India (conducted on 01 and 02 April 2015; contact hours: 16).
- 2015 A workshop on “Assessing and Treating Neurodynamic Dysfunction Using Neural Mobilization” for undergraduate and postgraduate students at JSS College of Physiotherapy, Karnataka, India (conducted on 31 January and 01 February 2015; contact hours: 16).
- 2014 A Seminar on "Writing and Publishing a Health Sciences/Medical Research Paper in a Scholarly Journal – A Beginner’s Guide" for Medical, Dental, Physiotherapy, Pharmacy, and Nursing faculty and students from Navodaya Institutions and other Colleges in Raichur, Karnataka, India (conducted on 18 October 2014 at Navodaya College of Physiotherapy; contact hours: 8).
- 2014 A workshop on “Tips for Writing a Research Paper - A Guide to Publishing in Scholarly Journals for Early Career Researchers” for academic staff and postgraduate students at JDT Islam College of Physiotherapy, Calicut, India (conducted on 13 and 14 September 2014; contact hours: 16).

(e) University Service

Physical Therapy Department Council Member, College of Applied Medical Sciences, Majmaah University, Saudi Arabia (August 2015 to August 2016)

Research Committee Member, College of Applied Medical Sciences, Majmaah University, Saudi Arabia (August 2015 to August 2016)

Post-graduate Representative of School of Physiotherapy - including Post-Graduate Committee, and the Board of Studies, School of Physiotherapy, University of Otago (April 2011 to April 2012)

Chief Guest to preside over the 5th Alumni meet of PSG College of Physiotherapy, Tamil Nadu, India (December 2011)

5. Teaching

(a) Summary of Courses Taught (2019)

Course Code	Course Name	Duration Taught and/or coordinated	Institution	Evaluation
MS RM 401	Research Methodology	Master of Physiotherapy - Semester II 2018-2019 Course Instructor	Department of Physiotherapy, College of Health Sciences, Gulf Medical University, United Arab Emirates.	I am teaching the courses for this Semester and course evaluation will be done at the end of the semester. Overall Student feedback on the Course has been good so far.
MPT-PND301	Physical Therapy in Neurological Disorders	Master of Physiotherapy - Semester II 2018-2019 Course Instructor		
PT-MSO 301	Physiotherapy in General Medical, Surgical, Obstetrics and Gynecological Conditions	Bachelor of Physiotherapy - Semester II 2018-2019 Course Instructor		

(b) Summary of Courses Taught 2015-2016

Course Code	Course Name	Duration Taught and/or coordinated	Institution	Evaluation
PHT 436	Physical Therapy for Orthopaedic Conditions	Semester I 2015-2016 Course Coordinator & Instructor	Department of Physical Therapy, College of Applied Medical Sciences, Majmaah University, Kingdom of Saudi Arabia	The course evaluation survey reports by students were good. The benchmark set for all the key performance indicators relevant to the course learning and program outcomes were achieved.
RHPT 494	Selected Clinical Topics			
RHPT 497	Undergraduate Student Projects	Semester I 2015-2016 Course Instructor		
RHPT 492	Occupational Therapy			
RHPT 475	Physical Therapy for Orthopaedic and Rheumatologic Conditions	Semester I 2015-2016 Course Coordinator		
PHT 224	Therapeutic Exercise I			
RHPT352	Therapeutic Exercise II			
PHT 325	Therapeutic Exercise II	Semesters I & II 2015-2016 Course Coordinator & Instructor		

PHT 327	Human Biomechanics	Semester II 2015-2016 Course Coordinator & Instructor		
PHT 442	Clinical Practice II			
PHT 226	Introduction to Biomechanics	Semester II 2015-2016 Course Instructor		

(c) Summary of Courses Taught (2011-2014)

Course Code	Course Name	Duration Taught and/or coordinated	Institution	Evaluation	
PHTY250	Anatomy for Physiotherapy Course	Semester I & II 2011-2013 Semester I 2014 Senior Demonstrator	Department of Anatomy, Otago School of Medical Sciences, University of Otago, New Zealand	I received the “Outstanding New Demonstrator Award - 2011” based on the evaluation of my teaching skills by supervisors and peers. In addition, I also received the “Most Overs Award - 2012” for demonstrating different papers by replacing other demonstrators.	
MICN201	Anatomy for Medicine Course (Second Year)	Semester II 2012 Senior Demonstrator			
ANAT250	Anatomy for Physical Education Course	Semester I 2011-2013 Semester I 2014 Senior Demonstrator			
PHCY471	Anatomy for Pharmacy Course	Semester II 2012 Senior Demonstrator			
ANAT250	Anatomy for Physical Education Course	Semester I 2012 Tutor	Māori Centre, University of Otago, New Zealand		
PHSE102	Biophysical Foundations of Human Movement (Motor Control and Biomechanics)	Semester II 2011 Tutor	School of Physical Education, University of Otago, New Zealand		Overall Student feedback on the Course was good.

Participation in Academic Accreditation

Name of Program – Bachelor of Physical Therapy

Role – Physical Therapy Department Council Member

Institution – College of Applied Medical Sciences, Majmaah University, Saudi Arabia

Accreditation Body – Accreditation Agency in Health and Social Sciences (AHPGS), Germany

Period – 08/2015 to 12/2015; AHPGS Accreditation received in December 2016.

Period – 08/2015 to 05/2016; Initial preparation to apply for National Commission for Academic Accreditation and Assessment (NCAAA) approval in Saudi Arabia.

Research Students Supervised

Supervision of postgraduate dissertation/thesis

- **Doctor of Philosophy** – Baskaran Chandrasekaran (started in 2018): The effectiveness of technology-assisted versus traditional physical activity program on sitting time and activity levels in Manipal University desk-based employees - A three-arm cluster randomized controlled trial (ongoing study). Department of Exercise and Sports Sciences, **Manipal Academy of Higher Education**, India. Primary supervisor: Dr. Chythra Rao.
My role: co- supervisor.
- **Doctor of Philosophy** – Kavitha Vishal (started in 2019): The effectiveness of bilateral sensorimotor training on upper quadrant function and quality of life in individuals with unilateral rotator cuff related shoulder pain - A randomized controlled trial (ongoing study). Department of Exercise and Sports Sciences, **Manipal Academy of Higher Education**, India. Primary supervisor: Pro. Arun G. Maiya. **My role: co- supervisor.**
- **Master's Dissertation** - Abdulraouf Alsolmi (2016): Use of inertial measurement unit to assess knee kinematics during activities of daily living and sports-related activities: A narrative review. (A Research Project submitted for the partial fulfilment of the requirements for the Master of Sports Physiotherapy Degree at **University of Otago**, New Zealand). Primary Supervisor: Dr. Gisela Sole. **My role: co-supervisor.**

Supervision of undergraduate dissertation

Umeå University, Sweden

- Sanna Mikko (2018): The effectiveness of rehabilitation training to improve proprioception following anterior cruciate ligament injury or reconstruction - A systematic review and meta-analysis (Completed). **My role: primary supervisor.**
- Johan Rutgersson and Fredrik Svanberg (2018): Investigation of electromyographic activity of the quadriceps and hamstring muscles during the land-and-cut maneuver of a novel one-leg double hop test with unanticipated/anticipated diagonal hops in individuals with and without anterior cruciate ligament reconstruction (Completed). **My role: primary and sole supervisor.**

Majmaah University, Saudi Arabia

- Mohammad Othman (2015): Cranio-cervical Flexor Strengthening in the Management of Neck pain – A Narrative Review
- Sulaiman Alhammad (2015): Nordic Hamstring Exercises in the Management of Hamstring Injury – A Narrative Review
- Saleh Almoayed (2015): Anterior Cruciate Ligament Injury: A Narrative Review with a Focus on Anatomical Features, Mechanism of Injury, and Physical Therapy Management
- Mubarak Hadi (2015): Lateral Collateral Ligament Injury of the Ankle – A Review of literature
- Msaad Abdullah (2015): Tennis Elbow – A Narrative Review

- Abdullah Suliman Aldwehy (2015): Laser Therapy for Osteoarthritis of the Knee Joint –A scoping review

My role: I was the **primary and sole supervisor** for the above-mentioned undergraduate student projects.

Participation in Examination Committees

- I was an examiner for students studying Physical Therapy at Gulf Medical University, United Arab Emirates (2019), and Majmaah University, Saudi Arabia (2015-2016).
- I was also involved in conducting and marking Anatomy exams of Physical Therapy, Medical, Physical Education, and Pharmacy students at Otago School of Medical Sciences, New Zealand (2011-2013).

Training for Academic Careers

I attended a course on “**Planning for Academic Careers**” conducted by Higher Education development Centre and Student Learning Centre, **University of Otago**, New Zealand (March 2012 to June 2012). This Course helped me to foster teaching and learning methods and research supervision that could be implemented for training students. I have attended special courses on MS Word, Excel, and ENDNOTE software conducted by the Information Technology Department, University of Otago. Previously, I attended a course on “Fundamentals of Computer” conducted by P.S.G center for Non-formal and Distance Education, Tamil Nadu, India to develop my basic skills in using information technology for teaching and research.