

## Richard E.A. van Emmerik, Ph.D.

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### EDUCATION

B.S./M.S.	Movement Science	Vrije Universiteit, Amsterdam, the Netherlands	1984
Ph.D.	Kinesiology	University of Illinois at Urbana-Champaign	1990
Post-Doctoral	Movement Science	Fellow Royal Dutch Academy of Arts & Sciences	1990-1993

### RESEARCH INTERESTS AND EXPERTISE

**KEY WORDS:** Motor Control; Dynamical systems; Ecological Approach to Perception and Action; Posture; Locomotion; Movement Disorders; Human Factors

**RESEARCH FOCUS:**

- Coordination and control of human movement based on nonlinear and complex systems
- Stability and adaptability in human movement
- The role of variability in healthy and disordered movements
- Perception-action coupling with application to movement disorders and human factors

### RESEARCH AND PROFESSIONAL EXPERIENCE

- Associate Chair; Department of Kinesiology, University of Massachusetts, Amherst, Massachusetts, USA; 2018-present
- Co-Director, Center for Personalized Health Monitoring, Institute for Applied Life Sciences, University of Massachusetts, Amherst, Massachusetts, USA; 2015-present
- Professor; Department of Kinesiology, University of Massachusetts, Amherst, Massachusetts, USA; 2009-present
- Associate Professor; Department of Kinesiology, University of Massachusetts, Amherst, Massachusetts, USA; 2001-2009
- Member; Neuroscience and Behavior Program, University of Massachusetts; 2003-present

## *Van Emmerik, Curriculum Vitae*

- Assistant Professor; Department of Exercise Science, University of Massachusetts, Amherst, Massachusetts, USA; 1995-2001
- Research Fellow; Dutch Organization for Scientific Research, Academic Hospital, Vrije Universiteit, Amsterdam, the Netherlands; 1993-1995
- Research Fellow; Royal Dutch Academy of the Arts and Sciences; Faculty of Human Movement Sciences, Vrije Universiteit (VU) Amsterdam, the Netherlands; 1990-1993
- Research Associate; Department of Kinesiology, University of Illinois, USA; 1988-1990
- Research Assistant; Department of Kinesiology, University of Illinois, USA; 1985-1988
- Research Assistant; Department of Human Movement Science, VU; 1984
- Research Assistant; Department of Psychology, VU; 1983
- Research Assistant; Department of Human Movement Science, VU; 1981-1982

## **HONORS AND AWARDS**

- Fellow, National Academy of Kinesiology; 2011-present
- Samuel F. Conti Faculty Fellowship award, University of Massachusetts Amherst, 2017.
- Mentor of the Year Award, Compact Institute Compact for Faculty Diversity's annual Institute on Teaching and Mentoring, Arlington, VA October 2015.
- Team-based Learning Fellow, University of Massachusetts, Amherst; 2011-2012
- Fellowship Royal Dutch Academy of the Arts and Sciences, 1990
- Early Career Distinguished Scholar Award: North American Society for the Psychology of Sport and Physical Activity; 1996
- Teaching and Learning in the Diverse Classroom Fellowship. Center for Teaching, University of Massachusetts, Amherst; 1999-2000
- Laura J. Huelster Scholarship award, Department of Kinesiology, University of Illinois; 1988
- Phi Kappa Phi, University of Illinois, 1988
- Dissertation Grant Support, University of Illinois; 1987
- Cum Laude, BS/MS degree; Vrije Universiteit, Amsterdam; 1984

## **RESEARCH GRANTS**

- National Institutes of Health (NIH). R01---DC012057-06. Aging and speech perception in complex listening environments. PI: Helfer, Co-I: Van Emmerik. Period 07/01/2017- 06/30/2022, total costs \$2,436,227.
- Department of Defense, Congressionally Directed Medical Research Program on Multiple Sclerosis. Grant #W81XWH-16-1-0351. *The MS Neuromotor Test: a Non-Ambulatory Measure of Sensorimotor Function to Identify and Track Progressive MS*. PI: Van Emmerik; Kent, Ionete Co-PI's. Dates: September 1, 2016 – August 31, 2019. Total Costs: \$833,886.00
- National Multiple Sclerosis Society (NMSS) Pilot Research Grant PP-2126. R.E.A. Van Emmerik (PI). *Tai Chi and Mindfulness Training to Improve Postural Control and Quality of Life in People with Multiple*

## *Van Emmerik, Curriculum Vitae*

*Sclerosis: A Community-Based Intervention Study* Dates: April 1, 2019 – March 31, 2021. Total Costs: \$54,972.00.

- National Multiple Sclerosis Society (NMSS) Pilot Research Grant PP-2126. R.E.A. Van Emmerik, S.L. Jones (co-PI's). *Improving Cutaneous Sensation and Balance Control in People with Multiple Sclerosis*. Dates: October 1, 2013 – March 31, 2015. Total Costs: \$43,993.00.
- Natick Soldier Research Development and Engineering Center (NSRDEC). PI R.E.A. Van Emmerik. *End-effector load and soldier performance during marksmanship tasks*. Dates: 9/1/2013-12/31/2015. \$232,627
- Naval Health Research Center (NHRC). PI R.E.A. Van Emmerik. *Effects of armor and load on action-perception coupling*. Dates 9/1/2012-12/31/2013. \$1,035,802.
- National Multiple Sclerosis Society (NMSS) #RG-3974A2/1. PI R.E.A. Van Emmerik. Co-PI: Dr. J. Kent-Braun. *Dynamic balance control and fatigue in Multiple Sclerosis*. Dates: 10/1/2007-9/31/2011. \$474,269.
- National Institutes of Health Ruth L. Kirschstein National Research Service Award for Individual Pre-doctoral Fellows. Awarding Institute: National Institute for Biomedical Imaging and BioEngineering (NIBIB). Award Number: 1F31EB005073-01A2. Duration: May 2007 – May 2009. PI: CJ Hasson. Sponsors: Caldwell GE, Van Emmerik REA, and Kent-Braun J. Score = 124, Percentile = 4.0
- National Institutes of Health (NIH) #1 R03 AG026281-01. Principal investigator: G.E. Caldwell. Co-I: R.E.A. Van Emmerik, J. Buonacorsi. *Muscular properties and balance control in older subjects*. R03. Total costs: \$151,534. Duration: July 2006 – June 2008. Direct costs: \$ 100,000.
- School of Public Health and Health Sciences, University of Massachusetts at Amherst, Pilot Research Grant. Principal investigator: Shelley Velleman, Co-investigators Richard Van Emmerik, Mary Andrianopoulos. *Kinematic differentiation of dysarthria vs. apraxia*. Dates: 9/1/05-8/31/06. Total award: \$10,000.
- National Institutes of Health (NINDS) # 1F31NS050930-01. Ruth L. Kirschstein National Research Service Award (NRSA). PI: J. Haddad, Sponsor: R.E.A. Van Emmerik. *Developmental integration of posture and manual control*. Dates: 9/1/04-8/31/06. \$53,565.
- National Science Foundation (NSF) # BCS-0341767. PI: R.E.A. Van Emmerik. Co-investigators: J. Hamill, P. Freedson, W.A. McDermott. *Coordination dynamics of the human locomotor and respiratory systems*. Dates: 9/1/04-8/31/08. Total amount awarded: \$307,182.
- National Multiple Sclerosis Society (NMSS) # PP-0934. PI R.E.A. Van Emmerik. Co-investigator: Dr. J. Kent-Braun. *Postural Stability and Fatigue in Multiple Sclerosis*. 7/1/2003-6/30/2004. \$44,000.
- Exponent Failure Analysis, Inc. PI: R.E.A. Van Emmerik. *The Influence of Locomotion on Speech Production and Recognition*. Subcontract. Dates: 9/1/200-1/1/2001. Total amount awarded: \$31,204.
- NIH – NINDS. Principal Investigator: G.E. Riccio. Co-investigators: R.E.A. Van Emmerik, P.V. McDonald. Topic: *Evaluation of Tremor for Neurological Diagnosis*. Dates: 3/15/2000-9/14/2000. Total amount awarded: \$100,000.
- NIH – NIAAA. Principal Investigator: Erwin van Wegen. Co-investigators: G.E. Riccio, P.V. McDonald, R.E.A. Van Emmerik. Topic: *Vestibular pattern recognition for postural stability*. Dates: 1999-2000. Total amount awarded: \$99,984.
- Whitaker Foundation Bioengineering Grant. Principal Investigator R.E.A. Van Emmerik, Co-investigators: L. Li, J. Collins, R. Krotkov. Topic: *Age-related changes in upperbody coordination in human locomotion*. Dates: 2000-2003. Total amount awarded: \$209,804.

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- National Aeronautics and Space Administration (NASA) grant. Principal Investigator: R.E.A. Van Emmerik. Co-investigator: Brian Peters. Topic: *The coordination of trunk, head and eye movements during visually goal-directed walking*. Dates of project: 9/1/98 – 8/31/2001. Total amount awarded: \$66,000.
- National Aeronautics and Space Administration (NASA) research grant, KRUG life Sciences, \$9,600, summer visiting Scholar NASA Johnson space center, 1996.
- National Aeronautics and Space Administration (NASA) research grant, KRUG life Sciences, \$9,000. 1996-1997.
- Faculty Research Grant University of Massachusetts, \$5,000. 1995-1996.
- Research grant NWO (Netherlands Organization for Scientific Research), Dutch federal government grant (equivalent to NSF/NIH). Principal Investigators: R.E.A. Van Emmerik & R.C. Wagenaar. *Dynamics of pathological gait in Parkinson's disease*. Three year grant, 1993-1996. Total amount awarded: \$250,000.
- Royal Dutch Academy of the Arts and Sciences. Principal Investigator: R.E.A. Van Emmerik. *Dynamics of Movement Disorders*. Three year grant, 1990-1993. Total amount awarded: \$150,000.

## PROFESSIONAL MEMBERSHIP

- National Academy of Kinesiology
- International Society for Ecological Psychology
- North American Society for the Psychology of Sport and Physical Activity
- Fellow Royal Dutch Academy of Arts and Sciences
- International Society for Motor Control

## PUBLICATIONS: REFEREED JOURNAL ARTICLES

1. Helfer, K. S., Freyman, R. L., **Van Emmerik, R.E.A.**, & Banks, J. (2020). Postural Control While Listening in Younger and Middle-Aged Adults. *Ear and hearing*, 41(5), 1383-1396.
2. Ducharme, S. W., & **Van Emmerik, R. E.A.** (2020). The interplay between physical activity and aging in locomotor fractal behavior. *Chaos, Solitons & Fractals: X*, 5, 100045.
3. Muir, B. C., Bodratti, L. A., Morris, C. E., Haddad, J. M., **Van Emmerik, R. E. A.**, & Rietdyk, S. (2020). Gait characteristics during inadvertent obstacle contacts in young, middle-aged and older adults. *Gait & Posture*, 77, 100-104.
4. Fonseca, S. T., Souza, T. R., Verhagen, E., **Van Emmerik, R.E.A.**, Bittencourt, N. F., Mendonça, L. D., Andrade, A.G., Resende, R.A. & Ocarino, J. M. (2020). Sports injury forecasting and complexity: a synergetic approach. *Sports medicine*, 1-14.
5. Lim, J., Hamill, J., Busa, M. A., & **Van Emmerik, R. E.A.** (2020). Changes in coordination and variability during running as a function of head stability demands. *Human Movement Science*, 73, 102673.
6. Palmer, C. J., & **Van Emmerik, R. E.A.** (2020). Constraints of Load and Posture on Coordination

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- Variability and Marksmanship Performance. *Motor control*, 24(3), 435-456.
7. Pinheiro, C. F., Moraes, R., Carvalho, G. F., Sestari, L., Will-Lemos, T., Bigal, M. E., Dach, F., **Van Emmerik, R.E.A.**, & Bevilaqua-Grossi, D. (2020). The Influence of Photophobia on Postural Control in Patients With Migraine. *Headache: The Journal of Head and Face Pain*, 60(8), 1644-1652.
  8. Hamill, J., Lim, J., & **Van Emmerik, R.E.A.** (2020). Locomotor Coordination, Visual Perception and Head Stability during Running. *Brain Sciences*, 10(3), 174.
  9. Miehm, J.D, Buonaccorsi, J., Lim, J., Sato, S., Rajala, C., Averill, J., Khalighinejad, F., Ionete, C., Jones, S.A., Kent, J.A., **Van Emmerik R.E.A.** (2020). Sensorimotor Function in Progressive Multiple Sclerosis. *Multiple Sclerosis Journal: Experimental, Translational, Clinical*, 6(3), 2055217320934835.
  10. Sato, S., Lim, J., Miehm, J.D., Buonaccorsi, J., Rajala, C., Kent, J.A., Khalighinejad, F., Ionete, C., **Van Emmerik, R.E.A.** (2020). Rapid foot-tapping but not hand-tapping ability is different between Relapsing-Remitting and Progressive Multiple Sclerosis. *Multiple Sclerosis and Related Disorders*, 41, 102031
  11. Irwin, G., Kerwin, D. G., Williams, G., **Van Emmerik, R. E.A.**, Newell, K. M., & Hamill, J. (2020). Multidimensional joint coupling: a case study visualisation approach to movement coordination and variability. *Sports biomechanics*, 1-11.
  12. Helfer, K. S., Freyman, R. L., **Van Emmerik, R.E.A.**, Banks, J., Clauss, M., & Dunn, L. (2019). Listening while balancing: Dual-task costs in speech vs. noise maskers. *The Journal of the Acoustical Society of America*, 145(3), 1872-1872.
  13. Weir, G., Wyatt, H., **Van Emmerik, R.E.A.**, Trudeau, M. B., Willwacher, S., Brüggemann, G. P., & Hamill, J. (2019). Influence of neutral and stability athletic footwear on lower extremity coordination variability during a prolonged treadmill run in male rearfoot runners. *European journal of sport science*, 1-7.
  14. Ducharme, S. W., Kent, J. A., & **Van Emmerik, R. E. A.** (2019). Comparable stride time fractal dynamics and gait adaptability in active young and older adults under normal and asymmetric walking. *Frontiers in Physiology*, 10, 1318.
  15. Celestino, M.L, **Van Emmerik, R.E.A.**, Barela, J.A., Gama, G.L., Barela, A.M.F. (2019). Intralimb gait coordination of individuals with stroke using vector coding. *Human Movement Science*, 68, 102522.
  16. Wyatt, H., Weir, G., **Van Emmerik, R.E.A.**, Jewell, C., & Hamill, J. (2019). Whole-body control of anticipated and unanticipated sidestep manoeuvres in female and male team sport athletes. *Journal of sports sciences*, 1-7.
  17. Liddy, J. J., Ducharme, S. W., **Van Emmerik, R. E.A.** & Haddad, J. M. (2019). Temporal correlations in human locomotion: Recommendations for sampling rate and foot strike detection. *Physica A: Statistical Mechanics and its Applications*, 121784.
  18. Weir, G., Stillman, M., **Van Emmerik, R.E.A.**, Wyatt, H., Jewell, C., & Hamill, J. (2019). Differences in Kinetics, Kinematics and Muscle Activation Strategies in Male and Female Team Sport Athletes During Unanticipated Sidestepping. *Journal of Science in Sport and Exercise*, 1-9.
  19. Muir, B.C., Haddad, J.M., **Van Emmerik, R.E.A.**, & Rietdyk, S. (2019). Changes in the control of obstacle crossing in middle age become evident as gait task difficulty increases. *Gait & Posture*, 70, 254-259.
  20. Santinelli, F. B., Barbieri, F. A., Pinheiro, C. F., Amado, A. C., Sebastião, E., & **Van Emmerik, R.E.A.** (2019). Postural Control Complexity and Fatigue in Minimally Affected Individuals with Multiple

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- Sclerosis. *Journal of motor behavior*, 1-10.
21. Santinelli, F.B., **Van Emmerik, R.E.A.**, Silva, F.A., Imaizumi, L.F.I., Penedo, T., Canzonieri, A.M., Rodrigues, S.T., Zago, P.F.P., & Barbieri, F.A. (2019). Saccadic eye movements are able to reduce body sway in mildly-affected people with Multiple Sclerosis. *Multiple Sclerosis and Related Disorders*, 30, 63-68.
  22. Weir, G., **Van Emmerik, R.E.A.**, Jewell, C., & Hamill, J. (2019). Coordination and variability during anticipated and unanticipated sidestepping. *Gait & posture*, 67, 1-8.
  23. Deprá, P.P., Amado, A.C., & **Van Emmerik, R.E.A.** (2019). Postural control underlying head movements while tracking visual targets. *Motor Control*, 23, 365–383. <https://doi.org/10.1123/mc.2018-0064>.
  24. Ducharme, S. W., & **Van Emmerik, R. E.A.** (2019). Multifractality of Unperturbed and Asymmetric Locomotion. *Journal of motor behavior*, 51(4), 394-405. DOI: 10.1080/00222895.2018.1490691
  25. Pereira, T. J. C., **Van Emmerik, R. E.A.**, Misuta, M. S., Barros, R. M., & Moura, F. A. (2018). Interpersonal coordination analysis of tennis players from different levels during official matches. *Journal of biomechanics*, 67, 106-113.
  26. Freedman Silvernail, J., **Van Emmerik, R.E.A.**, Boyer, K., Busa, M.A., & Hamill, J. (2018). Comparisons of Segment Coordination: An Investigation of Vector Coding. *Journal of applied biomechanics*, 20(XX), 1-6.
  27. Stock, H., **Van Emmerik, R.E.A.**, Wilson, C., & Preatoni, E. (2018). Applying circular statistics can cause artefacts in the calculation of vector coding variability: A bivariate solution. *Gait & posture*, 65, 51-56.
  28. Ducharme, S.W., Liddy, J.L., Haddad, J.M., Busa, M.A., Claxton, L.J., **Van Emmerik, R.E.A.** (2018). Association between stride time fractality and gait adaptability during unperturbed and asymmetric walking. *Human Movement Science*, 58, 248-259.
  29. Ducharme, S.W. & **Van Emmerik, R.E.A.** (2018). Fractal dynamics, variability and coordination in human locomotion. *Kinesiology Review*, 7, 26-35.
  30. Rinaldi, N.M., **Van Emmerik, R.E.A.**, Moraes, R. (2017). Changes in interlimb coordination during walking and grasping task in older adult fallers and non-fallers. *Human Movement Science*, 55, 121-137.
  31. Lim, J., Busa, M.B., **Van Emmerik, R.E.A.**, & Hamill, J. (2017) Adaptive changes in running kinematics as a function of head stability demands and their effect on shock transmission. *Journal of Biomechanics*, 52, 122-129.
  32. Lim, J., Palmer, C.J., Busa, M.A., Amado, A.C., Rosado, L.D., Ducharme, S.W., Simon, D. & **Van Emmerik, R.E.A.** (2017): Additional helmet and pack loading reduce situational awareness during the establishment of marksmanship posture, *Ergonomics*, 60:6, 824-836, DOI: 10.1080/00140139.2016.1222001
  33. Moura, F. A., **Van Emmerik, R. E.A.**, Santana, J. E., Martins, L. E. B., Barros, R. M. L. D., & Cunha, S. A. (2016). Coordination analysis of players' distribution in football using cross-correlation and vector coding techniques. *Journal of sports sciences*, 34(24), 2224-2232.
  34. Fuller J.T., Amado A.C, **Van Emmerik, R.E.A.**, Hamill J., Thewlis D., Tsiros M.D., Buckley J.D. (2016). The effect of footwear and footfall pattern on running stride interval long-range correlations and distributional variability. *Gait and Posture* 44, 137-144.
  35. Busa, M.B., Ducharme, S.W. & **Van Emmerik, R.E.A.** (2016). Nonlinear techniques reveal adaptive and maladaptive postural control dynamics in persons with Multiple Sclerosis. *Journal*

- of Multiple Sclerosis, 3(2), 1000177. <http://dx.doi.org/10.4172/2376-0389.1000177>
36. Busa, M.B., Lim, J., Van Emmerik, R.E.A., & Hamill, J. (2016). Head and Tibial Acceleration as a Function of Stride Frequency and Visual Feedback during Running. *PLoS ONE* 11(6): e0157297. doi:10.1371/journal.pone.0157297
  37. Amado, A.C., C. Palmer, C.J., Hamill, J., & **Van Emmerik, R.E.A.** (2016). Coupling of Postural and Manual tasks in Expert Performers. *Human Movement Science* 46, 251-260.
  38. Chung, L.H., Angelo, J., **Van Emmerik, R.E.A.**, & Kent, J.A. (2016). Energy cost of walking, symptomatic fatigue and perceived exertion in persons with multiple sclerosis. *Gait and Posture*, 48, 215-219.
  39. **Van Emmerik, R.E.A.**, Ducharme, S., Amado, A.C. & Hamill J. (2016). Comparing dynamical systems concepts and techniques for biomechanical analysis. *Journal of Sport and Health Science*, 5, 3-13.
  40. Busa, M.B. & **Van Emmerik, R.E.A.** (2016). Multiscale Entropy: a tool for understanding the complexity of postural control. *Journal of Sport and Health Science*, 5, 44-51.
  41. Busa, M.B., Jones, S.L., Hamill, J. & **Van Emmerik, R.E.A.** (2016). Multiscale Entropy Identifies Differences in Complexity in Postural Control in Women with Multiple Sclerosis. *Gait & Posture*, 45, 7-11.
  42. Williams, G.K.R., Irwin, G., Kerwin, D.G., Hamill, J., **Van Emmerik, R.E.A.**, and Newell, K.M. (2016). Coordination as a function of skill level in the gymnastics longswing. *Journal of Sports Sciences*, 34(5), 429-439. DOI: 10.1080/02640414.2015.1057209
  43. Lim J, Schuna JM Jr., Busa MA, Umberger BR, Katzmarzyk PT, van Emmerik REA & Tudor-Locke C. (2016). Allometrically scaled children's clinical and free-living ambulatory behavior. *Medicine & Science in Sports & Exercise*, 48, 2407-2416.
  44. Lim, J. Amado, A., Sheehan, L., **Van Emmerik, R.E.A.** (2015). Dual task interference during walking: The effects of texting on situational awareness and gait stability. *Gait and Posture*, 42, 466-471. DOI: <http://dx.doi.org/10.1016/j.gaitpost.2015.07.060>
  45. Remelius, J.G. & **Van Emmerik, R.E.A.** (2015). Time-to-Contact Analysis of Gait Stability in the Swing Phase of Walking in People with Multiple Sclerosis. *Motor Control*, 19, 281-311. DOI: <http://dx.doi.org/10.1123/mc.2013-0106>
  46. Rodrigues, P., Chang, R., TenBroek, T., **Van Emmerik, R.E.A.**, & Hamill, J. (2015). Evaluating the coupling between foot pronation and tibial internal rotation continuously using vector coding. *Journal of applied biomechanics*, 31(2), 88-94.
  47. Seay, J., **Van Emmerik, R.E.A.**, & Hamill, J. (2014). Trunk bend and twist coordination is affected by low back pain status during running. *European Journal of Sport Science*, 14(6), 563-568. DOI: 10.1080/17461391.2013.866167.
  48. Remelius, J.G., Hamill, J. & **Van Emmerik, R.E.A.** (2014). Prospective dynamic balance control during the swing phase of walking: Stability boundaries and time-to-contact analysis. *Human Movement Science*, 36, 227-245
  49. Chang, R., Rodrigues, P.A., **Van Emmerik, R.E.A.**, Hamill, J. (2014). Multi-segment foot kinematics and ground reaction forces during gait of individuals with plantar fasciitis. *Journal of Biomechanics*, 47, 2571-2577.
  50. Hasson, C.J., **Van Emmerik, R.E.A.**, Caldwell, G.E. (2014). Balance Decrements are Associated With Age-Related Muscle Property Changes. *Journal of Applied Biomechanics*, 30, 555-562.
  51. Rodrigues, P., TenBroek, T., **Van Emmerik, R.E.A.**, & Hamill, J. (2014). Evaluating runners with and without anterior knee pain using the time to contact the ankle joint complex range of

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- motion boundary. *Gait and Posture*, 39, 48-53.
52. Palmer, C.J., Bigelow, C., & **Van Emmerik, R.E.A.** (2013). Defining soldier equipment trade space: load effects on combat marksmanship and perception–action coupling. *Ergonomics*, 56(11), 1708-1721.
  53. Haddad, J. M., Claxton, L. J., Melzer, D., Hamill, J., & **Van Emmerik, R. E. A.** (2013). Developmental changes in postural stability during the performance of a precision manual task. *Journal of Motor Learning and Development*, 1, 12-19.
  54. Preatoni, E., Hamill, J., Harrison, A.J., **Van Emmerik, R.E.A.**, Wilson, C., & Rodano, R. (2013). Movement variability and skills monitoring in sports. *Sports Biomechanics*, 12(2), 69-92.
  55. **Van Emmerik, R.E.A.**, Jones, S.L., Busa, M.A., & Baird, J.L. (2013). A systems perspective on postural and gait stability: Implications for physical activity in aging and disease. *Kinesiology Review*, 2, 17-28.
  56. Hamill, J., Palmer, C.P., & **Van Emmerik, R.E.A.** (2012). Coordinative variability and overuse injury. *Sports Medicine, Arthroscopy, Rehabilitation, Therapy & Technology*, 4, 45 (1-9).
  57. Remelius, J.G., Jones, S.L., House, J.D., Busa, M.A., Averill, J.L., Sugumaran, K., Kent-Braun, J.A., & **Van Emmerik, R.E.A.** (2012). Gait impairments in persons with Multiple Sclerosis across preferred and fixed walking speeds. *Archives of Physical Medicine and Rehabilitation*, 93, 1637-1642.
  58. Palmer, C.J., **Van Emmerik, R.E.A.**, & Hamill, J. (2012). Ecological gait dynamics: stability, variability and optimal design. *Footwear Science*, 4(2), 167-182.
  59. Palmer, C.J., Riccio, G.E., & **Van Emmerik, R.E.A.** (2012). Orienting under load: Intrinsic dynamics and postural affordances for visual perception. *Ecological Psychology*, 24(2), 95-121.
  60. Haddad, J.M., Claxton, L.J., Keen, R., Berthier, N.E., Riccio, G.E., Hamill, J., & **Van Emmerik, R.E.A.** (2012). Development of the coordination between posture and manual control. *Journal of Experimental Child Psychology*, 111, 286-298.
  61. Johnson, M.B., Hamill, J., & **Van Emmerik, R.E.A.** (2012). Effect of Head Orientation on Postural Control during Upright Stance and Forward Lean. *Motor Control*, 16, 81-93.
  62. O'Halloran, J., Hamill, J., McDermott, W.J., Remelius, J.G., & **Van Emmerik, R.E.A.** (2012). Locomotor-respiratory coupling patterns and oxygen consumption during walking above and below preferred stride frequency. *European Journal of Applied Physiology*, 112, 929-940.
  63. Johnson, M.B., & **Van Emmerik, R.E.A.** (2011). Is head-on-trunk extension a proprioceptive mediator of postural control and sit-to-stand movement characteristics? *Journal of Motor Behavior*, 43, 491-498.
  64. Gruber, A.H., Busa, M., Gorton, G.E. III, **Van Emmerik, R.E.A.**, Masso, P.D., & Hamill, J. (2011). Time-to-Contact and multiscale entropy identify differences in postural control in adolescent idiopathic scoliosis. *Gait & Posture*, 34, 13-18.
  65. Seay, J., **Van Emmerik, R.E.A.**, & Hamill, J. (2011). Differences between pelvis-trunk coordination in runners with and without low back pain. *Spine*, 36, 1070-1079.
  66. Seay, J., **Van Emmerik, R.E.A.**, & Hamill, J. (2011). Low back pain status affects pelvis-trunk coordination and variability during walking and running. *Clinical Biomechanics*, 26, 572-578.
  67. MacLean, C., **Van Emmerik, R.E.A.**, Hamill J. (2010). Influence of a custom foot orthotic intervention on lower extremity intra-limb coupling during a 30-minute run. *Journal of Applied Biomechanics*, 26, 390-399.
  68. **Van Emmerik, R.E.A.**, Remelius, J.G., Johnson, M.B., Chung, L.H., & Kent-Braun, J.A. (2010). Postural Control in women with multiple sclerosis: Effects of task, vision and symptomatic



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  16. Wagenaar, R.C., & **Van Emmerik, R.E.A.**, & Beek, W.J. (1992). The dynamics of human gait: Townsend revisited. In Woollacott, M. & Horak, F.B. (Eds.), *Posture and gait: Control mechanisms*. Portland, Oregon: University of Oregon Press.
  17. **Van Emmerik, R.E.A.**, & Wagenaar, R.C. (1991). The coordination of human walking: qualitative changes in healthy and neurologically disabled individuals. In P.J. Beek, R.J. Bootsma, & P.C.W. van Wieringen (Eds.), *Studies in perception and action* (pp. 355-358). Amsterdam, Rodopi Press.
  18. Vereijken, B., **Van Emmerik, R.E.A.**, & Beek, W.J. (1991). Learning a complex rhythmical movement: Changing perceptual-motor workspaces. In P.J. Beek, R.J. Bootsma, & P.C.W. van Wieringen (Eds.), *Studies in perception and action* (pp. 349-354). Amsterdam, Rodopi Press.
  19. **Van Emmerik, R.E.A.** & Rutter, B.G. (1987). Phase transitions and dimensional analysis in movement pattern formation: Effects of task constraints and systems' design. In *Proceedings of Interface 87* (pp. 29-35). Rochester, New York.

## INVITED LECTURES AND TALKS

1. Van Emmerik, R.E.A. (2020). Coordination and control of human movement based on nonlinear and complex systems, invited keynote lecture, 10th Brazilian Congress of Motor Behavior 2020, Vitória (ES), Brazil, October 21 to 24 (held virtual).
2. **Van Emmerik, R.E.A.** (2020). Upper-body Coordination and Locomotor Control. Invited presentation at the 2020 Virtual Motor Control Summer School of the International Society of Motor Control, June 16<sup>th</sup> 2020.
3. **Van Emmerik, R.E.A.** (2019). Coordination Dynamics of Locomotion in Health and Disease: Intrinsic Patterns and Adaptations During Object Transport. Invited Senior Lecture, 2019

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- Meeting of the North American Society for the Psychology of Sport and Physical Activity, Baltimore, MD, June 6-8.
4. **Van Emmerik, R.E.A. & Hamill, J.** (2019) Dynamical Approach to Movement Coordination. Invited presentation Ribeirão Preto Medical School at Ribeirão Preto, University of São Paulo, Ribeirão Preto, São Paulo, Brazil, May 23, 2019.
  5. **Van Emmerik, R.E.A.** (2019). Dynamical Systems: Time-to-contact Measures in Postural and Gait Control. Invited presentation Ribeirão Preto Medical School at Ribeirão Preto, University of São Paulo, Ribeirão Preto, São Paulo, Brazil, May 24, 2019.
  6. **Van Emmerik, R.E.A.** (2019). Dynamical Systems: Variability and Motor Control. Invited presentation Ribeirão Preto Medical School at Ribeirão Preto, University of São Paulo, Ribeirão Preto, São Paulo, Brazil, May 22, 2019.
  7. **Van Emmerik, R.E.A.** (2019). Dynamical Systems: Dynamical Approach to Movement Coordination. Invited presentation Department of Physical Therapy, Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil, May 29, 2019.
  8. **Van Emmerik, R.E.A.** (2017). Dynamical Systems and Perception Action Coupling. (2017) Paper presented at the 35th International Conference on Biomechanics in Sport, Cologne, Germany June 14-18.
  9. **Van Emmerik, R.E.A.** Dynamical Systems: Variability and Motor Control. Invited presentation, São Paulo State University Rio Claro, São Paulo, Brazil, March 21<sup>th</sup> 2016.
  10. **Van Emmerik, R.E.A.** Dynamical Systems: Time-to-contact Measures in Postural and Gait Control. Invited presentation Universidade de São Paulo Escola de Educação Física e Esporte, Ribeirão Preto, São Paulo, Brazil, March 24<sup>th</sup> 2016.
  11. **Van Emmerik, R.E.A.** Dynamical Systems: Variability and Motor Control. Universidade de São Paulo Escola de Educação Física e Esporte, Ribeirão Preto, São Paulo, Brazil, March 18<sup>th</sup> 2016.
  12. **Van Emmerik, R.E.A.** Dynamical Systems: Concepts and Analysis Techniques for Movement Coordination. Universidade de São Paulo Escola de Educação Física e Esporte, Ribeirão Preto, São Paulo, Brazil, March 17<sup>th</sup> 2016.
  13. **Van Emmerik, R.E.A.** (2015). Dynamical Systems: Concepts and Analysis Techniques for Movement Coordination. Invited presentation Winterschool of Biomechanics, State University of Santa Catarina, Brazil, August 22-23.
  14. **Van Emmerik, R.E.A.** (2015). The role of Movement variability in Health and Disease. Invited presentation Winterschool of Biomechanics, State University of Santa Catarina, Brazil, August 22-23.
  15. **Van Emmerik, R.E.A.** (2015). Bernstein's Degrees of Freedom Problem. Invited presentation Winterschool of Biomechanics, State University of Santa Catarina, Brazil, August 22-23.
  16. **Van Emmerik, R.E.A., Jones, S.L., Busa, M.A., Remelius, J.G. and Averill, J.G.** (2013). Enhancing postural stability and adaptability in multiple sclerosis. Symposium on motor control and recovery from injury; Progress in Motor Control IX, Montreal, Canada; July 13-16.
  17. **Van Emmerik, R.E.A., Palmer, C.P., Busa, M.A. & Hamill, J.** (2013). Nonlinear dynamics: Review of metrics and their relation to movement adaptability. Symposium: Nonlinear dynamics and motor control: Where have we been, where are we now and where are we going. Annual meeting of the North American Society for the Psychology of Sport and Physical Activity, New Orleans, Louisiana, June 13-15.
  18. **Van Emmerik, R.E.A., Haddad, J.M., & Palmer, C.P.** (2013). A nested systems perspective on postural and manual control. Indiana University, Department of Psychology, April 5<sup>th</sup>.



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19. **Van Emmerik, R.E.A.** (2013). Department of Kinesiology and Human Health 2013 Charles C. Cowell Lecture. The role of movement variability in health and disease. April 3rd.
20. **Van Emmerik, R.E.A.** (2012). Postural time to contact: Concepts and applications to life span development and movement disability. Seventh Geraldine Pellecchia Memorial lecture, Center for the Ecological study of Perception and Action, University of Connecticut, Storrs.
21. **Van Emmerik, R.E.A.** (2012). The role of movement variability in health and disease. Department of Kinesiology Colloquium Series, April 2012.
22. **Van Emmerik, R.E.A.** (2011). Clinical relevance of time to contact methods in assessing dynamic balance control. Lecture series of the Center for Clinical Movement Disorders, University of Minnesota, September 2011.
23. **Van Emmerik, R.E.A.** (2011). Postural control in multiple sclerosis: Stability and complexity analyses. Annual meeting of the North American Society for the Psychology of Sport and Physical Activity (NASPSPA). *Journal of Sport and Exercise Psychology*, 33 (Supplement), 22-23.
24. **Van Emmerik, R.E.A.** (2010). Dynamics of movement coordination and perception during locomotion in older adults and individuals with neurological disorders. Progress in Rehabilitation Research. American College of Rehabilitation Medicine (ACRM) and American Society for Neural Rehabilitation (ASNR) Joint Education Conference, Montreal, Canada.
25. **Van Emmerik, R.E.A.** (2010). To step or not to step: time-to-contact, stability boundaries and the control of posture and locomotion. Perception and Action Workshop, University of Connecticut.
26. Hamill, J., Gruber, A., Miller, R. & **Van Emmerik, R.E.A.** (2010). Does changing footfall patterns alter running performance? Invited presentation, 6th World Congress of Biomechanics, Singapore, August 2010.
27. **Van Emmerik, R.E.A.**, Miller, R. & Hamill, J. (2009). Dynamical systems Approach to Movement Coordination. Proceedings of the 27th International Conference on Biomechanics in Sports, Limerick, Ireland, August 2009.
28. **Van Emmerik, R.E.A.** (2008). Motor Control and Dynamical Systems. Lecture series, June 23-28, National Taiwan Sports University, Taiwan.
29. **Van Emmerik, R.E.A.** & Haddad, J.M. (2008). Variability and Coordination in Movement Disorders. Tutorial lecture at the 55<sup>th</sup> Annual meeting of the American College of Sports Medicine, Indianapolis, IN, May 28-31. *Medicine & Science in Sports and Exercise*, 40(5), supplement, 240.
30. TenBroek, T.M., **Van Emmerik, R.E.A.**, Hasson, C.J., & Hamill, J. (2007). Lyapunov exponent estimation for human gait acceleration signals. XXIth Congress of the International Society of Biomechanics, Taipei, Taiwan. *Journal of Biomechanics*, 40, S210.
31. **Van Emmerik, R.E.A.** (2007). Introduction to dynamical systems. 12th Annual Gait & Clinical Movement Analysis Society Meeting, Springfield, Massachusetts, April 11.
32. Hamill, J., **Van Emmerik, R.E.A.**, McDermott, W.M. (2007). Clinical Applications of Dynamical Systems Theory. 12th Annual Gait & Clinical Movement Analysis Society Meeting, Springfield, Massachusetts, April 11.
33. **Van Emmerik, REA.** (2006) Coordination Dynamics of Posture and Gait: Translational Implications for Rehabilitation Practice. Joint meeting of the American Congress of Rehabilitation Medicine (ACRM) and the American Society of Neurorehabilitation (ASNR), Boston, Massachusetts, September 27-October 1.

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34. **Van Emmerik, R.E.A.**, Hamill, J., & McDermott, W.J. (2007). Clinical Applications of Dynamical Systems Theory. Invited symposium, 12<sup>th</sup> *Annual Gait and Clinical Movement Analysis Society* (GCMAS) meeting, April 11-14, Springfield, Massachusetts.
35. **Van Emmerik, R.E.A.** & Wagenaar, R.C. (2006). Coordination dynamics of Posture and Gait: Translational Implications for Rehabilitation Practice. Paper presented at the joint meeting of the American Congress of Rehabilitation medicine and the American Society of Neurorehabilitation, Boston, Massachusetts, September 27 – October 1.
36. Hamill, J., Haddad, J. M., & **Van Emmerik, R.E.A.** (2006). Overuse injuries in running: Do complex analyses help our understanding? In: Proceedings of the XXIVth International Symposium on Biomechanics in Sports Congress, University of Salzburg, Austria (pp. 27-32).
37. Hamill, J., Haddad, J. **Van Emmerik, R.E.A.** Coordination and Human Movement. Mid-West Graduate Student Conference on Biomechanics, Milwaukee, WI, March 2006.
38. Hamill, J., Haddad, J.M., & **Van Emmerik, R.E.A.** (2005, August). Using Coordination Measures to Assess Movement. In Q. Wang (Ed.), Proceedings of the 23<sup>rd</sup> International Symposium on Biomechanics on Sport, Beijing, China, August 22-27 (pp. 33-38).
39. **Van Emmerik, R.E.A.** (2005). Variability and coordinative function in movement disorders. Invited lecture, 2005 Michael J. Ellis Distinguished Lecture on Disability Science and Practice, College of Applied Life Studies, University of Illinois at Urbana-Champaign. April 25-27.
40. **Van Emmerik, R.E.A.** (2005). Dynamic stability, variability and energetics of human gait: Coupling of locomotion and respiration. Invited lecture, Perceiving and Acting workshop, Department of Psychology and Center for the Ecological Study of Perception and Action, University of Connecticut, Storrs, April 15.
41. **Van Emmerik, R.E.A.** (2005). Variability in motor control: Coupling dynamics of the locomotor and respiratory systems. Invited lecture, department of Exercise Science, Syracuse University. March 30-April 2.
42. **Van Emmerik, R.E.A.** (2004). Stability and adaptability of gait control: implications for mobility and daily living. Invited lecture, American Academy for Kinesiology and Physical Education, Chicago, Illinois, September 2004.
43. **Van Emmerik, R.E.A.** (2004). On the functional role of variability in posture and locomotion. Keynote lecture, American College of Sports Medicine, Indianapolis, June 4 2004.
44. McDermott, W.M., **Van Emmerik, R.E.A.**, & Hamill, J. (2004). Postural stability and the dynamics of locomotor-respiratory coordination. *Medicine & Science in Sports and Exercise*, 36(5), 1612, S235.
45. Whittlesey, S., **Van Emmerik, R.E.A.**, Caldwell, G., Nasca, P., & Hamill, J. (2004). Interaction of balance control and manual task demands. *Medicine & Science in Sports and Exercise*, 36(5), 1613, S235.
46. **Van Emmerik, R.E.A.** Coordination dynamics of the upper body during locomotion. Human Movement Science Department, Vrije Universiteit, the Netherlands, September, 2002.
47. Haddad, J.M., **Van Emmerik, R.E.A.**, Hamill, J. The adaptability of interlimb coordination in human walking. Paper presented at Korean National University for Physical Education (KNUPE), Seoul, South Korea, October 2002.
48. **Van Emmerik, R.E.A.** Coordination dynamics of the locomotor-respiratory systems. Human Movement Science Department, Vrije Universiteit, the Netherlands, December 2002.

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49. Haddad, J.M., Peters, B.T., **Van Emmerik, R.E.A.**, & Hamill, J. Continuous Relative Phase as a measure of Coordination: Application issues. In Proceedings of the Meeting of the International Society of Biomechanics, New Zealand, July 2003.
50. **Van Emmerik, R.E.A.** (2002). Age-related changes in upper-body coordination in human locomotion. *Whitaker Biomedical Engineering Research Conference*, (p. 64). La Jolla, California, August 8-11, 2002.
51. **Van Emmerik, R.E.A.** (2001). Age-related changes in upper-body coordination in human locomotion. *Whitaker Biomedical Engineering Research Conference*, (p. 152). La Jolla, California, August 9-12, 2001.
52. **Van Emmerik, R.E.A.** (2001). Movement Variability and Stability: Implications for Learning and Relearning. *Invited guest lecture Department of Computer Science, University of Massachusetts, Amherst, August 2001.*
53. **Van Emmerik, R.E.A.** (2000). On variability and Stability in Human Movement. Paper presented at American College of Sports Medicine Symposium on: Variability and Stability: A Dynamical Systems Perspective. *Medicine and Science in Sport and Exercise*, 32(5 supplement), S77.
54. **Van Emmerik, R.E.A.** (2000). An ecological perspective on the control of posture and locomotion. *Invited guest lecture Sargent College of Allied Health Sciences, Boston University.*
55. **Van Emmerik, R.E.A.** (2000). A dynamical systems approach to Parkinson's disease. *Invited guest lecture, Department of Kinesiology, Louisiana State University.*
56. **Van Emmerik, R.E.A.** (1999). A dynamical systems approach to Parkinson's disease. *Paper presented in educational symposium, "Dynamics of movement disorders: Implications for evaluation and treatment. Scientific Conference of the American Physical Therapy Association, June, Washington D.C.*
57. **Van Emmerik, R.E.A.** (1999). Identification of axial rigidity during locomotion in Parkinson's disease. *Paper presented at symposium on "Dynamics of Movement Disorders", Annual meeting of the North American Society for Psychology of Sport and Physical Activity, Clearwater Beach, Florida, June. Abstract published in Journal of Sport and Exercise Psychology, 21, S7.*
58. **Van Emmerik, R.E.A.** (1998). A dynamical systems approach to movement learning and relearning. Paper presented to department of Physical Education, *Seoul National University, Seoul, South Korea, August.*
59. **Van Emmerik, R.E.A.** (1998). A dynamical systems approach to postural stability in motor control. In: *Proceedings of the 1998 Seoul International Sport Science Congress*, pp. 511-533.
60. **Van Emmerik, R.E.A.**, Wade, M.G., Hopkins, B., & Davis, W.E. (1998). Effects of visual field perturbations on whole body sway in Down syndrome. *Proceedings of the first Biennial Scientific Conference on Down Syndrome, Vancouver, Canada, April.*
61. Li, L., **Van Emmerik, R.E.A.**, Caldwell, G.E., & Hamill, J. (1997). Walking and running in the gait transition region: Comparison of coordination patterns. Paper presented at the *1997 spring meeting of the International Society for Ecological Psychology (ISEP), Amherst, MA, March 29.*
62. **Van Emmerik, R.E.A.** (1997). Interlimb coupling dynamics in human walking: Are we bipeds or quadrupeds? Paper presented at the *Annual Meeting of the North American Society for the Psychology of Sport and Physical Activity (NASPSA), Denver, Colorado May 28-31. Published in: Journal of Sport and Exercise Psychology, 19, supplement, S3.*
63. **Van Emmerik, R.E.A.** (1995). Dynamics of pathological gait Department of Psychology, *paper presented at the workshop on Perception and Action, University of Connecticut, Storrs, November 13.*

64. **Van Emmerik, R.E.A.** (1995). Nonlinear dynamical analysis of posture and gait. *Department of Psychology guest lecture*, Trinity College, Hartford, Connecticut, October 25.
65. **Van Emmerik, R.E.A.** (1995). The functional role of movement variability: Implications for learning and relearning processes. *Paper presented at the Sports Science Symposium*, University of Oslo, Norway, 22-24 November.
66. **Van Emmerik, R.E.A.,** & Wagenaar, R.C., & Wolters, E.Ch. (1993). The dynamics of movement coordination in Parkinson's disease. *Paper presented at the European Congress on Mental Dysfunction in Parkinson's disease*, Amsterdam, Vrije Universiteit, October 20-23.

## CONFERENCE PRESENTATIONS, PUBLISHED ABSTRACTS, PROCEEDINGS

1. Stock, Holly; Wilson, Cassie; Van Emmerik, Richard E.A.; and Preatoni, Ezio (2020) "WITHIN-DAY REPEATABILITY OF COORDINATION VARIABILITY MEASURES ACROSS THE RUNNING GAIT CYCLE," *ISBS Proceedings Archive*: Vol. 38 : Iss. 1 , Article 192. Available at: <https://commons.nmu.edu/isbs/vol38/iss1/192>
2. Zeff, Sam R.; Weir, Gillian; Hamill, Joseph; and Van Emmerik, Richard E.A. (2020) "TRANSVERSE PLANE HEAD-TRUNK COORDINATION DURING ANTICIPATED AND UNANTICIPATED SIDESTEPPING TASKS," *ISBS Proceedings Archive*: Vol. 38 : Iss. 1 ,Article 219. Available at: <https://commons.nmu.edu/isbs/vol38/iss1/219>
3. Wyatt, Hannah; Jewell, Carl; Weir, Gillian; Van Emmerik, Richard E.A.; and Hamill, Joseph (2020) "COORDINATION VARIABILITY IN OVERGROUND RUNNING AND WALKING AT PREFERRED AND FIXED SPEEDS," *ISBS Proceedings Archive*: Vol. 38 : Iss. 1, Article 233. Available at: <https://commons.nmu.edu/isbs/vol38/iss1/233>
4. Sumire Sato, Yeun Hiroi, Danielle Zoppo, John Buonaccorsi, Jules D. Miehm, Caitlin Rajala, Jongil Lim, Jane A. Kent<sup>2</sup>, Richard E.A. van Emmerik, Spatiotemporal gait characteristics in multiple sclerosis subtypes during brisk walking. Paper presented at the Virtual 44<sup>th</sup> meeting of the American Society of Biomechanics, August 4-7, 2020.
5. Jongil Lim, Richard van Emmerik , Joseph Hamill, Changes in coordination and variability during running as a function of head stability demands, abstract for the 2020 Virtual experience of the American College of Sports Medicine, 2020.
6. Helfer KS, Freyman RL, van Emmerik REA, Banks JJ, Clauss MJ, Dunn LG, Tellerico S (accepted) Walking while listening and remembering: Dual- and multi-task costs. *Acoustical Society of America 179th Meeting, Virtual, December 7-11, 2020*
7. Helfer KS, Freyman RL, van Emmerik REA, Banks JJ, Clauss MJ, Dunn LG (2019) Listening While Balancing: Dual-task Costs in Speech vs. Noise Maskers. *Acoustical Society of America 177th Meeting, Louisville, KY, May 13-17, 2019*
8. Helfer KS, Freyman RL, van Emmerik REA, Banks JJ, Clauss MJ, Dunn LG (2019) Maintaining postural control while listening: effects of age and task difficulty. *American Auditory Society, Scottsdale, AZ, February 28-March 2, 2019*
9. Sumire Sato, John Buonaccorsi, Jules D Miehm, Caitlin Rajala, Jongil Lim, Jane A Kent, Richard van Emmerik. Progressive multiple sclerosis demonstrates greater sensorimotor function disparity between upper and lower extremities compared to relapsing-remitting and controls.

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- Abstract submitted and accepted to the 2019 Society for Neuroscience meeting, Chicago, IL October 19-23, 2019.
10. Miehme, J.D., Sato, S., Rajala, C., Lim, J., Averill, J.L., Buonaccorsi, J., Khalighinejad, F., Ionete, C., Kent, J.A., Van Emmerik R.E.A. Progressive Vs. Relapsing-Remitting Multiple Sclerosis: Sensorimotor Function is Affected Differently in Upper and Lower Extremities. 2019 meeting of the Consortium of Multiple Sclerosis Centers (CMSC), Seattle, Washington 5/28/19 – 6/1/19.
  11. Miehme, J.D., Sato, S., Lim, J., Rajala, C., Kelly, M., Averill, J.L., Ionete, C., Buonaccorsi, J., Van Emmerik, R.E.A., Kent, J.A. Vibration Sensitivity and Foot-Tapping Distinguish Non-Progressive from Progressive Multiple Sclerosis in the Absence of Overt Gait Differences. Poster Presentation at 8th International Symposium on Gait and Balance in Multiple Sclerosis, Portland, OR. September 2018.
  12. Sato, S., Lim J., Miehme, J.D., Averill, J.L., Rajala, C., Buonaccorsi, J., Kent, J.A., Ionete, C., van Emmerik, R.E.A. (2018). Rapid foot-tapping but not hand-tapping ability distinguishes between Multiple Sclerosis subtypes. European Committee for Treatment and Research in Multiple Sclerosis, Berlin, Germany. October 10-12 2018.
  13. Landy, M., Bhatt, N., Sato, S., van Emmerik, R.E.A. (April 2019). Comparison of sway angle and velocity during static balance tests between Multiple Sclerosis sub-types. *25<sup>th</sup> Massachusetts Undergraduate Research Conference*, Amherst, MA USA.
  14. Felipe Santinelli, Emerson Sebastiao, Fabiana Silva, Gabriel Moretto, Luiz Felipe Imaizumi, Lucas Simieli, Richard Van Emmerik, Fabio Barbieri (2019). Can saccadic eye movements minimize the deleterious effect of ankle muscle fatigue on postural control in people with Multiple Sclerosis? 2019 Meeting of the International Society of Postural & Gait Research (ISPGR), Edinburgh, Scotland, June 30-July 4.
  15. Felipe balistieri santinelli, Richard E. A. van Emmerik, Gabriel Felipe Moretto, Luiz Henrique Palucci Vieira, Fabio Augusto Barbieri (2019). assessment of postural control through detrended fluctuations analysis: could window length influence results? 18th Brazilian Congress on Biomechanics, Manaus, Brazil, May 1-4.
  16. Avelino Amado, Christopher Palmer, Joseph Hamill, Richard van Emmerik (2019). Coordinative Gait Adaptations to Visual Task Performance during Object Transport. Paper presented at the 20th International Conference on Perception and Action, Groningen The Netherlands, July 3-6.
  17. Van Emmerik, R.E.A., Averill, J.A., Busa, M.A. (2018). Adaptations in Postural Control to Different Task Constraints in People with Multiple Sclerosis. Paper presented at the 2018 annual conference of the North American Society for the Psychology of Sport and Physical Activity, Denver, CO, June 21-23 2018.
  18. Stock, H., Furlong, L. A. M., Wilson, C., Van Emmerik, R., & Preatoni, E. (2018, May). New developments in vector coding methods for assessing coordination variability. In *36th International Conference on Biomechanics in Sports*.
  19. Wyatt, Hannah; Weir, Gillian; Jewell, Carl M.; Van Emmerik, Richard E.A.; and Hamill, Joseph (2018) "Whole-body control strategies during anticipated and unanticipated sidestep manouevres performed by females and males," ISBS Proceedings Archive: Vol. 36 : Iss. 1 , Article 68. Available at: <https://commons.nmu.edu/isbs/vol36/iss1/68>
  20. Santinelli, F.B., Van Emmerik, R.E.A., Sebastiao, E., Ititkawa Imazumi, L.F., Canzonieri, A.M., Barbieri, F.A.. Complexity of postural control is not altered in persons with Multiple Sclerosis presenting with minimal disability. Poster presented at the 19<sup>th</sup> annual meeting of the

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- Brazilian Committee for Treatment and Research in Multiple Sclerosis, Sao Paulo, Brazil, August 1-4, 2018.
21. Celestino, M. L.; Barela, J. A.; Gama, G. L. ; van Emmerik, R. ; Barela, A. M. F. Investigating lower limb coordination patterns during gait of individuals with stroke. In: IX Congresso Brasileiro de Comportamento Motor, 2018, Bauru. Brazilian Journal of Motor Behavior, 2018. v. 12. p. 238-238.
  22. Celestino, M. L.; Gama, G. L.; Barela, A. M. F. ; van Emmerik, R. Treadmill versus overground body weight support training in patients with stroke: Effects on coordination variability during walking. In: Society for Neuroscience in Washington, DC from November 11-15, 2017.
  23. Celestino, M. L.; Gama, G. L.; Barela, A. M. F. ; van Emmerik, R. Body weight support training and movement coordination during walking on different surfaces in individuals with stroke. In: International Society of Posture and Gait Research, in Fort Lauderdale, Florida from June 25-29, 2017. Abstract Book 2017 ISPGR World Congress, 2017. p. 235-236.
  24. Miehm, J.D., Sato, S., Lim, J., Rajala, C., Kelly, M., Averill, J.L., Ionete, C., Buonaccorsi, J., Van Emmerik, R.E.A., Kent, J.A. Vibration Sensitivity and Foot-Tapping Distinguish Non-Progressive from Progressive Multiple Sclerosis in the Absence of Overt Gait Differences. Poster Presentation at 8th International Symposium on Gait and Balance in Multiple Sclerosis, Portland, OR. September 2018.
  25. Miehm, J.D., Averill J.L., Lim, J. Buonaccorsi, J., Ionete, C., Kent, J.A., van Emmerik, R. Lower-Extremity Vibration Threshold, But Not Proprioception or Mobility, Distinguishes Non-Progressive from Progressive Multiple Sclerosis Sub-Types. Free communication/slide session at the 2018 Annual Meeting, World Congress on Exercise is Medicine, and World Congress on the Basic Science of Muscle Hypertrophy and Atrophy of the ACSM, Minneapolis, MN. June 2018. *Med Sci Sports Exerc.* 2018; 50(5).
  26. Miehm, J.D., Averill, J.L., Lim, J., Buonaccorsi, J., Kent, J.A., van Emmerik, R. Effects of Multiple Sclerosis Sub-Type on Lower-Limb Sensorimotor Function and Mobility. Free communication/slide session at New England American College of Sports Medicine Fall Conference, Providence, RI, October 2017.
  27. Sato, S., Lim J., Miehm, JD., Averill, JL., Rajala, C., Buonaccorsi, J., Kent, JA., Ionete, C., van Emmerik, REA. (2018). Rapid foot-tapping but not hand-tapping ability distinguishes between Multiple Sclerosis subtypes. European Committee for Treatment and Research in Multiple Sclerosis, Berlin, Germany. October 10-12 2018.
  28. Weir, G., Jewell, C., Emmerik, R. V., & Hamill, J. (2017). Lower Extremity Coordination Variability During Anticipated and Unanticipated Sidestepping: Implications for ACL Injury Prevention. *ISBS Proceedings Archive*, 35(1), 92.
  29. Ducharme, S.W. Liddy, J.J., & van Emmerik, R.E.A. Differential Changes to Gait Parameter Fractality During Asymmetric Walking. Poster presentation for the 2017 International Society for Posture and Gait Research (ISPGR) World Congress, Fort Lauderdale, FL.
  30. Ducharme, S.W., Liddy, J.J., & van Emmerik, R.E.A. Influence of Age and Physical Activity on the Fractal Structure of Postural Center of Pressure. Poster presentation for the 2017 International Society for Posture and Gait Research (ISPGR) World Congress, Fort Lauderdale, FL.
  31. Liddy, J.J., Ducharme, S.W., van Emmerik, R.E.A., & Haddad, J.M. Differential Lower Limb Control Supports Interlimb Coordination during Normal and Forced Asymmetrical

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- Walking. Poster presentation for the 2017 International Society for Posture and Gait Research (ISPGR) World Congress, Fort Lauderdale, FL.
32. Ducharme, S.W., & van Emmerik, R.E.A. Gait Decline in Healthy Aging: Does Accounting for Physical Activity Level the Playing Field? Verbal presentation for the 2017 NASPSPA conference, San Diego, CA
  33. Liddy, J.J., Ducharme, S.W., Mattingly, L., Busa, M.A., Haddad, J.M., Claxton, L.J., & van Emmerik, R.E.A. Assessing the Practicality of Locomotor Fractality during Split-Belt Treadmill Walking. Poster presentation for the 2017 Accelerating Clinical and Translational Research conference, Washington D.C.
  34. Daiane Lazzeri de Medeiros, Luis Mochizuki, Richard Van Emmerik, Tenysson Will de Lemos, Natália Borges Agostinho, Isabela Forcin Favaro, Anamaria Siriani de Oliveira. (2017). Coordination patterns in reaching tasks in children with obstetric brachial plexus palsy. XXVI Congress of the International Society of Biomechanics, 23 -27 July 2017, Brisbane, Australia
  35. Melissa L. Celestino, Gabriela L. Gama, Ana M. F. Barela, Richard van Emmerik (2017). Body weight support training and movement coordination during walking on different surfaces in individuals with stroke. World Congress of the International Society for Posture and Gait Research (ISPGR), Fort Lauderdale, Florida, USA (June 2017; poster presentation).
  36. Muir, B.C., Haddad, J.M., van Emmerik, R.E.A., Rietdyk, S. Stepping Over Obstacles Reveals Gait Changes in Middle-Aged Adults Not Evident During Steady State Gait. World Congress of the International Society for Posture and Gait Research (ISPGR), Fort Lauderdale, Florida, USA (June 2017; podium presentation).
  37. Muir, B.C., Haddad, J.M., van Emmerik, R.E.A., Rietdyk, S. Middle-Aged Adults Have Reduced Ankle Braking and Push-Off Power in order to Achieve the Same Gait Speed as Young Adults World Congress of the International Society for Posture and Gait Research (ISPGR), Fort Lauderdale, Florida, USA (June 2017; poster presentation).
  38. Muir, B.C., Bodratti, L.A., Morris, C.E., Haddad, J.M., van Emmerik, R.E.A., & Rietdyk, S. Circumstances Leading to Inadvertent Trips in The Lab for Young, Middle-Aged and Older Adults. World Congress of the International Society for Posture and Gait Research (ISPGR), Fort Lauderdale, Florida, USA (June 2017; podium presentation).
  39. Avelino Amado; Carl Jewell; Richard van Emmerik; Joseph Hamill. (2017) Coordinative Variability in Forefoot Runners During an Exhaustive Run. Paper presented at the 35<sup>th</sup> International Conference on Biomechanics in Sport, Cologne, Germany June 14-18.
  40. Gillian Weir; Carl Jewell; Richard Van Emmerik; Joseph Hamill (2017). Lower Extremity Coordination Variability During Anticipated and Unanticipated Sidestepping: Implications for ACL Injury Prevention. Paper presented at the 35th International Conference on Biomechanics in Sport, Cologne, Germany June 14-18.
  41. Holly Stock; Cassie Wilson; Chris McLeod; Richard van Emmerik; Ezio Preatoni (2017). Interpretation of Vector Coding Variability Measures: Within-day Repeatability and Between-subject Variation in Treadmill Running. Paper presented at the 35th International Conference on Biomechanics in Sport, Cologne, Germany June 14-18.
  42. Lim, J, Busa, M.A., Van Emmerik, R.E.A., & Hamill, J. (2017). Adaptive changes in running kinematics as a function of head stability demands and their effect on shock transmission. Paper presented at the 2017 Annual Conference of the North American Society for the Psychology of Sport and Physical Activity, San Diego CA, June 4-7.

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43. Avelino Amado, Carl Jewell, Eric Rohr, Matthieu Trudeau, Richard Van Emmerik, Joseph Hamill. Coordination variability-force relationship during a tempo run. Paper presented at the 34<sup>th</sup> International Society of Biomechanics in Sports, Tsukuba, Japan, July 2016.
44. Avelino Amado, Carl Jewell, Eric Rohr, Matthieu Trudeau, Richard Van Emmerik, Joseph Hamill. Coordination variability-force relationships during a tempo run. Invited presentation at the Republic Polytechnic University, Singapore, July 2016.
45. Amado, A. & Van Emmerik, R.E.A. Task dependency of the complexity of postural center of pressure patterns. Presented at New England Sequencing and Timing meeting, Amherst, Massachusetts, USA, March 2016.
46. Amado, A., Van Emmerik, R.E.A. Adaptations in phase plane dynamics during postural-manual coordination in expert drummers. Paper presented at the 2016 meeting of the North American Society For The Psychology Of Sport and Physical Activity, Montreal, Quebec, Canada, June 15-18 2016.
47. Van Emmerik, R.E.A. Robert Wagenaar's contributions to dynamics of movement disorders. Paper presented at the 14<sup>th</sup> European workshop on Ecological Psychology, Groningen, The Netherlands July 6-8 2016.
48. Van Emmerik, R.E.A., Lim, J., Palmer, C.J., Busa, M.B., Amado, A.C., Rosado, L. Ducharme, S.W., & Simon, D. Small helmet and large torso loads reduce situational awareness during postural transitions. Paper presented at the 14<sup>th</sup> European workshop on Ecological Psychology, Groningen, The Netherlands July 6-8 2016.
49. Ducharme, S.W., Liddy, J.J., Haddad, J.M., Busa, M.A., Claxton, L.J., & van Emmerik, R.E.A. Fractal dynamics and gait adaptability during asymmetrical walking. Verbal presentation for the 2016 NASPSA National Conference, Montreal, Quebec.
50. Ducharme, S.W., & van Emmerik, R.E.A. Effects of gait speed and symmetry on local dynamic stability. Presentation for the 2016 American Society of Biomechanics National Conference, Raleigh, NC.
51. Ducharme, S.W., Palmer, C.J., & van Emmerik, R.E.A. Local Dynamic Gait Stability in Soldiers under Different Torso and Head Loads. Presentation for the 2016 American Society of Biomechanics National Conference, Raleigh, NC
52. Lim, J. I., Amado, A., Sheehan, L., & Van Emmerik, R.E.A. (2015). Dual task interference during walking: The effects of texting on situational awareness and gait stability. North American Society for the Psychology of Sport and Physical Activity, Portland, OR, USA. Abstract published in: *Journal of Sport and Exercise Psychology*, 37, S49.
53. Lim, J. I., Busa, M., Amado, A., Rosado, L., Simon, D., Ducharme, S., Palmer, C., & Van Emmerik, R.E.A. (2015). Effects of load configuration on movement coordination and visual information pick-up in expert marksmanship performance. North American Society for the Psychology of Sport and Physical Activity, Portland, OR, USA. Abstract published in: *Journal of Sport and Exercise Psychology*, 37, S49.
54. Ducharme, S., Lim, J., Simon D., Palmer, C.J., Busa, M.A., Amado, A., Rosado, L., Van Emmerik, R.E.A. (2015). Loading the head reduces head-pitch attenuation of center of mass oscillations during walking and running gait in soldiers. North American Society for the Psychology of Sport and Physical Activity, Portland, OR, USA. Published in: *Journal Sport and Exercise Psychology*, 2015, 37, S36.



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55. Rosado, L., Busa, M., Lim, J. I., Simon, D., Van Emmerik, R.E.A., & Palmer, C.J. (2014). The effects of soldier equipment load on head position and visual discrimination timing. SACNAS National Conference, Los Angeles, CA, USA, October.
56. Busa, M.A., Palmer, C.J., van Emmerik, R.E.A. (2015) Quantifying Survivability. An Ecological Analysis of Soldier Performance. Poster presented at the 18th International Conference on Perception and Action. Minneapolis, MN, USA, July 14-18.
57. Amado, A., Busa, M.A, Van Emmerik, R.E.A. (2015). Task dependency of the complexity of postural center of pressure patterns. Poster presented at the 10th Progress in Motor Control meeting, Budapest, Hungary, July 22-25.
58. Liddy, J.J., Jones, S.L, Busa, M.A., & Van Emmerik, R.E.A. (2015). Effects of Prolonged Walking at Preferred Speed in Individuals with Multiple Sclerosis. Poster presented at the 39th meeting of the American Society of Biomechanics 2015, Columbus, OH, August 5-8.
59. Ducharme, S., Palmer, C.J., Rosado, L.D., Busa, M.A., Lim, J., Simon, D., Amado, A., Van Emmerik, R.E.A. (2014). Greater loading in warfighters exhibits slower target identification and reduced segmental coordinative coupling during a dynamic marksmanship task. 3<sup>rd</sup> International Congress on Soldiers Physical Performance. Boston, MA. August 17-19.
60. Busa, M. A., Jones, S.L., & Van Emmerik, R. E.A. (2014). Multiscale Entropy Identifies Postural Control Changes in Persons with Multiple Sclerosis. 5th Annual UMass Clinical and Translational Science Research Retreat, University of Massachusetts Medical School, Worcester, MA, May 20.
61. Busa, M.A., Jones, S.L. & Van Emmerik, R.E.A. (2014). Concurrent Reduction in Plantar Cutaneous Sensation and Complexity of Postural Control in People with Multiple Sclerosis. International Society of Posture and Gait Research, Vancouver, BC, Canada.
62. Amado, A. Postural Instabilities and the Maintenance of Bi-Manual Rhythmic Movements. Presented at New England Sequencing and Timing meeting, Amherst, MA, February, 22 2014.
63. Jones, S.L., Remelius, J., Sugumaran, K., Busa, M.A., Van Emmerik, R. (2014) Cutaneous sensory function and plantar foot pressures during walking in people with Multiple Sclerosis. International Society of Posture and Gait Research, Vancouver, BC, Canada.
64. Ducharme, S.W., Rosado, L., Palmer, C.J., & Van Emmerik, R.E.A. Cross correlation analysis of segmental and end-effector coupling in warfighters as a function of load. Poster presentation at the 2014 Life Sciences Graduate Research Symposium, University of Massachusetts, Amherst, MA.
65. Ducharme, S., Palmer, C.J., Rosado, L.D., Busa, M.A., Lim, J., Simon, D., Amado, A., Van Emmerik, R.E.A. (2014) Symmetrically Loaded Warfighters Exhibit Greater Segmental Adaptability in a Dynamic Marksmanship Task. World Congress of Biomechanics. Boston, MA.
66. B.C. Muir, S. Rietdyk, J. M. Haddad, R.E.A. Van Emmerik. Age-Related Changes in Foot Placement Variability when Approaching and Stepping Over an Obstacle. Seventh World Congress of Biomechanics, Boston, July 7-11, 2014.
67. Tosto, B; Averill, J; Jones, S; Van Emmerik, R. (2014). Will everyday use of an Ankle-Foot Orthosis affect balance in an individual with Multiple Sclerosis after a three-week Tai Chi intervention? Fourth Annual Life Sciences Graduate Research Symposium, UMass Amherst; April 8.
68. Afum, C; Averill, J; Jones, S; Van Emmerik, R. (2014). Will a Three-Week Tai Chi Intervention Increase Function and Ankle, Knee, and Hip Joint Ranges of Motion during Preferred Speed

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- Walking in Individuals with Multiple Sclerosis? Fourth Annual Life Sciences Graduate Research Symposium, UMass Amherst; April 8.
69. Van Emmerik, R.E.A. (2014). Improving Balance and Mobility in People with Multiple Sclerosis. In symposium on Advanced Computational and Technological Approaches to Mitigating Mobility Dysfunction in People with Multiple Sclerosis, University of Massachusetts Center for Clinical & Translational Science 5th Annual Research Retreat, May 20.
  70. Jones, S.L. & Van Emmerik, R.E.A. (2014). Annual Meeting of the New England Chapter of the American College of Sports Medicine (Symposium), Multiple Sclerosis: a multifactorial disease that benefits from a multidisciplinary approach, Providence, RI. April 29<sup>th</sup>.
  71. Amado, A., Palmer, C.P., & Van Emmerik, R.E.A. (2013). Postural task constraints and bimanual rhythmic coordination. Poster presented at the 3<sup>rd</sup> Annual Life Sciences Graduate Research Symposium, Amherst, MA, November 22<sup>nd</sup>.
  72. Busa, M. A., Jones, S.L., & Van Emmerik, R. E.A (2013). Multiscale Entropy Identifies Postural Control Changes in Persons with Multiple Sclerosis. Paper presented at UMass Life Sciences Graduate Research Symposium, Amherst, MA, November 22<sup>nd</sup>.
  73. Van Emmerik, R.E.A., Jones, S.L., & Averill J. (2013). Balance and Walking Impairments in People with Multiple Sclerosis. University of Massachusetts Medical School Continuing Medical Education (CME) program: Promoting Neurologic & Functional Recovery in MS & Living Well with Multiple Sclerosis, Worcester, MA; September 27-28.
  74. Averill J, Jones S, Van Emmerik R. (2013). Effect of a three-week tai chi intervention on postural stability and function in individuals with multiple sclerosis. Third Annual Life Sciences Graduate Research Symposium, UMass Amherst; November 2013
  75. Rodrigues, P., TenBroek, T., Van Emmerik, R.E.A., & Hamill, J. (2013) Evaluating runners with and without anterior knee pain using the time to contact the ankle joint complex range of motion boundary. Paper presented at the 37<sup>th</sup> Annual meeting of the American Society of Biomechanics, Omaha, Nebraska, September 4-7.
  76. Baird, J.L., Umberger, B.R., Hamill, J. & Van Emmerik, R.E.A. (2013). Angular Momentum and Thorax-Pelvis Coordination in Walking Paper presented at the 37<sup>th</sup> Annual meeting of the American Society of Biomechanics, Omaha, Nebraska, September 4-7.
  77. Rosado, L.D., Busa, M.A., Lim, J., Simon, D., Van Emmerik, R.E.A., & Palmer, C.J. (2013). The effects of soldier load on action perception and posture dependent target engagement timing. Poster presented at Progress in Motor Control IX, Montreal, Canada; July 13-16.
  78. Jones, S.L., & Van Emmerik, R.E.A. (2013). Postural Stability is reduced in people with multiple sclerosis due to walking-imposed fatigue. Poster presented at Progress in Motor Control IX, Montreal, Canada; July 13-16.
  79. Averill, J., Chaput, M., Jones, S.L., & Van Emmerik, R.E.A. (2013). Effect of a Three-week Tai Chi intervention on dynamic postural stability in individuals with multiple sclerosis. Poster presented at Progress in Motor Control IX, Montreal, Canada; July 13-16.
  80. Chaput, M., Averill, J., Jones, S.L., & Van Emmerik, R.E.A. (2013). Effect of a three week Tai Chi intervention on postural stability in people with multiple sclerosis. 19<sup>th</sup> University of Massachusetts Undergraduate Research Conference, Amherst; April 26.
  81. Pagoulatos, S., Jones, S.L., & Van Emmerik, R.E.A. (2013). Effects of fatigue on standing postural control in people with multiple sclerosis. 19<sup>th</sup> University of Massachusetts Undergraduate Research Conference, Amherst; April 26.

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82. Liddy, J., Jones, S., Busa, M., Sugumaran, K., Averill, J., & Van Emmerik, R.E.A. (2012). Dynamic stability and gait adaptations to prolonged walking in persons with multiple sclerosis. 2012. 18<sup>th</sup> University of Massachusetts Undergraduate Research Conference, Amherst; April 27.
83. Van Emmerik, R.E.A. (2011). Postural control in multiple sclerosis: Stability and complexity analyses. *Journal of Sport and Exercise Psychology*, 33, Supplement, Human Kinetics, 2011, Pages 22-23. North American Society for the Psychology of Sport and Physical Activity, Burlington, Vermont; June 9<sup>th</sup>.
84. Johnson, M.B., & Van Emmerik, R.E.A. (2010). The impact of head orientation on multisegmental torso coordination during the transition from sitting to standing. *Human Factors and Ergonomics*, San Francisco, California, September 27<sup>th</sup>.
85. House, J., Jones, S., Remelius, J., Busa, M., Kent-Braun, J., Van Emmerik, R.E.A. (2010). Adaptations in Lower-Extremity Ranges of Motion to Gait Speed in People With Multiple Sclerosis. *Archives of Physical Medicine and Rehabilitation*, 91(10), Page 48. *Progress in Rehabilitation Research*; 2010 ACRM- ASNR joint educational Conference, Montreal, October 20<sup>th</sup>.
86. Busa, M.A., Umlinger, B.R., Hamill, J., & Van Emmerik, R.E.A. (2011). Multiscale entropy identifies complexity changes in postural control in Multiple Sclerosis. *International Society of Biomechanics meeting*, Brussels, Belgium.
87. Hasson, C.J., Van Emmerik, R.E.A., & Caldwell, G.E. (2010). A musculoskeletal model of postural control: simulated aging and muscle mechanical properties. *Annual meeting of the American Society of Biomechanics*, Providence, RI, August 18.
88. Gruber, A., Miller, R. Russell, E., Van Emmerik, R.E.A., & Hamill, J. (2010). Differences in joint kinematics and ground reaction forces between preferred and fixed running speeds. *Medicine and Science in Sport and Exercise*, 42(5), Williams & Wilkins. Page 269. *American College of Sports Medicine Annual Meeting*, Baltimore, MD, June 1.
89. Gruber, A., Miller, R., Van Emmerik, R.E.A., & Hamill, J. (2010). Does running speed alter lower extremity coordination? *6th World Congress of Biomechanics*, Singapore, August 1.
90. Gruber, A., Busa, M., Gorton, G., Van Emmerik, R.E.A., Masso, P., & Hamill, J. (2010). Time-to-contact identifies differences in postural control in adolescent idiopathic scoliosis. *Annual meeting of the American Society of Biomechanics*, Providence, RI, August 18.
91. Busa, M., Jones, S., Remelius, J., House, J., Sugumaran, K., Eve, J. & Van Emmerik, R.E.A. (2010). Changes in gait kinematics at preferred walking speed in people with multiple sclerosis. *Annual meeting of the American Society of Biomechanics*, Providence, RI., August 18.
92. Busa, M., Gruber, A., Gorton, G., Masso, P., Hamill, J., & Van Emmerik, R.E.A. (2010). Multiscale Entropy Identifies Complexity Changes in Postural Control of Adolescent Idiopathic Scoliosis. *Annual meeting of the American Society of Biomechanics*, Providence, RI, August 18.
93. O'Halloran, J., Remelius, J.G., Van Emmerik, R.E.A., & Hamill, J. (2010). Discrete frequency adjustment of walking above and below preferred stride frequency causes an increase in the metabolic cost of movement. *Annual meeting of the American Society of Biomechanics*, Providence, RI, August 18.
94. Johnson, M.B., & Van Emmerik, R.E.A. (2010). The impact of head orientation on multi-segmental torso coordination during the transition from sitting to standing. *Human Factors and Ergonomics*, San Francisco, September 27.
95. House, J.D., Jones, S.L., Remelius, J.G., Van Emmerik, R.E.A., Kent-Braun, J.A. (2009). Adaptations in Stride Parameters to Gait Speed in People with Multiple Sclerosis. *Consortium*

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- of Multiple Sclerosis Centers Annual Conference, International Journal of MS Care, 36-37, Supplement, S60.
96. Russell, E.M., Gruber, A.H., Van Emmerik, R.E.A., & Hamill, J. (2009). Lower Extremity Coordination in Obese Women. 2009 Annual Meeting of the American Society of Biomechanics, State College, PA, August 26.
  97. Remelius, J.G., Jones, S.L., House, J.D., & Van Emmerik, R.E.A. (2009). The influence of walking speed on the spatio-temporal parameters of gait in people with Multiple Sclerosis . 19th International Conference on Posture and Gait Research, Bologna, Italy, June 21.
  98. Hasson, C.J., Van Emmerik, R.E.A., & Caldwell, G.E. (2009). Structural Changes in Muscle Activity Patterns While Learning to Direct Pedal Forces. *Journal of Sport & Exercise Psychology*, 31 (Supplement): S67. North American Society for the Psychology of Sport and Physical Activity Annual Conference, Austin, Texas, June 11.
  99. Rosado, L., Hasson, C.J., Van Emmerik, R.E.A., & Caldwell, G.E. (2008). Age Related Changes in Postural Muscle Responses With Increasing Perturbations to the Upper Back (#448). North American Congress on Biomechanics, Ann Arbor Michigan, August 5-9.
  100. Baird, J. & Van Emmerik, R.E.A. (2008). Postural Control During a Standing Turning Task in Young and Older Adults (#524). North American Congress on Biomechanics, Ann Arbor Michigan, August 5-9.
  101. Haddad, J.M., Snapp-Childs, W., Van Emmerik, R.E.A., & Davidson, M. Can Thinking be Hazardous to Your Balance? The Effects of Cognition on Postural Stability in Older Adults (#389). 2008 North American Congress on Biomechanics, Ann Arbor Michigan, August 5-9.
  102. Miller, R.H., Caldwell, G.E., Van Emmerik, R.E.A., Hamill, J. & Umberger, B.R. (2008). Does Restraining Arm Motion Alter Ground Reaction Forces During Running? (#256). North American Congress on Biomechanics, Ann Arbor Michigan, August 5-9.
  103. Seay, J., Van Emmerik, R.E.A., & Hamill, J. (2008). Trunk Bend and Twist Coordination in Runners With Low Back Pain (#274). North American Congress on Biomechanics, Ann Arbor Michigan, August 5-9.
  104. Russell, E., Gorton, G., Masso, P., Van Emmerik, R.E.A., & Hamill, J. (2008). Coordination Pattern in Children With Spastic Diplegia: Pre-Operative and 1 and 5-Years Post-Operative (#399). North American Congress on Biomechanics, Ann Arbor Michigan, August 5-9.
  105. Gariépy, C., Hasson, C.J., Van Emmerik, R.E.A., & Caldwell, G.E. (2008). Age-related Decrease in Degrees of Freedom in Postural Control During Quiet Stance. The European Society of Biomechanics 16th Congress, Lucerne, Switzerland, July 6-9.
  106. Hasson, C.J., Van Emmerik, R.E.A., & Caldwell, G.E. (2008). Age related adaptability of postural control as assessed by recurrence quantification analysis. *North American Society for the Psychology of Sport and Physical Activity Annual Conference*, Niagara Falls, Ontario, June 5-7. *Journal of Sport & Exercise Psychology*, 30, supplement, S87.
  107. Hasson, C.J., Caldwell, G.E., Van Emmerik, R.E.A. (2008). Using time-to-contact to predict stepping behavior after postural perturbations in older adults. *North American Society for the Psychology of Sport and Physical Activity Annual Conference*, Niagara Falls, Ontario, June 5-7. *Journal of Sport & Exercise Psychology*, 30, supplement, S88.
  108. Hamill, J., & Van Emmerik, R.E.A. (2007). Functional Variability and Lower Extremity Injury. 10<sup>th</sup> Annual International Conference on Foot Biomechanics and Orthotic Therapy. San Diego, CA, November 16.

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109. Chang, R., Van Emmerik, R.E.A., Hamill, J. (2007). Coordination of the Rear foot and Forefoot During Walking. 10<sup>th</sup> Annual International Conference on Foot Biomechanics and Orthotic Therapy. San Diego, CA, November 18.
110. Wilson, C., Simpson, S., Van Emmerik, R.E.A., & Hamill, J. (2007). Changes in coordination variability with skill development in expert performers. Proceedings of the XXV International Symposium on Biomechanics in Sports pp. 269-272, Ouro Preto, Brazil.
111. Hasson, C.J., Gariépy, C., Caldwell, G.E., Van Emmerik R.E.A., and McDermott, W.J. (2007). Critical time-to-contact after postural perturbations. *The American Society of Biomechanics 31<sup>st</sup> Meeting*, Stanford, California, August 22-25.
112. Baird, J.L., & Van Emmerik, R.E.A. (2007). Segment contributions to a standing turn in young and old adults under different task constraints. WO-2, p42, International Society of Posture and Gait Research (ISPGR), Burlington, Vermont, July 14-18.
113. Johnson, M.B., Cacciatore, T., Van Emmerik, R.E.A. (2007). Inter-segmental motion of the torso during the transition from sitting to standing. WP-28, p167, International Society of Posture and Gait Research (ISPGR), Burlington, Vermont, July 14-18.
114. Remelius, J.G, Chung, L., Johnson, M.B., Smith, B., Baquis, G., & Van Emmerik, R.E.A. (2007). Postural control in multiple sclerosis during reach and lean perturbations. TP-58, p144, International Society of Posture and Gait Research (ISPGR), Burlington, Vermont, July 14-18.
115. Peters, B.T., Brady, R., Van Emmerik, R.E.A., & Bloomberg, J.J. (2007). Visual Acuity during Treadmill Walking. Paper presented at the VXIII<sup>th</sup> meeting of the International Society of Postural and Gait Research, Burlington, Vermont, July 14-18.
116. Haddad, J.M., Van Emmerik, R.E.A., Wheat, J., & Hamill, J. (2007). Developmental Changes in the dynamical Structure of Postural Sway during a Precision Fitting Task. XXI<sup>th</sup> Congress of International Society of Biomechanics, Taipei, Taiwan. July 1. *Journal of Biomechanics*, 40, S247, Elsevier.
117. Chang, R., Van Emmerik, R.E.A., & Hamill, J. (2007). Coordination of the rearfoot and forefoot during walking. XXI<sup>th</sup> Congress of International Society of Biomechanics, Taipei, Taiwan. July 1. *Journal of Biomechanics*, 40, S179, Elsevier.
118. Seay, J., Van Emmerik, R.E.A., & Hamill, J. (2007). Axial rotation and coordination of the pelvis and trunk in runners with and without low back pain. XXI<sup>th</sup> Congress of International Society of Biomechanics, Taipei, Taiwan. July 1. *Journal of Biomechanics*, 40, S378, Elsevier.
119. TenBroek, T.M., Van Emmerik, R.E.A., Hasson, C.J., & Hamill, J. (2007). Lyapunov exponent estimation for human gait acceleration signals. XXI<sup>th</sup> Congress of International Society of Biomechanics, Taipei, Taiwan. July 1. *Journal of Biomechanics*, 40, S210, Elsevier.
120. McDermott W.J., Van Emmerik, R.E.A., Hamill, J. (2007). The Integration of Respiration and Postural Control During Locomotion. In proceedings of the 12<sup>th</sup> *Annual Gait and Clinical Movement Analysis Society (GCMAS)* meeting, April 11-14, Springfield, Massachusetts.
121. Remelius, J., McDermott, W.J., Hamill, J., & Van Emmerik, R.E.A. (2007). The Influence of an External Constraint on Breathing Frequency During Walking. In proceedings of the 12<sup>th</sup> *Annual Gait and Clinical Movement Analysis Society (GCMAS)* meeting, April 11-14, Springfield, Massachusetts.
122. Van Emmerik, R.E.A., McDermott, W.J., Remelius, J.G., & Hamill, J. (2007). Movement variability of the upper body and metabolic cost during walking at different stride frequencies. North American Society for the Psychology of Sport and Physical Activity Conference, an Diego California. *Journal of Sport and Exercise Psychology*, 29, S138.

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123. Haddad, J. M., Hasson, C.J., Gagnon, J., Van Emmerik, R.E.A., & Hamill, J. (2007). The use of time-to-contact measures in assessing postural stability. World Congress of Biomechanics, Munich, Germany. *Journal of Biomechanics* (p. 557).
124. C.J. Hasson, G.E. Caldwell, R.E.A. Van Emmerik, and C. Gariépy (2007). Postural Corrections in Response to Increasing Upper-Body Perturbations. *Motor Control*, 11 (supplement), S165.
125. C.J. Hasson, R.E.A. Van Emmerik, G.E. Caldwell, W.J. McDermott, and J. Hamill (2007). Recurrence Quantification Analysis of Upright Stance with Postural and Respiratory Challenges. *Motor Control*, 11 (supplement), S155.
126. Hasson C.J., Van Emmerik R.E.A., and Caldwell G.E. (2006). Changes in mono- and bi-articular muscle activity patterns after learning to direct pedal forces. The American Society of Biomechanics 30th Meeting, Blacksburg, Virginia, September 6-9.
127. Hasson C.J., Van Emmerik R.E.A., and Caldwell G.E. (2006). Changes in pedal and joint kinetics after learning to direct pedal forces. The American Society of Biomechanics 30th Meeting, Blacksburg, Virginia, September 6-9.
128. Hamill, J., Haddad, J.M., & Van Emmerik, R.E.A. (2006). Overuse injuries in running: Do complex analyses help our understanding? In: Proceedings of the XXIVth International Symposium on Biomechanics in Sports Congress, University of Salzburg, Austria (pp. 27-32).
129. McDermott, W.M., Remelius, J.G., Van Emmerik, R.E.A., & Hamill, J. (2006). Locomotor-respiratory coordination dynamics and metabolic cost during walking at different stride frequencies. World Congress of Biomechanics, Munich, Germany. *Journal of Biomechanics*, 39, S106.
130. Remelius, J., Van Emmerik, R.E.A., & Hamill, J. (2006). Coordination and gait initiation in multiple sclerosis. World Congress of Biomechanics, Munich, Germany. *Journal of Biomechanics*, 39, S91.
131. McDermott, W.J., Remelius, J.G., Van Emmerik, R.E.A., & Hamill, J. (2006). Stride frequency and locomotor-respiratory coordination dynamics during walking. North American Society for the Psychology of Sport and Physical Activity Conference, Denver, Colorado. *Journal of Sport and Exercise Psychology*, 28, S130.
132. Haddad, J. M., Hasson, C.J., Cagnon, J., Van Emmerik, R.E.A., & Hamill, J. (2006). The use of time-to-contact measures in assessing postural stability. World Congress of Biomechanics, Munich, Germany. *Journal of Biomechanics* (p. 557).
133. Hasson C.J., Van Emmerik R.E.A., and Caldwell G.E. (2006). Changes in force directing ability after training to direct pedal forces. In: Proceedings of the 14th Biennial Conference for the Canadian Society for Biomechanics. University of Waterloo, Ontario, August 16-19 (p. 83).
134. Remelius, J.G., Van Emmerik R.E.A. & Hamill, J. (2006). Patterns of gait initiation in multiple sclerosis. In: Proceedings of the 14th Biennial Conference for the Canadian Society for Biomechanics. University of Waterloo, Ontario, August 16-19 (p. 14).
135. Baird, J.L., & Van Emmerik R.E.A. (2006). Performance of a standing turning task in young and older individuals. In: Proceedings of the 14th Biennial Conference for the Canadian Society for Biomechanics. University of Waterloo, Ontario, August 16-19 (p. 7).
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239. Van Emmerik, R.E.A. & Newell, K.M. (1987). Phase transitions in intralimb relative motion patterns in a drawing task. *Paper presented at the Conference of the North American Society for the Psychology of Sport and Physical Activity*, Vancouver, Canada, June.
240. Van Emmerik, R.E.A. & Rutter, B.G. (1987). Phase transitions and dimensional analysis in movement pattern formation: Effects of task constraints and systems' design. *In proceedings of Interface 87*, Rochester, New York, May.
241. Van Emmerik, R.E.A. & Newell, K.M. (1986). Topological characteristics of coordination in the acquisition of handwriting. *Paper presented at the Third Mid-Central Ergonomics/Human Factors Conference*, Miami, Ohio, July.
242. Van Emmerik, R.E.A. & Newell, K.M. (1986). Topological characteristics of coordination: Principles of acquisition. *Paper presented at the conference of the North American Society for the Psychology of Sport and Physical Activity*, Scottsdale, Arizona, June.

## TEACHING ACTIVITIES

### I. Courses Taught

- KIN560: Movement Neuroscience, UMass Amherst, fall 2020
- KIN597SM: Sensorimotor Control; University of Massachusetts Amherst, 2015-
- Motor Control and Dynamical Systems. Guest Lecturer. National Taiwan Sports University. June 23-28, Taipei, Taiwan.
- Undergraduate *Motor Control*. University of Massachusetts course KIN 450/460. 1995-2019.
- Undergraduate course *Neuromechanics of Human Motion*: KIN 297G; Co-taught: 2009.
- Graduate course on *Movement Coordination and Perception*. University of Massachusetts course KIN 565. 1995-present.
- Graduate course on *Nonlinear Biodynamics*, and its applications to human motor performance. University of Massachusetts course KIN 697N. 1995-present.

## *Van Emmerik, Curriculum Vitae*

- Graduate course on *Nonlinear Time Series Analysis: Applications to Human Perceptual-Motor Performance*. University of Massachusetts course KIN 797N. 1999-present.
- Graduate course on *Clinical Movement Evaluation*, KIN 597V, co-taught with Dr. J. Hamill 2008-2009.
- Graduate seminar on *Stability of Posture and Locomotion*. University of Massachusetts course EXCSCI 697S.
- Graduate course on Bernstein's contribution's to motor control University of Massachusetts course EXCSCI 697V/897V.
- Graduate seminar on novel techniques in nonlinear analysis. University of Massachusetts course EXCSCI 897N.
- *Honors Colloquium* Department of Kinesiology.
- Graduate/undergraduate course on *Rehabilitation Psychology*, with special emphasis on the dynamics of movement disorders (Vrije Universiteit, the Netherlands).
- Graduate Seminar on *Dynamics of Healthy and Pathological Gait*. (Vrije Universiteit, the Netherlands).

## **II. Post-doctoral and Students Trained**

### ***Post-Doctoral Fellows:***

1. Stephanie Jones (2008-2015)
2. Jongil Lim (2012-2016)
3. Darnell Simon (2012-2015)

### ***Ph.D. Students Chaired:***

- |                       |   |
|-----------------------|---|
| 1. Erwin van Wegen    | Department of Kinesiology, Univ. of Massachusetts (2004)    |
| 2. Brian Peters       | Department of Kinesiology, Univ. of Massachusetts (2005)    |
| 3. Bill McDermott     | Department of Kinesiology, Univ. of Massachusetts (2005)    |
| 4. Jeffrey Haddad     | Department of Kinesiology, Univ. of Massachusetts (2006)    |
| 5. Molly Johnson      | Neuroscience and Behavior, Univ. of Massachusetts (2010)    |
| 6. Jebb Remelius      | Department of Kinesiology, Univ. of Massachusetts (2012)    |
| 7. Chris Palmer       | Department of Kinesiology, Univ. of Massachusetts (2012)    |
| 8. Jennifer Baird     | Department of Kinesiology, Univ. of Massachusetts (2012)    |
| 9. Mike Busa          | Department of Kinesiology, Univ. of Massachusetts (2015)    |
| 10. Scott Ducharme    | Department of Kinesiology, Univ. of Massachusetts (2017)    |
| 11. Luis Rosado       | Department of Kinesiology, Univ. of Massachusetts (2019)    |
| 12. Avelino Amado     | Department of Kinesiology, Univ. of Massachusetts (2019)    |
| 13. Julianna Averill  | Department of Kinesiology, Univ. of Massachusetts (2021)    |
| 14. Sam Zeff          | Department of Kinesiology, Univ. of Massachusetts (current) |
| 15. Charles D. Napoli | Department of Kinesiology, Univ. of Massachusetts (current) |
| 16. Hwigeum Jeong     | Department of Kinesiology, Univ. of Massachusetts (current) |
| 17. Natalie Cabiles   | Department of Kinesiology, Univ. of Massachusetts (current) |

### **Doctoral Students (Committee member):**

Li, Li. (1999);Carolynn Patten (1998); Ed Melanson (1999); Bryan Heiderscheit (2000); Mike Rosenstein (2003); Kris O' Connor (2004); Sandy Whittlesey (2004); Christine Pollard (2005); Dave Pober (2007);

## *Van Emmerik, Curriculum Vitae*

Chris McLean (2007); Brendan Burns (2007); Joseph Seay (2008); Sheree Loftus (2008); Chris Hasson (2009); Ashvin Shah (2009); Anita Christie (2009); Patrick Deegan (2010); Ryan Chang (2009); Linda Chung (2010); Elizabeth Russell (2010); Kelly-Anne McKeown (2010); Ross Miller (2011); Pedro Rodrigues (2011); Trampas TenBroek (2011); Allison Gruber (2012); Steve Foulis (2013); Jeffer Sasaki (2014); Brittney Muir (Purdue University; 2015); Natalia Rinaldi (University of Sao Paulo, Brazil; 2015); Sangsoo Park (2018); Carl Jewell (2018); Jan Stenum (2019); Gabriela Borin (2019); Ryan Wedge (2019); Josh Liddy (Purdue University, 2019); Holly Stock (University of Bath, UK, 2020), Mary (Kate) Clayton Jones (2021), Dan Gregory (2021), Jules Miehm (current), Sumire Sato (Neuroscience and Behavior, current)

### **Master's Students Chaired:**

1. Erwin van Wegen Department of Kinesiology, Univ. of Massachusetts (2000)
2. Brian Peters Department of Kinesiology, Univ. of Massachusetts (2000)
3. Bill McDermott Department of Kinesiology, Univ. of Massachusetts (2000)
4. Jeffrey Haddad Department of Kinesiology, Univ. of Massachusetts (2000)
5. Molly Johnson Neuroscience and Behavior, Univ. of Massachusetts (2006)
6. Jebb Remelius Department of Kinesiology, Univ. of Massachusetts (2007)
7. Jennifer Baird Department of Kinesiology, Univ. of Massachusetts (2007)
8. Catherine Gariépy Department of Kinesiology, Univ. of Massachusetts (2008)
9. André Boulay Neuroscience and Behavior, Univ. of Massachusetts (2012)
10. Julianna Averill Department of Kinesiology, Univ. of Massachusetts (2013)
11. Karthik Sugumaran Department of Kinesiology, Univ. of Massachusetts (2013)
12. Avelino Amado Neuroscience and Behavior, Univ. of Massachusetts (2012)
13. Sam Zeff Department of Kinesiology, Univ. of Massachusetts (2020)
14. Charles D. Napoli Department of Kinesiology, Univ. of Massachusetts (2021)
15. Sam Carey Department of Kinesiology, Univ. of Massachusetts (2021)

### Master's students (Committee Member)

Pam Bockol (1999); David Asermely (1997); Bryan Heiderscheidt (1998); Geir Oterhals (1998; Norway); Paul Jarle Mork (1998; Norway); Sandy Whittlesey (1999); Chris Baggett (1999); Stephanie Jones (2000); Jeffrey Chu (2000); Rob Kandell (2002); Rachel Merrell (2003); Michelle Countryman (2003); Kelly-Anne McKeown (2004); Fidler, Andrea (2004); Ryan Crews (2004); Mariko Holbrook (2006); Elizabeth Russell (2007); Luis Rosado (2012); Carl Jewell (2013); Devon Kelly (2015); Amy Whitehead (2015); Christopher Moore (2018); Bekah Stein (2019); Colleen Sands (2019); Caitlin Rajala (2020);

### **Undergraduate Honors Student Thesis Chair:**

1. Liliy Egan Department of Kinesiology, Univ. of Massachusetts (1996)
2. Rick Rumford Department of Kinesiology, Univ. of Massachusetts (2000)
3. Rebecca Bell Department of Kinesiology, Univ. of Massachusetts (2002)
4. Kristen Kneeland Department of Kinesiology, Univ. of Massachusetts (2000)
5. Gary Loomis Department of Kinesiology, Univ. of Massachusetts (2006))
6. Amy Pascale Department of Kinesiology, Univ. of Massachusetts (2009)
7. Stephen McLean Department of Kinesiology, Univ. of Massachusetts (2010)
8. Josh Liddy Department of Kinesiology, Univ. of Massachusetts (2012)
9. Mary Chaput Neuroscience and Behavior, Univ. of Massachusetts (2013)



## *Van Emmerik, Curriculum Vitae*

10. Leo Sheehan	Department of Kinesiology, Univ. of Massachusetts (2014)
11. Jack Bernadon	Department of Kinesiology, Univ. of Massachusetts (2015)
12. Kimberly Vermilya	Department of Kinesiology, Univ. of Massachusetts (2017)
13. Kelly Kalagher	Department of Kinesiology, Univ. of Massachusetts (2018)
14. Mirra Stillman	Department of Kinesiology, Univ. of Massachusetts (2018)
15. Katie Ryder	Department of Kinesiology, Univ. of Massachusetts (2019)
16. Brianna Malaguti	Department of Kinesiology, Univ. of Massachusetts (2020)

### Undergraduate Honors Thesis member of Committee:

Elizabeth Devine (2002); Catherine Gariepy (2006); Katherine Kilmartin (2007); Joe Collins (2007); Brigid McKenna (2007); Jillian Angelo (2009); Matt Stranberg (2011); Carl Jewell (2011); Andrea Arabadjis (2012); Eric Dibasio-White (2013);

## SERVICE

### I. Kinesiology Department

- Department of Kinesiology Associate Chair (2018-)
- Member departmental Personnel Committee (1995-2015)
- Kinesiology Departmental Honors Program Director (1997-present)
- Member Department of Kinesiology Search Committees (1998; 2004; 2007; 2012-2013; 2015;2016;2017;2018)
- Chair Department of Kinesiology Search Committee (2008; 2014)
- Coordinator Exercise Science/Kinesiology Graduate Seminar (1999; 2006)
- Departmental Library coordinator (1999-2012)
- Department of Kinesiology Strategic Planning Committee (2005-2012)
- Department of Kinesiology Qualifying Exam Committee (2005-2011)

### II. School of Public Health and Health Sciences (SPHHS)

- Chair of School of Public Health and Health Sciences Human Subjects Review Committee (SPH&HS-HSRC) (1996-2008).
- Member School Personnel Committee (2012)
- Member School Strategic Planning Committee (2013)

### III. University of Massachusetts

- Member and Vice-Chair University of Massachusetts Human Subjects Review Committee (1999-present).

## *Van Emmerik, Curriculum Vitae*

- Associate Director, Center for Personalized Health Monitoring (CPHM), Institute of Applied Health Sciences (IALS) (2016-present).

### **IV. External Doctoral Examiner foreign Universities**

- Genevieve Williams, Cardiff School of Sport, Cardiff Metropolitan University, United Kingdom (2012)
- Tal Krasovsky, School of Physical and Occupational Therapy, McGill University, Montreal (Qc), Canada.

### **V. Service to Disciplinary Associations, Federal Agencies and Foundations**

- Standing member National Multiple Sclerosis Society (NMSS) grant review panel (12/1/2013 – present).
- Promotion and Tenure reviews 2005-present
- External Reviewer, National Science Foundation 2006-present.
- Grant Reviewer, Canadian Institutes of Health Research, 2006-present
- External reviewer, National Engineering and Research Council of Canada (NSERC), 2009-present
- Standing panel member, National Science Foundation, Perception, Action and Cognition; grant reviewer from 2003-2006.
- Grant review NIH Rehabilitation Research and Development Service: Aging and Neurodegenerative Diseases: 2010
- Grant review National Science Foundation, Social and Behavioral Sciences, special panel on modeling dynamics, June 2004
- External reviewer, National Multiple Sclerosis Society, 2008-present.
- Abstract reviews for North American Society for the Psychology of Sport and Physical Activity, American Society of Biomechanics, and Annual Dynamic Systems and Control Conference (1995-present)
- Grant Review, National Aeronautics and Space Agency (NASA) peer review panel Life Sciences Neuroscience Division: In-flight experiments, January 1999, Washington, D.C.
- Grant Review, Israeli Science Foundation, 1996
- Grant Review, Medical Research Council of Canada (1995-1996)
- Member, Five-College Research Consortium Williams Syndrome, Berkshire Hills Music Academy
- Grant Review, Dutch Organization for Scientific Research (1991-1995)

### **VI. Conferences and Symposia Organized**

- Symposium: Dynamics of Movement Disorders: A tribute to Robert Wagenaar. presented at the 14<sup>th</sup> European workshop on Ecological Psychology, Groningen, The Netherlands July 6-8 2016.
- International conference on Event Perception and Action, 2008: Scientific Committee.
- “Coordination Dynamics of Posture and Gait: Translational Implications for Rehabilitation Practice”. Symposium organized with R.C. Wagenaar at the Joint meeting of the American Congress of Rehabilitation Medicine (ACRM) and the American Society of Neurorehabilitation

## *Van Emmerik, Curriculum Vitae*

- (ASNR), Boston, Massachusetts, September 27-October 1, 2006.
- “Clinical Applications of Dynamical Systems Theory.” Symposium organized (with J. Hamill) at the *Gait and Clinical Movement Analysis Society* (GCMAS) meeting, April 11-14, 2007, Springfield, Massachusetts.
- North American Society for the Psychology of Sport and Physical Activity (NASPSPA), Motor control and learning committee organizing the 2001 conference.
- North American Society for the Psychology of Sport and Physical Activity (NASPSPA), Motor control and learning committee organizing the 1999 conference.
- 1997 Spring meeting of the North American section of the International Society for Ecological Psychology, Amherst, May 29 1997.
- American College of Sports Medicine, New England Chapter, 1997 meeting at Boxborough, Massachusetts, symposium: “Dynamical approaches to movement coordination and control in human posture and locomotion”, November 7, 1997.
- International conference on Event Perception and Action, 1997, Toronto Canada. Symposium: “Dynamics of movement disorders”, July 22, 1997.

## **VII. Editorial Board and Journal Review**

### ***Editorial Board:***

- Human Movement Science
- Motor Control
- Kinesiology Review
- Brazilian Journal of Motor Behavior

### ***Ad hoc Reviewer:***

Adapted Physical Activity Quarterly; Archives of Physical Medicine and Rehabilitation; Clinical Biomechanics; Ecological Psychology; European Journal of Applied Physiology; Exercise and Sport Sciences Reviews; Experimental Brain Research; Human Movement Science; Journal of Applied Biomechanics; Journal of Applied Physiology; Journal of Physiology; Journal of Biomechanics; Journal of Experimental Psychology: Human Perception and Performance; Journal of Gerontology; Journal of Motor Behavior; Journal of rehabilitation Medicine; Medicine and Science in Sport and Exercise; Motor Control; Naturwissenschaften; Neurorehabilitation and Neural Repair; Sports Biomechanics; Parkinsonism and Related Disorders; Research Quarterly for Exercise and Sport; Trends in Neurosciences.