

Curriculum Vitae Edwin van Asseldonk, PhD

Assistant professor
Biomechanical Engineering
MIRA
University of Twente

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Personal information

Date of birth	March 28, 1978
Place of birth	Erp
Address	Emmalaan 3, 6571 AK, Berg en Dal
Citizenship	The Netherlands
Marital Status	Married

Interests

- Neurorehabilitation
- Rehabilitation robotics
- Neuroplasticity
- Non invasive stimulation of the central nervous system
- Human motor control and adaptation

Education and personal development

2001	Master Faculty of Human Movement Science, Free University, Amsterdam
2009	Mentoring program
2010	Course: time management.
2012	Course: effective coaching and managing for coordinators : Effective communication, situational leadership, intervision and coaching, conducting difficult conversation, conflict management, providing feedback.
2014	University Teaching Qualification

Positions held

2001 – 2001	Research assistant, Institute for Research in Extramural Medicine, Free University, Amsterdam
2001 – 2002	Researcher and Matlab programmer, Department of pediatric physical therapy, Radboud University Nijmegen Medical Centre, Nijmegen
2002 – 2007	PhD student, Department of Biomechanical Engineering, University of Twente, Enschede
2008 – present	Assistant professor at Department of Biomechanical Engineering, University of Twente, Enschede
2015 – present	Adjunct professor at Department of Physical Therapy and Human Movement Sciences, Northwestern University, Chicago

Teaching

1997 - 2000	Teaching assistant Biomechanics, Nerve, muscle, skeletal modelling, Faculty of Human Movement Sciences, Free University of Amsterdam
2003 - 2004	Teaching assistant bachelor course Statics, Mechanical Engineering, University of Twente.
2005 - present	Supervision of master and bachelor students in final thesis research

2007 - 2009	Lecturer master course Human Movement Control, Mechanical Engineering, Biomedical Engineering, University of Twente
2007 - 2010	Lecturer bachelor course Mens in Beweging, Technical Medicine, University of Twente
2010 - present	Coordinator master course Human Movement Control. Mechanical Engineering, Biomedical Engineering, University of Twente
2015 - present	Lecturer bachelor course De bewegende mens, Technical Medicine, University of Twente
2015 - present	Lecturer master course Biomechanics, Mechanical Engineering, Biomedical Engineering, University of Twente

Funding

Past

Title: Effect of gait training with a new robotic gait trainer (LOPES) in chronic stroke survivors **PI:** Jaap Buurke
Number: NA **Period:** 2008-2009 **Effort:** 50%
Source: KNGF (Royal Dutch Society for Physical Therapy) **Costs:** 40 k€ **Role:** project CO-PI
Description: In this project the first clinical evaluation of the gait rehabilitation robot LOPES was performed in chronic stroke survivors.

Title: Priming the brain for robotic training **PI:** Edwin van Asseldonk
Number: NA **Period:** 2010-2014 **Effort:** 66%
Source: NWO-VENI **Costs:** 250 k€ **Role:** PI
Description: This project aims to enhance cortical plasticity and functional recovery in stroke survivors by the integration of cortical brain stimulation in robotic gait training

Title: Robotic gait trainer **PI:** Demon (B. Screever)
Number: NA **Period:** 2009-2014 **Effort:** 5%
Source: PIDON **Costs:** 375 k€ **Role:** Co-PI
Description: Follow up project of LOPES. Development of robotic gait trainer suited for a clinical setting and which will be evaluated within the project period in a clinical trial with acute stroke survivors and spinal cord injury subjects.

Ongoing

Title: BALANCE Balance Augmentation in Locomotion, through Anticipative, Natural and Cooperative control of Exoskeletons **PI:** Jan Veneman (Technalia)
Number: FP7 ICT2011.2.1 **Period:** 2013-2017 **Effort:** 5%
Source: EU STREP **Costs:** 588 k€ **Role:** Project Co-PI
Description: This project aims to realize an exoskeletal robot that improves the balance performance of humans, targeted at users facing balance-challenging conditions or suffering from a lack of ability to walk or maintain balance during walking.

Title: NeurAS: NEURoControl- Assessment and Stimulation **PI:** Frans van der Helm (TU Delft)
Number: NA **Period:** 2013-2016 **Effort:** 5%
Source: ZonMW **Costs:** 332 k€ **Role:** Subproject-PI

Description: This project aims to improve the outcome of gait training in spinal cord injury patients through development of a novel non-invasive stimulation paradigm that in combination with robotic support promotes neuroplasticity.

Title: Motor skill Learning in Older ADults: neurocognitive correlates, individual differences, and interventions to enable healthy aging **PI:** Willem Verwey

Number: NA **Period:** 2014-2017 **Effort:** 5%
Source: NWO - Open Research **Costs:** 213k€ **Role:** Co-PI
Area Plus

Description: This project aims to understand the effect of age on learning new motor skills and to assess how non-invasive brain stimulation (tDCS) can increase the capacity of older individuals to learn.

Title: AWARD: Assessment during Walking using A Robotic Device **PI:** Herman van der Kooij

Number: NA **Period:** 2013-2019 **Effort:** 5%
Source: STW **Costs:** 454 k€ **Role:** Co-PI

Description: This project aims to improve the outcome of robot-aided gait training by tailoring the robotic support to the individual patient's impairments. We will develop and evaluate protocols and algorithms to quantify the primary motor impairments while subjects are actually walking.

Title: Symbitron **PI:** Herman van der Kooij

Number: FP7 ICT-2013.2.1 **Period:** 2014-2018 **Effort:** 5%
Source: EU STREP **Costs:** 844 k€ **Role:** Co-PI

Description: In this project we will develop personalized wearable exoskeletons for SCI patients that are biologically inspired controlled

Title: Efficacy of Assist-As-Needed (AAN) Robotic gait Training in sub-acute Stroke survivors **PI:** Jaap Buurke

Number: NA **Period:** 2014-2018 **Effort:** 2%
Source: ZonMW **Costs:** 10k€ **Role:** Co-PI

Description:

International experience

2001 Jan – May Internship under supervision of Prof G.L. Gottlieb at the Neuromuscular Research Centre, Boston University, Boston, USA.
2005 May – Aug Visiting predoctoral fellow at the Neuro Imaging and Motor Control lab of Prof J. P. Dewald at Physical Therapy & Human Movement Sciences, Northwestern University, Chicago, USA.

Awards, recognition

2000 Master student prize of the Faculty of Human Movement Sciences (Gerrit-Jan

	van Ingen-Schenau scholarship). The grant amounts to fl 7500,- and allowed me to perform a research project at Boston University.
2001	Master, cum laude
2004	Poster presentation award, 11th Dutch annual conference on BioMedical Engineering (iBME),
2008	Second place Best PhD thesis in Human Movement Sciences
2009	Personal Veni grant

Organization national and international academic events.

- Workshop co-chair. "Robotic systems for training and assistance of walking". IEEE International Conference on Robotics and Automation (ICRA) May 16-21, Stockholm, Sweden. Submitted
- Workshop co-chair. "Robotic systems for training and assistance of walking". International Conference On Rehabilitation Robotics (ICORR), August 11 2015, Singapore, Singapore.
- Workshop co-chair. "Robotic systems for training and assistance of walking". International Conference on Rehabilitation Robotics, August 11 2015, Singapore, Singapore.
- Session chair "Non-invasive direct current stimulation and its application for motor neurorehabilitation" Congress on Neurorehabilitation and Neural Repair, May 21 and 22 2015, Maastricht, the Netherlands.
- Session chair "Non-invasive brain stimulation: opening up new horizons in neurorehabilitation?" at the Dutch Congress of Rehabilitation Medicine, November 6 and 7 2014, Rotterdam, The Netherlands
- Organizing committee 1st UAE meeting on Neurorehabilitation, March 9-10, 2012, Abu Dhabi, United Arab Emirates.
- Session chair of the 4th symposium of IEEE Benelux Chapter on Engineering in Medicine and Biology Society. November 9-10, 2009, Enschede, The Netherlands

Other academic activities

- Member of the Society for Neuroscience, Dutch Society for Neurorehabilitation, IEEE
- Reviewer for: Neurorehabilitation and neural repair, IEEE Transaction on Neural Systems and Rehabilitation Engineering, Experimental Brain Research, Archives of Physical Medicine and Rehabilitation, Gait and Posture, IEEE Transaction on Robotics

Management Activities (education & research)

2012	Twente graduate school committee for MIRA
2013 - present	Committee Neural and Motor system for redesign master Biomedical Engineering
2014 - present	MIRA Institute Council
2015 - present	Management board of the IMDI CoRE Neurocontrol.

Publications

PhD thesis

Van Asseldonk EHF. Restitution and compensation in the recovery of function in the lower extremities of stroke survivors. University of Twente, 2008, p. 180. ISBN: 978-90-365-2640-1

Book Chapters

van Asseldonk EHF, Van der Kooij H (2012) Robot-aided gait training with LOPES. In: Neurorehabilitation Technology (Dietz V, Nef T, Rymer WZ, eds), pp 379–396. London: Springer-Verslag.

Peer reviewed international journals

Van Asseldonk EHF, Boonstra, TA. Transcranial direct current stimulation of the leg motor cortex enhances coordinated motor output during walking with a large inter-individual variability. *Brain Stimulation*. Accepted

Meuleman J, **Van Asseldonk E**, Van Oort G, Rietman H, Van der Kooij H. LOPES II — Design and Evaluation of an Admittance Controlled Gait Training Robot with Shadow-Leg Approach. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*. Accepted pending revisions

Stevenson AJ, Mrachacz-Kersting N, **van Asseldonk E**, Turner DL, Spaich EG. Spinal plasticity in robot-mediated therapy for the lower limbs. *Journal of NeuroEngineering and Rehabilitation* 12:81, 2015.

Otten A, Voort C, Stienen A, Aarts R, **Van Asseldonk E**, van der Kooij H. LIMPACT: A Hydraulically Powered Self-Aligning Upper Limb Exoskeleton. *IEEE-ASME Transactions on Mechatronics* 20:2285–2298, 2015.

Wang S, Wang L, Meijneke C, **Van Asseldonk E**, Hoellinger T, Cheron G, Ivanenko Y, La Scaleia V, Sylos-Labini F, Molinari M, Tamburella F, Pisotta I, Thorsteinsson F, Ilzkovitz M, Gancet J, Nevatia Y, Hauffe R, Zanol F, van der kooij H. Design and Control of the MINDWALKER Exoskeleton. *IEEE Transactions on Neural Systems and Rehabilitation Engineering* 23:277–286, 2015.

Sylos-Labini F, La Scaleia V, d'Avella A, Pisotta I, Tamburella F, Scivoletto G, Molinari M, Wang S, Wang L, **Van Asseldonk E**, van der kooij H, Hoellinger T, Cheron G, Thorsteinsson F, Ilzkovitz M, Gancet J, Hauffe R, Zanol F, Lacquaniti F, Ivanenko YP. EMG patterns during assisted walking in the exoskeleton. *Frontiers in Human Neuroscience* 8:1–12, 2014.

van Asseldonk EHF, Campfens SF, Verwer SJF, van Putten MJAM, Stegeman DF. Reliability and agreement of intramuscular coherence in tibialis anterior muscle. *PLoS ONE* 9: e88428, 2014.

Nonnekes J, Arroggi A, Munneke MAM, **van Asseldonk EHF**, Oude Nijhuis LB, Geurts AC, Weerdesteyn V. Subcortical structures in humans can be facilitated by transcranial direct current stimulation. *PLoS ONE* 9:e107731, 2014.

Koopman B, **van Asseldonk EHF**, van der kooij H. Speed-dependent reference joint trajectory generation for robotic gait support. *Journal of Biomechanics* 47: 1447–1458, 2014.

Meuleman JH, **van Asseldonk EHF**, van der kooij H. The effect of directional inertias added to pelvis and ankle on gait. *Journal of NeuroEngineering and Rehabilitation* 10:40, 2013.

van Asseldonk EH, Koopman B, van der Kooij H. Selective control of gait subtasks in robotic gait training: foot clearance support in stroke survivors with a powered exoskeleton. *Journal of NeuroEngineering and Rehabilitation* 10:3, 2013.

Floor-Westerdijk MJ, Schepers HM, Veltink PH, **van Asseldonk EHF**, Buurke JH. Use of inertial sensors for ambulatory assessment of center-of-mass displacements during walking. *IEEE Transactions on Biomedical Engineering* 59: 2080–2084, 2012.

Nederhand MJ, **van Asseldonk EHF**, van der Kooij, Rietman HS. Dynamic Balance Control (DBC) in lower leg amputee subjects; Contribution of the regulatory activity of the prosthesis side. *Clinical Biomechanics* 27: 40–45, 2012.

Ronsse R, Lenzi T, Vitiello N, Koopman B, **van Asseldonk E**, De Rossi SMM, van den Kieboom J, van der Kooij H, Carrozza MC, Ijspeert AJ. Oscillator-based assistance of cyclical movements: model-based and model-free approaches. *Medical and Biological Engineering and Computing* 49: 1173–1185, 2011.

Molier BI, **van Asseldonk EHF**, Hermens HJ, Jannink MJA. Nature, timing, frequency and type of augmented feedback; does it influence motor relearning of the hemiparetic arm after stroke? A systematic review. *Disability and Rehabilitation* 32: 1799–1809, 2010.

Schepers HM, **van Asseldonk EHF**, Baten CTM, Veltink PH. Ambulatory estimation of foot placement during walking using inertial sensors. *Journal Biomechanics* 43: 3138–3143, 2010.

Vallery H, **van Asseldonk E**, Buss M, Van der Kooij H. Reference trajectory generation for rehabilitation

robots: Complementary limb motion estimation. *IEEE Transactions on Neural Systems and Rehabilitation Engineering* 17: 23–30, 2009.

Schepers HM, **van Asseldonk EHF**, Buurke JH, Veltink PH. Ambulatory estimation of center of mass displacement during walking. *IEEE Transactions on Biomedical Engineering* 56: 1189–1195, 2009.

Simons CD, **van Asseldonk EH**, van der Kooij H, Geurts AC, and Buurke JH. Ankle-foot orthoses in stroke: effects on functional balance, weight-bearing asymmetry and the contribution of each lower limb to balance control. *Clinical Biomechanics* 24: 769-775, 2009.

Van Asseldonk EH, Wessels M, Stienen AH, van der Helm FC, and van der Kooij H. Influence of haptic guidance in learning a novel visuomotor task. *Journal of physiology, Paris* 103: 276-285, 2009.

Veneman JF, Menger J, **Van Asseldonk EHF**, Van der Helm FCT, and Van der Kooij H. Fixating the pelvis in the horizontal plane affects gait characteristics. *Gait & Posture* 28: 157-163, 2008.

Vallery H, Veneman J, Van Asseldonk E, Ekkelenkamp R, Buss M, and Van der Kooij H. Compliant Actuation of Rehabilitation Robots: Benefits and Limitations of Series Elastic Actuators. *IEEE Robotics & Automation Magazine* 15: 60-69, 2008.

Van Asseldonk EHF, Veneman JF, Ekkelenkamp R, Buurke JH, Van der Helm FCT, and Van der kooij H. The effects on kinematics and muscle activity of walking in a robotic gait trainer during zero-force control. *IEEE Transactions Neural Systems Rehabilitation Engineering* 16: 360 - 370 2008.

Veneman JF, Kruidhof R, Hekman EEG, Ekkelenkamp R, **Van Asseldonk EHF**, and Van der Kooij H. Design and Evaluation of the LOPES Exoskeleton Robot for Interactive Gait Rehabilitation. *IEEE Transactions Neural Systems Rehabilitation Engineering* 15: 379-386, 2007a.

Van der Kooij H, **Van Asseldonk EH**, Geelen J, Van Vugt JP, and Bloem BR. Detecting asymmetries in balance control with system identification: first experimental results from Parkinson patients. *Journal of Neural Transmission* 114: 1333-1337, 2007.

Van Asseldonk EHF, Carpenter MG, Van der Helm FCT, and Van der Kooij H. Use of induced acceleration to quantify the (de)stabilization effect of external and internal forces on postural responses. *IEEE transactions on biomedical engineering* 54: 2284 - 2295, 2007.

Van Asseldonk EH, Buurke JH, Bloem BR, Renzenbrink GJ, Nene AV, van der Helm FC, and van der Kooij H. Disentangling the contribution of the paretic and non-paretic ankle to balance control in stroke patients. *Experimental Neurology* 201: 441-451, 2006.

Van der Kooij H, **Van Asseldonk E**, and Van der Helm FC. Comparison of different methods to identify and quantify balance control. *Journal of Neuroscience Methods* 145: 175-203, 2005.

Nijhuis-Van der Sanden MWG, **Van Asseldonk EHF**, Eling P, and Van Galen GP. Slow motor performance in girls with Turner Syndrome is not related to increased neuromotor noise *Motor Control* 7: 111-133 2003.

Nijhuis-Van der Sanden MW, Eling PA, **Van Asseldonk EH**, and Van Galen GP. Decreased movement speed in girls with Turner Syndrome: a problem in motor planning or muscle initiation? *Journal of Clinical and Experimental Neuropsychology* 26: 795-816, 2004.

Peer reviewed national journals

Jannink MJA, Prange GB, Buurke JH, Stienen AHA, **Van Asseldonk EHF**, and Van der Kooij H. State of the art CVA-revalidatie van beperkte arm- en handfunctie: robotica en virtual reality? .

Nederlands Tijdschrift voor Fysiotherapie 86-94, 2008.

Peer reviewed conference proceedings

Meuleman J, **van Asseldonk EHF**, van der kooij H. Novel actuation design of a gait trainer with shadow leg approach. Proceedings of ICORR 2013 - IEEE International Conference on Rehabilitation Robotics. Seattle: 2013

Wang L, Wang S, **van Asseldonk EHF**, van der kooij H. Actively controlled lateral gait assistance in a lower limb exoskeleton. Proceedings of ICORR 2013 - IEEE International Conference on Rehabilitation Robotics. Seattle: 2013.

Koopman B, Meuleman JH, **van Asseldonk EHF**, van der kooij H. Lateral balance control for robotic gait training. Proceedings of ICORR 2013 - IEEE International Conference on Rehabilitation Robotics. Seattle: 2013.

van Dijk W, van der kooij H, Koopman B, **van Asseldonk EHF**, van der kooij H (2013) Improving the transparency of a rehabilitation robot by exploiting the cyclic behaviour of walking. Proceedings of ICORR 2013 - IEEE International Conference on Rehabilitation Robotics. Seattle: 2013.

Wang L, **van Asseldonk EHF**, van der kooij H. Model predictive control-based gait pattern generation for wearable exoskeletons. Proceedings of ICORR 2011 - IEEE International Conference on Rehabilitation Robotics. Zurich: 2011.

van Asseldonk E, Koopman B, van der kooij H. Locomotor adaptation and retention to gradual and sudden dynamic perturbations. Proceedings of ICORR 2011 - IEEE International Conference on Rehabilitation Robotics. Zurich: 2011.

Tufekciler N, **van Asseldonk EHF**, van der kooij H. Velocity-dependent reference trajectory generation for the LOPES gait training robot. Proceedings of ICORR 2011 - IEEE International Conference on Rehabilitation Robotics. Zurich: 2011.

Ronsse R, Koopman B, Vitiello N, Lenzi T, de Rossi SMM, van den Kieboom J, **van Asseldonk E**, Carrozza MC, van der kooij H, Ijspeert AJ. Oscillator-based walking assistance: A model-free approach. Proceedings of ICORR 2011 - IEEE International Conference on Rehabilitation Robotics. Zurich: 2011.

Otten A, van Vuuren W, Stienen A, **van Asseldonk E**, Schouten A, van der kooij H. Position and torque tracking: Series elastic actuation versus model-based-controlled hydraulic actuation. Proceedings of ICORR 2011 - IEEE International Conference on Rehabilitation Robotics. Zurich: 2011.

Koopman B, **van Asseldonk EHF**, van der kooij H, van Dijk W, Ronsse. Rendering potential wearable robot designs with the LOPES gait trainer. Proceedings of ICORR 2011 - IEEE International Conference on Rehabilitation Robotics. Zurich: 2011.

Meuleman J, Terpstra W, **van Asseldonk EHF**, van der kooij H. Effect of added inertia on the pelvis on gait. Proceedings of ICORR 2011 - IEEE International Conference on Rehabilitation Robotics. Zurich: 2011.

Molier BI, Prange GB, Buurke JH, **van Asseldonk EHF**. Influence of reaching direction on visuomotor adaptation: An explorative study. Proceedings of ICORR 2011 - IEEE International Conference on Rehabilitation Robotics. Zurich: 2011.

Koopman B, **van Asseldonk EHF**, van der kooij H. In vivo measurement of human knee and hip dynamics using MIMO system identification. Proceedings of 32nd Annual International conference of the IEEE EMBS. Buenos Aires: 2010.

Van Asseldonk EHF, Koopman B, Buurke JH, Simons CD, and van der Kooij H. Selective and adaptive robotic support of foot clearance for training stroke survivors with stiff knee gait. In: Proceedings of ICORR 2009 - IEEE International Conference on Rehabilitation Robotics. Kyoto: 2009, p. 602-607.

Van der Kooij H, Koopman B, and **Van Asseldonk EHF**. Body weight support by virtual model control of a impedance controlled exoskeleton (LOPES) for gait training. In: Proceedings of EMBS 2008 30th Annual International Conference of the IEEE Engineering in Medicine and Biology Society. Vancouver: IEEE, 2008, p. 1969 - 1972.

Schepers HM, **Van Asseldonk EHF**, Buurke JH, Koopman HFJM, and Veltink PH. Ambulatory Assessment of Balance. In: IEEE Biorob 2008. Scottsdale, Arizona: 2008.

Veneman JF, **Van Asseldonk EHF**, Ekkelenkamp R, van der Helm FCT, and van der Kooij H. Evaluation of the effect on walking of balance-related degrees of freedom in a robotic gait training device. In: Proceedings of ICORR 2007 - IEEE International Conference on Rehabilitation Robotics Noordwijk: 2007, p. 868-875.

Van der Kooij H, **Van Asseldonk EHF**, and Nederhand M. Detecting asymmetries in balance control with system identification: first experimental results from above knee amputees. In: Proceedings of ICORR 2007 - IEEE International Conference on Rehabilitation Robotics. Noordwijk: 2007b, p. 1055-1062.

Van Asseldonk EHF, Ekkelenkamp R, Veneman JF, van der Helm FCT, and van der Kooij H. Selective control of a subtask of walking in a robotic gait trainer (LOPES). In: Proceedings of ICORR 2007 - IEEE International Conference on Rehabilitation Robotics Noordwijk: 2007, p. 841-848.

Invited talks international

"Taking robotic gait training to the next level", October 6 2015, 2nd International Autumn School on Movement Science, Berlin, Germany

"Human-inspired balance strategies in the control of exoskeletons", August 11 2015, Workshop Robotic Systems for Training and Assistance of Walking at the International Conference on Rehabilitation Robotics, Singapore, Singapore.

"Exoskeletons for the upper and lower extremity", June 3, 2015, Symposium Rehabilitation Institute of Chicago, Chicago, USA.

"Transcranial direct current stimulation enhances propulsion during walking", June 24-26, International conference on NeuroRehabilitation, Aalborg, Denmark.

"Revalidatierobots door en voor gangbeeld analyse", November 6 2014, SMALL symposium, Nijmegen, The Netherlands

"New concepts in robot-aided gait training", November 12-16 2013, 90th Annual Conference, American Congress of Rehabilitation Medicine (ACRM), Orlando, USA.

"Modulating lower limb learning with non-invasive brain stimulation", April 8-9 2013, COST Symposium: Rehabilitation robotics – clinical evidence and technical developments, Enschede, The Netherlands.

"Transcranial Direct Current Stimulation (tDCS) in stroke patients" March 9 2012, 1st UAE Meeting on Neurorehabilitation Abu Dhabi, United Arab Emirates.

"Feasibility of selective robotic support of foot clearance with continuously adapting impedance"

levels", September 10 2009, World congress 2009 Medical physics and biomedical engineering, Munchen, Germany.

Invited talks national

"Taking robot-aided gait training to the next level", March 17 2015, Sympostium Neurorevalidatie, Deventer.

"High tech revalidatie: robot ondersteunde looptraining voor patiënten met dwarslaesie of CVA", January 7, 2015, Day of Science: Tech or Not, Nijmegen.

"The effect of non-invasive stimulation on lower limb motor control and learning", November 6 2014, Dutch Congress for Rehabilitation Medicine 2014, Rotterdam,

"Kun je lopen met bionische benen?", November 2, 2014. Museum Jeugd Universiteit, Enschede.

"Non invasive stimulation of the Central Nervous System to promote neuroplasticity in neurological patients", June 25, 2013, MedTechWest event, Delft.

"Robotic developments lower extremity (e.g. LOPES)", November 2, 2012, Dutch Congress for Rehabilitation Medicine 2012, Noordwijkerhout,

"Integratie van inzichten over motorische adaptatie in robot-ondersteunde neurorevalidatie", May 29 2012, Symposium: Nieuwe perspectieven op de bewegingssturing van de arm en hand bij centrale parese, Nijmegen.

"Task specificity of robot aided gait training", December 9 2011, MIAS Symposium: Rehabilitation Robotics: a promise for the near future?, Enschede.

"Robot training in revalidatie", May 25 2011, Symposium Studiosi Mobilea: op naar de top, en er voorbij, Groningen.

"Robot aided gait training in treatment of neurological patients", November 29 2011, BW-middag: Revalidatie met stappen vooruit!, Nijmegen.

"Robot ondersteunde looptraining met LOPES", March 18 2009, CVA: nieuwe zorg, nieuwe kansen!, Den Haag.

"In balans: relatie tussen gewicht nemen en houdingscontrole na een CVA", November 30 2006, CVA revalidatie, een nieuwe koers, Enschede.

Mentoring

Graduate advisor of

2008 - 2014	Bram Koopman, Everyon PhD Thesis: Robot aided gait training and assessment. December 10, 2014. Assistant promotor
2008 - 2009	Ditske de Lange, Virturob
2009 - present	Jos Meuleman, LOPES
2009 - 2014	Alexander Otten, Virturob
2010 - present	Letian Wang, MindWalker
2010 - 2011	Ayşe Neşe Tüfekçiler, LOPES
2013 - present	Mark Vlutters, Balance
2013 - present	Alexander Kuck, ZonMW Neuras
2014 - present	Amber Emmens, Symbitron
2015 - present	Annerieke Nijman, Symbitron

Master advisor of

2005	Maaïke de Vrijer. Identification of intrinsic and reflexive mechanisms in human balance control. Master degree mechanical engineering
2005	Jasper Menger. Meten is weten: invloeden van horizontale bekken-fixatie en gewichtscompensatie in revalidatie robots op het normale gangbeeld. Master degree mechanical engineering
2007	Josien van den Noort. Clinical application and evaluation of the instrumented shoe. Ambulatory measurements of patients' gait. Master degree biomedical technology
2007	Martijn Wessels. Influence of guiding force fields on visuomotor learning. Master degree mechanical engineering
2007	Bart Koning. A time domain approach to the separation and identification of intrinsic and reflexive properties in human balance control. Master degree mechanical engineering
2007	Corien Simons. Effect of ankle-foot orthoses on static and dynamic balance asymmetry and functional balance tests in stroke patients. Master degree Human Movement Sciences, Nijmegen
2007	Marianne Westerdijk. Body center of mass estimation. Comparison of inertial sensors and an optical motion system. Master degree biomedical technology
2008	Bram Koopman. Selective support of gait subtasks during robotic gait training. a feasibility study using Virtual Model Control. Master degree biomedical technology
2009	Ard Westerveld. Measurement of calf muscle length during perturbed stance. Master degree mechanical engineering
2009	Floor Campfens. Proprioceptive feedback of the left and right ankle in balance control. Master degree biomedical technology
2009	Joelle van den Hoek. Gait training of chronic stroke patients in the gait rehabilitation device LOPES. Master degree Human Movement Sciences, Groningen
2009	Marjanne Folkersma. LOPES: A new device for walking rehabilitation after stroke. Master degree Human Movement Sciences, Groningen
2009	Sabine Beijen. sEMG control of a transfemoral prosthesis. First results regarding the feasibility of controlling a transfemoral prosthesis with sEMG signals from the lower extremity. Master degree BMT
2009	Rebekka Verheij. Influence of visual information on the rapid motor response during posture control. Master degree biomedical technology
2010	Anke de Ruiter. Sustained firing of motor units evoked with the tonic vibration reflex, measured with high density – surface EMG. Master degree biomedical technology
2010	Wieke van Vuuren. Modeling and control of a hydraulic series elastic actuator. Master biomedical technology.
2010	Hilbert Jan Rosier. Design of a control strategy for the LOPES gait training robot for treatment of severely affected neurological patients. Master mechanical engineering.
2011	Denise Engelhart. Lateral balance control during walking: prediction of foot placement. Master biomedical technology.
2011	Frank Brontsema. Feed forward control of the LOPES using radial basis functions. Master degree Biomedical engineering, Groningen.

- 2012 Hester Knol. The effects of gradual and sudden dynamic perturbations on locomotor adaptation and retention. Master degree Human Movement Sciences, Groningen.
- 2012 Stan Verwer. EMG Coherence to quantify tdc's induced changes in corticomotor drive during walking in healthy subjects. Master biomedical technology.
- 2012 Lianne Grin. Control of foot placement to counteract perturbations during walking. Master biomedical technology.
- 2012 Thijs Lohuis. The effect of non-invasive brain stimulation on lower limb motor skill acquisition. Master biomedical technology.
- 2012 Mark Vlutters. Controlling 3d balance in bipedal robots & exoskeletons during stance and walking. Master biomedical technology.
- 2013 Christo Pliagkas, Robotic gait assistance using an Iterative Learning Controller. Master biomedical engineering.
- 2014 Geert Brus. Visual versus haptic error enhancement. Master biomedical engineering.
- 2015 Annerieke Nijman, Determination of knee stiffness using LOPES: possibilities and limitations. Master biomedical engineering.
- 2015 Frank Wouda, Assisting lateral balance control during human gait. Master Mechanical Engineering
- 2015 Franka van Velthoven, Intra-subject reliability of noninvasive brain stimulation on lower limb motor control Master biomedical engineering
- 2015 Laure te Nahuis, Degrees of freedom and support during weight shift: the effect on trunk movements and muscle activity in patients with an incomplete spinal cord injury. Master Clinical Human Movement Sciences

bachelor advisor of

- 2005 Bram Koopman. Relation between balance contribution and weight distribution of healthy subjects in comparison with CVA patients. Bachelor degree biomedical technology
- 2006 Anke de Ruiter. The effect of touch and vision on human balance control influenced by platform perturbations. Bachelor degree biomedical technology
- 2006 Jolanda Zwetsloot. Het meten van gewrichtskoppelingen met behulp van de LOPES-robot. Bachelor degree biomedical technology
- 2007 Jantsje Pasma. Detecting nonlinearities in human balance control. Bachelor degree biomedical technology
- 2007 Marleen Ruijter. Influence of visual feedback on visuomotor learning. Bachelor degree biomedical technology
- 2008 Vincent Schut. Ambulatory estimation and evaluation of GRF, CoM and CoP of the instrumented shoe. Ambulatory measurements of patients' gait. Bachelor degree biomedical technology
- 2010 Chiel Grijssen. Bachelor degree biomedical technology.
- 2010 Juliet Haarman. Influence of ageing on the joint impedance of the hip and knee joint. Bachelor degree biomedical technology.
- 2010 Peter Hartman. Invloed van verschillende intertrial intervals en bewegingssnelheid op het aanleren van armbewegingen in een gedraaid visuo-motor veld. Bachelor degree biomedical technology.

- 2011 Kirsten Janssen. Gebruikerseisen van de LOPES. Bachelor degree Health Sciences.
- 2011 Thijs Lohuis. Fasedetectie tijdens lopen in lopes. Bachelor degree biomedical technology.
- 2011 Marloes de Voer. Intuïtieve snelheidsregelaar: evaluatie van een ontwerp voor 'LOPES'. Bachelor degree biomedical technology.
- 2011 Steven Schurink. Integration of Projected Visual Feedback with Robotic aided Gait Training. Bachelor degree biomedical technology.
- 2013 Astrid van den Broek. Interferentie tijdens het leren van complexe motorische leertaken. Bachelor degree biomedical technology.
- 2013 Gillian van Lenthe. Balance in human locomotion: Analysis of the ground reaction force and the virtual pivot point. Bachelor degree biomedical technology.
- 2014 Ole Seig. Preparation is not everything: on the effects of preparation time in the flexion-extension task. Bachelor degree Psychology.
- 2015 Tineke de Vries. Investigating the interference between physical therapists and the pelvis of patients after a cerebrovascular accident while maintaining balance during gait therapy. Bachelor degree biomedical technology.