TReND
Translational Research Network in Motor Disorder Rehabilitation

Newsletter

#01/2026
February 2026

Contents

Upcoming Events

7th May 2026 **12:00 – 14:00 CET**	TReND online lecture with Prof. Leslie Decker (University of Caen Normandie) (Zoom-Link: https://unibe-ch.zoom.us/j/6447676603)
26th – 29th May 2026	TReND Summer School at Radboud University Nijmegen, Netherlands
1st – 3rd June 2026	Symposium "Movement variability as a systemic biomarker of resilience and adaptability in aging: opportunities and challenges" at the EGRAPA conference in Caen
6th August 2026	TReND online lecture #7 (watch out for updates on our website and LinkedIN) (Zoom-Link: https://unibe-ch.zoom.us/j/6447676603)
5th November 2026	TReND online lecture #8 (watch out for updates on our website and LinkedIN) (Zoom-Link: https://unibe-ch.zoom.us/j/6447676603)

About TReND

We are a Marie Skłodowska-Curie Actions Doctoral Network (MSCA-DN).

Translational Research Network in Motor Disorder Rehabilitation: Advancing understanding of variability in motor control and learning, to enhance clinical practice

The theoretical understanding of human motor control and learning has a strong impact on the diagnosis and treatment of motor disorders, and vice versa. Recent progress has been made in the understanding of motor control and learning, particularly with respect to understanding the functional role of neurobehavioural variability that is inherent to sensorimotor control. However, this progress has not yet been transferred appropriately into clinical therapy approaches. The goal of TReND is thus, to create a translational research network in the rehabilitation of motor disorders. The network is highly interdisciplinary with doctoral and senior researchers from fundamental research areas (movement science, neuroscience, computer science), clinical practitioners (physical therapy, occupational therapy, rehabilitation sciences, etc.) and partners from related industries. The overall aim is to systematically translate recent theoretical and methodological advances in motor control and learning research into clinical practice to enhance clinical diagnosis and motor rehabilitation. More specifically, we will investigate the functional role of variability in the sensorimotor coordination dynamics at the behavioural and neurophysiological levels in motor and mental disorders such as stroke, Parkinson's or Alzheimer's disease.

Our research objectives

- To investigate how different disorders affect the sensorimotor systems' capability to exploit functional variability for stable and adaptive motor control
- To investigate how novel therapy concepts can enhance the capacity to exploit functional variability and treat motor disorders across different patient populations
- To develop novel approaches to translate the knowledge gain from our fundamental research into clinical practice.

Our innovation objectives

- To develop and evaluate clinical tools for the assessment and diagnosis of functional movement variability
- To compose guidelines and recommendations for restoring functional variability

Connect With Us

TReND
Translational Research Network in Motor Disorder Rehabilitation

https://www.uni-muenster.de/TReND-EU/

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State Secretariat for Education, Research and Innovation SERI

Publications

We are very happy to recommend to you the following articles and preprints by members of the TReND network:

Ford, H., Lewis, J., Tyros, V., Low, D. C., Bateman, W. R., Lee, Y., Sakadasariya, R., Rex, J., Oldfield, M., **Davare, M.**, & Shaheen, A. F. (2025). The ExtRA Capacity Test: Reliability, validity and normative data of a new clinical tool for assessing shoulder muscle performance. *Physiotherapy*, 101868. https://doi.org/10.1016/j.physio.2025.101868

Kalkantzi, A., Kleeren, L., Baeyens, D., Decraene, L., Crotti, M., **Klingels, K.,** Van Campenhout, A., Verheyden, G., Ortibus, E., **Feys, H.**, & **Mailleux, L.** (2025). Daily-life executive functions and bimanual performance in children with unilateral cerebral palsy. *Developmental Medicine & Child Neurology*, *67*(10), 1290–1300. https://doi.org/10.1111/dmcn.16297

Kleeren, L., **Mailleux, L.,** Crotti, M., Decraene, L., Verheyden, G., Lambercy, O., Ortibus, E., Campenhout, A. V., **Feys, H.,** & Klingels,K. (2025). Unraveling tactile and proprioceptive upper limb function in children with unilateral cerebral palsy: a combination of robotic and clinical assessments. *Disability and Rehabilitation*, 1–22. https://doi.org/10.1080/09638288.2025.2556944

Perdikis, D., **Sleimen-Malkoun, R.,** Müller, V., & Jirsa, V. (2025). *Developmental and Aging Changes in Brain Network Switching Dynamics Revealed by EEG Phase Synchronization*. bioRxiv. https://www.biorxiv.org/content/10.1101/2025.07.02.662760v1

Latest News

A Year of Conferences and Collaboration: TReND Doctoral Fellows Engage with the Scientific Community

Over the past year, our TReND doctoral fellows have been actively engaged in sharing their research plans and results with the scientific community through various national and international conferences. Through these experiences, our doctoral fellows have advanced their individual research and gained a deeper understanding of the scientific landscape, while also sharing ideas and fostering collaborations.

The year 2025 began with **Aleksandra (DC07)** attending the **11th Conference on Cognition Research of the Israeli Society for Cognitive Psychology** in February 2025, where she engaged with the local academic community and learned about the latest developments in cognitive psychology.

In March 2025, **Constanze (DC12)** attended the **18th Conference of the Sports Motorics Section of the German Society for Sports Science (DVS)** in Munich, Germany. This conference, themed **"Dimensions of Motor Control – Sport, Health, Development, Robotics"**, provided a comprehensive platform for her to explore the latest advances in sport science and motor control research.

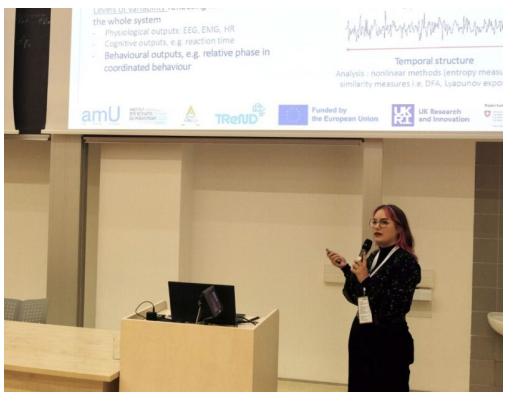
In May 2025, **Aleksandra (DC07)** presented a poster titled **“Effects of increasing variability on motor learning”** at the **18th Karniel Computational Motor Control Workshop**, highlighting her preliminary results. Later that month, **Julia (DC08)** and **Victoria (DC03)** presented a poster at a local conference in Montpellier, France, organized by their doctoral school, Journée de l'École Doctorale (JED). Their poster, titled **“Bridging variability and adaptability in motor control for better understanding and intervention in aging: Insights from bimanual coordination and force control tasks”**, aimed to share their research findings and gather feedback from the local academic community.

During the summer, **Kai (DC04)** attended both the **20th I.S.P.O. World Congress 2025** (June2025) and the **International Society of Biomechanics Conference** (July 2025) in Stockholm, Sweden. These conferences offered him the opportunity to discuss his research plans with a diverse group of experts, receiving constructive feedback that directly informed the refinement of his study protocols and supported the preparation of his ethics application.

In October 2025, **Julia (DC08)** participated in the **XIII edition of Aspects of Neuroscience** at the University of Warsaw in Poland. This event marked a significant milestone in her research journey, as she co-delivered her first keynote lecture with her supervisor, Prof. Jean-Jacques Temprado, titled **“When Physics Meets Neuroscience: A Dynamical Systems Approach to (Loss of) Motor Adaptability During Aging”.** Additionally, Julia presented a poster entitled **“Effects of Metronomes with Different Stochastic Properties on Motor Variability and Adaptability in Bimanual Coordination in Aging”.**

In December 2025, **Ilaria (DC11)** attended the **Neurophysiological Bases of Human Movement** meeting of the Physiological Society in London, England. Organized in part by her supervisor, Marco Davare, this meeting brought together experts in the field to discuss the latest advances in neurophysiology and human movement.

We look forward to seeing the continued progress and achievements of our doctoral fellows, and we are pleased to announce two upcoming conference events: Firstly, **Louise (DC05)** will present her results in two posters at the **Society for the Neural Control of Movement conference** in Kobe, Japan, in April 2026. In June 2026, a symposium at the EGRAPA 2026 conference, titled “Movement variability as a systemic biomarker of resilience and adaptability in ageing: opportunities and challenges”, will be co-chaired by TReND supervisor Rita Sleiman-Malkoun (Aix-Marseille University). This symposium will feature contributions from **Sofía Avila Pérez (DC02), Victoria Trifonova (DC03)** and **Julia Jakubowska (DC08).** We look forward to meeting you there and will keep you updated about any planned conference visits.



Julia at the Aspects of Neuroscience conference and Kai at the 20th I.S.P.O. World Congress 2025

👉 Keep up to date with our latest news.

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State Secretariat for Education, Research and Innovation SERI

❄Winter Academy in Bern❄

11th February 2026

The Department of Movement and Exercise Science at the University of Bern held its annual Winter Academy at the end of January. During this week, the research group and guest researchers met in the Swiss Alps to discuss ongoing projects, gain new perspectives, and apply theoretical knowledge in practice while skiing. This year, the interpersonal coordination project of our fellow Constanze was in the spotlight. Discussions focused on measuring synchrony, interpreting coordination patterns, and transferring the paradigm to rehabilitation.

💡 Get to know Constanze and her project here.

Insightful TReND Lecture with Prof. Dr. Stephan Swinnen

5th February 2026

In his lecture "Aging and the Brain: Processes of Neural Dedifferentiation and Compensation," Prof. Dr. Stephan Swinnen examined age-related changes in upper-limb motor behaviour, contrasting the compensation and dedifferentiation hypotheses. He advocated a multimodal imaging approach to map how brain and motor functions interact across the lifespan and outlined strategies to mitigate neural degeneration, thereby supporting functional independence and healthy aging.

📰 For more details please refer to the abstract.

Sixth secondment successfully completed

29th January 2026

Our fellow, Constanze Dammeyer, recently completed her secondment at the Department of Neuromotor Behavior and Exercise at the University of Münster. There, she had the opportunity to enhance her motion capture and study design skills, as well as deepening her knowledge of data analysis. Alongside Sofía Avila Pérez, who is one of the TReND fellows in Münster, she conducted a pilot study investigating the effects of a coordinated walking intervention on various gait parameters.

📰 A full report is available here.

Fifth secondment successfully completed

21st January 2026

Our fellow, Victoria Trifonova, completed her secondment at the Stade Marseillais Université Club (SMUC) in Marseille, France. Working with the coordinator, Isabelle Petit, and the adapted physical activity coach, Martin Nottin, she had the opportunity to learn about multidisciplinary, evidence-based assessment and training practices. She also initiated participant recruitment and cohort development for her experimental studies, as well as observing functional assessment sessions in older adults, which improved her understanding of best practices in applied evaluation.

📰 Read more about her experience.

Guest lecture about neuromarkers and machine learning in neuroscience

17th December 2025

At the end of last year our fellow Dilşah Gençaslan and the Department of Neuromotor Behavior and Exercise at the University of Münster were delighted to host Asst. Prof. Dr. Mesut Seker from Dicle University, Diyarbakir, Turkey. During his visit, he delivered an insightful guest lecture about multiple integrative computational frameworks for the classification of Mild Cognitive Impairment (MCI) and Alzheimer's Disease (AD) using resting-state EEG data. His contribution sparked stimulating discussions and also provided valuable insights for Dilşah's research, in which she plans to apply entropy measures to resting-state EEG recordings.

👉 Read on about Dilşah's research project.

If you would like to share information or announcements via the newsletter or have any further questions, please get in touch with us: trend@uni-muenster.de

With the newsletter, we would like to keep you posted about news and events concerning the TReND Project. If you do not wish to receive it any longer, please send us an e-mail or unsubscribe from the mailing list using this link

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