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Upcoming Events

| 20 th November 2025 12:00 – 14:00 CET | TReND online lecture (Zoom-Link: https://unibe-ch.zoom.us/j/6447676603) |
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| 5 th February 2026 12:00 – 14:00 CET | TReND online lecture (Zoom-Link: https://unibe-ch.zoom.us/j/6447676603) |
| 7 th May 2026 12:00 – 14:00 CET | TReND online lecture (Zoom-Link: https://unibe-ch.zoom.us/j/6447676603) |
| 26 th – 29 th May 2026 | TreND Summer School at Radboud University Nijmegen, Netherlands |

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 neuro-behavioural 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



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

https://bsky.app/profile/msca-trend.bsky.social

in https://www.linkedin.com/company/msca-dn-trend

trend@uni-muenster.de

Network Coordinator:









Latest News

Introducing the TReND fellows

We're proud to highlight that 10 doctoral candidates (DCs) have joined the TReND network as MSCA fellows. Each fellow is actively pursuing their own individual research project, driving forward TReND's mission while working towards completing their PhD. Their dedication and innovation are vital to the impact on rehabilitation of motor disorders we aim to achieve together.

🥜 DC01: Dilşah Gençaslan

<u>Project</u>: The relationship between cognition and motor variability in ageing and Parkinson Disease (PD) patients

<u>Host Institution</u>: University of Münster – Department of Neuromotor Behavior and Exercise

<u>Supervisors</u>: PD Dr. Dieter Friedhelm Kutz & Prof. Dr. Claudia Voelcker-

Rehage

DC02: Sofía Avila Pérez

<u>Project</u>: Can superimposed sensorimotor variability in practice enhance motor (observational) learning in older adults?

<u>Host Institution</u>: University of Münster – Department of Neuromotor Behavior and Exercise

Supervisors: Dr. Julian Rudisch & Prof. Dr. Claudia Voelcker-Rehage



<u>Project</u>: Can the structure of behavioural and physiological variability predict the training outcomes? –multidimensional assessment and intervention in older adults

<u>Host Institution</u>: Aix-Marseille University – Institute of Movement Science <u>Supervisors</u>: Dr. Rita Sleimen-Malkoun & Prof. Dr. Jean-Jacques Temprado

DC04: Kai Wang

<u>Project</u>: Virtual motor training of individuals with upper extremity amputations – Relative effects on movement variability and cognitive load <u>Host Institution</u>: Jonköping University – Department of Rehabilitation <u>Supervisors</u>: Prof. Dr. Nerrolyn Ramstrand & Prof. Dr. Dido Green

DC05: Louise Hocke

<u>Project</u>: Neurological factors challenging bimanual motor control and learning in children with unilateral cerebral palsy (uCP)

<u>Host Institution</u>: KU Leuven – Research Group for Neurorehabilitation (eNRGy)

<u>Supervisors</u>: Prof. Dr. Hilde Feys, Dr. Katrijn Klingels, Dr. Lisa Mailleux & Prof. Dr. Els Ortibus

DC06: Léa Obrecht

<u>Project</u>: Translation of fundamental research into practical fields – integrating the perspective of clinicians and patients in the process using the example of childhood motor disorders.

<u>Host Institution</u>: Radboud University – Behavioural Science Institute. <u>Supervisors</u>: Prof. Dr. Bert Steenbergen & Dr. Femke van Abswoude

PC07: Alexandra Kanar

<u>Project</u>: Effects of increasing variability during training on motor learning: Developing models and concepts for motor rehabilitation (task-specific practice)

<u>Host Institution</u>: Tel Aviv University – Department of Physical Therapy <u>Supervisor</u>: Prof. Dr. Jason Friedman

DC08: Julia Jakubowska

<u>Project</u>: Can the structure of behavioural and physiological variability predict physical training outcomes? – multidimensional assessment and intervention in stroke patients

<u>Host Institution</u>: Aix-Marseille University, Institute of Movement Science <u>Supervisors</u>: Prof. Dr. Jean-Jacques Temprado & Dr. Rita Sleimen-Malkoun

DC09: Ajša Džindo

<u>Project</u>: Neural mechanisms underlying functional neurological movements disorders

<u>Host Institution</u>: Radboud University – Donders Centre for Cognition (DCN) <u>Supervisors</u>: Prof. Dr. Richard van Wezel, Dr. Jorik Nonnekes & Prof. Dr. Noël Keijsers

DC12: Constanze Dammeyer

<u>Project</u>: State estimation and dealing with noise and uncertainty <u>Host Institution</u>: University of Bern – Department of Movement and Exercise Science

<u>Supervisors</u>: Prof. Dr. Ernst-Joachim Hossner, Dr. Stephan Zahno & Dr. Ralf

Kredel





















You can read more about the fellows, their personal backgrounds and motivation on our <u>website</u>! We are currently still in the process of recruiting DC10 and DC 11 at King's College London.

TReND lecture by Prof. Dr. Mark Latash

21st August 2025

During the third TReND lecture fellows had the opportunity to learn from Prof. Mark Latash (Pennsylvania State University) about the "Structure of Motor variability as a Window into the Neural Control of Action".

The lecture abstract is available <u>here</u>.

Ten TReND fellows have successfully defended their research proposals

7th August 2025

The successful defence of a research proposal is an important milestone for all PhD students. We are delighted that all currently recruited fellows have already achieved this milestone. We look forward to seeing their ideas come to fruition.

🦞 What is a research proposal defence? Approximately six months after they start, doctoral students must present their research project plans to the consortium in an online meeting. These plans are then discussed and developed further.

Spotlight on synergies in European Neuroscience Research

25th July 2025

We were proud to see Julian Rudisch, member of the TReND coordinator team and supervisor within the MSCA Doctoral Network, contribute to the TBrainBoost Summer School 2.0 in Slovenia last week!

More about this event can be found here.

Third secondment successfully completed

1st July 2025

Our third fellow, Dilşah Gençaslan, has completed her secondment at Aix-Marseille University (AMU), where she worked with Prof. Dr. Rita Sleimen-Malkoun and Prof. Dr. Jean-Jacques Temprado.

A full report about her secondment is available here.

Summer School in Bern

10th – 13th June 2025

From 10th to 13th June, the 1st TReND Summer School under the title "Theoretical Bases of Motor Control and Learning" was held at the University of Bern. This event brought together fellows and supervisors, as well as clinical and industrial partners of the TReND network, to explore the complexities of motor control and learning. During the Summer School our fellows were able discuss how concepts of motor control and variability can be applied to their individual research projects. We would like to thank Prof. Ernst-Joachim Hossner and his team at the University of Bern for hosting the event, and Prof. Jason Friedman from Tel Aviv University for developing the scientific programme.

More insights into the Summer School can be found here.

Second secondment successfully completed

15th April 2025

Our second fellow, Ajša Džindo, has completed her secondment at the Department of Neuromotor Behavior and Exercise at the University of Münster. During her stay, she also attended the team retreat, which focused on the use of artificial intelligence in university life, research, and open science.

A full secondment report can be read here.

TReND lecture by Prof. Dr. Cisek

3rd April 2025

During the second TReND online lecture Prof. Dr. Paul Cisek from the University of Montreal provided an insightful lecture about the neural mechanisms of embodied decisions.

For more details please refer to the <u>abstract</u>.

New TReND project page on Bluesky

25th March 2025

The University of Münster has suspended its activities on X (formerly Twitter). Together with around 60 German-speaking universities and research institutions, it wants to emphasise that the focus of the platform no longer corresponds to the basic values of the participating institutions: Open-mindedness, scientific integrity, transparency and a democratic culture of debate. As a result, the MSCA-DN TReND profile on X is no longer available.

💡 If you'd like to keep up with what we're doing, we invite you to follow our new project page on <u>Bluesky.</u>







First secondment successfully finished

10th March 2025

Our fellow Sofia has recently completed her secondment at the Department of Movement and Exercise Science at the University of Bern. There she had the opportunity to attend the Winter Academy and to deepen her theoretical understanding about motor control and learning.

Read more about Sofia's experience in Switzerland here.

Start of TReND lecture series!

23rd January 2025

Our new online lecture series, focusing on the intricacies of human movement control has just launched. The topic of the first lecture was "Analyzing Functional Variability - Decomposition and Quantification" and was held by Prof. Dr. Hermann Müller from Justus Liebig University Gießen, Germany. The first lecture explored how variability influences movement, learning, and performance, offering insights for researchers, practitioners, and anyone interested in the science of movement.

For more details please refer to the <u>abstract</u>.

Kick-Off Camp successfully done!

4th November 2024

From 29th to 30th October, the TReND Kick-Off Camp took place at the University of Münster. We are happy to have had a successful and productive official start of the doctoral training programme with the TReND fellows and their supervisors. Seven fellows came to attend the event in Münster together with their supervisor(s), while three fellows participated remotely. The kick-off camp was used to develop a joint theoretical framework for the research of the TReND consortium, but also for getting to know each other and growing as a consortium, which everyone really enjoyed!

learn more about the Kick-Off Camp here.

Great start!

6th March 2024

The MSCA Doctoral Network TReND has successfully commenced its activities with a virtual kick-off meeting on March 6th hosted by the coordinators at the University of Münster.

You can find out more about all involved researchers and partners <u>here</u>.

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

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 <u>link</u>.





