08:30  Registration & Virtual waiting room

09:00  Welcome
Martin Daumer, SLC-The Human Motion Institute, Trium Analysis Online, Technical University of Munich (TUM), GER

09:15  Keynote lecture: “In Praise of Walking”
Shane O’Mara, Trinity College Dublin, Experimental Brain Research, IRL

09:45  The influence of inactivity on health
Mathias Ried-Larsen, Centre for Physical Activity Research, Rigshospitalet, DK

10:00  What are good muscle endpoints for clinical studies?
Jörn Rittweger, German Aerospace Center (DLR), Division of Muscle and Bone Metabolism, Cologne, GER

10:15  Discussion, Coffee break

10:30  Sex-hormones and trainability
Ylva Hellsten, University of Copenhagen, Integrative Physiology, Department of Nutrition, Exercise and Sport, DK

10:45  Learning from healthy bears
Peter Godsk Jørgensen, Copenhagen University Hospital, Rigshospitalet, DK

11:00  Real world walking speed and mobile accelerometry with RCT3 platform — privacy by design
Marcin Mider, Trium Analysis Online, GER

11:15  Neurodegeneration and Disability in PPMS: Multimodal monitoring between real-life walking and brain imaging
Jan-Patrick Stellmann, Aix–Marseille Université, Centre de Résonance Magnétique Biologique et Médicale, FR

11:30  Fit-for-purpose validation of novel, value-based, digital endpoints for clinical trials
Adam Cohen, Centre for Human Drug Research (CHDR), NL

11:45  Discussion, Lunch break

12:45  Mobile monitoring of pregnancies: Experience in Denmark
Olav Bjørn Petersen, Rigshospitalet, Department of Obstetrics and Gynaecology, Copenhagen, DK

13:00  Mobile monitoring of pregnancies: Experience in Germany
Uwe Hasbargen, Ludwig-Maximilians-University of Munich (LMU), Perinatal Center, Department of Obstetrics and Gynecology

13:15  Use of the CHDR Trial@Home platform for studying recovery from pulmonary infections in children—relevance for viral infections
Vasileios Exadaktylos, Centre for Human Drug Research (CHDR), NL

13:30  Accelerometric gait Analysis devices in children — will they accept it?
Marcello Grassi, SLC-The Human Motion Institute, GER
Isabella Wiedmann, German Aerospace Center (DLR), Division of Muscle and Bone Metabolism, Cologne, GER

13:45  Discussion, Coffee break

14:00  Artificial Intelligence in Healthcare and Medicine
Daniel Rücker, Alexander von Humboldt-Professor for AI Chair for AI in Healthcare and Medicine, Faculty of Medicine and Informatics, Technical University Munich (TUM), GER

14:15  Telehealth in Denmark: From monoliths to co-creation
Morten Kyng, Århus University, Department of Computer Science, and Alexandra Institutet, DK
PRELIMINARY PROGRAM

14:30  Innovative teaching at TUM in times of Corona
  Klaus Diepold, Michael Zwick, Technische Universität München (TUM), Department of Electrical and Computer Engineering, GER

14:45  Validating the Intel RealSense T265 for Human Motion Tracking
  Peter Hausamann, Technische Universität München (TUM), Department of Electrical and Computer Engineering, GER

15:00  Orthopedic surgery in times of Covid
  Markus Walther, Schön Klinik München Harlaching, Foot and Ankle Surgery, GER

15:15  Discussion, Coffee break

15:30  Introduction to student presentations of the TUM lecture Clinical Applications of Computational Medicine (CACOM)

15:45  “flexeal” for face masks: stop your glasses from steaming up and increase protection in times of COVID-19
  Dennis Gölitz, Franziska Stöckeler, Helga Ritzl, Samira Balbach, Jakob Pfohl (“flexeal” study group)

16:00  Development of a DIY air purifier for reducing the risk of coronavirus transmission in a low and high budget version
  Leon Mayer, Claudia Hofmann and “flexeal” study group

16:15  Gait: a new fingerprint?
  Aydin Uzun, Oussama Skhiri

16:30  Towards an accurate diagnostic of cyclists’ endoﬁbrosis
  Carolina Contreras, Feriel Fendri, Lina Ben Messaoud

16:45  Panel Discussion, Closing Remark

The organizers reserve the right for rearrangements

REGISTRATION

REGISTRATION
We believe in the importance of holding this Winter Symposium and we rely on your attendance to make it a success.

Given the economic impact that COVID-19 is having across the world we have decided not to charge any registration fees. Instead, we would appreciate any financial support to our nonprofit organization SLC-The Human Motion Institute in the form of a donation, in order to continue our work.

If you have any questions, please contact us at sambo@slcsmr.org

Account holder: Sylvia Lawry Centre for MS Research e.V.
Financial institution: HypoVereinsbank Munich
SWIFT/BIC HYVEDEMMXXX
IBAN-Code DE70 7002 0270 00 36 198 214
Keyword: Winter Symposium 2021

Confirmation
Upon receipt of the donation, a receipt for tax purposes will be issued

For online registration scan QR-code or go to: https://goo.gl/forms/koSMGNHHe2GuBgRI2

Zoom Link to access the Symposium will be provided to registered participants

General Data Protection Regulation
The applicant agrees that SLCMSR electronically saves and processes personal data necessary for the registration process and upcoming symposia (§28 GDPR)

REGISTRATION CLOSING DATE
FRIDAY FEBRUARY 26, 2021

GENERAL INFORMATION

SCIENTIFIC COMMITTEE:
Martin Daumer, SLC-Human Motion Institute, Trium Analysis GmbH, TU Munich
Ylva Hellsten, University of Copenhagen, Integrative Physiology, Dept. of Nutrition, Exercise and Sport
Jörn Rittweger, German Aerospace Center (DLR), Head of the Division of Muscle and Bone Metabolism

ACADEMIC PARTNERS

SUPPORTED BY

PRESS

This Symposium is certified by the Bavarian Medical Association (BLÄK) with 8 continuing medical education points (CME-credits)
+++ Please note, that the event will be recorded and we will make the recording available to registered participants afterwards in order to receive CMEs +++

The conference is dedicated to the memory of the outstanding mathematician and mathematical physicist Prof. Dr. Detlef Dürr (*4.3.1951 - † 3.1.2021)
08:30 Registration & Coffee

09:00 Opening remarks: Towards regulatory acceptance of RWS as a phase III outcome
Martin Daumer, SLC-The Human Motion Institute, Trium Analysis Online, Technical University of Munich (TUM), GER

09:15 How are signals from muscle communicated to close and remote sites in the body
Ylva Hellsten, University of Copenhagen, Integrative Physiology, Department of Nutrition, Exercise and Sport, DK

09:30 Physiological extremes of the human metabolome, proteome and microbiome: first data
Daniela Schranner, TU Munich, Department of Sport and Health Sciences, GER

09:45 Falls and polypharmacy: Is de-prescribing the answer?
Tobias Dreischulte, LMU, Department of Clinical Health Services Research, GER

10:00 Track and field master athletics cohort (TaFMAC) – preparations for a 10-year longitudinal study
Jörn Rittweger, German Aerospace Center (DLR), Division of Muscle and Bone Metabolism, Cologne, GER

09:15 Time buffer, Discussion, Coffee break & Posters

11:00 Use of sensors in cardiology
Carsten Lennerz, German Heart Centre Munich, GER

11:15 Accelerometry for MS - current status and perspective
Jan-Patrick Stellmann, Aix Marseille Univ, CNRS, CRMBM, UMR 7339, Marseille, FR

11:30 CTG: Think different
Dominic Varga, Sana Clinics Biberach, Department of Gynecology and Obstetrics, GER

12:00 Digital mobility assessment: From exploration in clinical drug trials to clinical endorsement and regulatory approval
Frank Kramer, BAYER AG, Pharmaceuticals, Director Medical Devices & eHealth Clinical, Wuppertal, GER

11:45 Providing evidence to support clinical endpoints from mobile sensor data in drug labelling and regulatory decision making – report from the DIA Study Endpoints Community
Bill Byron, Signant Health, VP Product Strategy and Innovation, UK

12:15 Time buffer, Discussion, Lunch
Poster, Exhibition & Networking

13:15 Ethics in digital health
Theresa Willem, Munich School of Philosophy, Department of Media Ethics, GER

13:30 GDPR and Clinical Research
Anna E. Schmaus-Klughammer, Technische Hochschule Deggendorf (THD), Member of the Scientific Staff, GER

13:45 How skin thickness affects foot sensitivity
Bert Wynands, TU Chemnitz, Behavioural and Social Sciences, Human Movement Science and Health, GER

14:00 Common foot problems: What can be done today and what is known about the longterm outcome?
Christoph Zanzinger, Schoen Clinic, Department for Foot and Ankle Joint Surgery, GER

14:15 Gait pattern analysis - from stride length to real world vitality
Franka Genest, University of Wuerzburg, Department of Orthopedics König-Ludwig-Haus, GER

14:30 Panel Discussion, Time buffer, Break
REGISTRATION CLOSING DATE
FRIDAY FEBRUARY 21, 2020
Working Title:
Real World Walking Speed - Definition, Measurement, Validation and Regulatory Acceptance

Venue:
Klinikum Rechts der Isar, TUM Munich / Germany

Topics:
Sensor technology and assessment criteria
Endpoints based on mobile accelerometry
Validation and steps towards regulatory acceptance
Wearables & clinical trials
Walking in chronic diseases & rehabilitation
Walking and cognition/dual tasking
Walking/running/exercise in space, Bed rest studies
Myokines
Walking and falling
Shoes and risk of injuries
Maternal/fetal motion
Acceleromics
Devices and gold standards
Big data and open access
Regulatory aspects for novel outcomes

Information & talks about the previous Winter Symposium: peerj.com/collections/6-humanmotionproject
Novel Endpoints Generated by Mobile Accelerometry for Use in Phase III Clinical Trials

Venue
TranslaTUM – Central Institute for Translational Cancer Research of the TUM
GF, Building 522
Johannes B. Ortner Forum (room 22.0.1)
Ismaninger Str. 22
81675 Munich

Register till March 5th, 2018
Scan QR-Code or go to:
https://goo.gl/forms/CQlQvBfVV9wQN3qz1

5TH WINTER SYMPOSIUM OF "THE HUMAN MOTION PROJECT"

In the context of IMI Call
“Linking digital assessment of mobility to clinical endpoints to support regulatory acceptance and clinical practice”
Stage 1 submission deadline: 28 February 2018 (17:00 Brussels time)
www.imi-europe.eu

>> MARCH 07, 2018 <<

08:30 Registration & Coffee
09:00 Mobile accelerometry in clinical trials: towards regulatory decision making
Martin Daumer, SLCThe Human Motion Institute, Trium
Analysis Online, TU Munich, GER

09:15 Defining standards in accelerometry implementation and endpoints for clinical trials
Bill Byrom, VP Product Strategy and Innovation, CRF Health, UK

09:30 Beyond daily steps and energy expenditure: the next “step” in physical activity parameters
Bernd Grimm, Fellow of International Orthopaedic Research, Past-President EORS, GER

09:45 Discussion
10:00 Coffee break & Poster
10:15 Application of activity monitoring for objective functional assessment in patients with orthopaedic problems
Dieter Rosenbaum, Director Biomechanics Research, Clinical Research and Services, Otto Bock Healthcare GmbH, GER

10:30 Treatment of Fatigue in MS (TREFAMS-ACE study): results and detailed analyses of objectively measured physical behavior
Johannes (Hans) B.J. Bussmann, Associate Professor Dept. of Rehabilitation Medicine, Erasmus MC University Medical Center Rotterdam Vice & Past President of the International Society for the Measurement of Physical Behaviour (ISMTB), NL

10:45 Stepwave - a new algorithm for step detection and speed estimation
Holger Höfling, Novartis Institutes for Biomedical Research, Basel, CH

11:00 Discussion
11:15 The impact of the EU General Data Protection Regulation (GDPR) on medical devices
Anna E. Schmaus-Klughammer, Member of the Scientific Staff, Technische Hochschule Deggendorf (THD), GER

11:30 Lunch, Poster, Exhibition & Networking
13:00 Moving preclinics
Oliver Hayden, Heinz Nixdorf Chair of Biomedical Electronics, Department of Electrical and Computer Engineering, TU Munich, GER

13:15 Innovation by looking into extreme ends: learning from astronauts training and pediatric rehabilitation for clinical trial methodology
Jörn Rittweger, Head of the Division of Muscle and Bone Metabolism, German Aerospace Center, GER

13:30 Longitudinal data in ppMS patients including mobile accelerometry: insights from the OPRIMS study
Jan-Patrick Stellmann, Clinical Scientist, Institute of Neuroimmunology and Multiple Sclerosis (INMIMS), University Medical Center Hamburg-Eppendorf (UKE), GER

13:45 Discussion
14:00 In vivo load measurements with instrumented implants
Philipp Damm, Julius Wolff Institute for Biomechanics and Musculoskeletal Regeneration, Charité Universitätsmedizin Berlin, GER

14:15 Homeostasis disruption in carcinogenesis enclose inter-disciplinary link to research & Human Motion Project
Björn Brücher, Professor of Surgery, Director, Center of Gastrointestinal Oncology of the Cancer Center Cottbus, GER; INCORE & Theodor-Billroth-Academy Germany-USA

14:30 Event based analysis of real world walking in clinical populations
Malcom H. Granat, Professor in Health and Rehabilitation Sciences/School of Health Sciences, University of Salford President of the International Society for the Measurement of Physical Behaviour (ISMTB), NL

14:45 Discussion
15:00 Coffee break
15:15 The effect of immobilisation and training on vascular function and growth: an example of a human integrative physiology study
Ylva Hellsten, Professor of Integrative Physiology, Department of Nutrition, Exercise and Sport, University of Copenhagen, DK

15:30 Which endpoints should we measure in clinical trials? And how should we measure them?
Tom MacDonald, Director of MEMO Research, Professor & Consultant Physician, University of Dundee, Scotland

15:45 Design case study in wearable technology
Kuno Prey, Faculty of Design and Art, Free University of Bozen, IT

16:00 Summary, Funding opportunities
**POSTERS**

- Activity tracking with smart devices: precision in real world measurements and the quest for the gold standard
  Ferdinand Heinrich, Thomas Höller, Christoph Hobbein, Carla Proel Hoderlein
  \(^1\)Department of Electrical and Computer Engineering, TU Munich

- Study on classification of fetal risk from cardiotocography data using machine learning techniques
  Ulrich Rüschendorf, Burakhan Koyuncu, Aliye Kandemir, Christian Widrich
  \(^1\)Department of Electrical and Computer Engineering, TU Munich

- Functional enhancement of activity monitoring by building custom data visualization
  Muntee Ahmad, Lubov Semienova
  \(^1\)Department of Electrical and Computer Engineering, TU Munich

- Recovery of habitual gait speed after 60 days of bed rest in young healthy male subjects
  Marcello Grassi, Martin Daumer, Jörn Rittweger
  \(^1\)SLCM-The Human Motion Institute, \(^2\)Trium Analysis Online, \(^3\)German Aerospace Center

- Towards large-scale learning for intensity classification of daily activities: A step towards standardization of accelerometer
  V. Farrahi, M. Niemelä, P. Tjirin, M. Kangas, R. Korpelainen, F. Jamsi
  \(^1\)Research Unit of Medical Imaging, Physics and Technology (MiPT), University of Oulu, Oulu, Finland; \(^2\)Medical Research Center, Oulu University Hospital and University of Oulu, Finland; \(^3\)Center for Life Course Health Research, University of Oulu, Oulu, Finland

- Pervasive physical activity monitoring from wearable devices
  Joana Silva
  \(^1\)Fraunhofer Portugal Research Center for Assistive Information and Communication Solutions

- Precision and patient acceptance of a belt-worn wearable (actibelt) in patients with osteoporosis and/or after trauma surgery
  \(^1\)SLCM-The Human Motion Institute, \(^2\)Trium Analysis Online GmbH – Munich; \(^3\)LMU Department of General, Trauma and Reconstructive Surgery; \(^4\)Novartis Institutes for Biomedical Research - Basel

- Pervasive physical activity monitoring from wearable devices
  Joana Silva, Inês Sousa
  \(^1\)Fraunhofer Portugal Research Center for Assistive Information and Communication Solutions

**REGISTRATION**

**Registration fee**

<table>
<thead>
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<th>Category</th>
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<td>Public Research</td>
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<td>PhD students</td>
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<td>Students</td>
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<td>Interested patients</td>
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<td>Press</td>
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<td>Speakers</td>
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Scan QR-Code or go to: https://goo.gl/forms/CQlQvBfV9wQN3qz1

**Payment of Fees**

- All fees for registration should be paid in Euro (€) in advance to Sylvia Lawry Centre e.V. – The Human Motion Institute, stating the participant’s name and address. Bank charges are the responsibility of the payer and should be paid in addition to the registration fees. Payment can be effected by bank transfer to:
  - Account holder/beneficiary: Sylvia Lawry Centre for Multiple Sclerosis Research e.V.
  - Bank: HypoVereinsbank Munich
  - Account: 7002 0270 00 36 119 214
  - IBAN: DE70 7002 0270 00 36 119 214
  - SWIFT/BIC: HYVEDEMMXXX

**Confirmation**

Upon receipt of the correct registration fee, each participant will receive a confirmation of registration. Please bring this confirmation to the registration desk as proof of your registration.

**Cancellation Policy**

- No refund on cancellations after March 5th, 2018

**REGISTRATION CLOSING DATE**

**MONDAY MARCH 5TH, 2018**

**GENERAL INFORMATION**

**Site Map**

**Press & Dissemination**

**Academic Partners**

**Organizing Committee**

Martin Daumer, SLC-The Human Motion Institute, Trium, TU Munich
Bill Byrom, VP Product Strategy and Innovation, CRF Health, UK
Bernd Grimm, Fellow of International Orthopaedic Research, Past-President EORS
Oliver Hayden, Heinz-Nixdorf-Chair of Biomedical Electronics
Department of Electrical and Computer Engineering TranslaTUM, Campus Klinikum rechts der Isar, TU Munich

**WLAN access**

Please follow the instruction of the LRZ

https://www.lrz.de/services/netz/wlan_en/bayernwlan_en/

**Financial institution:**

Hypovereinsbank Munich
SWIFT/BIC: HYVEDEMMXXX
IBAN-Code: DE70 7002 0270 00 36 119 214

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**Registration fee**

- Industry: 400€
- Public Research: 250€
- PhD students: 100€
- Students: 50€
- Students presenting poster: free
- Interested patients: free
- Press: free
- Speakers: free

Scan QR-Code or go to: https://goo.gl/forms/CQlQvBfV9wQN3qz1

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**FINAL PROGRAM**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>08:00</td>
<td>Registration &amp; Coffee</td>
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<tr>
<td>09:00</td>
<td>Introduction - walking in Tourette’s traces</td>
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<td></td>
<td>Martin Daumer, SLC, Human Motion Institute, Trium Analysis Online, TUM, Munich</td>
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<tr>
<td>09:20</td>
<td>Mobility and prognosis in geriatric trauma</td>
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<td>Wolfgang Böcker, LMU, Klinik für Allgemeine, Unfall und Wiederherstellungschirurgie, Munich</td>
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<tr>
<td>09:40</td>
<td>What limits Human Performance?</td>
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<td>Physiological factors</td>
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<td>Ylva Hellsten, University of Copenhagen</td>
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<td>10:00</td>
<td>Discussion</td>
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<td>10:15</td>
<td>Coffee break &amp; Poster</td>
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<td>11:00</td>
<td>Is gait speed ready for use as outcome in clinical trials?</td>
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<td>Stephanie Studenski, National Institute on Aging, Baltimore</td>
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<tr>
<td>11:30</td>
<td>How to train your muscles in space - results from the Sarcoball study</td>
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<td>Jörn Rittweger, German Aerospace Center, DLR Cologne</td>
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<td>11:50</td>
<td>What are the psychological constraints of Human Performance?</td>
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<td>Maurizio Bertollo, Department of Medicine and Aging Sciences, University of Chieti</td>
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<tr>
<td>12:10</td>
<td>Discussion - overview of investigators &amp; student projects</td>
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<tr>
<td>12:30</td>
<td>Lunch, Poster &amp; Exhibition</td>
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<tr>
<td>13:30</td>
<td>Precision medicine vs. lifestyle: a second opinion</td>
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<td>Michael Joyner, Mayo Clinic, Rochester, Minnesota</td>
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<td>14:00</td>
<td>Locomotion speed in the context of dynamic walking stability - implications for in- and off-laboratory technologies</td>
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<td>Roman Schniepp, German Center for Vertigo and Balance Disorders, LMU, Munich</td>
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<tr>
<td>14:20</td>
<td>Investigating gait patterns using functional data analysis</td>
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<td>Sonja Brenner, Almond Stöcker, Department of Statistics, LMU, Munich</td>
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<td>14:40</td>
<td>Team presentation</td>
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<td>15:10</td>
<td>Round table discussion: towards regulatory acceptance</td>
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<tr>
<td>15:40</td>
<td>Summary, Funding opportunities</td>
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</tbody>
</table>

**Posters**

- Walking speed in the Berlin Aging Study (BASE-II)
- Is gait speed ready for use as outcome in clinical trials?
- How to train your muscles in space - results from the Sarcoball study
- What are the psychological constraints of Human Performance?
- Precision medicine vs. lifestyle: a second opinion
- Locomotion speed in the context of dynamic walking stability - implications for in- and off-laboratory technologies
- Investigating gait patterns using functional data analysis
- Team presentation

**Exhibitions**

- Equipment for mobile medical monitoring & gait labs, shoes and healthy walking.

The organizers reserve the right for rearrangements.

Interested to present a poster, give a talk or exhibit?

Please contact:

Dr. Martin Daumer  
SLCMSR e.V. - The Human Motion Institute  
E-Mail: daumer@slcmsr.org  
Website: thehumanmotioninstitute.org

Dr. Holger Böcker  
Institute for Medical Informatics  
University of Munich  
E-Mail: boecker@informatik.uni-muenchen.de  
Website: medinformatik.uni-muenchen.de

Dr. Peter Rittweger  
German Center for Vertigo and Balance Disorders  
LMU, Munich  
E-Mail: rittwe@lrz.uni-muenchen.de  
Website: vertigo.lmu.de

Dr. Maurizio Bertollo  
Department of Medicine and Aging Sciences  
University of Chieti  
E-Mail: bertollo@unichieti.it  
Website: unichieti.it

Dr. Maurizio Bertollo  
Department of Medicine and Aging Sciences  
University of Chieti  
E-Mail: bertollo@unichieti.it  
Website: unichieti.it

Dr. Maurizio Bertollo  
Department of Medicine and Aging Sciences  
University of Chieti  
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Website: unichieti.it

Dr. Maurizio Bertollo  
Department of Medicine and Aging Sciences  
University of Chieti  
E-Mail: bertollo@unichieti.it  
Website: unichieti.it
The vision of the Human Motion Project is to become a successful analogue of the Human Genome Project: improving human health by an open collaborative technology platform for the mobile medical monitoring of human motion. The basis is a growing “critical path toolbox” and a biomedical data warehouse for collecting, archiving, analyzing, and disseminating human motion data including a library of algorithms.

In the "4th Winter Symposium of the human motion project" we’ll pick out real life walking speed as "pars pro toto".

"Walking is man’s best medicine" was known in ancient Greece (Hippokrates - c. 460 – c. 370 BC) and walking ability and behavior presumably seems to be an important element of quality of life. How would one measure walking speed in real life and how could one derive meaningful outcomes for clinical trials? "Wearables", i.e. mobile sensors, in particular mobile accelerometers that can measure various aspects of physical activity in the clinic and the "real world", will probably play an important role in this field.

As a fundamental element of “human motion” we will focus during this day on various aspects and consequences of changes in walking speed for human health - with or without drug treatment. We’ll go from the clinical aspects to computational aspects (devices/sensors, data, algorithms, analysis, transmission) to the very important regulatory aspects (safety, efficacy, feasibility). Experts from university hospitals, research centers, rehabilitations centers, manufacturers of medical devices, pharmaceutical companies, patients* and regulatory bodies will cover the broad spectrum of topics with a clear focus: to help the field to jointly establish a new set of meaningful clinical endpoints linked to objective measures of human motion.

Abstracts and talks are expected to be published by our partner PeerJ in the "human motion collection", as in previous symposia and workshops.

https://peerj.com/collections/6-humanmotionproject/

Martin Daumer
Chair Organizing Committee

* we expect almost everyone in the audience to have "experience" as a patient in one way or another.

Registration fee

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<td>Speakers</td>
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Scan QR-Code or go to: https://goo.gl/forms/EikRUH0a31s8oodf2

Last minute registration: plus 20%
All Fees include 19% VAT
Fee includes drinks & Lunch

Confirmation
Upon receipt of the correct registration fee, each participant will receive a confirmation of registration. Please bring this confirmation to the registration desk as proof of your registration.

Cancellation Policy
Refund of registration fees will be as follows:
- until end of January 2017: 100% refund
- until end of February 2017: 50% refund
- No refund on cancellations after March 4th, 2017

REGISTRATION CLOSING DATE
THURSDAY, FEBRUARY 28TH, 2017

Site Map

We recommend the use of public transportation. Nearby parking garage (fee required)
Pankhaus Hofbräukeller
Innere Wiener Straße 19
81667 München

WLAN access in Auditorium B:
SSID ("WLAN-Name") : mwn-events
Benutzername: "HMP2017"
Passwort: "BB90UMWp"
Please follow the instruction of the LRZ
**PRELIMINARY PROGRAMME**

**08:30** Registration & Coffee

**09:00** Welcome by the Organizing Committee

**09:15** Session 1 - Clinical aspects
  - The effect of walking/low intensity aerobic exercise on cardiovascular health: evidence from the literature
    Ylva Hellsten, University of Copenhagen
  - Vestibulocerebellar control of gait - what can we learn from in-laboratory and off-laboratory measurements?
    Roman Schniepp, LMU, German Center for Vertigo and Balance Disorders, Munich
  - Heart rate variability and heart rate turbulence
    Georg Schmidt, TUM MRI, Munich

**10:00** Discussion

**10:15** Session 2 - From clinical to computational aspects
  - Are all strains equal?
    Jörn Rittweger, Space Physiology, DLR, Cologne
  - Impact of fetal & maternal movement on fetal state
    K.T.M. Schneider, TUM MRI, Munich
  - Long-term bedrest study and Astronaut training
    Edwin Mulder, Space Physiology, DLR, Cologne
  - Computational aspects of dysregulation - a perspective from dynamic modelling
    Gerald Schuster, Rutgers University, New Jersey

**11:15** Coffee Break

**11:45** Session 3 - Computational aspects
  - Pattern recognition of data from movement analysis – from bench to bedside?
    Cauchy Pradhan, LMU, German Center for Vertigo and Balance Disorders, Munich
  - Attractor-based kinematic gait analysis - methodological & clinical considerations
    Christian Dettmers / Manfred Vieten, Clinics Schmieder, University Konstanz
  - Healthy and disturbed sleep: from the laboratory to actigraphy
    Thomas Penzel, Charité, Berlin

**12:30** Lunch, Poster & Exhibition

**14:00** Session 4 - From computational to regulatory aspects
  - MoveLab - physical activity and exercise
    Michael Trenell, Newcastle University
  - Automated assessment of motor dysfunction
    Jonas Dorn, Scripps Research Institute, Novartis, Basel
  - Activity assessment in medical devices
    Raphael Schneider, Medtronic Bakken Research Center, Maastricht

**14:45** Discussion

**15:00** Session 5 - Regulatory aspects
  - Philosophy of pharmacology: Safety, statistical standards, and evidence amalgamation
    Barbara Osimani, LMU, Munich
  - Medical device safety: Investigating contributions of human factors
    Kathrin Lange, BfArM/EMA, Bonn
  - Exercise and devices in pragmatic trials in Hypertension
    Thomas M. MacDonald, University of Dundee
  - Discussion: What next?

**16:00** Summary, Funding and Outlook
  - Farewell Apero

The organizers reserve the right for rearrangements

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**Interested to present a poster, give a talk or exhibit?**

Please contact:

Dr. Martin Daumer  
SLCMSR e.V.  
Hohenlindener Str. 1  
81677 Munich, Germany  
The Human Motion Institute  
Tel: +49 89 206026920  
E-Mail: daumer@slcmsr.org  
Fax: +49 89 206026951  
Website: thehumanmotioninstitute.org

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**Is walking really medicine?**
Walking as outcome and treatment - using mobile accelerometry

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**3RD WINTER SYMPOSIUM OF "THE HUMAN MOTION PROJECT"**

**MUNICH**

**FRIDAY, MARCH 11TH, 2016**

**Venue**
Klinikum rechts der Isar Technische Universität München
Ismaninger Str. 22 - 81675 Munich
Auditorium B

Register here till Monday, February 29th, 2016
Scan QR-Code or go to:
http://goo.gl/forms/TEjiRhP39i

**Link to information & talks about the previous Symposium**
https://peerj.com/collections/6-humanmotionproject/
THE VISION

The vision of the Human Motion Project is to become a successful analogue of the Human Genome Project: improving human health by an open collaborative technology platform for the mobile medical monitoring of human motion. The basis is a growing "critical path toolbox" and a biomedical data warehouse for collecting, archiving, analyzing, and disseminating human motion data including a library of algorithms.

In the "3rd Winter Symposium of the Human Motion Project" we’ll pick out walking as "pars pro toto".

"Walking is man's best medicine" was known in ancient Greece (Hippokrates - c. 460 – c. 370 BC) - but is it really true? How would one measure and determine the right - effective and safe - dose for an individual and how would one measure the outcome? Mobile sensors, in particular mobile accelerometers that can measure various aspects of physical activity in the clinic and the "real world", will probably play an important role in this field.

As a fundamental element of "human motion" we will focus during this day on various aspects and consequences of walking/not walking for human health - with or without drug treatment. We’ll go from the clinical aspects to computational aspects (devices/sensors, data, algorithms, analysis, transmission) to the very important regulatory aspects of clinical trials and medical devices (safety, efficacy, feasibility). Experts from University hospitals, rehabilitation centers, manufacturers of medical devices, pharmaceutical companies, patients* and regulatory bodies will cover the broad spectrum of topics with a clear focus: to help the field to jointly establish a new set of meaningful clinical endpoints linked to objective measures of human motion.

Abstracts and Talks are expected to be published by our partner PeerJ in the "human motion collection", as in previous symposia and workshops. https://peerj.com/collections/6-humanmotionproject/

Martin Daumer/Roman Schniepp/Jörn Rittweger
Organizing Committee

* we expect almost everyone in the audience to have "experience" as a patient in one way or another.

REGISTRATION

Registration fee

| Industry:  | 400€ |
| Public research institution: | 250€ |
| PhD students: | 100€ |
| Students: | 50€ |
| Students presenting poster: | free |
| Interested patients: | free |
| Press: | free |

Last minute registration: plus 20%
All Fees include 19% VAT
Fee includes drinks & Lunch

Payment of Fees

All fees for registration should be paid in Euro (€) in advance to Sylvia Lawry Centre e.V. – The Human Motion Institute, stating the participant’s name and address. Bank charges are the responsibility of the payer and should be paid in addition to the registration fees. Payment can be effected by bank transfer to:

Account holder/beneficiary: Sylvia Lawry Centre for Multiple Sclerosis Research e.V.
Financial institution: HypoVereinsbank Munich
Innere Wiener Str. 60 - 81667 München
SWIFT/BIC HYVEDEMMXXX
IBAN-Code DE70 7002 0270 00 36 198 214

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Academic Partners

Supported by

Sponsored by

Press

WLAN access in Auditorium B:
SSID ("WLAN-Name"):  mwn-events
UserID:  "THMP"
PW:  "P2hieoWv"
Please follow the instruction of the LRZ

GERNARAL INFORMATION

REGISTRATION CLOSING DATE
MONDAY, FEBRUARY 29TH, 2016

Scan QR-Code or go to: http://goo.gl/forms/TEjiRhP39i
# Program

## The 2nd Winter Symposium of the HUMAN MOTION PROJECT

**From Gait Labs to the Real World**

**March 6th, 2015, Munich**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08:00</td>
<td>Registration</td>
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<tr>
<td>08:30</td>
<td>Welcome by the Organizing Committee</td>
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<tr>
<td>08:45</td>
<td>Introduction: The Science of Walking</td>
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<td>Andreas Mayer*, Centre Alexandre Koyré - Histoire des Sciences et des Techniques, CNRS/EHESS, Paris</td>
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<tr>
<td>09:15</td>
<td>Keynote 1</td>
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<td>&quot;Acceleromics&quot; - a new era of measuring mobility in clinical research</td>
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<td>Martin Daumer*, SLC - Human Motion Institute</td>
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<td>09:45</td>
<td>Symposium 1</td>
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<tr>
<td></td>
<td>Clinical gold standards &amp; mobile accelerometry to measure outcome</td>
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<td>- Assessment of posture and gait at the Munich-Aibling-Balance Unit</td>
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<td>Klaus Jahn*, Schön Klinik Bad Aibling and German Center for Vertigo and Balance Disorders, Munich</td>
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<td>- Mobile accelerometry and falls in patients with vertigo &amp; dizziness</td>
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<td>Roman Schniepp*, Department of Neurology and German Center for Vertigo and Balance Disorders, Munich</td>
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<td>- Ecologic validity of methods to assess walking ability in MS</td>
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<td>Patrick Stellman*, UKE, Hamburg</td>
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<td></td>
<td>- Accelerometry in Parkinson's disease</td>
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<td>Markus Hobert*, HIH, Tübingen</td>
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<td>11:15</td>
<td>Keynote 2</td>
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<td>Performance at old age</td>
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<td>Jörn Rittweger*, Space Physiology, DLR, Cologne</td>
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<td>11:45</td>
<td>Symposium 2</td>
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<td>Exercise and Disease</td>
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<td>- What is the real world in carcinogenesis?</td>
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<td>Björn Brücher*, Theodor Billroth Academy, Munich</td>
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<td>- Prehabilitation - Exercise before Arthroplasty</td>
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<td>Lothar Seefried*, University of Würzburg</td>
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<td>- The Copenhagen Women study: Preliminary data related to cardiovascular health</td>
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<td>Ylva Hellsten*, University of Copenhagen</td>
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<td>12:30</td>
<td>Buffet Lunch &amp; Physical Activity</td>
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<td>Parcours - Balance and gait tests, physiotherapy, natural walking and running shoes, poster &amp; exhibition</td>
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<td>14:00</td>
<td>Keynote 3</td>
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<td>Validation studies for mobility outcomes</td>
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<td>Jörg Goldhahn*, NIBR, Basel</td>
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<td>14:15</td>
<td>Symposium 3</td>
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<td>Fundamental motion outcomes</td>
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<td>- Steps</td>
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<td>Reto W. Kressig*, University of Basel</td>
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<td></td>
<td>- Walking speed</td>
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<td>Eling de Bruin* - dual task, ETH, Zürich</td>
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<td></td>
<td>- Falls</td>
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<td>Jochen Klenk*, University Ulm</td>
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<td>- Gait variability for quantification of the human sensory-motor system</td>
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<td>Niklas König*, ETH, Zürich</td>
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<td>15:15</td>
<td>Coffee Break &amp; Posters</td>
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16:00 Keynote 4
Regulator’s view on the scientific and regulatory challenges in new mobility outcomes & PROs
Gabriele Schloesser-Weber*, BfArM/EMA, Bonn

16:30 Symposium 4
Panel Discussion: Big Data, Validation & Transparency

- Information extraction and transparency in big data processing
  Ieuan Clay*, NIBR, Basel

- How to get better data in medicine
  Tom MacDonald*, University of Dundee

- Provocative statements: Publishing the wish to share data vs sharing data

- Governance: How to build structures to guarantee the development of meaningful & valid outcomes

- Funding & Independence

17:45 Summary & Farewell

18:00 "Goodbye Drinks"

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**Information**

Friday, March 6th 2015
8:00 – 18:00

Registration

Indus try
Public research institution
PhD Students
Students
Students presenting poster
Interested patients
Press

All fees are subject to an additional 19% VAT - not refundable
All fees include drinks & lunch

Some hotels (near Campus Großhadern)

- www.hotel-thalmair.de
- www.hotel-neumayr.de
- www.empress-hotel.de

Space is limited, please register early
Closing date for Registration
February 27th 2015
"last minute" registration possible (+20%)
1st Winter Symposium of “The Human Motion Project”
February 5th 2014
Hilton Munich City Hotel, Rosenheimer Straße 15, 81667 Munich

The vision of the Human Motion Project is to become a successful analogue of the Human Genome Project: improving human health by an open collaborative technology platform for the mobile medical monitoring of human motion. The basis is a growing “critical path toolbox” and a biomedical data warehouse for collecting, archiving, analysing, and disseminating human motion data including a library of validated algorithms.

08:30 – 09:00
Registration / Coffee

09:00 – 09:15
“The Human Motion Project” & Agile Learning
Dr. Martin Daumer

09:15 – 09:45
Biomechanics of sport shoes & running injuries
Prof. Markus Walther, Director Schönklinik/Harlaching, Munich

09:45 – 10:05
Biomechanics of lower limbs from the view of Spiraldynamic
Dr. Jens Wippert, elementhera, Munich

10:05 – 10:20
Meta Products - towards a “gait/running style app”
Dr. Martin Daumer & Student team

10:20 – 11:00
Coffee Break & Exhibition
Natural running, Meta products (EASY IMP - EU FP7) etc.

11:00 – 11:30
Falls as outcome in clinical trials
Dr. Jörg Goldhahn, Novartis, Basel; Niklas König, ETH Zürich

11:30 – 11:45
The importance of patient compliance
Miriam Porter, Novartis, Basel

11:45 – 12:10
Validation of methods to detect falls - Biomechanics of fractures and falling
Prof. William R. Taylor, Institute for Biomechanics, ETH Zürich

12:10 – 12:30
Gait & Posture Analysis in the “Deutsches Zentrum für Schwindel- und Gleichgewichtsstörung”
Dr. Roman Schniepp, LMU Schwindel- und Gleichgewichtsstörung, Munich

12:30 – 13:30
Lunch & Exhibition gait/balance/falls

13:30 – 14:00
Mobile accelerometry for measuring gait, balance and falls
Dr. Martin Daumer & Student team (mediolateral sway, gait speed and variability measures, Fall detection)

14:00 – 14:30
Myokines and clinical trials
Prof. Ylva Hellsten, Department of Nutrition, Exercise and Sports, University of Copenhagen

14:30 – 15:00
Coffee Break & Exhibition

15:00 – 15:20
Stress, Pain and Sport
Prof. Dr. Pia-Maria Wippert, Universität Potsdam

15:20 – 15:40
your724.com: the key to move your health?
Dr. Martin Daumer & student team

15:40 – 16:00
Controversy: Acceleromics & Genomics
what are the lessons from FDA’s ban of www.23andME.com?