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Dr. Farzin Dadashi, Dr. Benoit Mariani
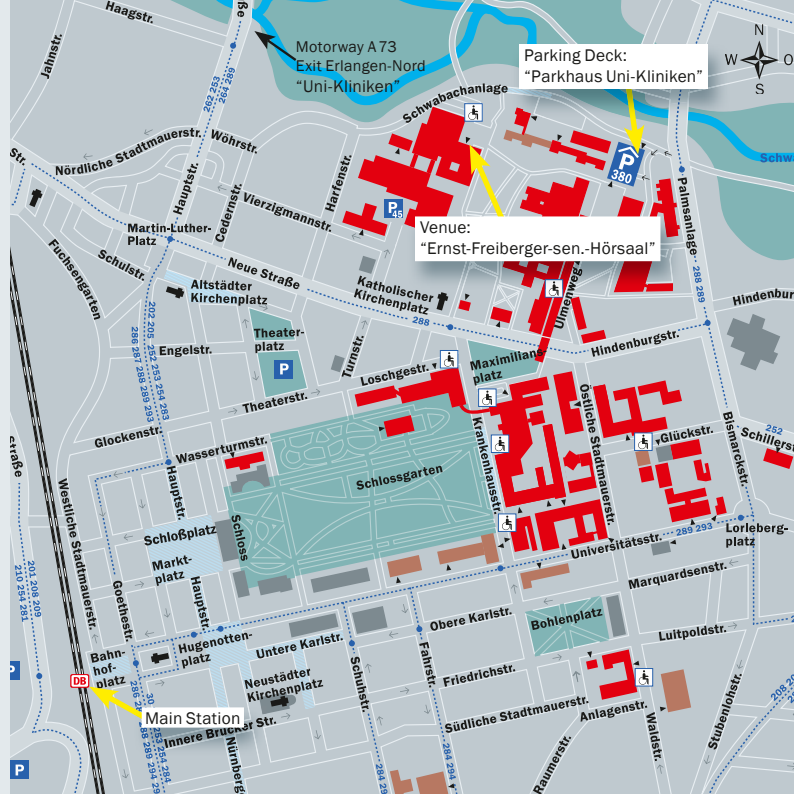GaitUp, Lausanne, Switzerland

Prof. Ugo Della Croce
Bioengineering, University of Sassari, Italy

Prof. Dr. Nils Hoppe
Center for Ethics and Law in Life Sciences,
Leibniz Universität Hannover

Guests of honor

Prof. Dr. Dr. h. c. Jürgen Schüttler
Dean, Faculty of Medicine, Erlangen

Prof. Dr. Joachim Hornegger
Vice President FAU Erlangen-Nürnberg

Motorway A73
Exit Erlangen-Nord
"Uni-Kliniken"

Parking Deck:
"Parkhaus Uni-Kliniken"

Venue:
"Ernst-Freiberger-sen.-Hörsaal"

Main Station

AMASE 2014

5th Automated Mobility Analysis Symposium Erlangen

Friday, 28th November 2014, 11.30 – 19.00

Venue: Universitätsklinikum Erlangen,
Ernst-Freiberger-sen.-Hörsaal
Schwabachanlage 6, D-91054 Erlangen, Germany

Faculty of Medicine, Department of Molecular Neurology
Faculty of Engineering, Pattern Recognition Lab

Certified with 7 points

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Head: Prof. Dr. Jürgen Winkler

Faculty of Engineering, Pattern Recognition Lab
Head: Prof. Dr. Joachim Hornegger

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FAU FRIEDRICH-ALEXANDER UNIVERSITÄT ERLANGEN-NÜRNBERG
TECHNISCHE FAKULTÄT

Universitätsklinikum Erlangen

Dear colleagues,

sensor-based tracking of mobility is increasingly introduced into daily life and medical care. Mobility is a crucial prerequisite for quality of life in health and disease. In particular, impaired gait results from complex interplay of neuro-musculo-skeletal dysfunctions and characteristic symptoms of distinct movement disorders such as Parkinson's disease or multiple sclerosis, but are also evident in cardiovascular diseases, and in the elderly population. In an ageing society impairment of motor function is of increasing medical and economical relevance, and reduces the ability to move independently and limits the autonomy of patients. Even though the disease causing mechanisms are specifically related to each disorder, mobility in general is limited. This defines mobility as an important surrogate marker for disease severity and progress, but more importantly for therapeutic decisions and assessment of quality of life.

Innovative and intelligent sensor-based motion detection systems are developed that (I) assess motor function in numerous disorders throughout the course of the disease, (II) support therapeutic decision, and (III) provide objective measurement for therapeutic efficacy in clinical studies. Also, they may be used for an early diagnosis or as biomarker for disease progression.

The 5th **Automated Mobility Analysis Symposium Erlangen** will focus on the current knowledge and applications of motion assessment systems in translational research bridging technical challenges and clinical needs.

We kindly invite you to our symposium taking place at the Kopfkliniken in Erlangen.

PD Dr. Jochen Klucken
Faculty of Medicine

Prof. Dr. Jürgen Winkler
Molecular Neurology

Prof. Dr. Björn Eskofier
Faculty of Engineering

Program

11.30 **Introduction and Welcome**
Prof. Dr. Joachim Hornegger,
Prof. Dr. Dr. h. c. Jürgen Schüttler,
Prof. Dr. Jürgen Winkler

12.00 **Keynote**
Wearable Technology for Health: Inspiring Healthy Choices
Julien Penders

Parkinson´s Disease –
Diagnostic Application and Intervention Monitoring

12.30 **Sensor-Based Gait Analysis in PD**
PD Dr. Jochen Klucken

12.50 **Bio-, Surrogate and Ecologically Valid Markers: One Sensor for All Aspects?**
Prof. Dr. Walter Mätzler

13.10 **Exercise Interventions to Improve Gait and Postural Control in PD**
Dr. Simon Steib, Prof. Dr. Klaus Pfeifer

13.30 **Postural Stability Analysis Using eGaIT in Patients with PD**
Dr. Heiko Gassner

13.45 **Coffee Break**

Geriatric Movement Disorder

14.30 **Keynote**
Sensor-Based Fall Prediction, Detection and Actuation for Older Persons Based on Real World Data – the FARSEEING Project
Prof. Dr. Clemens Becker

15.00 **Impact of a 4-Wheeled Walker on Older Adult's Gait Parameters**
Samuel Schülein, Prof. Dr. Karl-Günter Gaßmann

Multiple Sclerosis

15.15 **Sensors for Gait Assessment in MS: Early Experiences for Brighton and Hurstwood Park**
Dr. Harry Witchel

15.35 **Mobility and MS – New Outcome Parameters for the Assessment of Disability?**
Prof. Dr. Ralf Linker

15.50 **Mobility in Multiple Sclerosis: Interventions and Assessment of Capacity and Performance**
Dr. Alexander Tallner, René Streber

16.05 **Coffee Break**

Program

Ethics of Digital Biobanking and IT Platforms

16.50 **Legal and Ethical Challenges in Digital Biobanking – Doing Things the Way We Always Have or Shall We Try Something New?**
Prof. Dr. Nils Hoppe

17.10 **A Platform for Medical Data Transfer: Showcase Gait Analysis in Multicenter Studies**
Chantal Herberz, Jens Barth

Pattern Recognition – Sensor-Technology in Health and Disease

17.30 **Stepping Forward – Recent Developments in Automated Sensor-Based Mobility Analysis**
Prof. Dr. Björn Eskofier

17.50 **A Proposal for Wearable Inertial Sensing for Gait Assessment and Intervention**
Prof. Ugo Della Croce

18.10 **Efficient Use of Movement Constraints in Kinematics Assessment with Wearable Sensors**
Dr. Farzin Dadashi, Dr. Benoit Mariani

18.30 **Concluding Remarks**
PD Dr. Jochen Klucken, Prof. Dr. Björn Eskofier

The symposium is supported by

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FAU Emerging Fields Initiative

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