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**Venue:**  
Palisa.de  
Palisadenstraße 48 | 10243 Berlin



# BIH Digital Health Accelerator Demo Day—Program 2018

11 December 2018

# Berlin Institute of Health (BIH)

The Berlin Institute of Health (BIH) is a biomedical research institution focusing on translational research and precision medicine. BIH is dedicated to improving the prediction in progressive diseases and developing advanced therapies for unmet medical needs in order to improve patients' health and quality of life.

Our focus: Understanding mechanisms of disease development and progressive diseases, improving patient's individual diagnoses and risk predictions and developing advanced therapies for personalized treatment of progressive diseases in cases of unmet medical needs.

Our aim: Providing excellent research solutions and innovation enabling value-based, personalized healthcare.

Charité – Universitätsmedizin Berlin and Max Delbrück Center for Molecular Medicine in the Helmholtz Association (MDC) are founding institutions and independent, member entities within BIH. The BIH aims to create an innovative translational research commons of Charité and MDC

# Berlin Health Innovations (BIH)

Health Innovations, the joint technology transfer unit of the Berlin Institute of Health (BIH) and Charité – Universitätsmedizin Berlin, we are deeply committed to making a difference in translational medicine.

We recognize that applying our profound expertise in the areas of pharmaceuticals, diagnostics and medical technologies alone may not be enough to enable our innovators out of BIH and Charité to create the future of medicine. That is why we also focus on digital health – the convergence of new, digital technologies with biomedicine and healthcare – which allows us to add substantial value to innovations that improve patients' lives today and tomorrow.

Together with industry partners worldwide, and by leveraging our advanced instruments for technology transfer and highly collaborative working style, we drive translation.

# Programm

5:30 – 6:00 pm **Registration**

6:00 – 6:15 pm **Opening Remarks**

Dr. Klaus Nitschke, Director Berlin Health Innovations (interim)



6:15 – 6:30 pm **Keynote**

Mario Czaja, Senator a.D.; Managing Director,  
Die BrückenKöpfe GmbH



6:30 – 7:30 pm **Pitch Session Digital Health Accelerator Teams**

Hosted by Dr. Laura Johnson (Berlin Health Innovations)

**mTOMADY – Dr. med. Julius Emmrich,  
Dr. med. Samuel Knauss**

**A Transaction Platform for Accessible and Affordable  
Healthcare**

Department of Neurology with Experimental Neurology  
Charité – Universitätsmedizin Berlin  
julius.emmrich@charite.de · samuel.knauss@charite.de  
www.mtomady.de

**BodyTime – Prof. Dr. Achim Kramer**

**A New Diagnostic Assay to Assess the Internal Clock**  
Institute for Medical Immunology - Chronobiology  
Charité – Universitätsmedizin Berlin  
achim.kramer@charite.de  
www.bodytime.health

**DentalXr.AI – Dr. Falk Schwendicke**

**Deep Learning for Dental Image Diagnostics**  
Department of Restorative and Preventive Dentistry  
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**Cardio Prime – Kay Brosien**

**Diagnosis and Therapy Planning Platform for Patients with  
Cardiovascular Diseases**  
Institute for Imaging Science and Computational Modelling  
in Cardiovascular Medicine  
Charité – Universitätsmedizin Berlin  
kay.brosien@charite.de  
www.cardiaso.com

**Lingped – Dr. med. Serafeim Tsitsilonis, Nevada Kaya**

**An Innovative Monitoring Platform for Post-Surgical  
Rehabilitation**  
Center for Musculoskeletal Surgery  
Charité – Universitätsmedizin Berlin  
serafeim.tsitsilonis@charite.de · nevda.kaya@charite.de  
www.lingped.de

**Algnostics – Prof. Dr. Frederick Klauschen**

**Computational Pathology**  
Institute for Pathology CCM – Clinical Pathology, Working  
Group System Pathology  
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7:30 – 07:45 pm **Closing Remarks**

7:45 – 09:00 pm **Networking Reception**

# mTOMADY – A Transaction Platform for Accessible and Affordable Healthcare

More than 1 billion people in low- and middle-income countries lack access to basic healthcare. The majority of affected people do not have access to savings mechanisms and are at risk for unexpected expenses and even medical impoverishment. Recognizing this and related needs, promoting good health and well-being and alleviating poverty are UN Sustainable Development Goals.

Leveraging the global mobile phone infrastructure, team mTOMADY has developed a digital health wallet – a mobile transaction platform for healthcare savings. Healthcare sponsors, e.g., international aid organizations, governments, employers and communities, can contribute to individuals' healthcare accounts, which in turn can only be used at accredited clinics within defined reim-

bursement ranges. This solution promises reduced "leakage" of aid funding by international aid organizations, quality improvement and cost-control for governments and healthcare providers, and – most importantly – increased access to affordable, quality healthcare for patients. mTOMADY is currently live with a pilot in Antananarivo in cooperation with the Government of Madagascar.

Team mTOMADY consists of two neurologists from Charité – Universitätsmedizin Berlin and a team of mobile technology, software development, and public health experts.

**KEYWORDS:** Accessibility of Care, Affordability of Care, Developing Countries, Healthcare System Transformation, Financial Leakage, Mobile Transaction Platform

**ASK:** Funding | Partners (International Organizations, Governments, Hospital Systems, Large Employers)



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# BodyTime – A New Diagnostic Assay to Assess the Internal Clock

The biological clock is essential for health. The fast-paced and globalized lifestyles in modern society increasingly lead to the misalignment or disruption of our biological clock, which is associated with numerous common diseases such as sleep disorders, psychological disorders, metabolic syndromes, rheumatic disorders, cardiovascular diseases, and cancer.

In the emerging field of chronomedicine, team BodyTime addresses this medical need with a blood test (ChronoMarker) to determine the individual's biological clock by profiling genetic biomarkers and applying machine-learning algorithms. While as accurate as currently established tests, this solution promises to be less complex, faster and more

cost-effective. As the first application, the team is targeting sleep disorders in collaboration with sleep labs as a stand-alone tool or companion diagnostic for pharmaceutical or behavioral therapy options. Other opportunity areas include stratification of clinical trial cohorts, application to other disease types, and solutions directly empowering affected individuals.

Team BodyTime consists of experts in the field of chronobiology, medicine, and data-analysis/software development from Charité – Universitätsmedizin Berlin, supported by an expert in life sciences and new venture development.

**KEYWORDS:** Chronobiology, Chronomedicine, Biological Clock, Sleep Disorders, Companion Diagnostic, Clinical Trials, Patient Empowerment

**ASK:** Industry Partners | Co-founders | Business Angels/VC



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# DentalXr.AI – Deep Learning for Dental Image Diagnostics

Dental diseases are among the most prevalent of mankind, burdening billions of individuals with pain, impaired chewing movements, impaired speech and aesthetics. To manage these diseases, early detection and regular monitoring with supportive therapy is needed. While visual-tactile detection has low sensitivity for early disease stages, the analysis of dental images is challenging due to limited accuracy of individual examiners, low consistency between examiners, and required time.

Team DentalXr.AI is developing an artificial intelligence (AI)-based decision-support system for dental images, intended to help dentists to systematically and comprehensively assess

X-rays, document these assessments, and form evidence-based decisions. The envisioned solution enables faster and more accurate assessments of dental X-rays. This will result in reduced diagnostic uncertainty and better treatment decisions in less time. DentalXr.AI reduces assessment and treatment costs for patients and the healthcare system and makes dentists' lives easier. Future application areas include incorporating additional image types and predictive capabilities.

Team DentalXr.AI consists of senior clinicians, machine learning experts and software developers from Charité – Universitätsmedizin Berlin.

**KEYWORDS:** Dental Image Diagnostics, AI/ML, Dentist Decision-Support System

**ASK:** Industry Partners | Co-founders/Team Members | Business Angels/VC



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# Cardio Prime – Diagnosis and Therapy Planning Platform for Patients with Cardiovascular Diseases

The care path for cardiovascular patients, ranging from symptom detection to diagnosis to therapy and disease management, is fragmented. Providing each patient with the right type of care at the right place of care is a key challenge for each healthcare system. In a fragmented cardiovascular care path, quality and efficiency of care suffer.

Team Cardio Prime has developed an innovative Digital Health platform for diagnosis and therapy planning to inform and improve the care path for patients with cardiovascular diseases. The solution enables physicians working in cardiovascular and other specialties at hospitals, in specialist practices and in general practices to diagnose cardiovascular

conditions earlier and make even more informed care path decisions. The first application is a stress test of cardiac and heart valve function without pharmacologically or physical activity-induced stress. Other opportunity areas are complementary cardiovascular analyses and decision-support systems for cardiovascular diagnosis and therapy planning.

Team Cardio Prime consists of an interdisciplinary team of experts in cardiovascular disease diagnostics and treatments, physicists, engineers and software developers from Charité – Universitätsmedizin Berlin.

**KEYWORDS:** Cardiovascular Diseases, Care Path Improvement, Prevention, Platform Solution

**ASK:** Partners (Healthcare Providers, Payers) | Industry Partners | Business Angels/VC



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www.cardiaso.com

# LingPed – An Innovative Monitoring Platform for Post-Surgical Rehabilitation

Today, the rehabilitation of patients after surgery of the lower extremity is mostly a black-box to the surgeon. The responsibility to control the loading of the operated extremity and to move in a safe manner rests with the patient. This can be overwhelming and complex for patients. Failure to adhere to the post-operative protocol leads to an increase of complications, re-operations, socio-economic costs and can negatively affect the quality of patients' lives.

Team LingPed is closing this gap in post-surgical rehabilitation with a monitoring system for patients after orthopedic surgery of the lower extremities. The system consists of an insole for use e.g. in postoperative shoes (orthoses) for data collection, and an app for patients as feedback mechanism to monitor and,

if needed, adjust their behavior during recovery. The solution will also assist the surgeon in planning an individualized rehabilitation protocol. The system intends to reduce the risk of re-surgery, shorten and optimize the individual rehabilitation process, and reduce healthcare system costs. Future application areas include pattern recognition of gait abnormalities, telemedicine, prognosis and prevention of foot deformities for children and teenagers for optimal foot development.

Team LingPed consists of orthopedic trauma surgeons of the Center for Musculoskeletal Surgery from Charité – Universitätsmedizin Berlin and a medical student with hardware and software development expertise.

**KEYWORDS:** Orthopedic Surgery, Post-Surgery, Rehabilitation, Monitoring System, Sensor-based Solution, App

**ASK:** Industry Partners | Co-founders/Team Members | Business Angels/VC



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# Algnostics – Computational Pathology

Microscopic evaluation of tissue samples performed by pathologists is the basis of diagnosing cancer as well as many degenerative, infectious and inflammatory diseases. Given our aging population, the increase in numbers and complexity of cancer cases worldwide, a global shortage of pathologists is imminent. As a result, the capacity of healthcare systems to perform histological diagnostics and determine the right therapy is under increasing pressure.

To address this challenge, team Algnostics has developed an AI-based image analysis system to assist pathologists in standardized and quantitative automated tissue diagnostics. This solution

promises to be more accurate and faster than today's manual gold standard. The system can also be applied to drug development, where pharmaceutical companies depend on accurate assessments of histological tissue samples in preclinical animal studies or in clinical trials to stratify patients in drug efficacy and toxicity analyses.

Team Algnostics consists of experts in the fields of diagnostic and computational pathology from Charité – Universitätsmedizin Berlin, in cooperation with Prof. Klaus-Robert Müller, a globally renowned expert in machine learning from Technical University Berlin.

**KEYWORDS:** Computational Pathology, Digital Pathology, AI/ML, Cancer Diagnosis, Toxicity Screening, Clinical Trials

**ASK:** Industry Partners | Co-founders | Business Angels/VC



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