Berlin Institute of Health at Charité

BIH Digital Health Accelerator Demo Day 2025

Berlin, Germany | October 15, 2025


CHARITÉ
SUNDIKAT

2025 BIH Digital Health Accelerator Demo Day

The mission of the BIH is medical translation, helping bring findings from biomedical research into novel approaches for personalized prediction, prevention, diagnostics, and therapy. Conversely, it utilizes clinical findings to help researchers in developing novel approaches. The aim is to deliver relevant medical benefits for patients – turning research into health.

As the translational research unit of Charité – Universitätsmedizin Berlin, the BIH is building a translational ecosystem, promoting a systemic view of health and disease, and driving change in biomedical research culture.

The BIH was founded in 2013 and is funded 90 percent by the German Federal Ministry of Education and Research (BMBF) and 10 percent by the State of Berlin. In 2021, the BIH was partly integrated into Charité, maintaining close ties with the Max Delbrück Center for Molecular Medicine in the Helmholtz Association as a privileged partner.

The BIH Digital Health Accelerator Program (DHA) at Charité BIH Innovation funds, guides, and supports Charité/BIH clinicians and researchers at all stages of readiness to turn their concepts into digital health solutions for patients and healthcare systems via licensing or spinoff.

Supported projects develop clinical decision support systems, diagnostics, digital therapeutics, software as a medical device, and patient applications and industry solutions based on technologies such as AI/machine learning, AR/VR, bioprinting, robotics, and sensors.

With a proven track record of 64 projects supported to date, 18 projects currently in the program, 3 projects preparing to spin off this year, and 14 alumni projects having spun-off to date (one raising a Series B, one exit by acquisition, one license), the BIH DHA has taken root as the go-to-program for clinical digital health innovation – a unique program in the German and broader European university hospital landscape.

Please join us in celebrating this success and especially in thanking specifically those clinicians and researchers who are developing highly innovative digital health solutions in addition to their daily work advancing medical science and delivering world-class medical care in these challenging times for the German healthcare system.

In the future, the BIH DHA Program aims to broaden its geographical scope by collaborating with additional academic hospitals in Germany to scale digital health translation to benefit patients and our society. In addition, BIH continues to grow its DHA network by further deepening collaborations with academic institutions and corporate partners.

Thank you for joining and we hope you enjoy the BIH DHA Demo Day 2025!

Sincerely yours,

Prof. Dr. Christopher Baum
Chairman of the Board of Directors, BIH, and Chief Translational Research Officer, Charité

Dr. Doris Meder
Administrative Director BIH

BIH Digital Health Accelerator Program

2025 marks the eighth year for the BIH Digital Health Accelerator. We once again look back at the program's beginnings and venture a glimpse into the future.

Based on the vision of BIH leadership to tackle the missing link between medical research and medical application – product development – and supported by dedicated federal funding, the BIH Digital Health Accelerator was conceptualized in late 2016.

The DHA team piloted the program right away embracing the principle: Building the plane as we fly. What may seem haphazard at first in fact applied sound guidance for any innovation unit: Gather senior leadership support around a clear vision and success metrics, activate the resources needed to get going, and learn by doing: Don't be afraid to make mistakes, but if you do, make new ones.

Pilot Phase

In 2017, an external committee selected four projects to form the pilot DHA cohort. All projects considered either the heart or the brain with their product development ideas; in hindsight maybe no coincidence.

Based on best practices in product development, the core elements of the program were implemented that are still valid today: Co-working in an interdisciplinary work environment away from daily routine; mentoring by subject matter experts and seasoned professionals; and iterative product development to ensure future solution-need or product-market fit.

wprototypes and the program received the green light from BIH leadership and political decision makers to take root.

Proof of Concept Phase

Between 2018 and 2020, the program grew steadily, from six new teams in 2018 to eight in 2019 to ten new teams in 2020. The program diversified in medical fields, research domains, and digital technology areas. 2021 caused the program to slow down temporarily due to the acute clinical duties of project teams and clinical study prioritizations.

BIH Digital Health Accelerator Program

The program evolved into the two stages: Stage 1 to validate the medical need and the core technology, to prototype and iterate rapidly, and to get a basic understanding of regulatory, business, and reimbursement matters. Stage

By the Numbers

64
Projects
funded to date

27
Fields
of medicine, research

18
Projects
currently in program (Stage 1: 11, Stage 2: 7)

14
Spinoffs
graduated

1
Exit
by acquisition

250+
Jobs
created by spinoffs

2 to develop regulated, clinically validated digital medical products for diagnosis or therapy, digital platform solutions, or digital tools to improve drug development. In this stage, teams around clinicians and researchers grow in size and entrepreneurship knowledge, and prepare to bring their products to the healthcare market and medical application, e. g., via licensing or spinoff formation.

Over time, the following key success factors manifested themselves. One critically important success factor is the breadth and depth of knowledge and guidance by mentors, which is kindly supported by the German Accelerator Life Sciences, and other networks.

Structured Process
for digital health/
medical product development

Funding
including up to 50 % protected time
from clinical obligations

Mentoring
by subject matter experts, industry
professionals and seasoned founders

Community
of digital health innovation peers and
access to talent pool

Network
of potential transfer partners in industry
and (corporate) venture capital

Co-Working Space
for interdisciplinary work at
BIH Digital Labs

Equally important and somewhat unique to working at a university hospital turned out to be team completion: Finding, matching, and supporting new team members with needed skills sets, e. g., in product development, regulatory affairs, and new venture development.

In 2020, through the emergence of the first set of digital health spinoffs from the DHA program, tangible proof of concept was achieved.

To date, 14 spinoffs have emerged from the DHA program. Having developed and launched their medical products and digital health solutions, they have created over 250 jobs in the region. Eighteen new solutions are currently under development.

Outlook: Growth Phase and Broader Opportunity

By 2025, the BIH DHA program has developed standardized structures and processes, a program curriculum around a robust digital health product development framework, and knowhow that could support the translational ecosystem at Charité and BIH permanently by fueling the development and transfer of digital health innovations. In addition, the BIH DHA program is also exploring ways to cooperate with additional university hospitals and corporate partners to foster digital health innovation at scale for the benefit of patients and society.

Agenda

4:00 pm

Welcome & Introduction by Event Host

Tjaša Zajc
Journalist, Host Podcast Faces of Digital Health, Patient Advocate

Opening Remarks

Prof. Dr. Christopher Baum
Chair of the BIH Board of Directors and Chief Translational Research Officer of Charité – Universitätsmedizin Berlin

Impulse Talk

Barry Stein
Vice President, Chief Clinical Innovation Officer and Chief Medical Informatics Officer, Hartford Healthcare

BIH Digital Health Accelerator Pitch Session 1

vEC: From Fragmented Data to Focused Care, Helping Children Get Their Right Epilepsy Treatment Sooner
Dr. Konstantin Makridis

AerobicAI: Train at Your Personal Best Every Day
Dr. Tomas L. Bothe

movement.MRI: Knee Motion Made Clear for Smarter Treatment Pathways
Dr. Nicholas Brisson

BoneGuard: Spot the Risk Early – Your Dental Visit Could Save Your Bones
Iman Ghanad

Impulse Talk

Stephen Kennedy-Smith

Agenda

BIH Digital Health Accelerator Pitch Session 2

Malva: Breaking Data Silos to Reveal Hidden Cellular Patterns and Transform Healthcare and Therapeutics
Daniel León-Periñán

PhenoVox: Translating Vocal Signatures into Respiratory Insights
Dr. Mirja Mittermaier

AtriAI: Illuminating Precision with Insights to Improve Patient Outcomes in Interventional Cardiology.
Emanuel Heil

Midwife Roberta: Your Midwife in a Pocket – for Advancing Personalized Maternity Care with Medical Insight
Dr. Carina Nina Vorisek

RevOS: Revolutionizing Orthognathic Surgery for Efficient, Predictable Outcomes
Dr. Simon Bigus

BioRhythmix: Precision Timing for Immunotherapy
Adrian Granada

SafeBirth: Advancing Maternal Care Through Intelligent Support
Malika Guggenberger

Closing Remarks

Dr. Doris Meder
Administrative Director, Berlin Institute of Health (BIH)

6:00 pm .... **Thank you & Closing**

AerobicAI: Train at Your Personal Best Every Day

CONTACT
Dr. Tomas Luca Bothe
Viktor Heinz
Institute for Physiology
Center for Space Medicine Berlin
Charité Universitätsmedizin Berlin
Charitéplatz 1 · 10117 Berlin

tomas-lucca.bothe@charite.de
viktor.heinz@charite.de

Wearable technology has transformed how millions train worldwide today, from tracking heart rate and steps to monitoring sleep, distance, and workout intensity. Yet, despite billions using wearables, top performers still rely on lab tests and expert coaches. The reason is simple: most consumer metrics are based on population averages and generic zones, which often fail to capture meaningful physiological changes. As a result, trackers can miss the subtle signals that indicate improvement, overtraining, or the need for recovery – leaving athletes or people interested in their cardiovascular fitness to guess, with poor guesses risking stalled progress or injury.

AerobicAI addresses this by turning everyday fitness trackers/wearable into medical-grade tools for guiding cardiovascular training. The scientifically validated algorithm reads real-time physiological signals and provides precise, personalized guidance, indicating exactly how hard to train on any given day. Built on real physiology – tested on Earth and in space – the method does not rely on generic zones. The AerobicAI solution is currently undergoing the intellectual property and patenting process. Initial clinical validation demonstrates that the algorithm matches gold-standard lab accuracy. With just a smartphone and a standard fitness tracker/wearable, users can access the same insights typically provided by labs, anytime, anywhere. Because it operates on everyday devices, even professional athletes can receive high-precision feedback weekly, rather than interpolating between costly and time-consuming lab visits.

AerobicAI is envisioned to provide a clear view of an athlete's current fitness level, daily training targets, and endurance progression over time. Expert-level guidance is planned to be available wherever training occurs – on the track, the bike, or the trail. Ongoing validation and refinement with professional athletes, coaches, and sports scientists across multiple disciplines aim to ensure that the system becomes reliable, simple to use, and suitable for everyday application. The solution is designed to help athletes train at their true optimal level, detect fatigue early, recover smarter, and achieve measurable progress day by day, with guidance based on individual physiology rather than averages, ultimately making peak performance safer, more efficient, and more attainable.

The team behind the solution combines profound expertise in space medicine and physiology from Charité with hands-on experience in the rehabilitation of professional athlete teams, ensuring both scientific rigor and real-world applicability.

KEYWORDS
Space Medicine, Physiology, Sports Medicine, Cardiovascular Fitness, Real-Time Physiological Monitoring, Wearable Analytics

AtriAI: Illuminating Precision with Insights to Improve Patient Outcomes in Interventional Cardiology

Atrial fibrillation (AF) is far more than just an irregular heartbeat – it is the most prevalent cardiac arrhythmia, affecting one in three people over their lifetime. Its impact extends well beyond irregular heart rhythms, standing as a leading cause of stroke, heart failure, and frequent hospital admissions. As its prevalence rises sharply, AF places a heavy burden on patients, healthcare systems, and society.

Pulmonary vein isolation using single-shot catheters is the current gold standard for rhythm control. Yet, despite its widespread use, outcomes remain inconsistent. Physicians rely on limited two-dimensional X-ray imaging without standardized endpoints, leaving lesion quality and durability uncertain. This often results in incomplete ablations, high recurrence rates, and costly repeat procedures that increase risk for patients and strain hospital resources.

AtriAI aims to change this by making the invisible visible. This breakthrough feedback platform provides insight into tissue response revealing lesion quality and expected durability. The benefits are clear: patients face fewer repeat interventions and complications, improving quality of life; physicians gain confidence in effective, complete procedures; and hospitals improve efficiency by reducing costly re-interventions and freeing capacity. For industry partners, AtriAI offers an innovation that strengthens single-shot ablations with clear competitive differentiation.

With tens of millions worldwide affected and growing demand for effective treatment, AtriAI stands poised to transform care – improving lives, increasing hospital efficiency, and driving competitive advantage.

The team includes a senior interventional cardiologist supported by a junior colleague, alongside an expert in algorithm development based at the German Heart Center at Charité (DHZC). Together, they lead this innovative effort to redefine AF care through precision and personalized therapy.

Looking ahead, AtriAI is preparing commercialization through a dedicated spin-off and seeks collaboration with clinical, industrial, and strategic partners to bring this transformative technology to patients worldwide.

CONTACT
Emanuel Heil
PD Dr. med. Felix Hohendanner
Deutsches Herzzentrum der Charité

felix.hohendanner@dhzc-charite.de
emanuel.heil@dzhc-charite.de

Atri Ai

KEYWORDS
Interventional Cardiology, AF Management, Real-Time Tissue Response Monitoring, Catheter Ablation Optimization, AI-Based Platform, MedTech, Personalized Cardiac Care

BioRhythmix: Precision Timing for Immunotherapy

CONTACT
Dr. rer. nat. Adrián Enrique Granada
Dr. rer. nat Stefan Florian
Institute of Pathology
Charité – Universitätsmedizin Berlin, CCM
Charitéplatz 1 · 10117 Berlin

stefan.florian@charite.de

BIORHYTHMIX

KEYWORDS
Precision Oncology, Cancer Immunotherapy, Personalized Treatment Timing, Treatment Efficacy, CROs, Drug Development, Data-Driven Analytics

Immunotherapy has emerged as a transformative treatment for millions of cancer patients worldwide each year. Up to one-third of all cancer patients are now eligible for immunotherapy, gaining new treatment options and improved prospects for longer survival. The scientific consensus is clear: cancer immunotherapy represents a modern and innovative approach to combating the disease. Yet, for many patients, it has not consistently translated into extended survival.

A key challenge is that this heightened immune response can sometimes become overstimulated or misdirected, causing side effects. These immune reactions can impact any tissue or organ, resulting in complications ranging from mild discomfort to severe, potentially life-threatening conditions. In some cases, side effects are severe enough to require treatment cancellations or even withdrawal from clinical trials, limiting both patient benefit and the development of new therapies. Traditionally, efforts to enhance immunotherapy have focused on immune checkpoint proteins or optimizing drug properties, while systemic factors have remained largely unexplored. Among these, internal biological rhythms – our circadian clocks – are emerging as critical determinants of immune function, therapeutic efficacy, and side effects. Clinical evidence demonstrates that the timing of drug administration, whether early or late in the day, can profoundly influence treatment outcomes, depending on the circadian rhythm of the individual.

BioRhythmix is an early-stage project addressing this challenge by developing a computational approach that integrates circadian science with AI. The initiative aims to establish a new paradigm for immunotherapy: delivering the right treatment at the right time for every patient. The project is planning to incorporate patient immunotherapy data to train the algorithm and is actively seeking collaborations with research institutions, clinicians, and healthcare stakeholders to move these efforts forward.

The mission of BioRhythmix is to translate insights from circadian biology into actionable tools for oncology practice. While an early prototype is under development, the long-term vision is to provide digital support that refines and optimizes treatment schedules. For patients, this could eventually mean receiving therapies at the most effective time, improving outcomes, enhancing efficacy, and reducing side effects.

The project team brings a background in pathology and systems oncology, providing a solid foundation in cancer biology while developing expertise in integrating circadian principles into therapy. By aligning treatment with each patient's internal clock, the project aspires to maximize benefits, minimize toxicity, and ultimately transform the effectiveness of cancer immunotherapy.

BoneGuard: Spot the Risk Early – Your Dental Visit Could Save Your Bones

Osteoporosis, often described as a “silent disease,” affects more than 200 million people worldwide, with many more at significant risk. Women are disproportionately impacted, and yet millions remain undiagnosed and untreated until a fracture occurs. By then, the disease has often progressed quietly and extensively, weakening bones to the point where even minor incidents can lead to serious injury. With demographic changes and a globally aging population, the situation is expected to escalate dramatically. According to the International Osteoporosis Foundation (IOF), by 2040, over 158 million people will be at high risk of osteoporotic fractures. This trend not only results in personal suffering but also places a growing burden on healthcare systems – driving up costs, increasing hospital stays, and contributing to the loss of independence for affected individuals.

Current diagnostic practices for osteoporosis are largely limited to assessments performed by specialists such as gynecologists or orthopedists. These typically focus on specific skeletal regions, while early indicators, visible in the jawbones during routine dental care, are often overlooked. As a result, countless individuals at risk remain undetected until the disease has significantly advanced, reducing the window for preventive care.

This is where BoneGuard offers a transformative approach. BoneGuard is an AI-based diagnostic support tool designed to detect early signs of osteoporosis during routine dental check-ups. By analyzing panoramic radiographs already taken in dental practices, the system evaluates bone structure and translates the findings into an individual risk score. This enables early identification of patients who might otherwise go unnoticed. Seamlessly integrated into existing dental workflows, BoneGuard facilitates preventive screening without adding complexity to clinical routines. It offers a practical, scalable solution to improve early diagnosis rates and reduce the long-term impact of osteoporotic fractures through timely intervention.

BoneGuard envisions establishing a comprehensive, population-wide detection platform that leverages dental data and is adaptable across diverse healthcare systems. By steadfastly focusing on delivering measurable patient benefits, enhancing clinical efficiency, and ensuring sustainable integration, BoneGuard seeks to seamlessly bridge groundbreaking research with everyday clinical practice. In doing so, BoneGuard aspires to become an indispensable tool in the global fight against osteoporosis – facilitating earlier diagnosis, more effective treatment, and ultimately, significantly improving the quality of life for millions worldwide.

The project team combines expertise from dentistry, maxillofacial surgery, artificial intelligence, and a team member with a proven track record in bringing AI-driven dental solutions to market.

CONTACT
Iman Ghanad
Dr. Dr. Patrick Dinkelborg
Department of Oral and Maxillofacial Surgery
Charité – Universitätsmedizin Berlin, CBF
Hindenburgdamm 30 · 12200 Berlin

BoneGuard

KEYWORDS
Dentistry, Women’s Health, Osteoporosis, Bone Health, Early Detection, AI-Driven Diagnostic Support, Panoramic Radiograph Analysis

CONTACT
Daniel León-Periñán
Dr. Nikolaos Karaiskos
N. Rajewski Lab – Systems Biology and Gene Regultory Elements
MDC – BIMSB

nikolaos.karaiskos@mdc-berlin.de
angelika.eggert@bih-charite.de

Malva

KEYWORDS
Precision Medicine, Single-Cell Analysis, Data Harmonization, Biomarker Identification, Drug Discovery & Development, AI, Advances, Analytics, Autoimmune Diseases, Cancer

Malva: Breaking Data Silos to Reveal Hidden Cellular Patterns and Transform Healthcare and Therapeutics

This year's Nobel Prize in Physiology or Medicine highlighted the importance of understanding the cells that protect the body from autoimmune diseases, emphasizing the transformative potential of single-cell research. Platforms that integrate and analyze such data are essential not only for fundamental research but also as a product for pharmaceutical R&D and for clinician-researchers driving translational studies.

Each year, scientists digitize millions of cells from the human body at unprecedented molecular and spatial resolution, generating datasets that capture genomic, transcriptomic, proteomic, and epigenetic features. These next-generation single-cell and multi-omics datasets can revolutionize biomedical research, drug development, and precision medicine. Yet, much of their potential remains untapped. Data are collected in disconnected silos, often using heterogeneous protocols, platforms, and formats. Analytical approaches usually focus on isolated aspects, such as a single omic layer or cell type, which limits cross-study comparability. Fully leveraging these resources would require continuous reanalysis of millions of datasets – an impractical task with conventional computational approaches. As a result, much of the actionable biological and clinical knowledge remains underutilized.

Malva is an IP-protected platform designed to overcome these limitations by making diverse datasets searchable, interoperable, and directly comparable. By harmonizing data across multiple repositories and experimental conditions, the current status is a working prototype integrating multiple public repositories, which was tested with scientists, clinicians, and industry partners.

Malva enables pharmaceutical teams, clinician-scientists, and translational researchers to interrogate data at full resolution and ask complex, integrative questions previously impractical. Analyses that once required weeks or months can now be performed in seconds, unlocking insights and accelerating drug discovery, target identification, and therapeutic development.

Using Malva, industry partners can uncover hidden patterns in genomic data across cancer and autoimmune disorders such as Lupus, multiple sclerosis, and more. By integrating previously isolated datasets and providing advanced analytical capabilities, Malva empowers pharma and healthcare organizations to extract actionable knowledge, identify biomarkers, and optimize therapeutic strategies.

Ultimately, Malva aims to revolutionize healthcare by tracking and understanding human cells during disease. By enabling integrative analyses across public and private datasets, it accelerates innovation in therapeutics, diagnostics, and personalized medicine, turning complex cellular data into tangible industrial and clinical impact.

The team comes from the world-renowned lab for Single-Cell Approaches for Personalized Medicine at the Max Delbrück Center, supported by clinical insights from BIH, Charité, and now Essen.

Midwife Roberta: Your Midwife in a Pocket – for Advancing Personalized Maternity Care with Medical Insight

CONTACT
Dr. Carina Nina Vorisek
Berlin Institute of Health (BIH)
eHealth and Interoperability
Luisenstr. 65 · 10117 Berlin

carina-nina.vorisek@bih-charite.de

Pregnancy and birth are among life's most profound journeys. Every pregnancy is highly personalized, shaped by a woman's medical history, prior health challenges, and potential obstacles such as chronic conditions or genetic risk factors. In Germany, as in many other countries, the complexity of care is compounded by a lack of interoperability between inpatient and outpatient services, making it difficult to share essential information efficiently. Maternity teams across the UK, Europe, and the US face similar pressures: rising case complexity, time constraints, and overwhelming flows of information. Gynecologists, midwives, and specialty ambulances often lack the capacity to repeatedly answer common questions, while language barriers and fragmented communication between physicians, midwives, health insurers, and online resources further complicate care.

Midwife Roberta bridges this gap, serving as the missing link between expectant mothers and healthcare teams. The solution is highly personalized, configured by a woman's gynecologist or midwife, and allows women to choose the level of information they wish to receive. It consolidates all relevant data in one pocket-accessible platform – ready for emergency unit visits, multiple physician consultations, and handover to the delivery room. Midwife Roberta is adaptable to every pregnancy, from low-risk to high-risk cases, and aims to be reimbursed for risk pregnancies to ensure broader access for those who need it most.

By providing medically verified, guideline-based information tailored to each woman's specific case, Midwife Roberta prepares mothers for the potential choices they may encounter during delivery. It explains what to expect and why certain options might be recommended, empowering women to enter the delivery room informed and confident, capable of making decisions for themselves and their baby even in high-pressure situations.

For midwives and obstetricians, the solution streamlines information, reduces repetition, and improves handovers, freeing valuable time for direct, compassionate care and enhancing coordination across the healthcare team.

Beyond individual encounters, Midwife Roberta connects stakeholders across fragmented healthcare systems. By preventing complications, reducing unnecessary interventions, and lowering overall costs, it benefits families, professionals, and institutions alike.

The platform is developed by a physician and interoperability expert from the Berlin Institute of Health (BIH) and is supported by specialists from the Charité Obstetrics department as well as international experts in women's health. The project has validated both the clinical need and the concept and is now preparing its minimum viable product (MVP), ensuring clinical rigor, usability, and safety.

KEYWORDS
Obstetrics, Women's Health, Personalized Maternity Care, Pregnancy Management, Patient-Centered, Interoperable Digital Platform

CONTACT
Nicholas Brisson, PhD
Group Leader, Biomechanics of
Knee Injury and Osteoarthritis
Julius Wolff Institute (JWI)
Berlin Institute of Health at Charité
Rahel Hirsch Center
Luisenstraße 65 · 10117 Berlin

nicholas.brisson@charite.de

movement
MRI

KEYWORDS
Musculoskeletal (MSK) Diagnostic, Dynamic MRI Imaging, Sports Medicine, MedTech, Knee Joint Health, Real Time Analysis

Movement.MRI: Knee Motion Made Clear for Smarter Treatment Pathways

One in three doctor visits for joint issues involves the knee. As one of the body's most important joints, the knee bears heavy loads and supports independence throughout life – from running and play in youth, to work and competition in adulthood, to walking, climbing stairs, and staying mobile in older age. For athletes, it is the foundation of performance.

Yet the knee is complex and vulnerable. It is among the most frequently injured joints in both sports and daily life. Female athletes face a 2- to 8-fold higher risk of knee injuries than males, attributed to anatomic, biologic, and kinematic factors. Problems can result from sudden trauma, repeated overuse, or training strain. Conditions such as patellar misalignment, ligament tears, or meniscal damage are particularly burdensome. They cause pain, instability, and restricted movement, limiting performance and daily function while increasing the risk of long-term joint degeneration.

Currently, a diagnostic gap challenges physicians in selecting the right treatment. Standard imaging is static, capturing the knee at rest, which can miss underlying problems. As a result, treatment may be delayed or suboptimal, leading to longer recovery, higher risk of re-injury, and increased degeneration. What is needed is imaging of the knee in motion, revealing how bones, muscles, and connective tissues interact during activity to support informed clinical decisions.

Movement.MRI addresses this need by visualizing the knee dynamically. Unlike conventional imaging, it captures real-time motion, providing radiologists with detailed MRI images for interpretation and supporting orthopedic and musculoskeletal (MSK) surgeons in precise treatment and surgical planning.

The project has developed a working prototype, which has been tested with real patients, and completed a small feasibility study with clinicians. The goal is to deliver a clinical tool that enhances diagnostic accuracy for orthopedists, sports physicians, and physiotherapists, guiding surgical planning, tracking rehabilitation progress, and enabling personalized treatment strategies.

Looking ahead, the same technology could extend to other joints and musculoskeletal conditions, establishing a new standard for dynamic joint assessment and broadening the scope of personalized musculoskeletal care.

The team combines experts in knee biomechanics and joint surgery from Charité and Canada with imaging and technology specialists from University Hospital Jena, ensuring the solution is both clinically and technically robust.

PhenoVox: Translating Vocal Signatures into Respiratory Insights

A recent WHO/Europe and European Respiratory Society report highlights that chronic respiratory diseases (CRDs) – including asthma, chronic obstructive pulmonary disease (COPD), and other lung conditions – remain widely underdiagnosed and poorly managed across Europe. More than 81 million Europeans, including over 14 million Germans, are affected.

COPD is a progressive condition that significantly reduces quality of life and generates high healthcare costs. A major challenge is the occurrence of acute worsening episodes, or exacerbations, after which lung function often does not return to baseline. These episodes frequently lead to hospitalizations and drive increasing costs for healthcare systems.

Between routine clinical visits, typically every three months, patients lack continuous monitoring and early warning tools. When symptoms worsen, many delay seeking help, increasing the risk of severe complications and emergency interventions.

PhenoVox addresses this unmet need. It is an innovative digital solution that uses the human voice as a continuous, non-invasive signal of lung health. Through simple voice recordings analyzed by proprietary algorithms, PhenoVox detects subtle changes in lung function and provides personalized recommendations. This enables timely interventions, reduces exacerbations, and improves quality of life for patients.

Designed as a digital therapeutic, PhenoVox supports personalized COPD management based on a physician's prescription – for example, after a hospitalization or an emergency visit. Patients receive tailored digital support such as breathing exercises, secretion mobilization, or guidance on the appropriate use of standby medication. This empowers patients to take action earlier and with confidence, while giving clinicians objective data to guide care decisions.

For patients, PhenoVox increases safety and autonomy; for clinicians, it provides continuous insights between visits; and for healthcare systems, it reduces hospital admissions and costs.

The project is currently developing its minimum viable product (MVP) for clinical testing. The long-term vision is to create an evidence-based digital health platform that supports personalized treatment for all types of respiratory diseases, combining continuous monitoring with intelligent, data-driven therapeutic guidance.

Beyond COPD, PhenoVox aims to evolve into a screening and early detection tool for respiratory diseases such as asthma and pulmonary hypertension, with the potential for international rollout and broad impact on respiratory health management.

PhenoVox is developed by a pneumologist from Charité with backgrounds in bioinformatics and machine learning expert from HPI and Charité.

CONTACT
Dr. med Mirja Mittermaier
Joint Department: Infectious Diseases, Respiratory Medicine and Critical Care Medicine, CVK
Augustenburger Platz 1
13353 Berlin

mirja.mittermaier@charite.de

PhenoVox

KEYWORDS
Pneumology, Respiratory Health, CRDs, COPD, Voice-Based Diagnostics, Data-Driven Therapeutic Guidance

RevOS: Revolutionizing Orthognathic Surgery for Efficient, Predictable Outcomes

CONTACT
Dr. Simon Bigus
Department of Oral and Maxillofacial Surgery
Charité – Universitätsmedizin Berlin, CVK
Augustenburger Platz 1
13353 Berlin

simon.bigus@charite.de

KEYWORDS
Dentistry, Maxillofacial Surgery, Orthognathic Surgery, Jaw Correction, AI Assisted, Digital Surgical Planning

Each year, millions of people worldwide are affected by jaw misalignments that compromise both appearance and function. These conditions can impair chewing, speaking, and breathing, and are often linked to facial imbalance and obstructive sleep apnea. Jaw Surgeries- so called Orthognathic surgery – offer a definitive correction by repositioning the jaws to achieve proper alignment between the maxilla and mandible. However, conventional workflows typically require patients to undergo several months of presurgical orthodontics, delaying the benefits of surgery and extending overall treatment time.

An alternative method known as "Surgery First" reverses this sequence – performing the surgery at the beginning of treatment, followed by orthodontic finishing. This approach can significantly shorten treatment duration and enhance patient satisfaction. Despite growing interest from surgeons, orthodontists, and patients, widespread adoption has been limited. The primary barrier lies in the complexity of interdisciplinary coordination between surgical planning and orthodontic systems, which have traditionally operated in isolation.

RevOS is a digital solution developed to bridge this gap. Designed as an intelligent plug-in, the software connects aligner treatment planning tools with surgical simulation platforms, enabling a cohesive workflow across disciplines. By accurately predicting the ideal post-surgical occlusion and tooth position, RevOS allows clinicians to plan and execute Surgery First cases with greater efficiency, predictability, and clinical confidence. The result is a fully digital, integrated process – from diagnosis and surgical planning to aligner-based orthodontic finishing.

Currently advancing from concept to prototype, the project aims to bring modern jaw correction techniques to a broader patient population. Early feedback has highlighted a clear demand for such an integrated planning tool. Patients benefit from fewer invasive steps, shorter timelines, and improved quality of life. Orthodontists gain a more predictable and efficient treatment course, while surgeons are empowered to expand indications and achieve consistent outcomes.

The development team combines the academic and surgical expertise of maxillofacial surgeons from Charité – one of Europe's leading university hospitals – with the practical insight of an experienced orthodontics specialist. The team is further supported by one of the world's key opinion leaders in the 'Surgery First' approach, ensuring scientific rigor, clinical relevance, and global best practices.

SafeBirth: Advancing Maternal Care Through Intelligent Support

Every two minutes, a woman dies from preventable complications related to pregnancy and childbirth, with over 90% of these deaths occurring in low- and middle-income countries. According to the latest WHO report, this places a heavy burden on emerging health systems. The most common causes include severe postpartum hemorrhage, unsafe abortions leading to infections and bleeding, and pre-eclampsia.

Despite growing numbers of engaged midwives and healthcare workers, significant disparities in healthcare access persist – especially in rural, understaffed, and poorly equipped facilities. In these settings, healthcare workers often must improvise during emergencies, frequently resulting in suboptimal or adverse outcomes. Current training programs rely on costly, time-limited initiatives by external experts, which often fail to reach the most remote regions affected by these complications.

SafeBirth reimagines maternal care for such challenging environments. Leveraging advances in digital technology, smart trained algorithm patterns, and expanding mobile networks, SafeBirth offers a digital companion tool for midwives and frontline health workers. The system aims to adapt to local language, context, and user experience, delivering guideline-based answers in real time.

The solution is designed to serve as an on-call emergency companion, aiming to include integrated triage tools to assess severity. Its Smart Library is intended to enable midwives to ask questions and receive instant, evidence-based guidance in their local language at the point of care. Micro-trainings – fictional cases based on real encounters – are planned to reinforce critical skills while promoting respectful maternity care. The goal is to strengthen frontline workers' knowledge, skills, and confidence to manage obstetric emergencies in a scalable, sustainable way.

Co-developed in Kenya with local midwives and gynecologists, the first SafeBirth prototype will focus on the immediate postpartum period, providing emergency support for preventing and managing postpartum hemorrhage – the leading cause of maternal death. The Smart Library and training features already offer broader guideline content, with plans to expand Action Mode to other obstetric complications. Pilot implementation is underway in rural health facilities across Western Kenyan counties.

Looking ahead, SafeBirth aims to evolve into a next-generation platform for women's and neonatal health – key areas in low-resource settings. By enabling universal access to context-adapted expert advice and guideline-based recommendations, SafeBirth strives to make maternal care safer even in the most resource-limited settings.

The team includes an obstetrician and global health expert from Charité – Universitätsmedizin Berlin, and a Kenyan gynecologist focused on improving maternity care in Africa, overseeing 35 health facilities.

CONTACT
Malika Guggenberger
Department of Obstetrics,
Charité – Universitätsmedizin Berlin,
CVK
Augustenburger Platz 1
13353 Berlin

safebirth

KEYWORDS
Global Health, Maternal Health,
Women's Health, Obstetrics,
Low-Resource Settings

CONTACT
Dr. Konstantin Makridis
Prof. Dr. Angela Kaindl
Center for Chronically Sick Children (SPZ) and Department of Pediatric Neurology
Augustenburger Platz 1
13353 Berlin

angela.kaindl@charite.de

KEYWORDS
Neurology, Paediatric Epilepsy, Diagnose Support Tool, Virtual Clinic, Patient-Centered Care

vEC: From Fragmented Data to Focused Care, Helping Children Get Their Right Epilepsy Treatment Sooner

Each year, thousands of children across Europe are diagnosed with epilepsy – a condition that profoundly affects neurological development, psychosocial well-being, and quality of life. In Germany alone, around 80,000 children live with epilepsy, and one in three continues to experience seizures despite treatment. Families face long waits for appointments, incomplete or repeated diagnostics, and uncertainty about next steps. These delays lead to missed therapeutic windows, poorer neurocognitive outcomes, increased mortality, and higher healthcare costs.

The Virtual Epilepsy Clinic (vEC) is developing a digital diagnostic support tool for physicians treating pediatric epilepsy. It brings structure and clarity to fragmented care pathways by consolidating each child's medical history, diagnostic findings, and treatment course into a single, organized overview. This enables specialist consultations to begin with decision-ready information and reduces inefficiencies across the care continuum. Unlike today's dispersed paper or PDF records, vEC provides a consistent, clinician-friendly interface that highlights completed and pending diagnostic elements while integrating seamlessly with existing pediatric workflows. Families gain transparency and direction, reducing redundant procedures and uncertainty. Clinicians can make earlier, more confident decisions based on concise, high-quality data, while hospitals and payers benefit from better coordination and more effective use of specialist time.

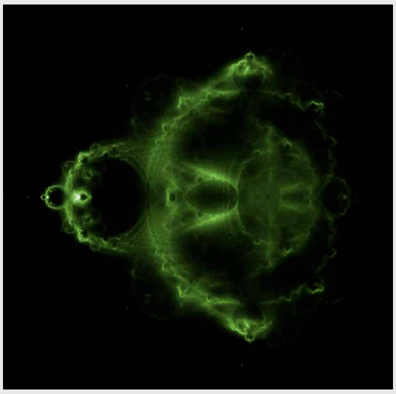
Currently in the PoT phase, vEC is conducting small-scale feasibility testing to validate its functionality, assess real-world usability, and clarify the specific needs of all stakeholder groups – clinicians, caregivers, and patients alike. The project ensures that its solutions deliver tangible value in daily practice, aligning digital support with the realities of pediatric epilepsy care.

The unique strength of vEC lies in its design: patients and caregivers remain within their established care network, supported by their trusted medical team and existing care pathway, while the solution operates as a secure diagnostic support system in the background. Looking ahead, vEC aims to accelerate diagnosis, reduce unnecessary testing, and ease the coordination burden families and clinicians face, ultimately improving outcomes for children living with epilepsy.

The vEC team consists of an international key opinion leader and professor in pediatric epilepsy, a senior physician with expertise in patient engagement and outpatient care, and a junior clinician working directly with affected children at Charité University Hospital. Their work is supported by one of Germany's most outspoken patient advocacy groups. Together, they have identified the real gap in pediatric epilepsy diagnostics and treatment and are committed to closing it.

Notes

2017



CONTACT
Dr. Florian Michallek
Prof. Dr. Marc Dewey
Department of Radiology
Charité – Universitätsmedizin
Berlin

florian.michallek@charite.de

KEYWORDS
Radiology, Cardiology, Oncology,
Fractal Analysis

Exploration of Heart Disease and Cancer Using Fractal Analysis Technology

In Europe alone, approximately 3 million cardiac catheterizations are performed every year. While about one third of these cases lead to positive outcomes, the remaining cases suffer from small vessel disease or do not benefit from the procedure. Thus, an estimated 2 million heart catheters performed every year suffer from the related risks of this invasive procedure and high costs to the healthcare system.

Building on the characteristics of self-similarity and scale-invariance, this fractal analysis tool can be used to analyze patterns of blood supply, and thereby, for instance, differentiate coronary artery disease from small vessel disease. Fractal analysis technology promises to enable new diagnoses and inform therapy choice also beyond heart disease, e.g., for breast, liver, and prostate cancer.

The team, consisting of highly experienced radiologists and researchers, has developed working prototypes and achieved proof of concept, is pursuing patent protection, and is clinically validating the technology across potential fields of application.

2017

Heart Disease Risk App and Automated CT Analysis

CONTACT
Prof. Dr. Marc Dewey
Department of Radiology
Charité – Universitätsmedizin Berlin

NIHR, Cambridge Biomedical
Research Center, Radiology

md2117@cam.ac.uk

KEYWORDS
Radiology, Cardiology, Cardiac
Risk Assessment, App, CT, Deep
Learning, Image Analysis

Heart Disease Risk App and Automated CT Analysis

This project consists of two complementary projects in the radiology space.

The Cardiac Risk App targets the 20 million annual stable chest pain patients in Europe, of which only an estimated 50% receive per-guideline care. The mobile phone app aims to allow a targeted analysis in a highly accessible way in most care settings, thereby aiming to improve the rate of per-guideline care for stable chest pain patients.

Cardiac CT analysis (CTA) today is a complex, manual analysis created by experienced radiologists to quantify stenosis and characterize plaque. Given this complexity, manual analysis is time-consuming and costly. The intended solution aims at utilizing machine learning technology for automated image analysis as input for analysis and final assessment by the radiologist.

The team consists of highly experienced radiologists and researchers, in addition to machine learning experts and software developers.

2017

Prediction 2020: Predicting Stroke Risk with Artificial Intelligence

Stroke is one of the major causes of death and disability. The lifetime risk for stroke is 1 in 4. Once a first stroke occurred, the risk of a second devastating stroke is high. However, stroke risk factors are well known. 15 % are potentially preventable secondary strokes.

The team Prediction 2020 developed an AI-based image analysis solution to predict the individual risk of stroke. Furthermore, the team developed a simulation of the brain vascular system to predict outcomes of therapy alternatives to enable physicians and patients to make informed therapy choices.

The Prediction 2020 team consists of a neurosurgeon and lawyer, computational neurologists, AI experts and senior software developers. After the BIH Digital Health Accelerator Program, the project was part of Startupbootcamp Digital Health Berlin and was invited to join the "Readiness Program" of the German Accelerator Life Sciences, and was partner in several national and international research grants with industry and academic solutions.

PREDICTioN2020

CONTACT
Dr. Dietmar Frey, Charité
Charité Lab for Artificial Intelligence in Medicine (CLAIM)
Charité – Universitätsmedizin Berlin

dietmar.frey@charite.de

2017

X-Cardiac: AI-based prediction of complications in ICU

Intensive care units (ICU) are highly challenging environments that include demanding caseloads and the need for decision making. Post-operative complications can significantly increase mortality for 100,000 patients per year in Germany, and can result in recurrent surgeries, and longer stays at the intensive care unit, which causes a substantial economic burden for hospitals.

To solve this challenge, the team x-cardiac developed a real-time AI-based platform solution to recognize postoperative complications, e.g., severe internal bleeding, enabling ICU staff in real-time to intervene before the devastating consequences manifest.

The team's vision is to break the "deadly triad of cardiac surgery" to improve patient care, reduce mortality, and reduce the length of stay at intensive care units (ICU), thereby improving health system economics, and enable healthcare professionals. Its products include x-c-bleeding™, which targets postoperative bleeding, and forthcoming offering x-c-renal-injury™, which targets the early detection of renal injury.

The team consists of a cardiac surgeon/computer scientist, experienced machine learning experts, and software developers. The resulting company, X-cardiac, spun off in 2021 and is based in Berlin. Their internal bleeding module is clinically validated in a study with 10,000 patients, published in The Lancet Respiratory Medicine, and is CE certified. The team is currently developing its second module to predict renal failure.

Spinoff

x-cardiac

CONTACT
Kay Brosien, COO

kay.brosien@xcardiac.com
www.xcardiac.com

2018

Spinoff

aignostics

CONTACT
Viktor Matyas, CEO Aignostics

viktor.matyas@aignostics.com
www.aignostics.com

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

aignostics: Computational Pathology

Voted by Newsweek as a top digital health company in its inaugural 2024 ranking, Aignostics recently closed a $34 million Series B to expand its AI-powered precision medicine offerings and accelerate growth in the US.

aignostics-Diagnostic in Pathology and Optimization of Drug Development Histological image analysis, performed by pathologists, is a crucial step in diagnosing many autoimmune, degenerative, and infectious diseases. Given our aging population and the increase of cancer cases worldwide, a global shortage of pathologists is expected.

To address this challenge, team aignostics has developed a patented "Explainable AI" (layer-wise relevance propagation) to assist pathologists in standardized and automated qualification and quantification of tissue features. This solution is more accurate and faster than today's manual gold standard. The system can also be applied to drug development. Pharmaceutical companies can augment histomorphological assessments in preclinical animal studies or in clinical trials to stratify patients in order to further improve drug efficacy and toxicity analyses.

Prof. Dr. Federick Klauschen (now LMU), Viktor Matyas, Dr. Maximilian Alber founded in cooperation with Prof. Klaus-Robert Müller, a globally renowned expert on ML from Technical University Berlin in 2018 aignostics. The Berlin-based company is funded by Boehringer Ventures and HTGF and has over 100 employees with interdisciplinary expertise to date.

2018

Spinoff

BODYCLOCK

CONTACT
Prof. Dr. Achim Kramer

achim.kramer@charite.de
www.bodyclock.health

KEYWORDS
Chronobiology, Chronomedicine, Internal Clock, Sleeping Disorders, Companion Diagnostic, Clinical Trials, Patient Empowerment

BodyClock: A New Diagnostic Assay to Assess the Internal Clock

An aligned circadian clock is essential for health. Misalignment or disruption of an individual's inner time relative to their environment, which is highly prevalent in the fast-paced and globalized lifestyles of modern society, are 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 BodyClock addresses this medical need with a blood test to determine the individual's body time by profiling selected genes with specific lab equipment and a bioinformatics algorithm. While as accurate as currently established tests, this solution promises to be less complex, faster, and more cost-effective.

BodyClock consists of experts in the field of chronobiology, medicine, and data-analysis/software development and spun off in 2021 as Bodyclock Technologies GmbH. They are providing the first RNA hair test to identify the individual internal clock.

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 protocol, quality and efficiency of care suffers.

Team Cardio Prime develops 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 to make more informed care path decisions. The first application is a stress test of cardiac and heart valve function without pharmaceutically or physical activity-induced stress. Other opportunity areas are complementary cardiovascular analyses and decision-support systems for cardiovascular diagnosis and therapy planning. Due to regulatory requirements on clinical validation, the development path turned out not to be feasible.

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

2018

Cardio Prime

CONTACT
Prof. Dr. Titus Kühne,
Kay Brosien
Institute for Imaging Science
and Computational Modelling in
Cardiovascular Medicine
Charité – Universitätsmedizin
Berlin

titus.kuehne@charite.de

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

DentalXr.AI: Deep Learning for Dental Image Diagnostics

Dental diseases are among the most prevalent of humankind, 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.

Team Dental Xr.AI developed 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 solution enables faster, more precise and more reliable assessments of dental X-rays. This saves examination time for patients, improves diagnostics and treatment choices, increases the ease of assessment and documentation, and improves patient inflow and management.

Team Dental Xr.AI consisted of senior clinicians, machine-learning experts and software developers and spun off in 2020. By now they have a fully-automated digital analysis and integrated reporting of dental images (CE certified) to improve therapy recommendation and reduce time. The company was acquired in 2022.

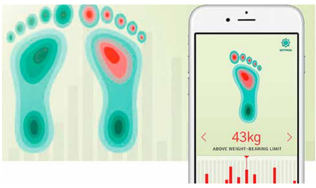
2018

Exit

dentalXr.ai

CONTACT
Prof. Dr. Falk Schwendicke
(now LMU)

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



LingPed: An Innovative Monitoring Platform for Post-Surgical Rehabilitation

CONTACT
PD Dr. med. Serafeim Tsitsilonis
Center for Musculoskeletal Surgery
Charité – Universitätsmedizin Berlin

serafeim.tsitsilonis@charite.de

KEYWORDS
Foot Surgery, Post-Surgery, Rehabilitation, Monitoring System, Sensor-based Solution, App

Today, a patient's rehabilitation after a foot surgery is not continuously supervised by medical professionals. Instead, the responsibility to control and manage weight load per foot rests with the patient. As medical outcomes depend on both, quality of surgery and quality of rehabilitative process, poor rehabilitation can negatively affect long-term patient outcomes, is dissatisfying for surgeons, and expensive for healthcare systems.

Team LingPed is closing this gap in post-surgical rehabilitation with a monitoring system for patients after foot surgery. The system consists of an insole for use e.g. in postoperative shoes (orthoses) to collect data, and an app for patients as feedback mechanism to monitor and, if needed, adjust their behavior during recovery. This solution intends to reduce the risk of re-surgery, shorten the rehabilitation process for each patient, and reduce healthcare system costs.

Team LingPed consists of trauma surgeons of Charité and has finished its technical testing and is currently preparing its feasibility study within the Charité. In 2019 Lingped was a finalist for the 1A-Award sponsored by 1A Pharma and the Deutsche Apothekerzeitung

Spinoff

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.

Building on the globally present mobile phone infrastructure, team mTomady has developed a digital health wallet – a mobile transaction platform for healthcare credits. Healthcare sponsors can contribute to individuals' healthcare accounts, which in turn can only be used at accredited clinics within defined reimbursement 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 of the Charité – Universitäts-medizin Berlin and a team of technology, software development and public health experts. In December 2020 the team foundet the mTOMDADY gGmbH. Since 2022 mTOMADY is scaling its activities in Ghana and the two founders, founded with Elucid their second health benefit focussed company.

CONTACT
Elsa Rajemison, CEO,
Julius Emmrich/Samuel Knauss
(Charité)
mTOMADY gGmbH

er@mtomady.com
www.mtomady.com

KEYWORDS
Accessibility of Care, Affordability of Care, Global South, Healthcare System Transformation, Financial Leakage, Mobile Transaction Platform

2019

Spinoff

LIMAA TECHNOLOGIES

LIMAA Technologies: Bringing Histopathology from 2D to 3D

No cancer diagnosis is possible without histopathology. Histopathology refers to the preparation and examination of tissue samples in order to study symptoms of a disease.

However, today's histopathology process is restrained. Information on 2D structures such as blood or lymphatic vessels cannot be seen entirely, and pathologists need to examine the sample via "eyeballing," a process requiring a very high level of specialization.

LIMAA Technologies addresses this need by developing an end-to-end histopathology pipeline for improved diagnoses and therapy decisions. The LIMAA Technologies solution consists of two core components: A staining solution and a software solution. The staining solution includes a new staining technology using Nanobodies able to penetrate large tissue samples much faster than traditional staining agents. The software component in development entails a visualization functionality for pathologists to see 3D structures such as vessels, and an indication-specific AI-based analysis functionality to highlight key sample areas. In the future, other use cases will be implemented. Based on these benefits, LIMAA Technologies aims to improve and speed up the clinical histopathology process for better diagnoses and therapy decisions. The project spun-off in 2022.

CONTACT
info@limaa-technolgies.com
www.limaa-technologies.com

KEYWORDS
Pathology, 3D Microscopy, Tissue Staining, AI-Software

2019

Spinoff

Nephrolyx

Nephrolyx: Clinical Decision Support System to Identify Acute Kidney Injury

1.7 million deaths per year are caused by Acute Kidney Injury (AKI) globally. AKI is a frequent clinical event occurring in up to 20 % of all hospital patients. Patients with AKI have a significantly higher risk of developing or exacerbating a chronic kidney disease. As of today, an early detection tool for AKI is not available.

Nephrolyx aims to close this gap of early detection with an easy-to-use tool for rapid and precise kidney function measurements. Translating scientific expertise in kidney function measurements to clinical routine, Nephrolyx utilizes a proprietary database, a protocol for contrast agent measurement, and a software to diagnose AKI within the first two to seven hours – reducing the time needed by over tenfold. Nephrolyx is easy to integrate into today's clinical workflow everywhere and, given low component costs, promises a step-changing improvement in both patient outcomes and healthcare system performance.

Team Nephrolyx unites deep expertise in clinical medicine with focus on nephrology, biomedical and laboratory expertise, biostatistics and machine learning. The project spun off in 2022 as Nephrolyx GmbH to reach their aim to uncover the AKI blind spot.

CONTACT
Bartosz Reinhold, CEO,
Prof. Prof. h.c. Dr. med. Markus van der Giet (Charité)
Nephrolyx GmbH

bartosz.reinhold@nephrolyx.com
markusvandergiet@charite.de
www.nephrolyx.com

KEYWORDS
Nephrology, Acute Kidney Injury, Laboratory Test, ICU

2019

ARCAS: AI For Life Sciences, Best Treatment Possible for Every Cancer Patient

Pre-Spinoff

Cancer – a disease of the genome – is the second leading cause of death globally. To make cancer treatments more effective it needs to be personalized from diagnosis to treatment. In today's clinical practice, however, the information from the genome is either not used or is used inefficiently.

Team Arcas is building an AI-based diagnostic decision support system for cancer. At the core, the system analyzes complex genomic information: Every cancer biopsy is sequenced not only for mutation detection, but also for large-scale alterations, gene expression, and epigenetic changes. Arcas is using a multi-level deep learning approach to integrate clinical, genomic, and pharmacological data. With this system, Arcas can predict patient cancer subtypes, survival outcomes, and personalized drug response, more precisely. Arcas has shown promising results for colon, breast, and lung cancer.

Team Arcas consists of international experts in the field of bioinformatics, omics data science, from the Institute for Medical Systems Biology at Max Delbrück Center for Molecular Medicine in Berlin and is supported by a season business expert from Pharma industry. Arcas has tested its algorithm with real word data and is currently looking for partnering options with Pharma and Biotech industry.

CONTACT

Dr. Altuna Akalin
Head of Bioinformatics and Omics Data Science Platform
Berlin Institute for Medical Systems Biology (BIMSB)
Max Delbrück Center for Molecular Medicine (MDC)

aa@arcas.ai
www.arcas.ai

KEYWORDS

Oncology, Genomic Data, Artificial Intelligence and Machine Learning, Decision Support Tool

2019

Open.IU: A Diagnosis and Therapy Solution for Adolescents with Internet Gaming Disorder

In our digitalized world, a rising number of adolescents are affected by internet gaming disorder (IGD). The WHO defines IDG as the inability to stop playing even though it interferes with other areas of a person's life. IGD is a distressing medical condition, which leads to daily life dysfunction, is associated with psychological and psychiatric issues, and thus needs qualified care.

Team Open.IU has developed an online solution to provide diagnosis and treatment of IGD and co-occurring psychiatric conditions to parties involved. Open.IU consists of an online counseling and therapy tool. The tool provides access to licensed therapists and to modules based on cognitive behavioral therapy. This solution is a low-threshold, easy-to-use service, and makes mental health care accessible for everyone at any time.

Open.IU consists of an interdisciplinary team of experts in psychiatric and psychosomatic diseases, diagnostics and therapy for children and adolescents from Charité – Universitätsmedizin Berlin and School of Medicine at Hofstra/Northwell in New York as well as software developers and designers. In 2020 Open.IU placed second at the 'Digitale Gesundheitspreis' sponsored by Novartis and Sandoz.

CONTACT

Prof. Dr. Christoph Correll,
Dr. med. Olga Geisel
Department of Child and Adolescent Psychiatry, Psychosomatic Medicine and Psychotherapy
Charité – Universitätsmedizin Berlin

christoph.correll@charite.de

KEYWORDS

Internet Gaming Disorder, Mental Health, Addiction, Diagnosis, Therapy, Online Intervention

2019

Spinoff & License

PREFree

CONTACT

Prof. Dr. med. Stefan Verlohren
(now UKE, Hamburg)
Dr. Max Hackelöer
Charité Universitätsmedizin
Berlin – Department of Obstetrics
Maternal-Fetal Medicine

max.hackeloeer@charite.de
www.prefree.de

KEYWORDS

Obstetrics, Preeclampsia, Digital Test, Remote Monitoring Solution

PreFree: For Reducing Uncertainty in Pregnancy – A Decision Support Tool and Home Monitoring Solution

Maternal mortality is unacceptably high. As a leading cause of maternal mortality, preeclampsia and related hypertensive disorders of pregnancy claim the lives of nearly 76,000 mothers and 500,000 babies worldwide every year.

PreFree is an AI-based decision support tool for physicians to identify pregnant women at risk for pregnancy complications, especially preeclampsia. The solution aims to support physicians to identify the individual risk for preeclampsia, to decide whether to hospitalize patients in need and to allow patients with low risk to return to their homes. The decision support solution will be complemented by a remote monitoring system that enables women returning home to closely monitor their signs and symptoms with their physicians.

PreFree intends to reduce the risk of false diagnosis, to avoid unnecessary hospitalization, and to reduce healthcare costs by patient-centered remote care in the convenience and support system at home.
Team PreFree consists of a team of medical doctors of the Department of Obstetrics from Charité – Universitätsmedizin Berlin and machine learning and software development expertis. They were the recent recipients of Innofond funding “PreFree – Cross-sector care for high-risk pregnancies using remote monitoring and decision support” Prefree Spun off in 2025 and was licensed to Neopredics

2019

siloa
Detect Alzheimer's Disease

CONTACT

Prof. Dr. Oliver Peters
Department of Psychiatry and Neurosciences
Charité – Universitätsmedizin Berlin

oliver.peters@charite.de

KEYWORDS

Alzheimer's Disease, Early Detection, Digital Test, Real-Time Monitoring

siloa: Solution for Digital Early Detection of Alzheimer's Disease

Worldwide, at least 50 million people are believed to be living with dementia; a number projected to reach 82 million in 2030 and 152 million in 2050. Dementia is a syndrome associated with deterioration of memory, thinking, behaviour, and the ability to perform everyday activities. Early detection and lifestyle interventions are believed to improve quality of life.

Team siloa is working on a digital test for the early detection of Alzheimer's disease to intervene in the disease progression. For the test, the team is developing a digital biomarker, combining software-based tests that engage brain areas known to be affected in very early stages of Alzheimer's disease. The test will be initiated by a physician and then conducted by the patients in the comfort of their homes for 15 minutes per day over the span of a month. An Alzheimer's probability score will then be transferred directly to the physician to maximize certainty for their patients and their caregivers. Siloa wants to enable a future where early detection of Alzheimer's disease.

Team siloa consists of clinicians and researchers in geriatric medicine at the Memory Clinic at Charité.

SUMUS: A Physiotherapy Guide for Patients Affected by Muscle Diseases

Pre-Spinoff

Muscular Dystrophy (MD) is a progressive condition is often at first affecting a particular group of muscles and deteriorates them over time. Some types of MD eventually affect heart muscles or breathing-related muscles, at which point the condition becomes life threatening.

Patients affected by muscle dystrophy need personalized physiotherapy to maximize their quality of life and potentially decelerate the progressive condition. In Germany and Europe, only a few physiotherapists are trained to provide this expert service.

SUMUS offers an alternative via a virtual physiotherapist tool that guides muscle patients to a well-balanced life. The individualized training syllabus is devised by a physician and a physiotherapist in close coordination with the patient. Another part is the SUMUS Smartwatch application that tracks any active movement of the patient's arms (initial prototype) in daily life and then suggests whether to train, which exercises to use, and to what extent. This mutual feedback feeds into a self-learning algorithm to ensure continuous optimization of the patient's fatigue monitoring and training.

SUMUS combines interdisciplinary expertise in neurology, muscle dystrophy diagnosis and therapy research at Charité and MDC, physiotherapy, computer-aided medical robotics, and game-based learning. Sumus is currently in the process of founding a company.

CONTACT
Simone.spuler@charite.de

KEYWORDS
Muscular Dystrophy, Guided Physiotherapy, Digital Health Solution, Home Monitoring

2020/2021

CONTACT
Prof. Dr. Sascha Treskatsch

sascha.treskatsch@charite.de

KEYWORDS
Anesthesiology, Perioperative Monitoring, MedTech

Aurelia: To Monitor Brain Perfusion during Anesthesia and Improve Perioperative Outcomes

During surgery, the anesthesiologist is the guardian of patient safety and protects physiological homeostasis. Currently, this is done via various invasive and non-invasive devices that monitor physiological biosignals. Unfortunately, millions of patients undergoing mid to high-risk surgery experience perioperative complications, which only emerge later after the anesthesia wears off.

Although the anesthesiologist is equipped with multiple monitors, no system currently exists to track global brain perfusion non-invasively and effectively. Charité Anesthesiology and their technology partner SectorCon have developed Aurelia, a prototype sensor-based system that non-invasively tracks brain perfusion. This system can provide vital information and be a powerful asset for the everyday anesthesiologist, enabling them to implement personalized hemodynamic strategies, maintain adequate brain perfusion, and ensure optimal physiological homeostasis.

Project Aurelia is powered by an interdisciplinary team of anaesthesiologists that are pushing for pioneering the development of non-invasive anesthesia monitoring for the digital age. Aurelia aims to be the go-to solution in every operating room to reduce perioperative complications. The team went back to conduct further research on the tech and modeling side.

2020/2021

CONTACT
Prof. Dr. med. Katharina Schmitt
Department of Pediatric Cardiology and Congenital Heart Disease
Charité – Universitätsmedizin Berlin/ DHZB

kschmitt@DHZB.de

KEYWORDS
Pediatric Cardiology, Congenital, Heart Disease, Remote Monitoring

DAGI: Keeping Your Child With Congenital Heart Disease Safe at Home

Congenital heart disease is the most common birth defect in humans, affecting 1 in 100 newborns. Advances in cardiovascular medicine and surgery have led to a steep decline in mortality in Western Europe in the past three decades. Improved survival leads to new challenges: Children with the most severe heart defects need close medical surveillance and therefore stay in hospital for several weeks, months, or even years. This prolonged hospitalization is associated with significant costs for health insurances, hospitals, as well as a high emotional burden for affected children and their families.

In order to improve care for these vulnerable patients, DAGI developed a remote patient monitoring app, facilitating earlier discharge and ensuring medical surveillance at home. The DAGI app is tailored to the specific needs of patients with congenital heart disease and combines daily monitoring of vital parameters, medication plan, information & chat function with a state-of-the-art interface for health professionals.

DAGI's mission is the improvement of medical care and quality of life for children with congenital heart disease. Our executive team combines passion for medical innovation with world leading clinical and scientific expertise.

MetaboKin: A Virtual Cell for Modeling Liver Metabolism

Spinoff

MetaboKin

Non-alcoholic fatty liver disease (NAFLD) affects more than 25 % of the world's population. Metabolic syndrome manifests in the liver as NAFLD and develops into more severe disorders like non-alcoholic steatohepatitis (NASH). Despite pharmaceutical companies' significant efforts in recent decades, there is still no available drug treatment for NASH.

Team MetaboKin has developed virtual cells that simulate central metabolism with kinetic properties from approximately 400 metabolic enzymes and transporters. Over the last four decades, biochemists gathered kinetic data which, today, enables realistic in silico representations of organ metabolism.

MetaboKin is the ideal tool to characterize metabolic changes in NASH, improve drug target identification, further differentiate between mechanisms of action, and support patient stratification. The tool analyzes proteomics data from tissue samples and provides functional insights into central metabolic pathways, which enables the comparison between clinical and pre-clinical samples. The project spun off in 2022 and is offering services in the field of next-gen proteome profiling for diverse disease areas.

CONTACT
PD Dr. Nikolaus Berndt (Charité)

nikolaus.berndt@charite.de

KEYWORDS
Proteomics, Metabolism, Kinetic Models, Simulation, NASH, Pharma R&D

2020/2021

MutationSearch: Making Whole Exome Sequencing Accessible

MUTATION SEARCH

Whilst most of the 6,000+ single gene disorders are rare, more than 200 million humans suffer from any of them. Due to their rareness, they are difficult to diagnose.

High-throughput sequencing technologies such as Whole Exome or Genome Sequencing (WES/WGS) allow the identification of disease-causing DNA mutations with a single assay. With the falling costs of these approaches, they will become a routine diagnostic procedure in the very near future.

With MutationSearch we aim to bring WES/WGS to clinics and industry, as a one-stop shop for the discovery of the molecular causes of genetic disorders. We will provide certified software that analyses raw data from DNA sequencers, finds variations from the reference genome (~40,000/patient in WES and ~4,000,000/patient in WGS), and predicts their pathogenicity, even without a clinical diagnosis. Medical doctors can provide as much information about the patient's phenotype as they have, thereby allowing the software to focus on variants in genes which are likely to cause the disorder. MutationSearch will automatically print a report including all information needed by physicians for a molecular diagnosis.

MutationSearch's interdisciplinary team combines expertise in bioinformatics, computer science, molecular medicine, biochemistry, and machine learning. The team is currently working on their business case and is looking for partnering possibilities with industries in the field of whole genome sequencing.

CONTACT
Prof. Dr. Dominik Seelow
Bioinformatics and Translational Genetics
Berlin Institute of Health at Charité

dominik.seelow@bih-charite.de
www.mutationsearch.org

KEYWORDS
Whole Exome or Genome Sequencing (WES/WGS), Bioinformatics, Translational Genetics

2020/2021

Spinoff

CONTACT
Dr. med. Sophie Lehnerer
Department of Neurology and
Experimental Neurology
Charité – Universitätsmedizin
Berlin

contact-myalink@charite.de
www.myalink.de

KEYWORDS
Remote Monitoring, Telemedicine, Digital Platform Solution, Myasthenia Gravis, Orphan Disease; Empowerment

RareLink (former MyaLink): A Monitoring Platform Solution for Orphan Diseases in Neurology

Team MyaLink has developed a solution to provide better care for patients with neurological orphan diseases. MyaLink believes that every patient – no matter the rarity of disease – should have access to a specialist when they need one. Physicians should be able to monitor patients over time and react to acute events when necessary.

The team has developed a platform solution for neurological orphan diseases that remotely monitors patients' vital parameters and tracks their condition daily. Over time, physicians can get a better overview of disease progression, rather than a quick snapshot during an in-person visit. MyaLink can help prevent expensive crises and ICU stays through the early detection of severe situations. The real-world data can also be very valuable for novel orphan drug development and post-market surveillance.

MyaLink is powered by a team of neurologists and researchers and is part of the largest nationally certified integrated myasthenic center in Germany. MyaLink works with German Myasthenia Association. MyaLink won the Health-i Award 2021 powered by TK and Handelsblatt. The team spun off in 2025 as RareLink.

2020/2021

CONTACT
PD Dr. Simon Sündermann
Clinic for Cardiovascular Surgery
Charité – Universitätsmedizin
Berlin

simon.suendermann@charite.de

KEYWORDS
Heart Valve Surgery, Artificial Intelligence, Therapy Simulation, Decision Support Tool

PerMitrA: Optimization Tool for Heart Valve Surgery

In Europe, mitral valve regurgitation is a heart condition that affects 2.4 % of adults over age 40. As the heart contracts, blood flows into the systemic circulation, but for those with this condition, blood also problematically flows backward into the atrium because the valve can no longer close. As the condition progresses, heart failure and dyspnea are the consequences. The standard therapy is surgery. Here, annuloplasty rings can be used to reduce the valve's diameter to allow the valve leaflets to close again.

PerMitrA was developed to support surgeons' choice of the optimal ring model/ size, streamline clinical decision-making, and improve patients' outcomes postprocedure. PerMitrA combines image-based models of a patient's unique heart structure with digital models from commercially available annuloplasty rings. The key technology is a fast geometric simulation that shows how a particular ring model would change the anatomy of a patient's heart. This tool allows surgeons to simulate personalized strategies before surgery and to visually demonstrate them for discussion, both with the team and with the patient.

PerMitrA is powered by a team of cardiac surgeons and AI experts with complementary core competencies and a shared understanding of how to improve cardiac interventions. Due to liability questions on the legal and procurement side, the development path turned out not to be feasible.

2020/2021

QoL-O-Mat: Establishing a Health-Related Quality of Life Software-As-Service Assessment Platform

The German PROMIS® National Center is presently projected to provide more than 27,000 Patient Reported Outcomes assessments in the next 5 years. It has become evident that the unmet need is the lack of a proficient software solution. In 2016, the PI established the GPNC at the BIH-Charité. This implies, in cooperation with the US Department of Mental Health and PROMIS® Health Organization (PHO), the FDA validated translation of >1200 questions for over 30 domains of life into German, the establishment of the German PROMIS® National Center and exclusive distribution rights for German speaking countries.

The lack of a proficient software-as-a-service solution for PROMIS® has become evident in cooperation with industrial and non-industrial partners with hospitals and patient advocates alike. This is critical, as the PROMIS® system is the only system that validly assess people of all ages, diseases and nations alike (presently translated into English, Dutch, Spanish, Chinese and German), efficiently. The NIH and FDA ratify and prefer PROMIS®, but quality standards apply also to the mode of assessment and presentation in German for old and young alike.

The QoL-O-Mat Team has been working on building a software solution to fill the gap to collect real word evidence on the QoL in Germany. The team is currently working on translating and validating patient repoted outcomes further and clarifying legal pre-conditions.

QoL-O-Mat

CONTACT
Charité/BIH Clinical Study Center
Charité – Universitätsmedizin
Berlin

2020/2021

rAIdiance: AI-Based Radiology Solution to Improve ICU Care

Radiographs play an important role in answering diagnostic questions in medicine. In the intensive care unit, patients may receive a new radiograph every day. However, if expertise is lacking, the error rate is correspondingly high. It would be desirable if the radiologist would immediately assess every image, but this is not the case in many hospitals. As a result, on-site medical staff who do not have the knowledge of a radiology expert must perform image interpretation.

With the AI tool developed, team rAIdiance aims to help physicians in the intensive care unit with image interpretation when radiologic expertise is not available. The goal of team rAIdiance is to make physicians better and more confident in analyzing radiology images. We are developing an AI solution to help image interpretation by highlighting important image areas and quantifying findings, particularly focusing on the intensive care unit.

rAIdiance is an interdisciplinary team of experts with several years of experience in radiology and AI development. rAIdiance technology is based on a high quality annotation set of over 4.000 images so far. The team is looking for interested parties in their thechnology stack.

rAIdiance

CONTACT
PD Dr. Keno Bressem
Clinic for Radiology
Charité – Universitätsmedizin
Berlin

keno.bressem@charite.de

Deutsches Herzzentrum München
bressem@dhm.mhn.de

KEYWORDS
Radiology, AI, Decision Support Tool, ICU, ER, Medtech

2020/2021

Spinoff

RECOVERYCAT

CONTACT
Dr. med. Jakob Kaminski
Department of Psychiatry and Neuroscience
Charité – Universitätsmedizin Berlin

recoverycat@posteo.de
jakob.kaminski@charite.de
www.recovery.cat

KEYWORDS
Psychiatry, Remote Monitoring, Mental Health, Chronic Mental Illness, Decision Support Tool, Digital Therapy, Adherence

Recovery Cat: Keeping Patients with Chronic Mental Disorders Safe

Recovery Cat is a digital application providing decision support for outpatients with severe mental diseases (schizophrenia, bipolar disorder and recurrent depression) and their physicians. Unfortunately, many drugs only work for a few patients. To decide whether a patient responds to a drug and the treatment should therefore be continued or changed, physicians have to disentangle the time course of life events, symptoms, side effects and drug intake.

By tracing patients' individual target symptoms, drug intake and side effects, Recovery Cat aims at early detection of non-response, side-effects, and determining patients at risk. Recovery Cat is a customizable patient monitoring and therapy support app, in its core and is directly integrated into a running therapy, and reimbursed via selective contracting since 2023. It enables patients and doctors to decide together with the help of the evaluation dashboard. Patients can better understand the relationship between symptoms and medication, and feel more confident with their treatment.

The highly interdisciplinary and experienced team from psychiatrists, psychotherapists, product strategists, over techies and UX/UI designers spun-off in 2022.

2020/2021

Spinoff

Time Teller

CONTACT
Professor for Systems Medicine and Biostatistics
MSH Medical School Hamburg
Department of Human Medicine
Institute for Systems Medicine (ISM) I Group Circadian Medicine and Systems Biology
Am Kaiserkai 1 I D-20457 Hamburg

info@time-teller.eu
www.time-teller.eu
sysbio-relogio.com

KEYWORDS
Circadian Clock, Oncology, Computational Biology

TimeTeller: Circadian Clock Profiling for Timing Treatment in Cancer

The circadian clock is our internal time-generating system that rules our sleep/wake cycles and molecular processes like metabolism and cell division. We all have our own personal circadian clock, which means metabolism and cell division happen at different times of day for each of us. Furthermore, while over 50% of FDA-approved drugs target 24h-rhythmic genes, but currently these circadian rhythms are not taken into consideration in clinical care.

The TimeTeller team has developed a method for profiling the personal circadian clock and predicting the optimal time windows for a given drug and patient. The TimeTeller solution offers a non-invasive at-home testing kit, a patient biomarker monitoring tool and a clinician decision support tool.

The TimeTeller platform can ultimately be applied across clinical indications, from cancer to neurodegenerative diseases, diabetes and more. We are currently participating in clinical studies on ovarian and colon cancer and have planned studies starting in 2021 on pedriatic leukemia and Parkinson's Disease.

The team is the recipient of 12 awards, including the 2024 Newcomer of the Year award by the German Startup Awards. TimeTeller spunoff in X and has been recognized with multiple accolades, including the 2024 Newcomer of the Year award from the German Startup Awards. Additionally, the company was nominated for the prestigious Deutscher Gründerpreis 2025 in the Startup category, marking a significant milestone in its journey.

WePath: A Platform-Based Global Network for Pathology Expertise

Pathology is the study of human disease, a specialty is central to medicine. In recent years, the workload of pathologists has steadily increased, and the complexity of their work is going up because of precision diagnostics and personalized therapies.

The WePath platform helps the pathology community to use these new opportunities by providing instant access to the collective expertise worldwide. This takes pathologist collaboration to an entirely new level where incoming and outgoing cases together with integrated real-time or asynchronous conversations are available at their fingertips.

At the same time, this community also opens up entirely new, vast potential for conducting preclinical and clinical trials as well as for the clinical validation of AI solutions. For digitized studies, cases and their specimens together with the generated data are available and fully managed within the platform. While minimizing organizational burden and assuring regulatory compliance, WePath gives pharmaceutical and AI companies access to the expertise of human diagnostic pathologists.

In the interdisciplinary WePath team, pathologists, mathematicians, biochemists and computer scientists are working together to build the WePath platform.

CONTACT
Norman Zerbe
Charité – Universitätsmedizin Berlin
Institute of Pathology

info@wepath.org
www.wepath.org

KEYWORDS
Pathology Diagnostics, 24/7 Expertise, Platform, Digital Trials, AI Validation

2022

Pre-Spinoff

ODEYA (formerly GYDE): Patient-Centered Therapy Solution for Sexual Distress in Women

For the millions of women in Germany and the EU affected by gynecological conditions, such as endometriosis, breast cancer, gynecological cancers, lichen sclerosis, vulvodynia, or menopause, up to 90% of them will also then be affected by a secondary condition, sexual distress. This secondary, life-impacting condition, while caused by the first cannot be cured by using the same therapies, interventions, or approaches. There is an evidence-based treatment for sexual distress that should be offered to all of these women but simply isn't. The clinic at Charité is one of only 3 in Germany equipped with a team of professionals to deliver sexual distress therapy to women. Due to the lack of care, only 1% of the women who are looking for help can be treated, leaving 99% of women suffering for a prolonged time and it could be avoided.

Team Odeya has brought their evidence-based therapy digital so it is accessible to women, wherever they are. ODEYA's first treatment is focused on just one gynecological condition and treatment of the related sexual distress condition: Endometriosis. We will then expand the product to offer therapy to more gynecological conditions and serve the 66 million women looking for help for sexual distress every year in the EU. ODEYA is developed by an interdisciplinary team of experts in sexual medicine, gynecology, and psychology. The team is close to finishing its clinical validation with over 100 women and is in the process of spinning off.

CONTACT
Dr. Laura Hatzler
Selina Marie Kronthaler
Institute of Sexology and Sexual Medicine
Department of Gynecology CCM
Charité – Universitätsmedizin Berlin
Charitéplatz 1, 10117 Berlin
selina.kronthaler@charite.de
www.odeya.health

KEYWORDS
Womens Health, Sexual Medicine, Gynecology, FemTech, Sexual Dysfunction, Digital Health, Patient-Centered

2022

MatchGraft.AI: Donor-Patient Matching Tool for Stem Cell Transplantations and Beyond

Stem cell transplantation (SCT) remains for 90% of patients the curative treatment option for many hematologic diseases in children and adults. The number of performed SCTs has almost doubled in the last ten years with 3,600 SCTs in Germany and 20,000 SCTs in Europe per year. Despite major improvements over the last decades, donor-patient matching is still slow and insufficient. SCT holds severe, possibly life-threatening complications such as Graft-versus-Host Disease (GvHD), relapse of malignant disease, rejection, and infections. In GvHD, transplanted immune cells recognize the recipient's organs as foreign and attack them. Due to insufficient donor-patient matching as well as unsatisfactory first-line treatment and a lack in the standard of care for a second-line GvHD treatment, up to 50% of the patients undergoing SCT will develop GvHD resulting in high morbidity, mortality (up to 90% for severe GvHD) and treatment costs after SCT.

MatchGraft.AI will revolutionize donor matching by building and applying an AI-based tool. Its first use case is the prediction of the development of a GvHD after matching to decrease the rate and severity of the disease by optimizing GvHD prophylaxis and facilitating earlier treatment. The MatchGraft.AI solution focuses on better matches, faster, improves clinical decision-making, and reduces mortality for children and adults

MatchGraft.AI is built by an experienced team in clinical hematology, oncology, and stem cell transplantation, supported by machine learning and scientific advisors.

CONTACT
PD Dr. Lena Oevermann
Department of Pediatric Oncology and Hematology, CVK
Charité – Universitätsmedizin Berlin
Augustenburger Platz 1 · 13353 Berlin

lena.oevermann@charite.de

KEYWORDS
Oncology, Transplantation, Stem Cells, AI, GvHD, Donor-Matching, Malignant, Non-Malignant

METATRON: A Wearable Sensor Platform for the Early Detection of Peripheral Artery Disease

2022

Stage 2

As the population ages, the prevalence of Peripheral artery disease (PAD) continues to increase. In Germany alone, approximately 2.3 million people suffer from PAD, resulting in exorbitant costs for the national health system. Today, treatment is delayed most significantly due to unrecognized disease progression by the patients.

METATRON is a wearable, non-invasive sensor device placed on the calf of PAD patients. After initial setup with a vascular specialist, the patient simply needs to actively utilize the wearable for only a few minutes each week. The system reliably detects deterioration of limb perfusion, serving as an "early warning system" for worsening PAD. With growing use, METATRON can analyze perfusion patterns using a dedicated machine-learning algorithm in order to detect PAD deterioration before it manifests.

METATRON is powered by an experienced and highly motivated interdisciplinary team of interventional radiologists, engineers and data scientists with complementary core competencies and a shared understanding of how to improve the management of PAD patients. The team is currently in Stage 2 of the program, has finished it prototype and is in the recruitment for its prospective validation.

CONTACT
PD Dr. Federico Collettini
PD Dr. Timo Alexander Auer
Clinic for Radiology, CVK
Charité – Universitätsmedizin Berlin
Augustenburger Platz 1, 13353 Berlin

federico.collettini@charite.de

KEYWORDS
Radiology, Sensors, Peripheral Artery Disease, Early Detection, Disease Management Program

mucoaid: AI-Powered Solution to Detect Oral Mucosal Lesions Early To Fight Oral Cancer

2022

Oral cancer has a death rate higher than that of cervical cancer, Hodgkin's disease, brain, liver, and skin cancer. One of the real dangers of this cancer is that in its early stages, it can easily go undetected with severe consequences for the survival.

mucoaid detects and classifies oral mucosa lesions in photographs taken by dentists using machine learning algorithms for diagnostic decision support. By uploading images acquired with an intraoral camera onto mucoaid's application, a quicker diagnosis is achieved. The application shortens the interval between the onset of symptoms and the start of treatment, while also guiding patients and dental professionals throughout diagnosis, treatment, and aftercare. mucoaid supports the observation of chronic diseases, assists in cancer aftercare, and includes patient-reported data to lower the risk of malignant transformation and/or recurrence.

Team mucoaid is powered by the expertise of a senior clinician and researcher in the field of digital imaging and computer-aided treatment planning in oral and maxillofacial surgery, dentists from Charité and Einstein Center Digital Future, Berlin supported by a machine learning and a business expert. mucoaid is currently in the spin-off process.

CONTACT
Prof. Dr. Tabea Viktoria Flügge
Clinic for Oral and Maxillofacial Surgery
Charité – Universitätsmedizin Berlin
Campus Benjamin Franklin
Hindenburgdamm 27, 12203 Berlin

tabea.fluegge@charite.de

KEYWORDS
Dentistry, Digital Imaging, AI, Decision Support Tool, Oral Cancer, Oral Surgery

2022

Spinoff

RadioEye: The Autopilot in Diagnosing Misleading Radiology Cases Correctly

CONTACT
PD Dr. med. Katharina Erb-Eigner
Department of Radiology
MVZ Charité
Charité – Universitätsmedizin Berlin
Augustenburger Platz 1, 13353 Berlin

katharina.erb@charite.de
www.radioeye.com

KEYWORDS
Radiology, Specialized Radiology, AI, Ophthalmology, Diagnosis Support, Image Analysis

Interpretation of radiological images is core in diagnostic radiology. However, the medical world has grown in terms of complexity and broadness. In 10´35% cases, the radiologists consults various sources for reverence to be able to interpret the image correctly.

RadioEye closes this gap by offering diagnosis support with the help of a reference tool. Designed as an interactive case collection, the tool offers curated information and a vast database of reports and radiological images of cases. It additionally assists with an AI-based image-search functionality that helps find similar cases based on image features alone and by ranking narrowing potential diseases down. Radiologists can swipe through images and compare them to the case at hand. The product offers an eye and eye socket module, tested already in clinical setting and expands its features currently to the brain.

A curated radiology database that covers the real-world variance of disease presentation together with a powerful image-search functionality is unique and aims to improve quality and efficiency in diagnostic radiology worldwide. RadioEye is powered by an interdisciplinary team with years of experience in radiology and specialized radiology, AI and software development, and business the team is currently finalizing the company founding process. Radioeye Spunoff in 2025.

2022

SangoRT: Making A Change for Clinical Trials in Oncology

CONTACT
Dr. Susanne Holzhauer
Charité – Universitätsmedizin Berlin
Campus Virchow-Klinikum
Augustenburger Platz 1 · 13353 Berlin

KEYWORDS
Oncology, Breast Cancer, ILB, Patient-Centered Care, Personalized Treatment, Integrated Care, DMP

Clinical trials are instrumental for bringing new treatments to patients. Despite this fact, less than 5% of eligible patients participate in clinical research due to the disturbances they pose to patients' daily life. In addition, up to 20% of trials are either withdrawn due to patient recruitment problems or completed with a reduce target population. These problems greatly impair trial quality data, prolonged timelines and as a result add to the overall costs of trials.

SangoRT tackled this challenge by developing a cost-effective, home-based IVD medical device for remote monitoring of blood counts and common side effects of drugs. By automating and optimizing the workflow of blood tests for side-effect monitoring, the team works towards enabling virtual and hybrid clinical trials, e.g., in oncology. The team's goals are to increase the right patient recruitment and retention rates by reducing the burden of clinical trials on the patients, and to enrich the data insights by enabling more frequent sample collection.

SangoRT team is composed of a clinical researcher, a medical doctor, a computational biologist supported by an oncologist/ hematologist. Its mission is to optimize clinical trials in order to get new effective treatments to patients faster and more cost-effective.

Pre-Spinoff

VirtuCueR

VirtuCueR: A VR-Based Treatment to Reduce Relapse & Craving For Alcohol-Dependent Patients

In Germany alone, 1.6 million people are alcohol-dependent. Affected individuals often suffer from health issues, unemployment and social exclusion. Crucially, alcohol dependence is characterized by its chronicity, with relapse rates up to 80 percent after rehabilitation treatment.

One way to address alcohol dependency is by re-directing the craving response. Cravings are often experienced in situations that remind the individual of alcohol intake, such as, the local pub or informal gatherings of social groups. However, most therapies for alcohol dependence do not incorporate these real-life situations in the therapeutic process.

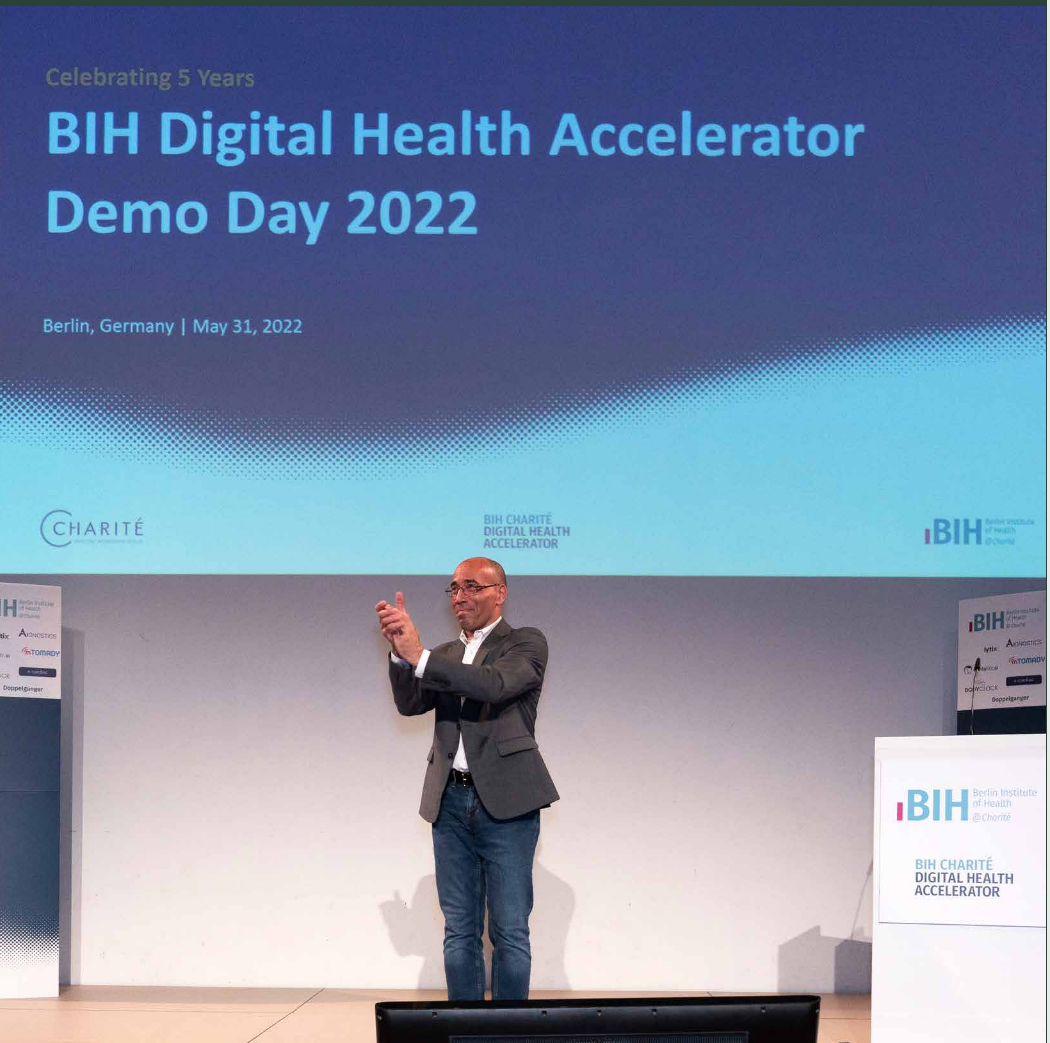
VirtuCueR aims to overcome this limitation by using virtual reality to expose affected individuals to personalized high-risk situations that elicit craving. During this treatment, patients wear a head-mounted display that exposes them to alcohol-associated environments. The experience and the interaction with the environments can be controlled and adjusted by a therapist. The overarching aim of the treatment is that patients can acquire specific skills to overcome craving.

The VirtuCueR is a multi-professional team consisting of psychiatrists, psychologists and scientists from Charité and a partner institution which specializes developing virtual-reality treatments. The team is currently in the spin-off process.

CONTACT
Prof. Dr. med. Stefan Gutwinksi
Dr. med. Nikolaos Tsamitros
Department of Psychiatry and Neurosciences
Charité – Universitätsmedizin Berlin
Campus Mitte
Charitéplatz 1, 10117 Berlin

stefan.gutwinski@charite.de
www.virtucuer.de

KEYWORDS
Alcohol Addiction, Exposure Therapy, Virtual Reality, Relapse, Craving



2023

Spinoff

dotPD: A Customizable Platform for Data Driven Medicine

Despite new digital health solutions being invented almost every day, very few actually see any action. In reality, myriad considerations, including interoperability, security, and standardization, create a logistical hurdle not easily bypassed. That's where dotPD's dotbase comes in.

The dotbase solution provides a unique workspace for building and operating countless digital health solutions efficiently and effectively. New customized dashboards or patient applications can be seamlessly assembled using its modular and interoperable design with best-in-class features and no-code/low-code adjustability. Today, the solution already powers a wide range of applications, including comprehensive remote patient monitoring platforms, integrated multi-centric clinical trials, and entire hospital outpatient clinics at Charité.

The dotPD team aims to revolutionize the digital health, landscape by making it faster, more reliable, and cost-effective for everyone to build and run regulated digital health solutions in the real world. Powered by a growing team of proficient software engineers, medical doctors, UI/UX designers, and health economic specialists, dotPD is driven by the belief that the digitalization of healthcare has to be rapid, adaptive, and universally accessible. dotPD spunoff in 2024 as Dotbase.

CONTACT
Andrea Kreichgauer, M.Sc.
Department of Neurology and
Experimental Neurology
Campus Mitte
Bonhoefferweg 3
Charitéplatz 1, 10117 Berlin

hello@dotbase.org
www.dotbase.org

KEYWORDS
Healthcare IT, Open Platform,
HIS, Data-Driven Medicine,
Customizable Health Reporting,
No-Code/Low-Code

2023

Pre-Spinoff

IDA: Enabling Streamlined, Personalized Breast Cancer Care

IDA offers an innovative and interoperable platform solution for physicians and healthcare teams treating breast cancer. By wading through the ocean of relevant information and treatment options, IDA enables personalized care pathways that are multidisciplinary in their approach and comprehensive in their considerations.

To achieve this, IDA integrates relevant information such as standardized reporting systems, electronic medical records, tumor board information, patient-specific data, treatment guidelines, and research evidence into a single organized location. Consequently, IDA has the ability to identify complications early on and facilitate timely interventions, leading to better health outcomes and lower treatment costs.

The collaboration between leading breast cancer specialists from Charité, digital health enthusiasts, and a design team specialized in healthcare design highlights the multidisciplinary and patient-centered nature of IDA. By centralizing and making transparent key real-time information about the patient, IDA has the potential to make a significant impact in improving breast cancer care, enhancing patient experiences, and optimizing treatment outcomes.

CONTACT
Prof. Dr. med. Maria Margarete Karsten
Dr. med. Therese Pross

Department for Gynecology
with Breast Center
Campus Mitte
Charitéplatz 1 · 10117 Berlin

ida@charite.de
www.ida-charite.de

KEYWORDS
Oncology, Breast Cancer, ILB,
Patient-Centered Care,
Personalized Treatment,
Integrated Care, DMP

2023

metis: An AI-powered PoC Solution for Verifying the Antibiotic Need

According to the Centers for Disease Control and Prevention, about one-third of antibiotic use occurs in situations when it is unnecessary or not the appropriate treatment. This overuse of antibiotics drives an increase in antibiotic-resistant bacteria, which the WHO classifies as one of the top ten threats to global health. METIS seeks to address this overuse via an AI-powered PoC solution capable of identifying the antibiotic need directly at the GP's office.

metis measures multiple key proteins to gain insight into how the patient's immune system is responding to an infection with a simple test device, similar to lateral flow tests that we are familiar with from COVID-19 testing. After metis pools multiple sources of information, the test result can be quickly read by a GP via a smartphone app that relies on AI algorithms to process the results. The whole process takes only a short amount of time and does not require specialized hardware or sending samples offsite, making it perfect for every outpatient setting.

To design metis, an interdisciplinary team from emergency and laboratory medicine spent years evaluating the current and next-generation infection tests clinically and inpatient settings. Combined with their biobank and AI expertise, metis is perfectly positioned to bring infectious disease diagnostics to the next level.

metis

CONTACT

Dr. med Wolfang Bauer
Department of Emergency Medicine , Campus CBF
Hindenburgdamm 30 · 12200 Berlin

www.metis-diagnostics.com

KEYWORDS
PoC Solution, Antibiotic Resistance, Adults, Children, AI, GPs, PEDs, Diagnostics

2023

Pre-Spinoff

motus med: Transforming Early Age Epilepsy Diagnosis Via Accessible & Intelligent Movement Analysis

During their first two years of life, about 10% of all toddlers exhibit unusual or "strange" movements. In fact, Infantile spasms (IS) are the most common epilepsy syndrome in this age group with an incidence of 1:2500. Motus med utilizes the power of AI-technology and smartphone-based videos to speed up the oft-delayed timeline of the IS diagnosis. motus med's seizure detection technology is developed using large-scale, expert-labeled datasets, has been proven to work with videos recorded from smartphones, and benefits further from previous validation in a multi-center home video monitoring trial that was previously led by our team (G-BA Innovationsfonds).

motus med aims to not only shorten the time to diagnosis for toddlers with suspected seizures, but also reduce the chance of life-long impairments and costs. In the long term, the team is working toward becoming a medical video-based diagnostic platform not only for epilepsy, but also for other neurological conditions.

Team motus med consists of experienced neurologists and data scientists from Charité and BIH with long-standing international and award-winning expertise in AI applications across the epilepsy diagnostic pathway, including video analysis, wearable technology, and EEG diagnostics, and an extensive network with leading academic centers, insurance providers, as well as patient support groups.

motus med

CONTACT

PD Dr. med. Christian Meisel

Department of Neurology and Experimental Neurology
AG Computational Neuroloy
Charitéplatz · 10117 Berlin

christian.meisel@charite.de
www.motusmed.de

KEYWORDS
Neurology, Epilepsy, Pediatrics, Seizure, AI, Video Analysis, Diagnosis Support

MoveFx: Bone Fracture Simulation Tool for Orthogeriatrics

Bone fractures are more common among the elderly, and the healing process can be complex and critical in this population. Recognizing the significance of movement in life, MoveFx is a tool that supports after-care physicians in scheduling post-operative activity. By analyzing the patient's activity level prior to fracture, the X-ray images of the fracture, fracture treatment, and patient anatomy, MoveFx predicts the range of tolerable forces at different points in time during the healing process. The tool then enables the geriatric aftercare teams and caregivers to mobilize patients to their pre-operative activity level as early as possible while simultaneously avoiding overloading the healing fracture zone.

MoveFx's vision is to bring the benefits of individualized, quantitative analysis of the interaction between physical and mechanical factors directly into the care path. To make this possible, MoveFx relies on an interdisciplinary team of engineers, software developers from BIH, and the Julius Wolff Institute, Charité, all embedded in a broad network of international clinical and research partners.

CONTACT
Dr.-Ing. Mark Heyland
BIH@Charité
Julius-Wolff-Institute
Augustenburger Platz 1
13353 Berlin

mark.heyland@charite.de
movefx.app

KEYWORDS
Orthopedics, Geriatrics, Surgery, Bone Fractures, Simulation, Implants, Rehabilitation

UroMe.ai: An AI-Based Tool for Personalized Treatment in Urological Cancers

2023

Stage 2

Bladder cancer is the fifth most common cancer in Europe, accounting for 5% of total European healthcare cancer costs.

With the power of AI tools, molecular data, and patient-derived organoids, UroMe.ai aims to predict treatment response and make personalized bladder cancer treatment an everyday possibility. By accurately predicting treatment responses, UroMe.ai can in turn additionally assist clinicians and tumor boards in making informed decisions regarding a given treatment modality, therapy outcomes, and potential quality of life for patients with bladder cancer.

UroMe.ai's unique process works by training an AI algorithm on personalized organoids that utilize only molecular data.

The UroMe.ai team combines the expertise of internationally recognized senior researchers and clinicians from the Charité in the field of urology and patient-derived experimental models alongside technical experts in machine learning. In the future, UroMe.ai aims to be the standard of care tool used not only in all clinically approved oncological treatments of bladder cancer – but also in other urological cancers.

CONTACT
Dr. rer. nat. Annika Fendler

Department of Urology
Charité Campus Mitte
Charitéplatz 1
10117 Berlin

annika.fendler@charite.de
www.urome.ai

KEYWORDS
Urology, Urogyn, Cancer, Bladder, AI, Organoids, Chemotherapy, Treatment, Malignant, Decision Support

myne: A Personalized Treatment Support Tool for MCI

2023

Up to 20% of people above the age of 65 years suffer from an abnormal decline in memory and related brain functions. Mild cognitive impairment (MCI) substantially decreases the quality of life of the affected and presents an emotional and financial burden to their loved ones, who typically perform informal care. Unfortunately, MCI currently has no approved treatment.

myne aims to put the latest advances in personalized neuromodulation directly into the hands of users being affected from MCI. After initially obtaining the frequency of brainwaves using behavioral input alone, myne can then deliver personalized brain stimulation. This is achieved by playing sequences of sounds, heard simply through a conventional pair of headphones, without requiring any additional devices. State-of-the-art research shows that personalized electric brain stimulation can, using expensive laboratory equipment and trained experts, preserve the existing memory level.

Team myne has been built by experts in deep brain stimulation and psychiatry working at the interface between research and clinical practice. In the future, myne aims to become a platform for deviceless, personalized auditory neuromodulation and become a scalable and accessible solutions that benefit patients with brain disorders.

CONTACT
Orestis Rakitzis, M.Sc.

Clinic for Psychiatry and Psychotherapy
AG Clinical Neurotechnology
Charitéplatz 1 · 10117 Berlin

orestis.rakitzis@charite.de

KEYWORDS
Neurology, Psychiatry, Aging, Memory, MCI, Early Dementia, Treatment Support, Audio, Deep Brain Simulation

2024

CalciQuant: Digital Insights to Accelerate CNS Drug Development

Over 165 million Europeans are affected by Central Nervous System (CNS) disorders, including Alzheimer's, Parkinson's, epilepsy, and mental disorders. One in three people will experience a neurological or mental disorder during their lifetime, making CNS diseases a leading cause of disability worldwide.

CalciQuant aims to help reduce the high failure rate in CNS drug development. Its digital platform analyzes human brain cell function and is designed to provide early insights into compound efficacy and safety – before costly clinical trials begin.

Using calcium imaging on stem cell-derived human brain cultures, CalciQuant predicts toxicity, validates targets, and detects off-target effects on neurons and synapses. Its automated, modular pipeline will ensure sensitive, reproducible, and scalable analysis.

The project is a collaboration between Charité and DZNE, consisting of three PhD candidates in neuroscience and the head of the Synaptic Dysfunction Group. With over 20 years of combined expertise in functional assays and digital image analysis, the team is uniquely positioned to advance CNS drug discovery.

CalciQuant envisions a world where patients with CNS have pharmaceutical therapy options that are effective, well-tolerated, and numerous in number.

CONTACT
Jeremy Krohn, M.Sc, Dr. Camin Dean
The Neuroscience Research Center (NWFZ) & German Center for Neurodegenerative Diseases (DZNE)
Charitéplatz 1 · 10117 Berlin

jeremy.krohn@charite.de
camin.dean@charite.de
www.calciquant.de

KEYWORDS
Neuroscience, CNS, Drug Development, Algorithm, Assay, Calcium Imaging

2024

Deep Brain Decode: Training-Free Personalization of Adaptive DBS

Movement-related symptoms in Parkinson's disease and other neurological disorders result from irregular electrical signals in motor control brain regions. Deep Brain Stimulation (DBS) has been an effective treatment since 1997, using implanted electrodes and a pacemaker-like device to relieve symptoms.

Current DBS, however, delivers constant stimulation that cannot adapt to fluctuating symptom severity. Patients often require frequent adjustments to maintain effectiveness and avoid side effects. Next-generation adaptive DBS, which adjusts stimulation automatically, has been limited by the enormous amount of clinician time needed for personalization.

Deep Brain Decode overcomes this barrier with machine learning algorithms that estimate a patient's symptom state and dynamically adjust stimulation in real time. Using five years of invasive recordings from patients with neurological disorders, the team developed generalized neural decoders that integrate plug-and-play into DBS implants – enabling training-free personalization and overcoming the main barrier to scalable adaptive DBS.

The project is led by a Charité team of experts in neuroscience, machine learning, neurophysiology, and DBS for movement disorders. Deep Brain Decode aims to enable next generation therapy for neurological disorders by providing medical device companies with generalized neural decoding models.

CONTACT
Timon Merk, MSc
Prof. Dr. Wolf-Julian Neumann
Department of Neurology and Experimental Neurology
Charité – Universitätsmedizin Berlin
Charitéplatz 1 · 10117 Berlin

info@deepbraindecode.com
www.deepbraindecode.com

KEYWORDS
Neurology, Parkinson's, DBS, Movement Disorders, Software, AI, Personalized Treatment, Adaptable

Fractalyzer: Non-Invasive Prostate Cancer Diagnosis with Fractal Analysis

Prostate cancer is the second most common cancer in men, affecting about one in eight during their lifetime. Current diagnosis relies on PSA tests, MRI scans, and biopsies. Biopsies, however, are costly, invasive, and often produce limited diagnostic yield, with up to 50% returning negative and 35% false-positive results.

Fractalyzer addresses this challenge by using standard MRI imaging to determine whether a lesion warrants a biopsy. Its “fractal analysis” evaluates lesion complexity, with higher fractal dimensions indicating more aggressive tumors. Clinicians can then segment cases into low- and high-risk categories, guiding decisions on further intervention.

The method is compatible with existing clinical equipment and can be applied retrospectively to existing data. By integrating Fractalyzer into the diagnostic workflow, unnecessary biopsies can be reduced, active surveillance optimized, and patient discomfort minimized.

The team includes two distinguished radiologists – a vice chair at Charité and a professor at Japan’s Mie University – supported by an expert in medical informatics and economic strategy. Team Fractalyzer envisions a future where prostate cancer grading is non-invasive and innovative, representing a major leap in cancer diagnostics.

Fractalyzer

CONTACT
PD Dr. med. Florian Michallek
Department of Radiology
Charité – Universitätsmedizin Berlin
Campus Charité Mitte
Charitéplatz 1 · 10117 Berlin
Department of Advanced
Diagnostic Imaging
Mie University Graduate School of
Medicine · Tsu · Mie 514-8507 · Japan
info@fractalyzer.com
www.fractalyzer.com
KEYWORDS
Radiology, Imaging Analysis, Prostate Cancer, Biopsy, Deep Learning, Risk Assessment

2024

gaitMATE: A Digital Platform Empowering Patients and Accelerating Therapy for INMDs

Genetic or Inherited Neuromuscular Disorders (INMDs), including Charcot-Marie-Tooth Disease and inherited transthyretin amyloidosis, affect over 15 million people worldwide. Patients face progressive muscle and nerve degeneration, requiring specialized care, yet experience long periods of relative stability, making frequent clinical visits burdensome.

gaitMATE aims to address this challenge by connecting patients and physicians through a patient-centered digital platform. It facilitates remote access to specialist centers, guide patients through complex healthcare pathways, and provides tailored support. The platform also enables participation in remote research, accelerating treatment development.

Through personalized gait analysis, gaitMATE advances digital monitoring for various gait disorders. It supports post-market surveillance of existing therapies and aids in implementing new outcome measures, helping clinical trials become faster and more cost-effective. The team includes a junior neurologist and patient advocate who founded the CMT clinic at Charité, a senior neurologist leading the neuromuscular and Amyloidosis Center, and an electrical engineering student with healthcare data experience, supported by a neuroscience expert from Columbia University.

gaitMATE endeavors to bridge the gap and empower individuals affected by INMDs, as well as physicians, in the treatment and development of new therapies through its platform solution.

gaitMATE

CONTACT
PD Dr. med Katrin Hahn
Department of Neurology with
Experimental Neurology
Charité – Universitätsmedizin Berlin
Campus Benjamin Franklin
Hindenburgdamm 30 · 12203 Berlin

helena.pernice@charite.de
www.gaitmate.org

KEYWORDS
Neurology, INMD, CMT, Rare Diseases, Amyloidosis, Patient-Centered Care, Drug Development, Digital Biomarker

2024

Stage 2

NURTURE

NURTURE: AI-Driven Therapeutics for Pregnancy Care

Every year, there are 200 million pregnancies, and roughly half experience at least one complication. Conditions such as diabetes, hypertension, and preeclampsia often go beyond symptom management, impacting long-term cardiovascular and metabolic health for both mother and child.

NURTURE addresses this gap with an AI-based platform combining placental organoid multi-omics and clinical data. The platform enables rapid identification of compounds effective in treating pregnancy-related conditions, providing early safety and efficacy data before animal studies.

By integrating in vitro and in vivo data, NURTURE aims to help guide pharmaceutical development toward the most promising compounds, accelerating drug discovery and maximizing impact. This solution is uniquely focused on pregnancy-related diseases, combining predictive biology with AI to overcome traditional pre-clinical limitations.

The team is led by a clinician-scientist specializing in translational studies of pregnancy complications, alongside an international AI and data science expert. Together with computational biologists experienced in wet lab research, the team covers all necessary expertise for success.NURTURE's mission is to reduce the long-term health burden caused by pregnancy complications by improving availability of preventative therapies.

CONTACT
Dr. med Olivia Nonn
Naveed Ishaque, PhD
Experimental and Clinical Research Center (ECRC)
& BIH – Center for Digital Health
Charité Universitätsmedizin Berlin
Campus Buch
Lindenberger Weg 80 · 13125 Berlin
oliva.nonn@charite.de
www.nurture-health.ai
KEYWORDS
Women's Health, Obstetrics, Pregnancy Diseases, AI, Organoids, Drug Development, Preeclampsia, Safety

2024

RADIOLOGY FLOW

RadiologyFlow: Personalized and Automated Radiology Report Correction

Radiology reports are essential for patient care, yet crafting clear and accurate reports is challenging. Radiologists often spend up to 30% of their time proofreading due to errors in spelling, grammar, terminology, and formatting. Existing solutions fail to adapt to institution-specific SOPs, subdisciplines, or language requirements.

RadiologyFlow aims to solve this problem with AI-powered software that automatically detects and corrects errors in radiology reports. Leveraging large language models trained on extensive radiology texts, the platform aims to offer one-click corrections tailored to each institution's data and workflows, integrating seamlessly into PACS or RIS systems.

The software ensures corrections match the radiologist's intent and style, learning over time to become fully personalized. This allows radiologists to focus on interpretation while providing referring physicians with clear, consistent, and error-free reports.

The team combines expertise in radiology workflows, AI/NLP, and software engineering from Charité, supported by senior radiologists at the German Heart Center Munich and TUM.

Radiology Flow's mission is to rid the world of radiology reporting errors – one AI-assisted report at a time.

CONTACT
PD Dr. med. Jawed Nawabi
Institute of Neuroradiology
Charité – Universitätsmedizin Berlin
Campus Virchow Campus
Augustenburger Platz 1
13353 Berlin
PD Dr. Keno Bressem
Deutsches Herzzentrum München
bressem@dhm.mhn.de
info@radiologyflow.com
www.radiologyflow.com
KEYWORDS
Radiology, Reporting, Adaptive AI, Autocorrection, Work Flow Optimization, Quality Assurance

UroSavvy: Value-Based Care for Postoperative Urogenital Management

Urogenital complications from surgeries, diseases, or treatments can extend hospital stays, require multiple interventions, and reduce patient quality of life. Delayed detection and suboptimal management also impose substantial financial burdens, with costs per case reaching up to €1 million.

UroSavvy is a clinical decision support system that helps healthcare professionals detect, manage, and evaluate postoperative urogenital complications. By integrating medical history, surgical reports, diagnostics, and clinical guidelines, it provides tailored recommendations and risk profiles for each patient. Powered by advanced algorithms and a unique dataset from the Charité Pelvic Floor Competence Center, UroSavvy enables early detection, optimized decision-making, and personalized interventions – improving outcomes, reducing complications, and lowering healthcare costs. The team includes experts from Charité's Departments of Urology and Gynecology, including the head of the Pelvic Floor Center and the lead of a research group in Sexology and Sexual Medicine. Their combined expertise ensures clinically relevant and practical solutions.

UroSavvy's vision is to seamlessly integrate postoperative complication management into value-based healthcare. By offering tailored decision support for hospitals now and remotely soon, UroSavvy aims to enhance patient outcomes and reduce costs, establishing UroSavvy as the premier digital platform for urogenital complication management globally.

2024

Stage 2

CONTACT
Department of Gynaecology
Department of Urology
Charité – Universitätsmedizin Berlin
CCM & Campus Benjamin Franklin
Hindenburgdamm 30 · 12200 Berlin

laura.hatzler@charite.de
www.urosavvy.com

KEYWORDS
Urology, Gynecology, AI, Surgery, Postoperative Complications, Decision Support Tool, Value-Based Healthcare

VarFish: Genome Interpretation for Clinicians and Labs

An individual's genetic makeup profoundly influences health, yet interpreting genomic data remains slow and labor-intensive. For the over 250 million people worldwide affected with rare diseases, this extends an already long journey, with more than 50% of cases unsolved even after whole genome sequencing.

VarFish is a clinician-focused platform that automates key parts of the genetic diagnostic workflow. It allows geneticists to filter variants with complex rules, annotate with machine learning models, and access gene-disease associations efficiently. Built-in data sharing enables collaboration with experts and contribution to public variant databases.

Developed by experienced geneticists and bioinformaticians, VarFish cuts variant assessment time by over 50%, saving ~7 hours per case. Laboratories gain a robust, integrated database combining multiple prediction models, while patients benefit from faster diagnoses and earlier access to targeted therapies.

The team's expertise in rare disease diagnostics, high-performance computing, and machine learning ensures the platform meets the needs of both clinical and academic labs

VarFish envisions it to be the primary genome interpretation platform for labs and university hospitals across Europe and beyond, as whole genome sequencing becomes vital in diagnostics.

2024

CONTACT
Dr. Dieter Beule
Institute of Medical and Human Genetics
Charité – Universitätsmedizin Berlin &
BIH – Core Unit Bioinformatics (CUBI)
Berlin Institute of Health (BIH)
Chariteplatz 1 · 10117 Berlin
digitallabs@bih-charite.de
www.varfish.de

KEYWORDS
Whole Genome Sequencing, Genetics, Bioinformatics, Translational Genetics, Rare Diseases

Stage 2

VISIONS

CONTACT
Dr. med Caroline Gabrysch
Dr. med Sophia Ossmann
Department of Obstetric and Gynecology
Charité – Universitätsmedizin Berlin
Charité Campus Mitte
Luisenstr. 64 · 10117 Berlin

caroline.gabrysch@charite.de
sophia.ossmann@charite.de

www.visions-project.com

KEYWORDS
Women's Health, FemTech, Sexual Assault, Emergency Care, Digital Aid, Aftercare

VISIONS: Digital Support for Informed Decisions After Sexual Assault

In the EU, one in ten women aged 16 and older experience sexual violence, yet only about 10% seek help. In Germany, just over 10,000 cases are reported annually, leaving many incidents unaddressed. Survivors face a complex, bureaucratic process for clinical support, evidence collection, and follow-up care, which often discourages engagement and increases long-term trauma.

VISIONS provides a digital companion to guide survivors, clinicians, and, when necessary, the police through the entire process. The platform is being developed to help survivors make informed decisions about examinations, evidence collection, and reporting while streamlining documentation for clinicians and police. This ensures high-quality evidence, improves care, and reduces administrative burden.

By offering context on rights and care options, guiding emergency room procedures, and supporting follow-up appointments, VISIONS will empower survivors and enhance clinical efficiency. Its intuitive tools will simplify workflows, enabling clinicians to focus on patient-centered care rather than procedural hurdles.

Developed by two gynecologists in training at Charité, VISIONS builds on first-hand experience with the aftermath of sexual violence in the clinic. Their expertise ensures the solution is practical, reliable, and sensitive to the needs of survivors, clinicians, and the broader healthcare system.

VISIONS envisions a future where survivors receive seamless support, informed guidance, and improved long-term outcomes.

Notes

Supported Projects from 2017 – 2025

Cohort 2017

- **Exploration of Heart Disease and Cancer Using Fractal Analysis Technology**
  Dr. Florian Michallek, Institute of Radiology, Charité

- **Heart Disease Risk App and Automated CT Analysis**
  Prof. Dr. Marc Dewey, Institute of Radiology, Charité

- **Predicting Stroke Risk with Artificial Intelligence**
  Dr. Dietmar Frey/Dr. Vince Madai, Neuro Surgery, Predictive Modeling in Medicine, Charité

- **Prediction of Post-operative Complications in the Intensive Care Unit (Spinoff: X-Cardiac)**
  Dr. Alexander Meyer/Prof. Dr. Volkmar Falk, Department of Cardiothoracic and Vascular Surgery, Charité & DHZB

Cohort 2018

- **BodyTime: A New Diagnostic Assay to Assess the Internal Clock (Spinoff: Bodyclock)**
  Prof. Dr. Achim Kramer, Institute for Medical Immunology – Chronobiology, Charité

- **Cardio Prime: Diagnosis and Therapy Planning Platform for Patients with Cardiovascular Diseases**
  Prof. Dr. Titus Kühne/Kai Brosien, Institute for Imaging Science & Computational Modelling in Cardiovascular Medicine, Charité

- **Computational Pathology (Spinoff: aignostics)**
  Prof. Dr. Frederick Klauschen, Institute for Pathology – Clinical Pathology, Working Group System Pathology, Charité

- **DentalXr.AI: Deep Learning for Dental Image Diagnostics (Exit: DentalXr.ai)**
  Prof. Dr. Falk Schwendicke/Departement of Restorative and Preventive Dentistry, Charité

- **LingPed: An Innovative Monitoring Platform for Post-Surgical Rehabilitation**
  PD Dr. Serafeim Tsitsilonis/Kaya Nevda, Center for Musculoskeletal Surgery, Charité

- **mTOMADY: A Transaction Platform for Accessible and Affordable Healthcare (Spinoff: mTOMADY)**
  Dr. Julius Emmrich/Dr. Samuel Knauss, Departement of Neurology and Experimental Neurology, Charité

Cohort 2019

- **3D Histopath: Bringing Histopathology from 2D to 3D**
  (Spinoff: Limaa Technologies)
  Dr. René Hägerling, Institute of Medical Genetics and Human Genetics, Charité

- **ARCAS: AI for Life Sciences. Best Treatment Possible for Every Cancer Patient (Pre-Spinoff)**
  Dr. Altuna Akalin, Institute for Medical Systems Biology (BIMSB), Max-Delbrück Center for Molecular Medicine (MDC)

- **Nephrolyx: Clinical Decision Support System to Identify Acute Kidney Injury (Spinoff: Nephrolyx)**
  Prof. Prof. hc. Dr. Markus van der Giet, Department of Nephrology and Medical Intensive Care, Charité

- **Diagnosis and Therapy Optimization in Implant Infections**
  PD Dr. Andrej Trampuz, Center for Musculoskeletal Surgery, Charité

- **Open.IU: A Diagnosis and Therapy Solution for Adolescents with Internet Gaming Disorder**
  PD Dr. Olga Geisel/Prof. Dr. Christoph Correll, Department of Child and Adolescent Psychiatry, Psychosomatic Medicine and Psychotherapy, Charité

- **PreFree: For Reducing Uncertainty in Pregnancy – A Decision Support Tool and Home Monitoring Solution**
  (Spinoff and License: PreFree)
  Prof. Dr. Stefan Verlohren, Department of Obestrics Maternal-Fetal Medicine, Charité

- **Siloa: Solution for Digital Early Detection of Alzheimer's Disease**
  Dr. Herlind Megges/Dr. Silka Dawn Freiesleben, Department of Psychiatry, Geriatric Medicine – Memory Clinic, Charité

- **SUMUS: A Trustable Psychotherapy Guide for Patients Affected by Muscle Diseases (Pre-Spinoff)**
  Prof. Dr. Simone Spuler/Dr. Elisabetta Gazzerro, Clinic for Muscular Disorders, Charité/MDC

Cohort 2020 / 2021

- **Aurelia: Monitoring Brain Perfusion During Anesthesia and Improving Perioperative Outcomes**
  Dr. Michael Nordine/Prof. Dr. Sascha Treskatsch Clinic for Anesthesiology and Intensive Care Medicine, Charité

- **DAGI: Keeping Your Child With Congenital Heart Disease Safe at Home**
  Prof. Dr. med. Katharina Schmitt/Dr. Florian Gross, Department of Pediatric Cardiology and Congenital Heart Disease, Charité/DHZB

- **MetaboKin: A Virtual Cell for Modeling Liver Metabolism**
  (Spinoff: MetaboKin)
  PD Dr. Nikolaus Berndt/Dr. Johannes Eckstein, Laboratory Computational Systems – Biochemistry, Charité

- **MutationSearch: A Full-Service Platform Solution for Whole Exome Sequencing**
  Prof. Dr. Dominik Seelow, Bioinformatics and Translational Genetics, BIH

- **MyaLink: A Monitoring Platform Solution for Orphan Diseases in Neurology (Spinoff: RareLink)**
  Dr. Sophie Lehnerer/Dr. Lea Gerischer, Department of Neurology and Experimental Neurology, Charité

- **PerMitrA: Optimization Tool for Heart Valve Surgery**
  PD. Dr. Simon Sündermann, Clinic for Cardiovascular Surgery, Charité

- **rAIdiance: AI-Based Radiology Solutions to Improve ICU Care**
  Dr. Keno Bressem/PD. Dr. Dr. Stefan Niehues, Clinic for Radiology, Charité

- **Recovery Cat: Keeping Patients With Chronic Mental Disorders Safe (Spinoff: Recovery Cat)**
  Dr. Jakob Kaminski, Department of Psychiatry and Neurscience, Charité

- **TimeTeller: Circadian Clock Profiling for Cancer Treatment Timing (Spinoff: TimeTeller)**
  Prof. Dr. Angela Relogio, Institute for Theoretical Biology, Charité

- **WePath: A Platform-Based Global Network for Pathology Expertise**
  Prof. Dr. Peter Hufnagl, Digital Pathology IT, Institute of Pathology, Charité

Cohort 2022

- **Odeya: Patient-Centered Therapy Solution for Sexual Distress in Women (Pre-Spinoff)**
  Dr. Laura Hatzler/Selina Marie Kronthaler, Institute of Sexology and Sexual Medicine, Department of Gynecology, Charité

- **MatchGraft.AI: Donor-Patient Matching Tool for Stem Cell Transplantations and Beyond**
  PD Dr. Lena Oevermann/Dr. Jonathan Groß, Department of Pediatric Oncology and Hematology, Charité

- **Metatron: A Wearable Sensor Platform for the Early Detection of Peripheral Artery Disease (Stage 2)**
  PD Dr. Federico Collettini/PD Dr. Timo Auer, Clinic for Radiology, Charité

- **Mucoaid: AI-Powered Solution to Detect Oral Mucosal Lesions Early to Fight Oral Cancer**
  Prof. Dr. Tabea Viktoria Flügge, Clinic for Oral and Maxillofacial Surgery, Charité

- **RadioEye: The Autopilot in Diagnosing Misleading Radiology Cases Correctly (Spinoff: RadioEye)**
  PD Dr. med. Katharina Erb-Eigner, Department of Radiology MVZ, Charité

- **SangoRT: Making A Change for Clinical Trials in Oncology**
  Iris Wing To Lam, Department of Infectious Diseases and Pulmonary Medicine, Charité

- **VirtuCueR: A VR-Based Treatment to Reduce Relapse & Craving For Alcohol-Dependent Patients (Pre-Spinoff)**
  PD Dr. Stefan Gutwinski/Dr. Nikolaos Tsamitros,
  Department of Psychiatry and Neurosciences, Charité

Cohort 2023

- **dotPD: A Customizable Platform for Data Driven Medicine**
  (Spinoff: Dotbase)
  Andrea Kreichgauer, M.Sc., Department of Neurology and Experimental Neurology, Charité

- **IDA: Enabling Streamlined, Personalized Breast Cancer Care (Pre-Spinoff)**
  Prof. Dr. med. Maria Margarete Karsten/Dr. med. Therese Pross, Department for Gynecology with Breast Center, Charité

- **metis: An AI-powered PoC Solution for Verifying the Antibiotic Need**
  Noa Galtung/ Dr. med Wolfang Bauer, Department of Emergency Medicine, CBF, Charité

- **motus med: Transforming Early Age Epilepsy Diagnosis Via Accessible & Intelligent Movement Analysis (Pre-Spinoff)**
  Prof. Dr. med. Christian Meisel, Department of Neurology and Experimental Neurology/AG Computational Neuroloy BIH, Charité

- **MoveFx: Bone Fracture Simulation Tool for Orthogeriatrics**
  Dr.-Ing. Mark Heyland, Julius-Wolff-Institute, BIH

- **myne: A Personalized Treatment Support Tool for MCI**
  Dr. Orestis Rakitzis, David Haslacher, MSc, Department of Psychiatry and Neurosciences, Charité

- **UroMe.ai: An AI-Based Tool for Personalized Treatment in Urological Cancers (Stage 2)**
  Dr. Annika Fendler/ Dr. Henning Plage, Department of Urology, Charité

Cohort 2024

- **CalciQuant: Precise Braininsights to Shape CNS Drug Development**
  Jeremy Krohn, MSc, The Neuroscience Research Center (NWFZ) & German Center for Neurodegenerative Diseases (DZNE)

- **Deep Brain Decode: Training-Free Personalization of Adaptive DBS Therapy**
  Timon Merk, MSc, Department of Neurology and Experimental Neurology, Charité

- **Fractalyzer: Innovating Non-Invasive Prostate Cancer Diagnosis with Fractal Analysis**
  PD Dr. med. Florian Michallek, Department of Radiology, Charité

- **gaitMATE: A Digital Platform Empowering Patients and Accelerating Therapy Development for Inherited Neuromuscular Disorders**
  Dr. med Helena Pernice, Department of Neurology with Experimental Neurology, Charité

- **NURTURE: Pioneering Pregnancy Care Through AI-Driven Therapeutic Advancements (Stage 2)**
  Dr. med Olivia Nonn, Experimental and Clinical Research Center (ECRC) & BIH – Center for Digital Health, Charité

- **RadiologyFlow: Personalized and Automated Radiology Report Correction**
  PD Dr. med Nawed Nawabi, Institute of Neuroradiology, Charité

- **UroSavvy: Advancing Value-Based Urogenital Care & Revolutionizing Postoperative Management (Stage 2)**
  Dr. med Laura Hatzler, Department of Gynaecology, Charité

- **VarFish: The Go-To Genome Interpretation Platform for Clinicians in Labs and Academic Centers**
  Lara Einicke, Max Xiaohang Zhao, Institute of Medical and Human Genetics, Charité

- **VISIONS: The Digital Aid for Informed Decisions After Sexual Assault (Stage 2)**
  Dr. med Caroline Gabrysch, Dr. med Sophia Ossmann, Department of Obstetric and Gynecology, Charité

Cohort 2025

- **AerobicAI: Train at Your Personal Best Every Day**
  Dr. Tomas Luca Bothe/Viktor Heinz

- **AtriAI: Illuminating Precision with Insights to Improve Patient Outcomes in Interventional Cardiology**
  Emanuel Heil

- **BioRhythmix: Precision Timing for Immunotherapy**
  Dr. Adrian Granada/Dr. Stefan Florian

- **BoneGuard: Spot the Risk Early – Your Dental Visit Could Save Your Bones**
  Iman Ghanad/Patrick Dinkelborg

- **Malva: Breaking Data Silos to Reveal Hidden Cellular Patterns and Transform Healthcare and Therapeutics**
  Daniel León-Periñán/Dr. Nikolaos Karaiskos

- **Midwife Roberta: Your Midwife in a Pocket – for Advancing Personalized Maternity Care with Medical Insight**
  Dr. Carina Nina Vorisek

- **Movement.MRI: Knee Motion Made Clear for Smarter Treatment Pathways**
  Dr. Nicholas Brisson

- **PhenoVox: Translating Vocal Signatures into Respiratory Insights**
  Dr. Mirja Mittermaier

- **RevOS: Revolutionizing Orthognathic Surgery for Efficient, Predictable Outcomes**
  Dr. Simon Bigus

- **SafeBirth: Advancing Maternal Care Through Intelligent Support**
  Malika Guggenberger

- **vEC: From Fragmented Data to Focused Care, Helping Children Get Their Right Epilepsy Treatment Sooner**
  Prof. Dr. Angela Kaindl

Notes

Stay up-to-date

Visit: **dha.bihealth.org**

Register for updates:
digitallabs@bih-charite.de

Follow us on LinkedIn:
BIH Digital Health Accelerator

BIH Digital Labs
Am Zirkus/Bertolt-Brecht-Platz 3
10117 Berlin

Berlin Institute of Health at Charité (BIH)
Translational Research Unit
of Charité – Universitätsmedizin Berlin
Anna-Louisa-Karsch-Str. 2
10178 Berlin

Tel.: +49 (0)30 450 543 049
Fax: +49 (0)30 450 7543999
E-mail: info@bih-charite.de