

+ Our center is an essential part of the Bern Medical Hub, situated on the Bern University Hospital campus in close vicinity to the University of Bern and is part of the Swiss Institute for Translational and Entrepreneurial Medicine sitem-insel.



siteminsel



^b
UNIVERSITÄT
BERN

ARTORG CENTER
BIOMEDICAL ENGINEERING RESEARCH

University of Bern ARTORG Center

Biomedical Engineering that Transforms Clinical Reality



University of Bern
ARTORG
Center for Biomedical Engineering Research
Murtenstrasse 50
3008 Bern
Switzerland

info@artorg.unibe.ch
Phone +41 31 632 7575

ARTORG Center for Biomedical Engineering Research

ARTORG is the University of Bern's transdisciplinary Center of Excellence for medical technology research. Its mission is to tackle unmet clinical needs and anticipate future challenges in diagnosis, monitoring and treatment to create viable healthcare technology solutions with imagination, agility and purpose.

Covered topics range from discovery and basic research to clinical translation. In its unique constellation as an engineering department within a medical faculty, the ARTORG Center has been delivering a decade of ambitious biomedical engineering research, teaching and development across a wide variety of clinical areas.

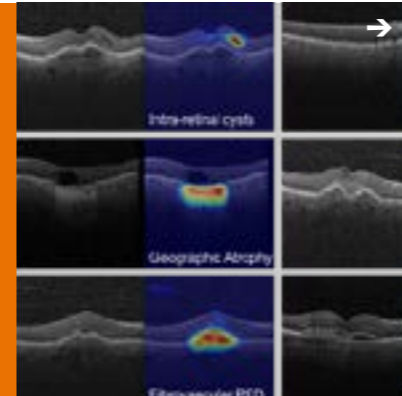
We are committed to excellence in academic education. The ARTORG Center delivers globally leading master's and doctoral programs in biomedical engineering, specialist courses for clinicians and networking events with industry partners. We give master's and PhD students the possibility to translate skills and academic experiences into MedTech innovation at the forefront of healthcare.

Our key competencies include



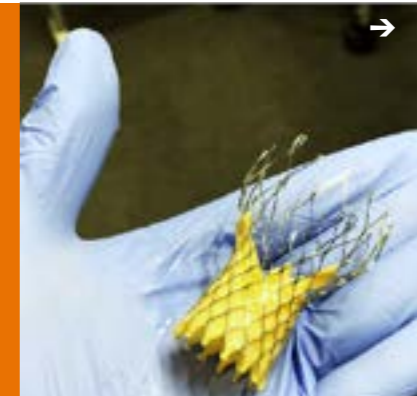
1.0

Artificial Intelligence in Health & Nutrition
Machine learning approaches that translate "data into knowledge" to empower patients with diabetes and nutrition-conscious publics with user-friendly AI tools.



2.0

Artificial Intelligence in Medical Imaging
Applies AI methods to develop clinical tools that use medical images for diagnostics, interventional radiology and surgical robotics.

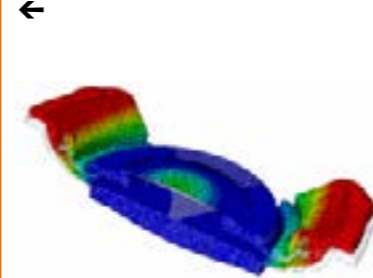


3.0

Cardiovascular Engineering
Uses fluid mechanics to develop new diagnostic tools and improve the long-term durability and bio-compatibility of implants and therapeutic devices.

4.0

Computational Bioengineering
Develops patient-specific computational models to inform decision making in vascular surgery, ophthalmology, and orthopedics.



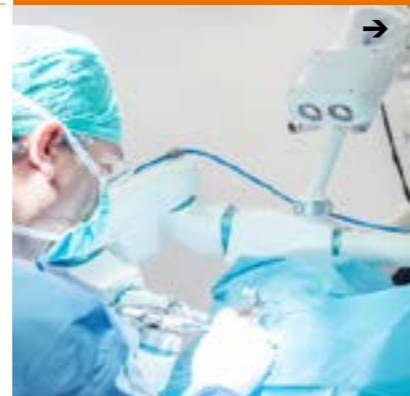
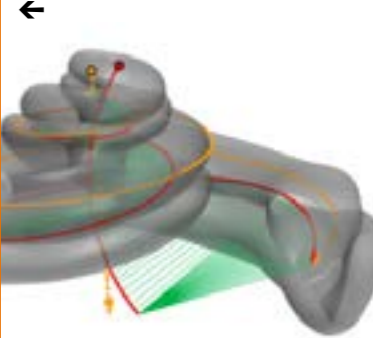
5.0

Gerontechnology and Rehabilitation
Creates and evaluates neuro-rehabilitation technology for brain injury and neurodegenerative diseases to enhance autonomy and independent living.



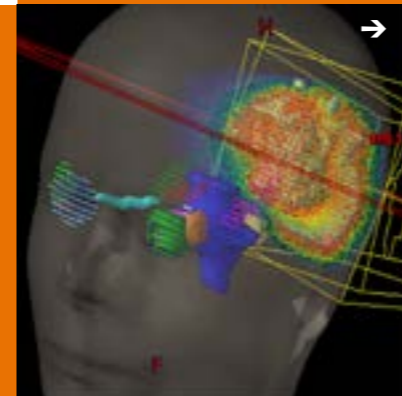
6.0

Hearing Research Laboratory
Technology for the diagnosis and treatment of inner ear diseases including hearing loss, tinnitus and vertigo through simulation, experiments and clinical studies.



7.0

Image-guided Therapy
Advances minimally invasive surgical and interventional procedures using medical robotic and stereotactic guidance technologies.



8.0

Medical Image Analysis
Develops advanced medical image analysis and translational biomedical engineering technologies to quantify, diagnose, and follow-up disorders of the central nervous system.



9.0

Motor Learning and Neurorehabilitation
Investigates innovative technology that enhances the rehabilitation of neurological patients and optimizes motor learning through robotics and virtual reality.

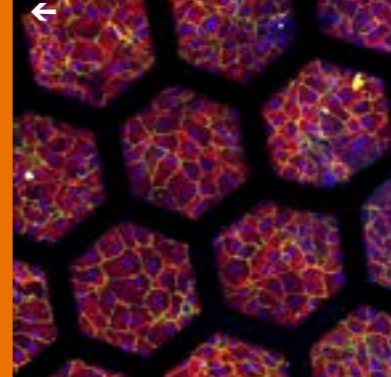
10.0

Musculoskeletal Biomechanics
Explores multiscale structure-function relationships of bone and bone-implant systems to improve prevention, diagnosis and treatment of skeletal diseases.



11.0

Organs-on-Chip Technologies
Builds advanced in-vitro models of the lung that recreate the cellular microenvironment of the respiratory tract for drug development and precision medicine.



12.0

Urogenital Engineering
Innovates technologies to improve insight and treatment of urinary tract diseases (urinary retention, incontinence, kidney stones) which have a significant impact on health and quality of life.



Mechanical Design & Production

Our workshop co-develops and manufactures mechanical and electro-mechanical components from concept to production to enable state-of-the-art experimental set-ups in a wide variety of biomedical engineering research areas.



Education

Master of Science in Artificial Intelligence in Medicine
– Principles of AI, Machine and Reinforcement Learning
– Introduction to Clinics and Clinical Application Modules

Master of Science in Biomedical Engineering
– Specialization in Biomechanical Systems, Electronic Implants & Image-guided Therapy

x Two-year full-time programs in English (120 ECTS)
x Affiliated to Bern University Hospital with strong clinical focus