

Call for Project Funding Applications

What is CAIM?

The Center for Artificial Intelligence in Medicine (CAIM) is a research, teaching and translation platform for medical technology that uses AI to facilitate the work of doctors and nurses and to deliver better care to patients. It is a virtual center that joins the University of Bern's medical faculty, the Inselspital, Bern University Hospital, the University Psychiatry Services and the Swiss Institute for Translational and Entrepreneurial Medicine, sitem-insel as partners. CAIM connects engineers, physicians, and scientists in the domain of AI in medicine and provides them with resources and access to infrastructure.

CAIM Research Fund

The CAIM Research Fund aims to foster and promote research and innovation efforts in the domain of digitalization and AI for healthcare. It focuses on identifying new projects that have strong potential to be groundbreaking for future therapeutic and clinical approaches and with a realistic and deliverable pathway to patient benefit. Projects may be discovery, proof-of-concept, or translational in nature and should have an active inter-disciplinary component. Important questions to assess these criteria include:

- Is a project a basic science research question or a technological proof of concept?
- At what stage of the Technology Readiness Level (TRL) scale is a potential project?
- What is the roadmap of the project if it is successful and what would the steps be to go further?

Projects sponsored by CAIM are inter-disciplinary (inter-/intra faculty) and meant to foster collaboration between/within the Faculty of Medicine and may include other disciplines.

Key questions and investigations that the CAIM research fund will help address include:

- What new projects or activities can lead to new technologies in routine clinical care?
- What practical problem in medicine would strongly benefit from digitalization or AI?
- What specific elements of a project are unique to Bern?
- Should other new activities and areas of research be investigated to maintain competitiveness?
- What interdisciplinary approaches are conducive to strong impact in healthcare?
- What ethical, regulatory, and legal challenges are posed by AI applications in medicine and how can they be addressed?

Areas of research funded by CAIM include, but are not limited to:

Bio-signals: Novel AI applications that focus on the analysis and exploitation of EEG, ECG, ECOG or other multi-channel signal-based sensor systems.

Clinical Data: Data science approaches for outcome-driven inference from clinical data acquired from lab and multi-OMICS platforms.

Medical Imaging: Innovative AI approaches that leverage image data targeting the identification of various image-based markers and outcome-driven outputs.

Precision Medicine: Design and validation of AI-based approaches for tailor-made patient care, patient-specific interventions, and personalized therapy planning.

Intelligent Medical Sensors: AI based approaches for smart sensors and robotics for patient management and interventions.

Ethical/legal aspects: Analysis of ethical, regulatory, and legal challenges, e.g., privacy, data security, impact on doctor-patient relationship; approaches towards transparency, interpretability and algorithmic fairness.

Internet of things: Novel integration and use of data from mobile sensor systems that are pervasive in target populations or patient groups.

Available Funding/Resources

The CAIM project funding will support research projects for up to 2 years with up to 100'000 CHF. The funded project must be based at the University of Bern, the Insel Gruppe/Bern University Hospital, the Universitäre Psychiatrische Dienste Bern (UPD)/Bern University Psychiatric Services and sitem-insel.

Computational infrastructure/resources (priority CPU and GPU access) can be requested separately within the framework of high-performance computing (HPC) platforms of University Bern (Ubelix) and Inselspital (Insel Data Science Center) in addition to CAIM project funding.

Application Process

Application teams with up to 2 applicants from the University of Bern and/or Bern University Hospital and/or the UPD and/or sitem-insel (with at least one applicant from the Medical Faculty, University Bern) are invited to apply. Proposals can be submitted to the online portal (<https://cmt3.research.microsoft.com/CAIM2021/>). Applications must be completed in English. Please send any queries regarding applications to fund.caim@unibe.ch and use "CRF_LastNamePI_FirstNamePI" as the subject of your email in any correspondence.

Applications will be peer-reviewed by national and international reviewers. Reviewer scores will be used to rank applications. A first cut-off will be used to invite top-ranked proposals for a presentation of their project. The selection committee will use the reviewers' comments and the presentation for the final ranking of applications.

Important dates

Deadline for submitting of applications: **Wednesday 15 September 2021 17.00 (CEST)**. Applications will be peer-reviewed, and a shortlist will be invited to present their project in an elevator pitch format **6 December 2021**. Awards will be announced in early **February 2022**.

Additional information and eligibility

Please consult the CAIM Research Fund Application Guidelines for details regarding eligibility for funding as well as a detailed description of the application process.

Details are available at: https://www.caim.unibe.ch/research/research_fund