

CZS Breakthroughs: AI in Health



Call for proposals for universities within
the CZS focus topic artificial intelligence

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Letter of intent deadline: 31.01.2023

Full application deadline: 15.03.2023

1 Thematic focus and target setting

Health plays a major role throughout a person's life. Among other things, digital applications based on artificial intelligence (AI) can help in this regard. Therefore, the Carl-Zeiss-Stiftung (CZS) has defined the application of AI in health as one of its areas of activity. With the 'CZS Breakthroughs' funding programme, the Carl-Zeiss-Stiftung is enabling universities to implement innovative, scientifically promising basic research.

In the call for proposals 'AI in health', the CZS promotes interdisciplinary research concepts at the interface between AI and applications in health. The focus is on algorithmic solutions from AI for problems in medical research. Examples of challenges in this area include exploring algorithmic tools to analyse, contextualise, create and publish health-related datasets for disease prevention, diagnosis, treatment and rehabilitation. The projects must address one or more of the following CZS cross-cutting issues in the field of AI: trustworthiness, resilience, data protection, scalable annotation, meta-learning and/or sustainable AI.

Projects that receive funding must lead to internationally competitive research results. They must use potentials at interfaces between disciplines and institutions to achieve goals and address application-oriented concepts in basic research.

2 Scope and object of funding

Funding can be requested for up to a total of

EUR 5,000,000.

The funding period is up to six years. The earliest possible project start date is 1 January 2024 and the project must start no later than 1 July 2024.

The following are eligible for funding as part of the programme:

- Scientific and technical personnel including material resources,
- Early-career talent groups, post-doc and doctoral candidate positions,
- Junior professorships (e.g. as Tenure Track Foundation professorship),
- Large-scale equipment and research infrastructures,
- Networking activities.

The universities are free to divide up the funding for which the application is submitted. A maximum of 20 per cent of the total funding amount may be used for investments. The requested funding must be justified accordingly. The Carl-Zeiss-Stiftung expects a contribution of at least 10 per cent of the requested funding for the entire project.

The Carl-Zeiss-Stiftung expects the number of doctoral candidates employed to match the amount of work associated with the project. The CZS welcomes full-time positions in this context. Furthermore, it expects that the employment contracts of scientific employees are concluded for the entire period of the respective qualification phase regardless of the duration of the project funding.

Only applications from science, technology, engineering and mathematics (STEM) fields will receive funding.

3 Eligibility to apply

The Carl-Zeiss-Stiftung's funding activity is axiomatically restricted to the federal states of Baden-Württemberg, Rhineland-Palatinate and Thuringia. The following universities are entitled to submit applications as part of this call for proposals (the number of applications that can be submitted is shown in brackets):

Baden-Württemberg: Freiburg (1), Heidelberg (1), KIT (1), Tübingen (1), Ulm (1)

Rhineland-Palatinate: Kaiserslautern-Landau (2), Koblenz (1), Mainz (2)

Thuringia: Ilmenau (2), Jena (2), Weimar (1)

An applying university can also submit a joint application with other scientific institutions (universities, colleges or non-university research institutions) from the three CZS funding states. The applying university must take the lead in this undertaking. This means that the organisational processing must exclusively be carried out via the university that submits the application and this university must retain more than 50% of the funding.

It is also acceptable to include institutions in other federal states (i.e. outside Baden-Württemberg, Rhineland-Palatinate and Thuringia), foreign institutions and non-scientific non-profit institutions. Funding of up to 20% can be passed on to these institutions.

4 Selection procedure and criteria

The selection process consists of two stages.

- Two independent scientists will scrutinise all submitted applications in a written expert opinion. Based on the written expert opinions, a scientific selection committee initially selects the most promising projects.
- The selected applicants will be invited to present their project to the selection committee via video conference and answer questions from the committee members.

The project representatives can expect to receive their invitation to present and answer questions by the end of July 2023. The selection committee meeting will take place on 12 September 2023. The Carl-Zeiss-Stiftung will make the final funding decision based on the recommendations by the scientific selection committee. There is no entitlement to funding. No justification will be provided for rejection decisions; in particular no information will be given about the assessors' evaluations.

In reviewing applications, priority will be given to the following selection criteria:

Research work and strategy

- Quality and innovation potential of the proposed research project (objective, research questions, originality, possibility of a scientific breakthrough, unique selling propositions, scientific significance in international comparison)
- Excellence and scientific reputation of the scientists who are involved in the application proposal (highly qualified research association and international visibility)
- Work programme (coherence of scientific exploratory work with the application proposal, suitability of methods, plausibility and feasibility, collaboration format within the project group)

- Existing and planned internal university and inter-university and/or extra-university partnerships, e.g. with research institutions, companies or in networks/associations
- Social and economic relevance of the research work (in particular the transferability of the research results to practice/practised knowledge and technology transfer between science and business)
- Contribution to strengthening an existing research area
- Alignment of the project with the university's research profile and strategic orientation
- Future-oriented research field with long-term viability and potential for continuation
- Quality of the research data concept

Management

- Organisation and management of the project
- Plausibility of planning (staff, equipment, etc.) in relation to the achievement of objectives
- Independent contribution by the university during the funding period
- Measures by the university for continuation
- Integration and targeted promotion/qualification of early-career scientists
- Project support; potentially by a project council (e.g. made up of individuals from other sectors such as industry or society)
- Measures for active promotion of diversity

5 Application

Applications may only be submitted via university management.

Universities intending to submit an application must **submit a letter of intent** to the Carl-Zeiss-Stiftung **by 31 January 2023**. The Letter of Intent includes

1. a cover sheet with all relevant master data

2. one page summarising the topic and the basic focus of the proposal
3. consent to storage of personal data

The deadline for the submission of full applications is **15 March 2023**. Applications received after this date cannot be considered.

A funding decision is expected in **October 2023**.

Both the letter of intent and the applications must be submitted exclusively digitally to the following address:

Carl-Zeiss-Stiftung

Mr Florian Jenner

foerderantrag@carl-zeiss-stiftung.de

If you have any questions, please contact Mr Florian Jenner (florian.jenner@carl-zeiss-stiftung.de).

Application guidelines

1 General formal requirements

- The application can be submitted in German or English.
- Arial font, size 12 and single line spacing must be used for the applications.
- Applications, including all the necessary documents, must be submitted to the Carl-Zeiss-Stiftung exclusively electronically: The applications, with attachment, must be submitted as **one** PDF document without password protection or access restrictions regarding reading, copying and printing. The PDF must be made available to the Foundation by email (as an attachment or link). Physical data carriers (CD-ROM, DVD, etc.) cannot be processed.

2 Documents to be submitted

The universities are asked to provide the following documents and the completeness of these documents is a prerequisite for receiving funding:

2.1 Letter of intent

A university entitled to submit an application and intending to submit an application for the 'CZS breakthroughs' funding programme must submit a written letter of intent to the Carl-Zeiss-Stiftung by **31 January 2023**. Submitting an application at a later date is not possible if no letter of intent has been submitted. The letter of intent should enable the Foundation to prepare the evaluation process for the application.

The letter of intent must include the following details:

1. Cover sheet (one page)
 - a) University submitting the application
 - b) Managing department for the application and preliminary contact
 - c) Application subject area (the project title may be modified in the final application, but the fundamental content area of the project must remain the same)
 - d) Potentially suggestions, justified in bullet points, of up to three assessors whom the university believes would be suitable to assess the application in a

professional and impartial manner according to the DFG criteria. We ask for contact details to be included. Good German skills are required.

2. Content-related description of the project (one page)
 - e) A broad thematic outline of the application, which enables the Foundation to identify suitable assessors
3. Annex
 - f) Signed consent for storage of personal data in accordance with the template provided by the Carl-Zeiss-Stiftung.

This letter of intent must be submitted exclusively electronically to foerderantrag@carl-zeiss-stiftung.de.

2.2 Application for the research project

A written application from the university (max. 20 A4 pages excluding annexes) including the following details in the specified order must be submitted by **15 March 2023**:

1. Cover sheet with master data
 - a. University submitting the application
 - b. Application coordinator (name, work address, telephone and email address, web link)
 - c. Description of the project/application title and short title or acronym (max. 30 characters)
 - d. Summary of the research project in layman's terms (max. 280 characters).
 - e. Name of the discipline to which the research project relates (according to DFG subject definitions)
 - f. Financial details: funding requested from the Carl-Zeiss-Stiftung (personnel, material costs and investments), independent contribution by the university
 - g. Funding period requested (start and end date)
2. Abstract
 - a. Clear summary of the research project in German and English (maximum half a DIN A4 page each, together on a separate page).
3. Target setting
 - a. Motivation, scientific goals and scientific innovation potential: What are the (up to four) most important research questions? What is the envisaged 'breakthrough' of the planned research? What are the unique selling points of the project?
 - b. Structural and strategic goals, alignment of the project with the strategic orientation and profile of the university
4. Research status
 - a. Key national and international developments in the relevant research field

- b. Important and/or competing research groups who are active in Germany and abroad in the relevant research field
5. Quality of the project group
 - a. Excellence and international visibility of the scientists and/or groups of researchers who comprise the project group
 - b. Integration of the project group in existing structures
 - c. Description of the planned networking of the project group with external partners (e.g. research organisations or companies)
6. Work programme
 - a. Description of the planned measures/work packages and the (expected) interim goals and/or milestones during the project period, naming the working groups and/or scientists responsible for them.
Please use the milestone plan in Appendix 1 as a supplement.
7. Organisational and management structures
 - a. Description of organisational and management structures within the setting of the project incl. organisational chart, which demonstrates the integration and networking of the application plan in the university structure and, where applicable, with external cooperation partners
 - b. Description of measures for internal quality assurance and project support (e.g. project advisory board)
 - c. Measures for integration and promotion of early-career scientists
 - d. Measures for active promotion of diversity
8. Research data concept
 - a. Concept for handling research data (with regard to data protection, open source, open access, shared databases, reproducibility).
9. Long-term perspectives
 - a. (Specific) measures for continuation
 - b. Added value of the application proposal for the university's strategy and research profile
10. Transfer
 - a. Social relevance of the proposed project
 - b. Economic relevance of the proposed project (e.g. transferability of the research results to practice, practised knowledge and technology transfer between science and business)
11. Financial details
Please exclusively use the finance plan in Annex 2 to provide information on the financial aspect of the project.

Applications received by the Carl-Zeiss-Stiftung after 15 March 2023 cannot be considered.

2.3 Annex to application

Please attach the following documents to your application:

1. Milestone plan in accordance with Annex 1
2. Financing plan in accordance with Annex 2

Please enclose a financing plan with the application as an annex, which should be created as an Excel table using the template and submitted as an xlsx file. The individual cost items should be shown rounded to 1,000 euros. With regard to personnel remuneration, the current DFG personnel average rates should be used as the basis. Expected rate increases during the funding period should be taken into consideration for calculating the requested funding amount.

The following details must be included:

- a. Basic facilities and independent contribution by the university
What basic facilities (personnel, laboratory space, large equipment, etc.) and what independent contribution will be provided by the university at which point in time?
The independent contribution should demonstrate the university's dedication. A prerequisite for funding is an independent contribution of 10 per cent of the requested funding. The independent contribution can take the form of additional staff positions, material resources and similar. Further third-party funds acquired for the requested project are also assigned to the independent contribution. These should be clearly marked as such separately.
 - b. Funding requested
Specification of the requested funding, broken down by personnel, equipment and investment funds, incl. brief justification.
In the event a junior Foundation professorship forms part of the application, details should be provided to indicate at which point the university continues the funding of the Foundation professorship independently from its budget.
 - c. Forwarding of funding
If an application is submitted in cooperation with other organisations, clarification should be provided as to which funds will be forwarded to external partners for which activities.
3. Independent contribution
Separate binding declaration from university management concerning the nature and amount of the independent contribution
 4. Scientists

List of scientists who are involved with details of each scientist including their title, date of birth, institute membership and web links

5. Organisations

List of organisations (institutes and organisations of the university and, where applicable, other involved universities and external organisations) involved in the application project with the associated addresses and web links

6. Cooperation partners

Planned cooperation partners (e.g. other universities, research organisations, companies, museums, etc.) with the associated addresses and web links. If transfer measures are chosen as a structural approach within the meaning of the call for proposals, the willingness of the cooperation partner to participate in the project must be demonstrated in the form of a descriptive LOI.

7. Publication list

List of the most important publications (up to 10) connected to the application proposal and published by the scientists involved in the project group (publications in the last five years)

8. Further proof of qualification

List of up to ten further points relating to proof of qualification (e.g. research prizes, patents, roles, etc.) that distinguish the scientists in the project group

9. CVs

Short overview of the scientific careers of up to 10 key scientists involved in the project in alphabetical order (each comprising a maximum of one A4 page)

10. Third-party funding

List of the ten most important funding measures from third-party funding organisations for the past three years which have a thematic link to the application proposal according to the table template in Annex 3.

These guidelines on submitting applications, including annexes and the call for proposals, can be accessed at <https://www.carl-zeiss-stiftung.de/en/programme/czs-breakthroughs/czs-breakthroughs-artificial-intelligence-ai-in-health>.