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Call for Joint Projects in **Biomedical Engineering**

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Content

Call for Joint Projects in Biomedical Engineering

Overview

The Helmholtz Association invites proposals for joint research projects in Biomedical Engineering, focusing on interdisciplinary innovations that offer accelerated solutions to medical challenges. The scope of the research is defined by the six Helmholtz Bioengineering Flagships (https://www.helmholtz-bioengineering.de/), and includes areas such as human microphysiological systems, diagnostic imaging and novel sensors, smart implants, synthetic biology approaches (gene editing, genetic circuits, protein and tissue engineering, 3D printing, smart cells, delivery vehicles, etc.), and AI- and structure-based drug design, addressing real-world biomedical challenges. All projects are expected to accelerate the transfer of research knowledge into practical solutions & applications, thus supporting Helmholtz's commitment to innovation and establishing crucial capacity and networks for co-creation across the Helmholtz Association and transfer-oriented partners. A total of 9 million euros in funding from the Helmholtz Initiative and Network Fund (IVF) is available for this call.

Objectives

The primary goal of this initiative is to foster new synergies in Biomedical Engineering – a defined cross-cutting topic within Helmholtz – by promoting collaboration among Helmholtz Research Centers and Research Fields while actively engaging with diverse transfer- and application-oriented partners. By accelerating the development of practical solutions, the initiative seeks to drive high-impact innovations and position both Germany and Helmholtz as future leaders in Biomedical Engineering and related entrepreneurial activities.

Project Requirements

Proposals must align with one of the six flagship concepts outlined in the Helmholtz Biomedical Engineering White Paper. Key requirements include:

- Each project must emphasize interdisciplinary innovations aimed at translating research into real-world biomedical solutions or human health related applications, such as toward human disease prevention, diagnosis, or treatment. The future path toward developing groundbreaking technologies, creating a prototype, reaching patentability, or establishing a spin-off should be clearly outlined and defined.

- Each project should be organized as a small to medium-sized consortium united by a central research question, with individual subprojects led by Principal Investigators (PIs). The consortium must include between two and five PIs, with at least two PIs from different Helmholtz Centers to promote cross-center collaboration. For consortia with four or five

PIs, the PIs must represent at least two different Helmholtz Centers and two different research fields to ensure interdisciplinary perspectives and structural impact.

- Each PI's contribution should be equivalent in scope to a 3-year postdoctoral research project. Furthermore, the interactions between subprojects must be clearly defined to ensure a coherent and integrated approach. Joint leadership of subprojects within the consortium is also permitted.

- Funding is primarily intended to support postdoctoral researchers, as training the next generation of Biomedical Engineers is a key objective of this initiative. For each subproject, funding to support one postdoctoral position for up to three years can be requested Postdocs should ideally be recruited externally to attract new talent. If a partner's contribution does not justify a full postdoctoral position, alternative funding requests may be considered if well justified.

- Consortia should bring together all the relevant expertise needed to carry out and execute the project. This may include a diverse range of fields, such as biomedical, clinical and applied research, engineering, data science, and industry experience. Expertise can be contributed by principal investigators (PIs) leading subprojects or through collaboration partners. University collaborators may be funded through a Funding Transfer Agreement.

- The project must develop an innovative biomedical solution with a tangible health impact and a clear path to translation-readiness. The project should involve input from stakeholders such as industry experts, clinical partners, and end-users. Consulting the technology transfer office is strongly recommended and should be documented in the proposal.

- External partnerships in the form of co-creation with industry or other non-academic sectors are strongly encouraged, with the specific roles of these partners clearly defined. Projects with industry partners are particularly advantageous, provided that clearly defined in-kind contributions and/or direct financial support (a condition for industry partnerships) are included.

- Each participating Helmholtz Center must co-fund at least 25% in addition to the budget awarded to each project. The distribution of co-funding should be aligned with the funding allocated to each subproject and can be adapted to specific needs. It may therefore vary over the course of the financial years and between partners. Contributions may take the form of direct costs (e.g. consumables) covered by the center's own resources or direct contributions in kind, such as personnel time or use of infrastructure. Please note that overhead costs are neither funded by the IVF nor eligible as matching contributions. The commitment to co-funding must be documented through a signed letter from the Management Board (German: “Vorstand”) and submitted with the application.

- All projects are expected to run 3 years (from 2026 - 2028).

A dedicated coordination unit will be established to organize and manage networking and outreach activities within the Helmholtz Biomedical Engineering community. This full-time position, based at one of the participating Helmholtz centers, will play a pivotal role in advancing the Helmholtz Biomedical Engineering Initiative. Key responsibilities include maintaining and improving the initiative's web presence, organizing community outreach efforts, and planning a midterm conference in 2027 for funded projects and the broader network. The role will also address emerging community needs, such as establishing new partnerships and identifying opportunities for research commercialization. If a center is interested in hosting this position, it must submit a signed letter from its Management Board (German: "Vorstand") as a separate document, independent of the research proposals. The letter should detail additional activities to strengthen and expand the initiative's impact, as well as a clear strategy for the long-term establishment (German: "Verstetigung") of the position. The letter should also highlight the center's ability to foster a dynamic and collaborative Biomedical Engineering community. The final decision on the hosting center will be made by the review panel.

Eligibility

To be eligible for funding, a joint project proposal must be submitted by a designated lead PI, in agreement with all participating PIs of the project and the respective Helmholtz Management Boards (German: Vorstand) of the participating centers. Each PI must be employed at a Helmholtz center at the time of submission (permanent or temporary contract) and hold a PhD or equivalent qualification. Consortia should include between two and five PIs from at least two different Helmholtz centers. For consortia with four or five PIs, the PIs must additionally come from at least two different research fields. The lead PI will be the main contact with the Helmholtz Head Office and will coordinate within the consortium. Multiple participations (i.e., a PI being involved in more than one project) are allowed. Funds will be disbursed by the lead Helmholtz Centre and then distributed to the consortium partners.

Evaluation criteria

- **Formal Requirements:** Proposals must meet all required elements described in the call documents, including cross-center and cross-research field collaborations, co-funding, postdoctoral support, and alignment with the six flagship concepts.

- **Innovative and Outcome-Driven Goal:** The project should focus on interdisciplinary innovations that address medical challenges, with the goal of translating research into tangible, real-world applications. It must prioritize clear, milestone-driven outcomes, ensuring each stage is achievable and measurable through indicators such as Technology Readiness Level (TRL) advancements or specific performance metrics, creating a clear path to translation-readiness.

- **Scientific Track Record:** PIs must have an outstanding scientific track record, with a strong publication history and a diverse, complementary range of expertise that promises the successful implementation of the project.

- **Preliminary Data, Feasibility, and Work Plan:** The project should present convincing preliminary data that supports its feasibility and potential for success. Additionally, a detailed work plan is required, outlining clear steps, timelines, milestones, and accessible resources to ensure the project's successful implementation.

- **Integrated and Synergistic Subprojects:** Subprojects must be well integrated and mutually reinforcing to achieve the overall objectives. Roles of collaboration partners must be clearly defined.

- **Stakeholder Involvement:** Throughout all project phases, the user perspective, market needs, and value, as well as socio-economic relevance and significance for human health, should be consistently considered. To achieve this, input from stakeholders – including industry, non-academic and clinical partners, and end-users – is expected.

- **External Partnerships and Industry Engagement:** External partnerships, especially with industry, are encouraged and considered advantageous, with clearly defined roles and contributions, including a concise co-creation workplan.

Submission Process

The submission process consists of two stages:

- **Draft Submission:**
  An application, due by 5 May (12am) 2025, must include, in one PDF:
  - ✓ Project draft proposal (see template)
  - ✓ CVs for each PI with up to 10 key publications (3 pages max)
  - ✓ Co-funding approval from participating Helmholtz centers, signed by Management Board (German: Vorstand).
  - ✓ Signed letters of support from collaborators
  - ✓ Declaration of consent regarding data protection, signed by each PI

  As a separate PDF, due by 5 May (12am) 2025
  - ✓ If applicable: Application letter for Coordination Unit, signed by Management Board (German: Vorstand).

- **Full Proposal Submission**: Following a pre-selection by an interdisciplinary panel of international reviewers on the basis of the draft proposals, selected projects will be invited to submit a full proposal by 17 September (12am) 2025, and present their research plans to the panel in October 2025.

Only complete applications will be considered. Draft and Full proposals must be submitted via ProMeta (https://ivf.helmholtz.de/). For further details, please refer to the instructions for proposal submission via ProMeta, which will be published on the Helmholtz website from March 2025.

Notification

Funding decisions will be communicated via email in November 2025, ensuring that funding can commence as early as January 2026. Successful projects will also be announced on the Helmholtz website.

Questions

For further information, please contact Katja Grossmann by email (BioMedicalEngineering@helmholtz.de). Additionally, an online Q&A session (date, time and zoom details will be announced on the Biomedical Engineering Website) will be scheduled to address formal questions about this call.

Annexes

1) Draft proposal template
2) Declaration of consent regarding data protection
3) Data Protection Compulsory Information - GDPR