

# JARA - Prep Fund Projects – thematic call: Preparation of Flagship projects in Simulation and Data Science

## Background

The **Exploratory Research Space @ RWTH Aachen (ERS)** is the central instrument of RWTH to foster interdisciplinary research and to develop emerging fields with the potential to shape the University's research profile. ERS comprises activities which give a leeway for creativity to both senior and junior researchers and which foster interdisciplinary exchange and discussion. As a new project format, ERS **Prep Fund Projects** are introduced, varying in size and duration according to the needs of the specific project; the typical duration of a Prep Fund Project is 6 to 24 months. The criteria of Prep Funds are (i) identification of a gap in an area of high strategic importance for RWTH, (ii) definition of project goals to close this gap, (iii) description of tangible deliverables.

This Prep Fund Call is a call within the framework of the Jülich Aachen Research Alliance and strives to enable the acquirement of large scale collaborative funding in the thematical scope of the JARA Center for Simulation and Data Science (JARA-CSD).

## 1. Description of the research field Simulation and Data Science at JARA-CSD

With the JARA Center for Simulation and Data Science (JARA-CSD), the RWTH Aachen University and the Forschungszentrum Jülich bundle their expertise and resources into a unique and worldwide-recognized competence center with high scientific reputation, to scope with future challenges in simulation and data science.

JARA-CSD consolidates computer- and data-infrastructures, user support as well as methodical and disciplinary research in the fields of simulation, data analysis and HPC technologies. It brings together experts in modeling, simulation, data science, numerical methods, and HPC from many disciplines (mathematics, computer science, engineering, natural sciences and medicine).

Modern computational science is characterized by data-intensive workflows, combining diverse modules for data preprocessing, model-based data analysis and processing, or visualization, all linked through high-volume data streams. JARA-CSD strives to make advances in simulation and data science through integrative approaches that encourage cross-pollination between these fields, and bring the next breakthroughs in computational science and its applications. The results of these efforts are made available, possibly with the help of domain-specific user support, to the wider community. This in turn leads to a much more efficient and effective use of the provided simulation and data infrastructure.

Simulation and data science benefit in a major way from the use of new high-performance computing and data storage systems, in order to produce new knowledge. The combined structure and joint expertise is the basic requirement for such advances; only with such a common broad basis, one can make the best decisions concerning the software and algorithms that are to be developed, optimized, and applied.

Proposals within this Prep Fund Call should focus primarily on the development of simulation and data science methods applicable to multiple application fields.

## 2. Type and aim of projects:

The aim of the JARA Prep Fund Call is to support the acquisition of large external third-party funding in the sense of coordinated programs of the DFG (Research Units, Collaborative Research Centres), EU joint projects or to address known calls for proposals in the future. JARA Prep Funding could be used, for example, to carry out initial preliminary work or to establish new methods. The criterion for success is a promising funding application resulting from the funding.

Projects can also be submitted as International Research Space@RWTH Aachen (IRS) proposals. This entails additional funding for collaboration with international partners, who are expected to contribute to the project through matching funds (except in case of capacity building proposals). IRS proposals should elaborate the specific added value of the international cooperation.

## 3. Selection and evaluation criteria:

The projects will be selected and evaluated by an evaluation group with representatives from RWTH Aachen and Forschungszentrum Jülich. The selection process may involve external experts.

The selection criteria for submitted proposals will be

- Identification and formulation of a research gap in a strategically important area
- Naming of the objective of the Prep Fund project with regard to a preferably specific intended application, including a funding instrument and source
- Preliminary work between the project partners in the mentioned topic area
- Subsidiarity (funding through other sources is not yet possible)
- Qualification of applicant(s),
- Potential impact on the research strategy and structure of JARA,
- Adequateness of research approach,
- Adequateness of research data management plan.

Specifically for IRS:

- Coherent implementation of internationalization in line with [RWTH internationalization strategy](#),
- Adequate matching funds from the partner (except for projects on capacity building),
- Added scientific value of the international cooperation.

### Mandatory half-time workshop for funded projects

Halfway through the funding period (spring 2021), a workshop with presentation of the preliminary results is to be held, to which the JARA Secretary General as well as representatives of the JARA offices will be invited.

Major evaluation criteria after project completion will be the quality of obtained research results and a promising research proposal for collaborative funding described in a final report which has to be provided shortly after end of funding and a follow-up report 18 months after project closure:

- A promising proposed third-party funded collaborative project (DFG, BMBF, EU),
- Publications in peer reviewed journals,
- Granted patents or promising patent applications.

#### 4. Funding

The budget for a Prep Fund Project is provided by the excellence strategy of the German federal and state governments and Forschungszentrum Jülich and amounts to

- 200,000 euros per calendar year in 2020 and 2021 at RWTH Aachen University;
- 200,000 to 400,000 euros in 2020 at Forschungszentrum Jülich and a maximum of 200,000 euros (up to a total funding of 400,000 euros at the Jülich site) in 2021

It is not possible to exchange funds between the sites or to transfer them to subsequent years.

Eligible costs are: Staff expenses, travel and subsistence costs, support for workshops and conferences, hiring students to work on the project, consumables and equipment.

One or two of the proposals submitted will receive funding.

**Please note:** due to the type of funding, in projects with a duration of more than a year funded research staff at RWTH Aachen University needs to have a mandatory teaching assignment (Lehrverpflichtung) (4 hours per week for full time non-permanent staff)

#### 5. General conditions

Research Partners: Applications should be submitted by a consortium of JARA scientists from both partners, if possible under the leadership of one spokesperson per location.

Progress evaluation: Half-time workshop, final report and follow-up report after 18 month

#### 6. Proposal structure and content

Length of proposal: 10 pages **max.**, type size: Arial 11, line spacing: 1.5

- Principle investigator(s)
- Summary
- Description of the identified gap within the research field Simulation and Data Science
- Intended collaborative funding
- Outline how the larger joint flagship project should look like
- Goals and approach (methodology) how to close this gap
- Working plan including deliverables
- Financial plan, structured in expenses per year and site (Aachen and Jülich)
- Expected long term impact, especially on the targeted application fields
- Research data management plan
- References

Language: English or German

**Please note:** Jülich applicants must consult with Dr. Melanie dos Santos Mendes, Corporate Development, Head national and international relations (UE-B), before submitting the application to coordinate the disposition of Jülich funds.

**Please note:** Proposals that do not comply with the formal criteria will be excluded from the reviewing process.

7. **Deadline for submission: 07 July 2020**
8. **Project start: October 2020**
9. **Project duration: up to 15 months (end of 2021)**
10. **Please apply at: <http://portal.ers.rwth-aachen.de>**
11. **Call: JARA Prep Fund 2020**

For additional information on the selection process, please refer to our website:  
<http://www.rwth-aachen.de/ers>