**Centre of Excellence for Resilient Infrastructure Analysis on DAFNI**

Apply for funding to support the Centre of Excellence for Resilient Infrastructure Analysis on the Data and Analytics Facility for National Infrastructure (DAFNI).

This funding is to address grand-challenge problems for infrastructure resilience.

A total fund of £1.4 million is available overall for projects, funded at 80% full economic cost (FEC), for up to 18 months.

Funding streams:

* supporting key models: we advise funds of up to £50,000 and expect to support four to six of projects
* developing a resilience framework: we expect to support one to two projects of up to £200,000
* exploring resilience scenarios: we would anticipate projects of £100,000 to £350,000 and expect to support three to six projects in total

The proposers should specify which funding stream they are applying for and indicate any leveraged resources that are available. The proposers can apply for more than one stream but must complete a separate Joint Electronic Submission system application per submission.

We invite all researchers and other academics from across UK research performing organisations eligible to accept UK Research and Innovation (UKRI) grants to submit proposals for projects to be funded through the Centre of Excellence.

It is expected that you will be active participants in infrastructure research within the following disciplines:

* data sciences (including analytics, visualisation, cloud systems)
* environmental science studies (for example, water, climate, air quality, ecology)
* infrastructure engineering (for example, energy, transport, water, waste management, telecommunications, built environment, urban observatories)

Multidisciplinary studies linking infrastructure with societal impacts (for example, demographics, health, food security, economic development) are also welcome.

Projects can be from a single institution or involve multiple partners.

A total fund of £1.4 million is available overall for projects. We are interested in proposals of the following types:

### 1. Supporting key models

The centre seeks to support research software engineers to maintain and evolve existing models of key importance, exploring and evaluating resilience scenarios.

This would entail:

* enhancing the coverage, quality, and robustness of the model
* packaging, licensing, and documenting the model to maintain its open availability on the DAFNI platform through its future versions
* providing use cases of the model

We advise funds of up to £50,000 (80% FEC) would be sufficient to support a model on the platform within the period of the grant. We expect to support four to six of these projects.

### 2. Developing a resilience framework

The centre will support one or two projects to develop and apply state of the art research in frameworks to evaluate resilience within infrastructure systems engineering, including for example:

* uncertainty quantification
* sensitivity analysis
* redundancy and failover
* cascade effects
* interconnectedness analysis

The projects will provide leadership within the centre in approaches to analysing resilience and recommend tools and approaches which can be adopted within the DAFNI platform. We expect to support one to two projects of up to £200,000 (80% FEC).

### 3. Exploring resilience scenarios

The centre will support projects developing and exploring scenarios in response to a particular short-term or long-term shock, and develop appropriate solutions which demonstrate an aspect of resilience.

Projects should include how to access, use and combine data and computational models to evaluate the impact of shocks, and propose appropriate responses and adaptations to further resist, absorb and recover from the shock event.

Projects should make use of and be made available to stakeholders via the DAFNI platform. Of particular interest are scenarios which can be transferred from one geographic region to another, can be scaled up to a national scale, or explore the interactions between different infrastructure systems and with environmental and societal features in a multidisciplinary approach.

We would anticipate projects of different sizes ranging from £100,000 to £350,000 (80% FEC) and would expect to support three to six projects in total.

The proposers should specify which funding stream they are applying for and indicate any leveraged resources that are available.

Separate Joint Electronic Submission system submissions are required for each submission.

Eligible project costs can include:

* staff time cost and overheads (can be included at 80% of the FEC, using research council FEC models)
* appropriate travel and subsistence to support the activities
* consumables associated with public engagement and wider outreach activities

### What we will not fund

Capital equipment costs (over £10,000) will not be eligible.

Postgraduate studentship costs are not eligible.

Projects should engage with wider stakeholders in academia, government and industry, and proposers should specify how they plan to interact with stakeholders to maximise impact.

STFC will fund 80% FEC.

Projects must start on 1 October 2023 and finish by 31 March 2025.

You must apply using the [Joint Electronic Submission (Je-S) system](https://je-s.rcuk.ac.uk/JeS2WebLoginSite/Login.aspx).

You can find advice on completing your application in:

* the [Je-S handbook](https://je-s.rcuk.ac.uk/Handbook/index.htm)
* [guidance for applicants](https://www.ukri.org/councils/stfc/guidance-for-applicants/)

We recommend you start your application early.

Your host organisation will also be able to provide advice and guidance.

### Submitting your application

Before starting an application, you will need to log in or create an account in Je-S.

All investigators involved in the project need to be registered on Je-S.

Any investigators who do not have a Je-S account must register for one at least seven working days before the opportunity deadline.

When applying:

* select ‘documents’, then ‘new document’
* select ‘call search’
* to find the opportunity, search for: DAFNI – Building a Secure and Resilient World

This will populate:

* council: STFC
* document type: standard proposal
* scheme: standard
* call/type/mode: DAFNI – Building a Secure and Resilient World

Once you have completed your application, make sure you ‘submit document’.

You can save completed details in Je-S at any time and return to continue your application later.

### Deadline

STFC must receive your application by 31 May 2023 at 4:00pm UK time.

You will not be able to apply after this time. Please leave enough time for your proposal to pass through your organisation’s Je-S submission route before this date

You should ensure you are aware of and follow any internal institutional deadlines that may be in place.

### Attachments

Your application must also include the following attachments.

Case for support (eight pages maximum) must include:

* track record of applicants (up to one page per institute, two pages maximum in total)
* description of research (up to two pages) as follows:
  + clearly identify which funding stream (as described above) you wish to apply for
  + if applying to support a key model: a description of the model and its coverage, application to exploring research scenarios in response to shocks to infrastructure; description of proposed enhancements to the model
  + If applying to develop a resilience framework: description of the applied research to be undertaken, describing its applicability to research across different shocks and infrastructure systems, and its practical application within the DAFNI platform
  + if applying to develop and demonstrate a resilience scenario: description of the research to be undertaken, the methods used, its application to exploring research scenarios in response to shocks to infrastructure, and availability of appropriate data and models to be used in the scenario so that it can be delivered within the DAFNI platform and available later for DAFNI users
* a description (up to two pages) of the activities to be undertaken, including an outline Gantt work-plan, timelines, and key outputs and milestones. These will be the activities you will commit to deliver as part of your grant application and any agreement
* a stakeholder engagement plan (up to one page) describing the approach to outreach to wider stakeholders in academia, government, and industry.
* a justification of resources (one page). You should indicate their plan for providing resources to ensure rapid initiation of the project. Overall cost and details of funding requested with a justification. This should include any contributions from third parties. Further, any assumptions about related DAFNI core team time or resources should be clearly stated. The DAFNI core team are available for discussion prior to submitting an application

Additional documents (mandatory):

* a résumé for research and innovation CV of all participants and any project collaborators named in the proposal two pages maximum per CV, merged into one file and uploaded as a single PDF), following [UKRI résumé for research guidance](https://www.ukri.org/apply-for-funding/before-you-apply/resume-for-research-and-innovation-r4ri-guidance/)
* a statement as to how the project plan reflects the [UKRI policy on equity, diversity and inclusion](https://www.ukri.org/what-we-offer/supporting-healthy-research-and-innovation-culture/equality-diversity-and-inclusion/)

All other aspects of the Je-S submission application to be completed, including financial and contact details. For details on font size and margins, please refer to Je-S Help section [Je-S Handbook](https://je-s.rcuk.ac.uk/Handbook/index.htm?#t=pages%2FGuidanceonCompletingaStandardG%2FCaseforSupportandAttachments%2FSTFCspecificrequirements.htm).

### Assessment process

Applications will be reviewed by a review panel drawn from the DAFNI Executive Board, together with coopted experts as needed, and successful applicants notified as soon as possible.

Proposals will be assessed based on the following criteria:

* originality and potential contribution to knowledge, with a focus of the aims of the Building a Secure and Resilience World programme
* research design and methods, including feasibility of work-plan and suitability and sustainability of research within the DAFNI platform
* value for money
* outputs, dissemination and impact to wider stakeholders

### Panel

We will invite experts to collectively review your application against the criteria and rank it alongside other applications after which the panel will make a funding recommendation.

STFC will make the final funding decision.

Find out more about [STFC’s assessment process](https://www.ukri.org/councils/stfc/guidance-for-reviewers/peer-reviews/).

### Timescale

We aim to complete the assessment process within two months of receiving your application.

### Feedback

We will give feedback with the outcome of your application.

### Principles of assessment

UK Research and Innovation (UKRI) supports the San Francisco [declaration on research assessment](https://sfdora.org/read/) and recognises the relationship between research assessment and research integrity.

Find out about the [UKRI principles of assessment and decision making](https://www.ukri.org/publications/ukri-principles-of-assessment-and-decision-making/).