

## **Manufacturing the Future: Investigator- led Research Projects**

**Call type:** Invitation for proposals

**Closing date:** 16:00 on 05 July 2018

**Related themes:** Engineering, Digital Economy, Energy, ICT, Manufacturing the future, Mathematical Sciences, Physical Sciences

### **Summary**

The EPSRC Manufacturing the Future theme invites investigator-led proposals for consideration at a manufacturing-focused prioritisation panel. A standard Manufacturing Panel will be held in each quarter of 2018, (subject to sufficient demand). Proposals for any panel should address key research challenges facing manufacturing in the UK today and in the future. This activity is intended to highlight the theme's long term ambition to increase the number of investigator- led research ideas we support.

The next batching dates are:

- 16:00 on 06 July 2018
- 16:00 on 05 October 2018

**It is strongly recommended that proposals are submitted before the batching dates to ensure there is enough time for the peer-review process to be completed.** Proposals submitted after this date, or those that do not have sufficient reviews in time for the panel, will be assessed by the most appropriate capability theme panel at a later date (i.e. Engineering, ICT, Physical Sciences or Mathematics). The Manufacturing the Future theme has prioritised funding to support investigator-led research projects in manufacturing, with up to £3.2 million per panel available (dependent on demand and quality of proposals). Should there be insufficient demand we reserve the right for proposals to be considered at the most appropriate capability theme panel meeting.

### **Background**

EPSRC's Delivery Plan (<https://epsrc.ukri.org/newsevents/pubs/epsrc-delivery-plan-2016-17-2019-20/>) highlights our commitment to maintaining a programme of long-term, excellent research where the emphasis is on 'bottom-up' investigator-led ideas, including community-generated challenges. We aim for this to comprise around 60% of our total research portfolio, with strategic programmes making up the remaining 40%.

Investigator-led proposals are crucial in maintaining a healthy flow of new ideas and forming a vibrant research community. As such, there is considerable value in achieving a portfolio of research including both strategically-focussed programmes and investigator-led projects. However, the volume of investigator-led proposals addressing fundamental manufacturing research questions has not matched the demand elsewhere in the Theme and across EPSRC as a whole.

This activity is intended to highlight the theme's long term aim to increase the number of investigator-led research ideas we support, as well as stimulating demand in the short term.

EPSRC defines Manufacturing research as the design and development of new and existing manufacturing processes, systems and networks. This call is aimed at people working in these areas or in underpinning research areas.

The vision for the Manufacturing the Future theme is for the research we sponsor to help solve some of the most serious challenges facing the UK today and in the future. Manufacturing makes a major contribution to the UK economy but further investment is required, particularly in high-value and specialist manufacturing, underpinned by the research base. The goal of the theme is to take research from our science and engineering base that addresses the research issues of scaling-up processes and products required for manufacturing impacts.

## Research Visions

The Manufacturing the Future challenge theme draws on capabilities from across the whole engineering and physical sciences research portfolio. We are seeking a balanced portfolio of long-term, speculative research, as well as research where the benefits and manufacturing outcomes are clearly evident.

We would like to encourage investigator-led research proposals from the breadth of the engineering and physical sciences research community that are focused on addressing key challenges in UK manufacturing. These could lead to the following research visions identified by the Manufacturing the Future theme:

**21<sup>st</sup> Century Products** – Century defining products might be 'smart', multi-functional or might enable or enhance our well-being. Unimaginable today, these products may be enabled by new technologies or have advanced materials incorporated into components. Research efforts will generate a suite of flexible tools, enabling the manufacturing process to be integrated in the discovery, design and development of these new products, allowing for rapid prototyping with scale-up capability embedded.

**Digital Manufacturing** - Digital manufacturing optimises the design process, allows for simulation and visualisation of processes and enables fast and responsive control and connectivity of manufacturing systems and supply chains. Intelligent factories and industries will be categorised by automation, personalisation of products and services (including development of the digital technologies and user-interfaces that enable this); transformation of the cyber- physical production system driven, for example, by data from IoT and increased interconnectivity; and cyber security risks to manufacturing.

**Sustainable Industries** - Manufacturing industries will be able to meet the needs of present sectors/customers without compromising the ability of future generations to meet their own manufacturing needs. This depicts a future where

resource usage, resilience and security are transformed and where business models, manufacturing processes and product value/ownership are redefined.

**New Industrial Systems** – Industrial systems may evolve from being predominantly centralised towards a portfolio that becomes more effective at creating and capturing value at a variety of scales. This vision could be interpreted at different levels. At a tangible level; introduction of alternative machine tools, cellular manufacturing, self-healing tools, systems that self-build. Different models of operation may be alternative supply chains and business models. Finally, mass customisation in consumer products and personalisation of healthcare.

## **Funding available**

Standard Grants are very flexible; applicants may apply for projects ranging from small value, short term grants (e.g. feasibility studies) to longer-term, larger awards (e.g. a multi-institution project), including first grants, networks or workshop funding.

We can accept awards of up to £2 million through this call. If you have an idea for a project of higher value, please speak to one of the EPSRC contacts who will be happy to provide advice on possible funding mechanisms.

The applicant can request funding for anything that is eligible as detailed in the EPSRC funding guide (<https://epsrc.ukri.org/funding/applicationprocess/fundingguide/>).

High-risk/high-return research proposals relating to new concepts or techniques are particularly encouraged.

The proposal must clearly articulate how the research contributes towards the manufacturing visions set out above, including the novelty and innovation of the approach.

We encourage research collaborations with business and the public sector, particularly where they can help research advances and the take-up of results. However a project partner of this nature is not an obligation for this call.

If you want to work with another university, we are happy to receive proposals from two or more organisations that, when taken together, form a coherent project.

New Investigator Awards are also invited for consideration at this one-off panel meeting. See the website for more details on the New Investigator Award scheme (<https://epsrc.ukri.org/funding/applicationprocess/routes/newac/nia/>).

## **Equipment**

For information on support for equipment on research grants please see the EPSRC website (<https://epsrc.ukri.org/research/facilities/equipment/process/researchgrants/>).

## Eligibility

For information on the eligibility of organisations and individuals to receive EPSRC funding, see:

<https://epsrc.ukri.org/funding/howtoapply/fundingguide/eligibility/>

## How to apply

### Submitting application

You should prepare and submit your proposal using the Research Councils' Joint electronic Submission (Je-S) System (<https://je-s.rcuk.ac.uk/>).

When adding a new proposal, you should select: Council 'EPSRC'

Document type 'Standard research'

Scheme 'Standard' (or 'New Investigator Award' if it is to be assessed under the first grant scheme) and under 'Discipline' please select 'Manufacturing'.

Please attach a covering letter to say you are applying under this call as the call is not listed in Je-S. This is due to proposals being considered under standard research procedures.

Guidance on the types of support that may be sought and advice on the completion of the research proposal forms are given on the EPSRC website (<https://epsrc.ukri.org/funding/applicationprocess/fundingguide/>) which should be consulted when preparing all proposals.

### Guidance on writing application

For advice on writing proposals see:

<http://epsrc.ukri.org/funding/howtoapply/preparing/>

Please note that font size 11 is the minimum acceptable and the minimum margin **must** be size 2cm on all sides. For accessibility purposes, a sans-serif font style such as Arial or Helvetica should be used as these are more easily readable to those with visual impairment. For the same reason, type should be justified only on the left hand side

If any attachments exceed the page limit stated, fail to adhere to the specified format or include any documentation that has not been specified your proposal will be returned or rejected.

## Assessment

### Assessment process

Proposals will be considered by the standard process as outlined on the EPSRC website (see <https://epsrc.ukri.org/funding/assessmentprocess/> for more details).

Proposals which are deemed best suited to alternative prioritisation panels will be transferred.

Proposals will be considered at a manufacturing-focussed Prioritisation Panel in accordance with EPSRC assessment procedure for standard research grants.

Should there be insufficient demand we reserve the right for proposals to be considered at the most appropriate capability theme panel meeting. Please note that this assessment procedure takes into account the EPSRC's balancing capability strategy for its research areas. More information on this strategy can be found at <http://epsrc.ukri.org/research/ourportfolio/researchareas/>

## Contacts

We recommend that potential applicants discuss their ideas with EPSRC. If you have any questions about the call, please contact a member of the theme:

For Proposals related to New Industrial Systems, please contact:

- **Dr Rebecca Williams**  
Portfolio Manager – Manufacturing the Future (01793 44 4106);  
[rebecca.williams@epsrc.ac.uk](mailto:rebecca.williams@epsrc.ac.uk)

For Proposals related to Digital Manufacturing:

- **Dr Tracy Hanlon**  
Senior Portfolio Manager – Manufacturing the Future (01793 44 4514);  
[tracy.hanlon@epsrc.ac.uk](mailto:tracy.hanlon@epsrc.ac.uk)

For Proposals related to Sustainable Industries, please contact:

- **Dr Shyeni Paul**  
Portfolio Manager – Manufacturing the Future (01793 44 4051);  
[shyeni.paul@epsrc.ac.uk](mailto:shyeni.paul@epsrc.ac.uk)

For Proposals related to 21<sup>st</sup> Century Products, please contact:

- **Mr Gerard Davies**  
Portfolio Manager – Manufacturing the Future (01793 44 4233);  
[gerard.davies@epsrc.ac.uk](mailto:gerard.davies@epsrc.ac.uk)

If you have any questions about preparing and submitting your proposal using Je-S, please contact the Je-S helpdesk ([JeSHelp@rcuk.ac.uk](mailto:JeSHelp@rcuk.ac.uk), 01793 444164). Your Research Administration should also be able to offer advice about costing and writing your proposal and the Je-S system.

## Change log

<b>Name</b>	<b>Date</b>	<b>Version</b>	<b>Change</b>
Dr Rebecca Williams	21/09/2016	1	
Dr Rebecca Williams	12/10/2016	1.2	Changed incorrect phone number for Gerard Davies
Ms Rhia Visavadia	10/05/2017	1.3	Change of batching dates and contacts update
Dr Shyeni Paul	26/10/2017	1.4	Change of batching dates and contacts update
Dr Shyeni Paul	04/12/2017	1.5	Change of title and additional information in assessment procedures
Dr Shyeni Paul	06/04/2018	1.6	Change of batching dates