

Quick Reference

Please note that you must read the full Call document for guidance before submitting your expression of interest

Building a Pervasive and Ubiquitous Computing Community

Call type: Expression of interest

Closing date: 16:00 on 14 February 2018

Location: Cardiff

How to apply: Submission of an EOI through the form found at <https://www.epsrc.ac.uk/funding/calls/puccommunityworkshopeoi/>

Assessment Process: Expressions of Interest will be assessed internally

Key Dates:

Activity	Date*
EOI form opens	14:00 10 January 2018
Deadline for submission of an EOI	16:00 14 February 2018
Successful applicants notified	Week commencing 19 February 2018
Workshop	14-15 March 2018

Funding available: EPSRC will be covering the cost of accommodation during the workshop. However, expenses for travel and subsistence incurred by participants will not be covered by EPSRC.

Contacts:

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Related themes: Digital economy, Energy, Engineering, Healthcare technologies, ICT, LWEC, Manufacturing the future

Summary

EPSRC is holding a two-day workshop on Pervasive and Ubiquitous Computing. The workshop will be highly multidisciplinary as well as bringing together those who are developing platforms and standards with researchers deploying and evaluating in real world environments.

Background

In the Balancing Capability exercise, Pervasive and Ubiquitous Computing was selected as an area to grow. While this is likely to happen due the increasing economic and social influence of the Internet of Things and related technologies, we believe that some effort is required at this stage to ensure a balanced portfolio of funded research by the end of the delivery plan period.

Moreover, while we believe this field has a key role to play in contributing to the achievement of our cross-ICT priorities, we think that to achieve the objectives described in the priorities: People at the Heart of ICT, Safe and Secure ICT and Cross-Disciplinarity and Co-Creation a mature community discussion will be required.

For more information about EPSRC's portfolio and strategies, see our website: <https://www.epsrc.ac.uk/research/ourportfolio/>

What is Pervasive and Ubiquitous Computing?

Put broadly, Pervasive and Ubiquitous Computing (PUC) is the fundamental and applied research that aims achieve the integration of computing into any device in any location that interacts with our lives.

Research in this area is necessarily multi-disciplinary and in order to achieve success will draw-on and synthesise ideas at the boundary of numerous other strands of research. This includes:

- Context awareness and affective computing in mobile systems and fundamental research into smart devices.

- Communication and information management between trillions of devices as well as new forms of distributed data handling and processing at scale.
- Research into the software or hardware of devices that have mobility as a unique aspect of their application. This includes the solutions to challenges of building systems on a grand scale such as interoperability, reliability and scalability.
- Research into new forms of interaction with pervasive computer systems and related research into trust, privacy and security. This will require novel computer science and engineering while incorporating research from the social sciences, humanities and law.

The challenges

This field has seen growth in the past few years, however the research proposals funded by EPSRC have not shown collaboration across the full breadth of activities we believe are necessary to achieve the potential transformational benefits. Although there are exceptions critical mass collaborative activities across disciplines are relatively rare and we believe there is an opportunity to identify suitable challenges that will require a joined up approach.

As identified above, there are many domains and activities required to deliver pervasive systems, and yet researchers in established fields, such as software engineering, artificial intelligence technologies, human-computer interactions, data science, cyber security or communications systems are tending to make independent contributions. The rapid and emergent growth in research in this area has perhaps made it difficult to form a broad, cohesive self-identifying community.

Research in PUC offers the chance to solve numerous longstanding societal challenges and research in domains such as digital healthcare, connected and autonomous transport and smart energy networks, and these domains are now supported by a large research portfolio. However, within the ICT disciplines, a challenge remains for researchers to reach out to potential academic and industrial users of their research in order to co-create new solutions at the discipline boundaries that are influenced by underpinning computer science and electronic engineering as well as the application domains.

The Workshop

The workshop will bring together researchers in this area in order to:

- develop as complete an understanding as possible of the current research landscape, followed by identification of the current gaps and the possibilities for strengthening links between fields
- identify opportunities to solve longstanding societal and industrial problems and the associated high reward research opportunities
- identify the significant research challenges across the field of PUC, and the required collaborative cross disciplinary research programmes that will be required to make progress against them

- develop a consensus between EPSRC and the research community on the strategy that needs to be taken to maximise the contribution to our published aims including:
 - an exploration of the People at the Heart of ICT and Safe and Secure ICT priorities and how they apply to PUC

In running this workshop our objectives are:

1. To articulate a clear understanding of the opportunities presented by PUC, and the research challenges that will need to be solved to make the most of these opportunities
2. Development of a statement identifying best practice in line with the ICT theme priorities: People at the Heart of ICT and Safe and Secure ICT
3. Initial gathering of a broad, cohesive community that includes everyone who has a part to play in realising the above two objectives.

Who should attend

We are looking for participants who can contribute to a range of topics across the ICT domain whose research interests include applications to challenges associated with Pervasive and Ubiquitous Computing. Our aim is to bring together as wide a range of expertise as possible. To give examples this will include (but is not limited to):

- Human computer interactions and computer supported cooperative work.
- Software engineering, verification and cyber security, especially applied to distributed systems and processing techniques such as cloud and edge computing
- Data science including large scale distributed data processing and extracting understanding from data
- Radio engineering, communications, networks and signal processing in relation, for example to massive Machine Type Communications
- Computer architectures and hardware and electronic engineering research tackling the challenges associated with large scale distributed systems such as low energy processing, and for future smart devices, sensors and actuators
- Control and systems engineers, who are able to take an overview of these pervasive systems to optimise in the face of uncertainty in components

We will also be looking for participants with connections to application domains, particularly where those challenges require new pervasive solutions. These could include (but again are not limited to):

- Healthcare technologies
- Connected and autonomous transport
- Agriculture technology

- Digital manufacturing
- The performing arts
- Smart energy networks

We are hoping to achieve a balance between delegates from academia as well as from industry or the third sector and therefore users of research are encouraged to apply.

There will be an opportunity for participants to showcase relevant research in a poster session and time set aside for networking and collaboration building.

The output will be a published report which will highlight the research opportunities to the broader community.

Equality, Diversity and Inclusion

The long-term strength of the UK research base depends on harnessing all the available talent and the Research Councils have together developed the ambitious RCUK Equality, Diversity and Inclusion Action Plan.

<https://www.epsrc.ac.uk/links/councils/research-councils-uk-rcuk/diversity-rcuk/>

In line with the RCUK Diversity Principles, EPSRC expects that equality and diversity is embedded at all levels and in all aspects of research practice. We are committed to supporting the research community in the diverse ways a research career can be built with our investments. For information on the RCUK Diversity Principles please see the RCUK website:

<http://www.rcuk.ac.uk/funding/diversity/>

This includes career breaks, support for people with caring responsibilities, flexible working and alternative working patterns. With this in mind support for people with caring responsibilities, access requirements or any other special circumstances will be available. Please see the section below for further details.

Please see our Equality and Diversity webpages for further information:

<https://www.epsrc.ac.uk/funding/equalitydiversity/>

How to apply

Those wishing to attend the workshop should complete the short Expression of Interest (EoI) form that can be found at

<https://www.epsrc.ac.uk/funding/calls/puccommunityworkshopeoi/>

Expressions of interest will need to address the following points:

- A short biography that includes your research interests and includes a description of how your research contributes to Pervasive and Ubiquitous Computing (max. 200 words)
- A statement on what you hope to gain from the meeting and what you think will be the benefit to your research in the long term (max. 200 words)

- Examples of application domains for your research. These need not be limited to industrial sectors or commercial exploitation but could also address other academic disciplines (max. 200 words)
- What other disciplines or knowledge would you need to involve in order to realise your ideas, especially where you think such connections ought to be strengthened across the community as a whole? (max. 200 words)
- A description of any research you would like to highlight in a poster at the workshop (max. 200 words)

Selection Process

This form will be used to select participants based on their ability and willingness to contribute to the discussion as described in their EoI submission. In addition, EPSRC will also be seeking to ensure a balanced representation of organisation, expertise and career stages from both the academic and user communities.

Places are limited and the number of participants from a given organisation may have to be restricted in the event of multiple applications.

EPSRC reserve the right to apply additional selection criteria in the event of the call being so substantially oversubscribed as to be unmanageable as initially planned.

Eligibility

There are no restrictions on eligibility.

Moving forward

Successful applicants will be notified in the week commencing TBC

An application will be considered confirmation of availability on this date and a commitment to attend if selected. Full details of the venue and agenda will be made available to the selected participants.

EPSRC's decision on attendance is final and feedback will not be given to unsuccessful applicants.

Submissions to this call for expressions of interest will not count towards the Repeatedly Unsuccessful Applicants Policy. Further information about the policy can be found at:

<https://www.epsrc.ac.uk/funding/howtoapply/basics/resubpol/rua/>

Funding available

EPSRC will be covering the cost of accommodation during the workshop. However, expenses for travel and subsistence incurred by participants will not be covered by EPSRC.

Support for people with caring responsibilities, access requirements or any other special circumstances

As this is a two-day event we understand that some people with caring responsibilities may be put off from applying. EPSRC is committed to attracting the best potential researchers from diverse populations and therefore:

- Where participation might involve additional care requirements there may be support available.
- Where travelling to the event will require any special requirements likely to incur an additional cost to the attendee there may be support available.

Details will be supplied to successful applicants on request.

Key dates

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*EPSRC aims to adhere to the key dates as published, however there may be exceptions where the sift, prioritisation or interview meeting may have to change due to panel member availability.

Contacts

For general enquiries please contact:

- Matthew Scott – Portfolio Manager, ICT Theme
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- Michael Barclay – Portfolio Manager, ICT Theme
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Change log

Name	Date	Version	Change
Matthew Scott	14 December 2017	1	N/A