

## Call for Papers for AHM2008

Submission Deadline: 15<sup>th</sup> May 2008

### General Information:

The overall theme for this year's UK e-Science AHM is *Crossing Boundaries*. The appointment of Professor Peter Coveney as Programme Chair heralds a new approach and, this year, key papers from the meeting will be published in two back to back editions of [Philosophical Transactions of the Royal Society A](#) in the early part of 2009, with the title "Crossing Boundaries: Computational Science, E-Science and Global E-Infrastructures". There will also be opportunities to present your work and ideas in a 20-minute presentation. Proposers are therefore being asked to submit *abstracts* rather than full papers.

**Important information** on the format for abstracts, full details of the submission process and guidelines for authors is available in *Appendix 1* of this document– *Guidelines for Submission of Abstracts to AHM2008*.

The general format of the meeting will include cross-community symposia (kicked off by invited key speakers) and workshops. The workshops are being championed by Programme Committee members in what are considered to be key areas of e-Science that need to be addressed, rather than by a call for workshops as has been done in the past.

We are therefore calling for abstract submissions for:

**General papers** which are not particularly attached to a workshop

### Workshop papers

Here we provide a general outline document intended only to give a summary. For full descriptions and further information on the workshops please go to the AHM website at: <http://www.allhands.org.uk/2008/programme/workshops.cfm>.

#### Workshop 1: Delivering Grid Services - the role of Central Computing Services

Organisers: Clare Gryce and Jeremy Yates

To ensure the usability and long-term sustainability of institutional Grid-based services, it is essential that support for these services is embedded in the central Computing Services Departments of UK HEI's rather than in academic departments as has happened in many institutions to date. This workshop will aim to bring together all key stakeholders in the vision for a sustainable Grid-services infrastructure including:

- Representatives of Central Computing Services Departments from UK Universities (Systems Administration, Network Services, Research Computing)
- University-based Computational Scientists wishing to use Grid services
- Representatives of standards bodies such as OMII

The one day workshop will include a morning session of *invited talks* from representatives of the stakeholder groups on critical themes to be identified before the meeting which could include e.g. job submission, securely removing network policy barriers, enabling direct addressing of machines and removing network bottlenecks. This will be followed by an afternoon of chaired discussion around the same themes.

Note: This workshop is *not* calling for abstracts and anyone who wishes to *actively* participate, e.g. by giving a talk, should contact Clare Gryce at UCL as soon as possible. The workshop itself will be open to all those attending AHM2008.

Workshop 2: Infrastructure Provision for 'Grids', Infrastructure for Users

Organisers: Andrew Richards, Gillian Sinclair, Katie Weeks, Claire Devereux

This workshop seeks contributions from grid projects involved with, but not limited to, the following types of grid activities in particular where the contributor(s) have experience in engaging with and directly supporting end-users. At least as important, the workshop welcomes submissions from end-users about their research done on distributed resources as well as representatives of user communities who have direct experience of support requirements for operating in a distributed grid environment.

Topic Areas:

- Grid Support Centres
- User Outreach, Training and Documentation.
- Portals, User Applications
- End user experiences of Grid Computing
- Subject specific requirements from the research community
- Experiences of non-traditional Grid users
- Grid computing vs. local resources - issues
- Problem of recruiting users to grid initiatives
- Campus Grid initiatives

Workshop 3: Software Development for Scientific Applications: current and future perspectives

Organisers: James Annett, Bruce Beckles, Chris Greenough, Neil Chue Hong, Peter Kilpatrick, Stan Scott

The workshop aims to foster a symbiotic relationship amongst the computer science, computational science and software engineering communities and enable participants to exchange and debate future trends in software engineering and their application to computational science.

Participants will have practical and/or research experience in:

- developing computational science applications software; and/or
- developing, extending, deploying or using software engineering methodologies and tools.

Members of the Collaborative Computational Projects (CCPs) are particularly encouraged to attend.

This workshop will comprise two parts:

Workshop 3A: Scientific Software development in the UK, the CCP model

Workshop 3B: Reliable and Efficient Computational Science Software in Dynamic Grid Environments

Workshop A will take place in the morning and Workshop B in the afternoon. Participants are encouraged to attend both workshops. There will be a combined round table discussion immediately following Workshop B involving participants from both workshops.

We invite contributions around the following broad themes:

- Reliability – including numerical validation and fault-tolerance.
- Efficiency – including algorithms and load balancing.
- Adaptivity – including changing operational environments and resource variability.
- Software Engineering Tools
- Software Engineering Methodologies – including agile, monumental, distributed, component-based technologies, skeleton systems and structured parallel programming.
- Requirements Engineering
- Usability Engineering
- Community - including community development, community engagement and user driven development.

Workshop 4: Information Assurance for the Grid: Crossing boundaries between stakeholders

Organisers: Ali E. Abdallah, Bruce Beckles and Peter Ryan

The main objective of this workshop is to work towards bridging the gap between the security currently provided by grid applications and the information assurance increasingly demanded by the various stakeholders, by providing a forum for interdisciplinary discussions between the various stakeholders. An essential part of this process is eliciting real world problems from existing and potential stakeholders, evaluating proposed solutions, avoiding costly pitfalls and sharing best practice.

The workshop will take the form of a mini-symposium with one invited keynote talk, presentation sessions and a discussion session. Topics of interest include:

- Eliciting security requirements for grid applications with emphasis on authentication, authorisation, auditing, accounting and availability
- Capturing confidentiality, privacy and anonymity requirements and evaluating mechanisms for their implementations on the grid
- Describing security barriers of interest to other stakeholders and sharing best practice for overcoming them
- Integrating security and usability requirements to achieve appropriate levels of assurance
- Integration of security policies of competing stakeholders
- Use of assurance methods for evaluating specific grid applications
- Software engineering best practice in the development of secure software
- Information risk management and evaluation of security risks for various categories of grid applications
- Handling sensitive data (e.g. medical data) in grid environments
- Legal and regulatory compliance of grid applications across national boundaries
- Provisions for business continuity and disaster recovery
- Assurance requirements for mission/safety critical grid applications
- Assurance requirements for medical and e-Health grid applications
- Security of shared resources in academic environments (e.g. Campus Grids)
- Business cases for grid security
- Security of grid Web Services

Workshop 5: Frontiers of High Performance and Distributed Computing in Computational Science: Advancing Research Across Scales

Organisers: James Annett, Pete Beckman, Bruce Boghosian, Shantenu Jha

The aim of this workshop is to compile and characterise a range of computational science applications that have successfully exploited distributed and/or massively parallel infrastructure in challenging and novel ways to produce impactful and inspiring domain-specific results. By showcasing successful applications spanning the scale of networking, computing and data resource requirements, we also hope to highlight the potential of distributed infrastructure and to assess future directions in high performance and distributed scientific applications.

This workshop invites submissions from computational researchers who have successfully utilised distributed and/or high performance infrastructure. Papers on tools and techniques that have been developed for grid-enabling applications are also welcome; contributed papers will be expected to provide an analysis of why distributed resources were required and how the use of distributed resources enabled results that would not have been possible otherwise. Submissions should cover topics that include but are not limited to:

- Case studies of new scientific work made possible by high performance and distributed computing
- Applications that exploit dedicated networks and optical light paths
- Applications utilising novel distributed algorithms
- Applications with challenging deployment and run-time requirements such as cross-grid information services

- Case studies where high-throughput, ensemble computing and/or integrating computational resources from desktop to supercomputing have engendered new scientific insight
- Data-intensive applications
- Novel tools, techniques and infrastructure that assist the development, deployment and execution of distributed applications
- Methods – frameworks, compilers, solvers, algorithms – to facilitate petascale applications
- Programming models for HPC/petascale applications

Workshop 6: Interactive e-Science to Support Creativity and Intuition in Research

Organisers: John Brooke, Steven Kenny, Lakshmi Sastry, Helen Wright

This workshop will bring together end-users and developers with an interest in tools and methods that allow interaction with simulations, workflows and experiments over e-Infrastructure. Previous workshops at the AHM's have looked at the ability to steer and visualize large simulations running on distributed resources. This workshop aims to promote discussion and to develop ideas that will extend the community employing such methods, make the tools easier to use and increase the functionality of the methods.

We invite contributions around (but not limited to) the following themes relevant to interactive e-Science:

- Examples of knowledge discovery arising from interactive e-Science
- Linking data gathering with simulation, e.g. using data derived from clinical or engineering practice to shape simulation.
- Use of visual and haptic methods of understanding and interacting with e-Science applications.
- Steering and interacting with workflows.
- Human computer interface issues, making it easy and comfortable to interact with simulation, workflow or remote experiment.
- Enabling distributed collaboration in extended explorations to explore data or simulation aimed at understanding real world behaviour.
- Methods for coping with latency and failure in interacting with a distributed system.

Workshop 7: HPC Grids of Continental Scope

Organisers: Gavin Pringle and Andrew Richards

The aim of this workshop is to bring together scientists who deploy or employ Grids of High Performance Computers (HPC) to share experiences of their own Grids through open sharing of related issues. It will be of interest to end-users who wish to know what HPC Grids can offer as well as end-users who currently employ HPC Grids who want to share their experiences and provide feedback directly to the service providers. The workshop aims to bring together both service providers and end-users within an environment that permits the free exchange of ideas regarding the issues of running such HPC Grids of Continental Scope.

We invite contributions around (but not limited to) the following themes relevant to this area:

- The provision of fast inter-platform connectivity
- The speed and ease of data movement between platforms
- Robust and transparent middleware
- Presenting the user with an homogeneous access to a heterogeneous environment
- Security and political restrictions
- Interoperability of HPC Grids

Workshop 8: Computational Biomedicine: e-Science from Molecules to Man

Organisers: Richard Baldock, Peter Kohl, Catherine Gale and Paul Kellam

The goal of this workshop is to act as a focus for UK computational biomedicine, to bring together research scientists from the essential disciplines in order to discuss and deliver the collaborative structures, data-management and computational resources required. The track will be organised as a series of plenary lectures, submitted papers and discussion sessions, including designated cross-over talks with other tracks of the conference. The sequence will flow from the small to the large scale - from molecule to Man.

We invite contributions in the following areas:

- Genomic, molecular and cellular level modelling of pathways, interactions and cellular behaviour
- Tissue and organ-level response, physiology, data standards, infrastructures and visualisation
- Whole organism analysis and link through to population, clinical studies and trials

Workshop 9: The Global Data Centric View

Organiser: Jeremy Frey

Further information on this workshop will be available shortly. We are seeking submissions contributing to the consistent or integrated treatment of data derived from laboratory processes, computational simulations, analyses, legacy systems and human annotation and that address one or more of the following:

- Distributed Data Acquisition
- Data Management, Migration and Curation
- Data Models
- Data Flows
- Data Translation, Normalization and Integration
- Data Representations
- Data Evaluation
- Metadata and annotation

Workshop 10: e-Science in the Arts and Humanities: Early Experiments and Systematic Investigations

Organisers: Sheila Anderson, Lorna Hughes, Tobias Blanke, Stuart Dunn

This workshop, led by the Arts & Humanities e-Science Support Centre (AHeSSC – [www.ahessc.ac.uk](http://www.ahessc.ac.uk)), aims to stimulate discussion around the creative and research uses of e-Science tools and methods (so-called grid technologies, and technologies integrated with them such as data-mining, simulation and visualization) in the arts and humanities within the UK. The workshop will focus on how the take-up of e-Science is developing new areas of research in the arts and humanities community, including the performing arts and humanities research.

The workshop aims to elicit expert critical opinion on the usage and applicability of e-Science in the arts and humanities. Previous arts and humanities workshops at the AHM's have looked at specific topics, in 2006 at the Arts and Humanities e-Science Scoping Study (<http://www.ahessc.ac.uk/scoping-study>), in 2007 at the implications of e-Science for textual analysis in academia and industry (<http://www.dlib.org/dlib/january08/dunn/01dunn.html>). This year we would like to summarize all existing activities and prepare an agenda for the future of e-Science and e-Infrastructures in the Arts and Humanities. With the workshop, we would like to promote discussion and to develop ideas that will extend the community employing e-Science methods in the Arts and Humanities. We welcome anybody interested in this agenda, researchers, tools developers, and anybody interested in arts and humanities e-Science.

We will invite contributions around (but not limited to) the following themes relevant to arts and humanities e-Science

- advanced arts and humanities research infrastructure scenarios
- advanced collaboration scenarios for geographically distributed collaborative research
- advanced arts and humanities data management and storage
- text and media integration, interoperability
- advanced computational modeling
- knowledge management in the arts and humanities including ontology development
- advanced discovery and analysis methods for arts and humanities data: text-mining, visualization, etc.
- use of e-Science tools and methodologies in practice-led research
- user interface design supporting advanced arts and humanities e-Research
- e-Science education and training for arts and humanities researchers
- legal and ethical issues: open access initiatives
- impact of e-Science on the research life cycle in arts and humanities – potential for developing workflows to support arts and humanities research

*Workshop 11: Profiling UK e-Research: Mapping Communities and Measuring Impacts*

Organisers: Rob Procter, Alex Voss and Peter Halfpenny

The main objective of this workshop is to bring together members of the e-Research, innovation studies and science policy communities to explore the challenge of measuring the impact of research innovations and its implications for science policy.

Researchers from a range of disciplines have accumulated a stock of knowledge that can be brought to bear on this challenge and we invite contributions that will help to operationalise this knowledge.

The workshop will consist of a small number of invited talks, presentations and a discussion session.

As e-Research technologies and methods mature, we need to consider how they become a core part of scientific practice if they are to fulfil their potential. In order to achieve this aim, we need to understand the mechanisms which influence adoption and appropriation. We also need to be able to gather reliable evidence of uptake, measure impact on research practice and wider society, evaluate programmes intended to facilitate research innovation and create an evidence-base for future science policy-making.

Evaluating the impact of research is difficult. New findings and methods take time to enter the public domain and their significance may only become clear much later. This limits the capacity of metrics, such as citations, to document scientific impact within relatively short timescales. Similarly, evaluating wider impact of research programmes on, for example, industry, the economy and competitiveness is fraught with difficulties. There are also fundamental questions that need to be addressed concerning what kinds of impact should be included.

Comparisons of different science policies and national contexts can help understand more about the interplay between different factors in the research innovation process and thus increase the capacity to shape the future direction of e-Research investments and ways to make e Research sustainable in the long term.

We invite contributions on the following topics:

- Mapping e-Research: projects, disciplines, structure, processes, outputs
- Case studies of impact
- Types of impact and their metrics

- Data collection, including qualitative and quantitative
- Data analysis, including impact models, methodologies and tools
- Theories and models of innovation
- Science policy evaluation
- Lessons from international comparisons and past innovation programmes

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**Enquiries:** Please address any enquiries about abstract submission to [admin@allhands.org.uk](mailto:admin@allhands.org.uk)

## Appendix 1: Guidelines for Submission of Abstracts to AHM2008

### General Information:

This year, key papers from the meeting will be published in two back to back editions of *Philosophical Transactions of the Royal Society A* in the early part of 2009, with the title "Crossing Boundaries: Computational Science, E-Science and Global E-Infrastructures". There will be *no other proceedings* produced. There will also be an opportunity to present your work and ideas as a 20-minute presentation at AHM2008. As there are a limited number of slots for presentations, there will be a selection process.

- Proposers are therefore being asked to submit *abstracts* (see definition below) rather than full papers.
- You can select whether you want your abstract to be considered for inclusion in Phil. Trans A or not. If accepted for inclusion you will need to produce a paper which goes through a further refereeing process. (See below.)
- You can select whether you are submitting your abstract as part of a workshop or not.
- Submitted abstracts will be selected for inclusion in AHM2008 by the [AHM2008 Programme Committee](#) for:
  - a) Inclusion in Phil Trans A *or*
  - b) Inclusion as presentations *or*
  - c) Inclusion as posters *or*
  - d) Not suitable for inclusion.

Talks and posters will appear in electronic format on the conference web pages.

- Submission of abstracts will be on-line at <http://www.allhands.org.uk> and the completed documents (including diagrams etc) must be received by **15 May 2008**.

### Critical Dates for Publication:

15 May 2008 Deadline for abstract submission  
mid Jun 2008 Decisions to authors

*And for those abstracts selected to become papers in Phil Trans A:*

1 Sep 2008 Deadline for receipt of final papers  
13 Oct 2008 Refereeing complete  
8 Dec 2008 Deadline for revisions  
16 Jan 2009 Deadline for 'submission' ready papers

### Format:

- The submission should be **no more than 1 A4 page of text** or up to two pages if it includes diagrams, tables and references, with the extra space devoted to these and any captions.
- Font size should be no smaller than 10 pt Times New Roman. With 2.5cm margins, one page of A4 text is around **800 words** and this is the **maximum for text**.
- Anyone submitting an abstract for consideration for publication in Phil Trans A should assume that they will need the full page of text to describe their work convincingly.
- All diagrams and tables should be positioned in their proper place in relation to the text, ensuring that the total contribution does not exceed 2 pages.
- As these abstracts will *not* be published in a proceedings, authors are free to choose the layout (columnar, full page) for their document. However the following information *must* be included in the document:
  - Title
  - Author(s) and their institution(s)
  - Where the document is more than 1 page, headers and footers giving the abstract title and 'page x of y' information for easy identification of every page.
- Note that as part of the on-line process you will need to enter a 100 word *summary* of the abstract for inclusion in the conference programme.
- Documents should be submitted in **PDF format only**.

**Enquiries:** Please address any enquiries about abstract submission to [admin@allhands.org.uk](mailto:admin@allhands.org.uk)