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AHM2007

Monday 10th September to Thursday 13th September at the East Midlands Conference Centre, Nottingham. Call for Workshops Announced (page 6) www.allhands.org.uk

ISSGC'07 Announced

5th International Summer School on Grid Computing

The next annual International Summer School on Grid Computing will take place in Sweden, at the Röda Korset Centre in Mariefred from 8 to 20 July 2007. Further information will be in the next newsletter.

UK e-Science Stand at SC06

This November in Tampa, Florida, the UK e-Science Programme took advantage of SC06 to demonstrate its successes across a range of application areas, with a variety of informative and discussion provoking sessions. SC06 or "Super Computing" is the premier international conference for High-Performance and Grid Computing.

Ten continuous demonstrations, presentations and panel discussions took place at the stand. This year over 900 visitors registered their names at our stand, which illustrates the potential for dissemination of UK e-Science projects at this event. The demonstrations on the stand were grouped into four themes; Exploring the Universe (Particle Physics and Astronomy), Exploring Our World (Climate Science, Social Science and BioInformatics), Collaborative Software Infrastructures (OMII-UK and E-Minerals) and Collaborative Organisations (Security Services, Virtual Organisations and Interactive Visualisation)

Malcolm Atkinson, the UK e Science envoy, presented an *Overview of the UK e-Science Programme's many successes and future opportunities*. The UK Programme has funded advanced computing infrastructure and research across all research disciplines. Other talks on the first day included Roger Jones, from CERN presenting on *Applications for Particle Physics on the LCG/EGEE*. Peter Coveney talked about *The Application Hosting Environment (AHE)* which provides the scientist with application specific services to utilise grid resources in a quick, transparent manner with the scientific objective as the main driver of the activity. Two Panel discussions in the afternoon looked at *Licensing Software for Grid Environments and Standards driven interoperability for Job Submission*.

A showing of the BBC Documentary, 'Meltdown', hosted by explorer Paul Rose was well received. Produced by the BBC and The Open University, it presents some of the current research in climate change and global warming. This is done by excursions into the past climate of earth, showing its impact on human settlements, and an overview of current understanding of climate change. Carl Christensen and David Anderson looked at *Volunteer Computing for Scientists: and GridPP/EGEE Operations* was presented by Gidon Moont (CERN) and followed by Dave Colling, (GridPP) on *Running and Monitoring a Production Grid*. James Casey also talked about *Building the LHC Computing Grid Service*. On the final day Steven Newhouse from OMII-UK looked at *User focused software development for the UK e Science Community* and Martin Dove at the *eMinerals Project*.

<http://www.supercomputing.org>



e-Science: (Re-)Organise to Research

by Malcolm Atkinson, e-Science Envoy

The lively environment of the IEEE 2nd International Conference on e-Science in Amsterdam (4-6 December 2006) has stimulated two thoughts: the immense ambition of e-Scientists to gain new insights by integrating data and models and a need to change our institutions and ways of working to achieve those goals.

The ambition was evident in many stimulating talks. Peter Hunter, from the University of Auckland, New Zealand who leads the International Union of Physiological Sciences' physiome project, described the project's vision which anticipated "complete" models of every human organ. Their development is underway, and the integrative biology of the heart, which is perhaps the most advanced, highlights the challenges of linking understanding from genes through proteomics to tissue, organs and the whole body. Data from models have to be combined with MRI scans, histology data, and so on – an ever growing diversity and volume of data. UK e-Science figures prominently here.

Ed Seidel, (pictured to the right) from Louisiana State University, and Ladislav Hluchý, from the Institute of Informatics in Slovakia, both faced the challenge of violent weather prediction. Ed Seidel's challenge, in a consortium modelling the coastal regions at the south of the USA, is to couple models, such as the computation of a hurricane's path, the storm surge, wave formation and the interaction between these and coastal areas, waterways and settlements. Ladislav Hluchý's challenge is to combine the models and communities observing the Danube, which crosses more than half of Europe, to predict flash floods and their impact. In both cases, it is vital to explore ensembles of computations to explore the options about what might happen and to steer the computations by using information about what is happening using satellite data, sensor data and human knowledge. We have yet to create general methods of combining observation and data in real time.



Jef Huisman, from the University of Amsterdam introduced us to families of plankton species, taught us to understand how some sink and some swim, and so how turbulence affected their nutrition and populations. Via partial differential equations and computations he showed how to predict and avoid toxic Cyanobacteria blooms by increasing turbulence artificially in a local swimming lake. He then demonstrated the vulnerability to global warming of the phytoplankton biopump which absorbs 16 Gigatons of carbon per year. The same computational models were validated by field, or rather ocean, observations. Again, progress required better coupling between models and real data – satellite observations and ocean sensors.

In the UK we enter energetically into many e-Science challenges: modelling fires in buildings, detecting and modelling local pollution to provide traffic management, modelling human behaviour over decades in real cities, collating all the available information about the brain, modelling the steps in reducing gate sizes on digital chips, understanding new materials and modelling coastal ocean mechanisms.

Carl Kesselman identified these challenges as system-level research – attempting to understand multiple aspects of complex systems. Their complexity demands larger and more diverse research teams. Invariably we see new requirements to combine data and models that were once in a sub-discipline silo or developed by a local group. The infrastructure is changing to enable more and more deployment of sensors and satellites, faster data movement, ubiquitous access and millions of computers. It provides the foundations for wider and more effective global and multi-disciplinary collaboration and rapid advances in e-Science. We have to rethink our research culture to move adroitly in these interdisciplinary, international collaborations.

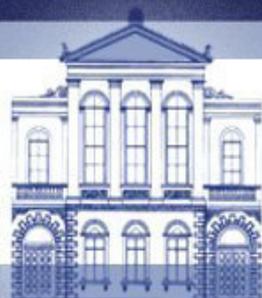
But are we ready to change? Are we changing our universities so that they nurture inter-disciplinary thinking? As the President's Information Technology Advisory Committee advised the US President "Universities must significantly change organisational structures: multi-disciplinary and collaborative research is critical." Or do we retain a habit of thinking good citizens and good research are "pure", undistracted by working across discipline boundaries? Do we allow time to understand enough the challenge in another discipline? Do we take care not to be biased against the interdisciplinary work in our reviewing and promotions? Universities have the great asset of housing many disciplines; do they exploit that asset well? We saw a burst of success when the e-Science
(continued over page...)



(continued from previous page) pilot-project funding provided incentives. Will the UK research community nurture that nascent collaborative culture? Perhaps this is hardest for the computer science researchers, who, like chips, go with everything.

Can we help the next generation of researchers? Are we developing graduates equipped to work collaboratively in multi-disciplinary teams? The biggest challenge facing UK e-Science today is how quickly we can change ourselves, our institutions and our curricula.

Conference and Proceedings: <http://www.escience-meeting.org/eScience2006>.
This year 300 participants from 50 countries, 9 invited speakers, 6 tracks with 44 sessions presenting approximately 160 papers (40% of submissions)



eSI Announcement: New themes to be run in 2007



The e-Science Institute is pleased to announce the outcome of its recent call for Theme proposals. At its 20 November 2007 meeting, the Science Advisory Board recommended that the Institute should support three submissions. These are:

Theme 4: Spatial Semantics for Automating Geographic Information (GI) Processes
to be led by Dr Femke Reitsma (School of Geosciences, University of Edinburgh) and Prof. Werner Kuhn (Institute of Geoinformatics, University of Münster) with Dr Alia Abdelmoty (School of Computer Science, Cardiff University) which will commence in January 2007.

“Up to 80% of information is spatially referenced in some way, yet that information is often unusable without expert interpretation. This theme aims to formalise the semantics of geographical data, to improve data integration, support automated reasoning, and enable cross-disciplinary scientific computing.”

Theme 5: Distributed Programming Abstractions: What are the Challenges for Distributed High-Performance Applications?

to be led by Dr Shantenu Jha (Centre for Computation and Technology, Louisiana State University) with Prof. Peter Coveney (Department of Chemistry, University College London) and Prof Gabrielle Allen (Centre for Computation and Technology, Louisiana State University) to commence in March 2007.

“Computing infrastructure is changing ever more rapidly, yet scientists still use the same programming methods for distributed computing that they are accustomed to using on isolated machines. How should scientific programming change to fit the new world of distributed computing?”

Theme 6: e-Science in the Arts and Humanities

To be led by Lorna Hughes, Sheila Anderson, Tobias Blanke and Dr Stuart Dunn (all at the Arts and Humanities E-Science Support Centre, King's College London) and commencing in April 2007.

“The arts and humanities have substantial commonalities with e-Science, from highly dispersed content, to deep data and text mining, and to visualisation and simulation. This theme will show how e-Infrastructure can support innovative research in the arts and humanities, expanding its use beyond the early adopters.”

Further information on the themes and opportunities for becoming involved will appear on the eSI website as the themes develop.

Further information on these and other eSI themes is available at:
<http://www.nesc.ac.uk/esi/themes/index.htm>

To propose a theme or if you have any questions, please contact Anna Kenway by email anna@nesc.ac.uk or +44 (0)131 650 9818

This month's article

Following on from last month, we are including some in-depth articles surrounding issues raised by e-Science Institute or National e-Science Centre Events or issues relevant to the e-Science Community. This month the following article relates to the e-Science Institute workshop "Re-Use or Re-Invention: A Roadmap for Data Integration" that was held here on the 27th and 28th November.

Making the Impossible Difficult

Medical and biological research is generating ever-increasing amounts of data. How can we make sense of it all, and use it to improve healthcare? That's the challenge that the e-Science Institute workshop "Re-Use or Re-Invention: A Roadmap for Data Integration" aimed to meet. Held on the 27th and 28th of November, the workshop brought together e-Science researchers, clinicians and legal experts to consider the issues surrounding data integration in medicine and biology generally, and in mental health research in particular.

Working with very large data sets can lead to substantial medical advances, as David Porteus made clear in his presentation about the Generation Scotland project, an ambitious scheme to chart the family and medical histories of 50,000 volunteers. Looking at a large number of family groups offers a far greater prospect of pinning down the genetic factors behind illness than can be achieved by random sampling methods, and raises the possibility of developing medicines specially tailored to the specific effects of the genes in question. This is a massive data integration task, but the successes of smaller-scale projects give some indication of the benefits that it could bring. One such success has been the study of schizophrenia. Indeed, this eSI workshop was subtitled "Schizophrenia as a test case", and many of the presentations dealt with the achievements and the remaining challenges in understanding the causes of this serious illness. Researchers from the NeuroGrid project are building on the Edinburgh High Risk Study, which followed 162 people who had been identified as at risk of developing schizophrenia, taking brain scans and other medical data from them at intervals over a nine year period. As a result of this study, researchers for the first time have high quality data on schizophrenic patients from before they developed their illness. This allows them to identify new tell-tale signs that could predict the onset of schizophrenia with unprecedented accuracy. Stephen Lawrie explained that it is surprisingly common for people to show psychotic symptoms at some point in their lives, but only around 25% of those who do so go on to develop schizophrenia. With the new medical data set from the Edinburgh High Risk Study, it became possible to predict schizophrenia with around 80% accuracy. This is a significant advance, and Lawrie used to think that brain imaging alone was the key to understanding mental illness – but he has now become convinced that e-Science has a major role to play. The e-Science aspect of this work is that data, such as brain images, is taken over a long period of time, in many different places, with a wide range of equipment. Researchers need to bring as much of this data together as they can, into the largest possible data set. This will allow more precise statistical analysis in general, and is particularly important in the case of schizophrenia, which can be accompanied by atrophy in diverse areas of the brain. The more varied the symptoms, the more need there is to have data on many different cases.

Data harmonisation of brain scans presents particular problems. Each imaging machine introduces its own characteristic distortions into the image, which can vary over time, and each operator will take images in a slightly different way. All of these must be understood and corrected for before images can be reliably compared. The Edinburgh High Risk Study itself inadvertently became a test-bed for image harmonisation, as it had to switch to a different scanning machine part-way through the project.

Beyond data harmonisation lies ontology, the construction of a formal representation of the knowledge structures in a given field. Probably the most significant achievement of this workshop was the progress that was made in defining such an ontology for the study of schizophrenia. A wide-ranging discussion of these issues was begun by Maryanne Martone, who presented the work being undertaken by the Biomedical Informatics Research Network (BIRN) to establish ontologies for biological and medical research. This is a vital tool for enabling researchers to fully exploit the myriad data sets that now exist. The sheer quantity of data has outgrown the ability of a lone researcher to assimilate and understand it all: it is now essential to automate this process as much as possible. The big problem comes in trying to fit the messy realities of biology into a precise logical structure. Most biological data doesn't fit well into hierarchies. Not only is the data multifaceted, including disease models, genetic sequencing, experimental techniques and a host of other different kinds of information, but the concepts themselves can be fuzzy and difficult to formalise. Even so, it is still worth making the attempt, as even a limited degree of progress can allow researchers to deal effectively with data sets that would otherwise be unmanageable. This has been characterised as "making the impossible difficult". (Continued over page)

(continued from previous page) There is a continuum of formalisms, as Oscar Corcho's presentation on metadata made clear. Full-fledged ontologies are at one end of the spectrum, while BIRNLex, the formal lexicon devised by the BIRN project, is close to the other end. The discussion of this range of possibilities proved valuable to NeuroGrid researchers such as Dominic Job, who came to this workshop hoping to learn how to create an ontology for their research in schizophrenia and other forms of psychosis. A consensus developed that NeuroGrid would be best served by a conceptual approach based on the well-established formal language of clinical psychology. Psychiatry is not amenable to the stricter logical formality of computer science, and the best strategy is to build on the existing DSM-IV terminology that is agreed upon by virtually everyone working in the field.

The hardest problems of all in dealing with clinical data are ethical, social and legal. Patients have to be confident that their medical records will be anonymised, and their personal details kept strictly confidential. Generation Scotland have put some effort into considering a variety of worst-case scenarios, when safeguards break down and people break the rules with the best of intentions, and Rena Gentz presented a few of these for consideration at the workshop. The ensuing discussions made clear the need for strict guidelines on access to data, separating patients' personal details from the medical records used in research, and understanding the extent and the limits of legal liability in scientific research. In this field, security becomes an ethical issue: researchers have a duty to keep patients' information confidential. Richard Sinnott emphasised the need for user-friendly security systems that less technically-minded people can use effectively. Security protocols dreamed up by lawyers and IT professionals can fail disastrously in the real world unless users are involved in designing systems that are compatible with their working practices – hard-pressed clinicians are unlikely to follow unwieldy security protocols, and the resources available for technical support in the health sector will always be limited by the need to concentrate resources on healthcare itself. This wide-ranging workshop generated considerable discussion, and resulted in a real advance in the effort to create an ontology for the study of mental health. The tools that are being developed now for the specific study of schizophrenia may help to achieve the integration of data and the formalisation of scientific analysis across wide areas of medicine and biology. That project still faces great difficulties, but the formal representation of an acorn must surely include its potential to grow into a mighty oak.

More details of the workshop, including presentation slides, are available at <http://www.nesc.ac.uk/esi/events/709/>

by Dr Iain Coleman, Science Writer, National e-Science Centre

Realising and Coordinating e-Research Endeavours Workshop

Why not attend the next Workshop which will be held in association with the eSI Thematic Programme: Adoption of e-Research Technologies and organised by Alexander Voss on the 14 March -15 March 2007 at the e-Science Institute, 15 South College Street, Edinburgh?

The workshop will be part of an effort to compile a report on strategies and guidelines for realising e-Research infrastructures. We will discuss the following questions:

- How do you encourage and manage research collaboration in e-Research?
- How do you manage e-Research projects and the relationship between the various stakeholders involved?
- How can the relationship between emerging requirements and ongoing technological development be managed?
- What are the appropriate tools and techniques to coordinate scientific endeavour?
- How do we match the facilities of e-Research with particular scientific cultures?
- What are the opportunities and restrictions associated with the commercial development of e-Infrastructures for research?
- How do we promote and support sustainable use of e-Infrastructures for research?

The target audience are people with experience in running e-Research endeavours and an interest in the socio-technical dimensions of such work. If you are interested in taking part in the workshop, we would ask you to upload a **two-page position statement** when you apply online. These position statements will be reviewed by the organisers to ensure highest quality contributions but also with a view to ensuring that the workshop covers a wide enough range of expertise and interests. Attendance will be limited to ca. 30 people and we will assume that attendees will have familiarised themselves with the position statements which will be circulated prior to the workshop.

Please go to the bookings page to apply to attend this meeting. The registration deadline is the 7th of March 2007. Enquiries should be made directly to our Conference Administrator <http://www.esi.ac.uk>

Call for Proposals for Mini Workshops AHM 2007

The Sixth UK e-Science All Hands Meeting (AHM 2007) will be held from 10th-13th September 2007 at the East Midlands Conference Centre in Nottingham.

Proposals for mini-workshops are now invited. These are sessions focused on a particular topic that are organised by individuals to bring together a number of presenters in a panel or mini-symposium format. These sessions will be scheduled in parallel with other conference sessions, but with the expectation that individuals will not move between sessions.

A proposal to organise a mini-workshop should be submitted by email to the Chair of the AHM 2007 Programme Committee (see below), and include the following:

- The title of the mini-workshop.
- The name, affiliation, and contact details of the organiser.
- The format of the mini-workshop, e.g., panel or mini-symposium.
- The approximate duration of the mini-workshop. It is expected that workshops at AHM 2007 will last between 75 and 180 minutes.
- An abstract of no more than one page giving the aims of the mini-workshop, the motivation for holding it, and the target audience.
- A mini-workshop chair and a tentative list of speakers/participants should be identified.

Organisers of approved mini-workshops will be responsible for:

- Liaising with the AHM 2007 Organising Committee to ensure their session is appropriately resourced.
- Advertising their mini-workshop and soliciting contributions.
- Refereeing contributions and recommending which should be accepted by the AHM 2007 Programme Committee.

The PC will delegate to mini-workshop organisers responsibility for refereeing submissions in accordance with the conference guidelines. To ensure a uniform high quality of submitted papers the PC will retain overall control of the mini-workshop programme.

The deadline for submission of mini-workshop proposals is 22nd January 2007. Applicants will be notified of acceptance or rejection by 1st February 2007. The workshops will then be publicised on the AHM website, and thereafter mini-workshops featuring contributed papers will follow the schedule for regular conference papers (deadline 16th April 2007).

Mini-workshop papers will appear in the conference proceedings.

Programme Committee: Chair, Professor Jie Xu, University of Leeds (jxu@comp.leeds.ac.uk).
For more information please see the AHM 2007 Website at <http://www.allhands.org.uk>

Apply now for the Edinburgh e-Science MSc/Diploma

Applications are still being accepted for admission to the e-Science MSc/Diploma programme at the University of Edinburgh in 2007/08. This unique degree is taught by staff from the University's School of Physics and Informatics, as well as NeSC and provides students with coverage of the principles underpinning e-Science and Grid computing, as well as practical experience of many of the main technologies used within academic e-Science research and analogous parts of the commercial IT sector.

We expect to be able to provide funding for a number of UK or other EU students, and those seeking financial support are encouraged to apply early. Further details of the programme are found at http://www.ph.ed.ac.uk/postgraduate/degrees/msc_escience.html Informal enquiries by email to the Programme Director, Dr Robert Mann (rgm@roe.ac.uk).



International Review Panel at NeSC

On Thursday 7th December, NeSC was pleased to host the meeting of the full international review panel with a substantial team from EPSRC and many UK colleagues to discuss and demonstrate multidisciplinary research. Lesley Thompson, EPSRC head of research, welcomed the panel, and recounted the history of EPSRC's drive for interdisciplinarity, recounting the experience of the EPSRC life-sciences interface projects. She looked forward to a time when the formation of interdisciplinary alliances appropriate to meet a research challenge would be an automatic and intuitive response of researchers.

Malcolm Atkinson, as e-Science Envoy, presented a quick overview of the achievements of e-Science over the past five years. He noted the predominance of multidisciplinary research, the strong community and the value of organised support for the researchers. The majority of the afternoon was allocated to showing the achievements of many interdisciplinary projects including all of the IRC projects. A rich variety of demonstrations was presented, ranging from the work of Goldsmith's designer, Bill Gaver, who had produced pressure sensitive tables that slowly traversed an aerial photograph of a large city, to the Ultrafast Photonics IRC led by Wilson Sibbett of St Andrew's University. The posters also showed a wide variety of multidisciplinary research. Illustrative examples, were the 3-D time-varying GPS imaging of the polar ionosphere, led by Paul Spencer of the University of Bath, and Transport Information Monitoring Environment, led by Jean Bacon from the University of Cambridge. In total, there were two demos and 24 posters.



The afternoon concluded with a lively discussion on what is significant and essential in the EPSRC's multidisciplinary research - this inverted the usual protocol, the panel asked the audience perceptive questions. A crucial issue, looked at from several angles, was "What is needed for sustainability?" It was a pleasure to see such a strong EPSRC team present, to have such a distinguished panel invest so much time despite their gruelling schedule and to note that the building once again cast its magic spell that stimulates many new conversations at once.

Grid Computing Now! runs its second successful Web seminar.

This seminar focused on 'The business case for next generation IT infrastructure'. Chaired by Dave Berry of the National e-Science Centre, it included speakers Steve Wallage of The 451 Group and Shahid Mohammed of Marsh Ltd. They explained how to make a strong business case, plan the new infrastructure, decide which applications to migrate or replace, and deal with the social issues of change.

Twenty people logged on to listen to the speakers, who gave lively and interesting talks. Several questions were submitted by attendees, creating a worthwhile panel session as Wallage and Mohammed gave their views on where grid stands on Gartner's 'hype' chart, on the sectors most likely to pick up on the technology, and the impact of grid on energy efficiency.

A recording of the Web seminar is available at

<http://brighttalk.com/comm/gridcomputingnow/325a2ebf71-2473-335-2284#>.

It can also be found, along with GCN!'s first Web seminar, at www.gridcomputingnow.org.

Grid computing 'Mappa mundi' unveiled in Florida

Visitors to Supercomputing '06 in Tampa, Florida were the first to see a new interactive map that shows nine of the world's largest computing Grids. The map, developed by researchers from GridPP in the UK and the European particle physics laboratory, CERN, in Geneva, uses Google Earth to pinpoint Grid sites on six continents, showing more than 300 sites overall. Like the medieval 'mappa mundi', which showed what was known of the world at the time, this is one of the first attempts to show the whole scientific Grid world.

Gidon Moont from Imperial College London, developed the interface with Google Earth. It was then adapted by the GIN group.

The file to show Grid sites on Google Earth and instructions on how to install it can be downloaded from:
http://www.gridpp.ac.uk/demos/gin_monitor.html

EDIKT2 – Taking the Grid to other Sciences

Scientists from all disciplines are now creating more and more data than ever from analysis and experiments and hence require more space to store this data and more compute power to analyse it. The EDIKT2 Project aims to help scientists at the University of Edinburgh with this problem and provide them with the infrastructure and support they need. The project team is working with the scientists, using portal technologies as an interface between their current software and the Grid to give them access to the larger data storage facilities that they need. This way there is no need for the installation of new software - the project staff will adapt the interface to suit whatever software scientists are currently using, therefore giving the solution with the minimum of fuss or disruption. The result is that the Project is taking the Grid to other sciences.

The National e-Science Centre has just appointed as Research Leader Jano van Hemert who will co-ordinate NeSC research activity in EDIKT2 and establish continued funding for this project. The Project itself will run from April 2006 until April 2010 and has initial funding through the Scottish Funding Council: <http://www.sfc.ac.uk/>.

NeSC, EPCC and the university computing service are collaborating on the project. working with Research Assistants based within four Departments at the University:

- The University of Edinburgh School of Chemistry: <http://www.chem.ed.ac.uk/>
- The Scottish Centre for Genomic Technology and Informatics: <http://www.gti.ed.ac.uk/>
- Brain Imaging Research Centre For Scotland: <http://www.dcn.ed.ac.uk/bic/>
- The Wellcome Trust Centre for Cell Biology: <http://www.wcb.ed.ac.uk/>

The Project also hopes to make use of the University of Edinburgh's current e-Science MSc students. As part of their final project. they will go into Departments at the University and work with Scientists to make sure they have the technology and software that they want to use and that it works on our systems. This was piloted last year with two MSc students providing support to the MRC Human Genetics Unit at the Western General Hospital.

This Project will result in more research staff being employed at the National e-Science Centre. This ties in with the overarching aim of the National e-Science Centre and e-Science Institute to become a "Research Hub" over the next few years. Bringing in more research expertise in areas such as scientific data exploitation will add to the academic environment where researchers can share ideas and theories and work together in developing e-Science Research. Already as part of the e-Science Institute Programme, three new Theme Leaders will start in the former part of next year, bringing in new areas of research to the Institute. There are also plans for more visitors and PhD students at the Centre over the next year.

If you would like to find out more about EDIKT2 and the work it is planning, or about future workshops to do more details can be found at <https://www.edikt.org/>

Training and Education Events

Collaboration in Education and Training Workshop, 15-16 January, NIEES



The UK e-EduTrain network will be running a workshop in Cambridge in January. It will be open to those who are active, intending to be active or are otherwise committed to establishing cooperation in education and training in the use of e-science technologies in the UK.

Schedule of upcoming courses in the UK

The following events are planned for the near future:

- Introduction to the Application Hosting Environment and the National Grid Service University College, London, 12 - 13 December, 2006
- Integrating Fortran and XML, NIEES Cambridge, 8-10 January 2007

For details and registration for these events see <http://www.nesc.ac.uk/training/events/index.html#mostrecent>

NeSC Presenting around the UK

On the 30th Nov 2006 Richard Sinnott, Technical Director of the National e-Science Centre gave a talk about "An e-Voyage showing Single Sign-on via Shibboleth in Action" at a UCISA Managers Forum Event on Access Management, in Birmingham. http://www.ucisa.ac.uk/events/2006/forum/access_man/Programme. He has also given a Grid security seminar at Royal Holloway on 12th December and an e-Science lecture at Aberdeen on 13th December.

OMII-RAVE Funding Agreed

The OMII RAVE project has recently been agreed for funding. This project looks at OMII extended with the RAVE visualisation middleware. NeSC Glasgow provide the application for this project (nanoCMOS project). The OMII-RAVE bid is itself lead by Cardiff.

Other News

Investing in education and research - Successful bids totalling £5.5m announced

In November JISC announced the successful bids under the first round of funding of its capital programme. Representing an investment of nearly £5.5m, the 27 projects are being funded under the e-learning, e-infrastructure and repositories and preservation strands of the programme. The first call under the programme – which represents a total investment of some £81m over three years – was issued in April of this year in response to which nearly 100 bids were received. A second call is currently issued, totalling around £15m of further funding.

Eleven projects are funded in the repositories and preservation strand of the programme including the national Repository Support Project to be managed by SHERPA at the University of Nottingham and supported by the University of Wales at Aberystwyth, the University of Southampton, UKOLN and the Digital Curation Centre (DCC). The project will provide a free 'one-stop shop' for advice and support to all HE institutions in England and Wales in establishing and developing digital repositories.

Two funded projects in the e-infrastructure strand will build on work already being undertaken by JISC in the area of access management. Led by the University of Manchester and Cardiff University (in partnership with the London School of Economics), the projects will focus on security and identity management.

Thirteen projects funded in the e-learning strand will be those linking with HEFCE's Lifelong Learning Networks which are providing regional progression pathways between further education colleges and higher education institutions as a means of widening participation.

Other activities funded through the capital programme for which expenditure is now committed include: SuperJANET5, the upgrade to the JANET network (£27.6m); enhancements to the national e-infrastructure, including enhancements in the areas of access management, the National Grid Service and text mining (£3.6m); the interim repository service PROSPERO (£0.5m), and collaborative activities with the Higher Education Academy in the area of e-learning (£2m).

A separate call under the digitisation strand of the programme was issued in April and the successful projects under this £5.5m strand will be announced in due course.

Study of User Priorities for e-Infrastructure for Research

EPSRC and JISC are funding a project - Study of User Priorities for e-Infrastructure for Research (SUPER) - to discover short-term issues that can be addressed within current funding streams, and the infrastructures that are needed in the medium-term supported by new funding streams, to provide an order of magnitude increase in the use of the UK's e-Infrastructure.

The project will provide a set of preliminary findings for public comment in late January 2007 and a workshop in the late Spring to disseminate the report's conclusions to the wider community. Input for this report is being undertaken through a series of face-to-face meetings and an on-line survey <http://www.zoomerang.com/recipient/survey-intro.zgi?p=WEB225QB3ZXVKW>.

The responses from the survey will be used to determine the final set of face-to-face visits. Please take the time to provide your views - even if you have never used or are new to the world of e-Science - we value input from everyone! One respondent, selected randomly, will **win an iPod shuffle!**

AGCS Survey

The AGCS is undertaking a survey to assess their performance, the state of the Access Grid in the UK and to get your input into what they do. The survey's focus is on quality, usability and manageability.

<http://survey.manchester.ac.uk/accessgrid/index.php?sid=1>

But don't just fill in the survey yourself - please encourage other users at your institution to fill it in. The more people who respond, the more useful the data. The survey will be open until the end of the year. Please visit the web site at <http://www.jisc.ac.uk/>

2007 Digital Preservation Award

Are you completing an exceptional digital preservation project? If so, why not apply for the Digital Preservation Award, worth £5000. Entries are still being accepted for the third Digital Preservation Award. The deadline for applications is 31 March 2007. Further information: http://www.conservationsawards.org.uk/index.php?option=com_frontpage&Itemid=1

Forthcoming External Events

Details of important events happening in the UK and Internationally

1st Biomed Grid School Announced

14 – 19th May 2007 in Varenna, Italy (near Milan). Bioinfogrid, EMBRACE, EBI and ICEAGE are involved in organising this School.

<http://www.bioinfogrid.eu/course/biomedgrid2007>

Call for HPDC 2007 Workshop Proposals

The HPDC 2007 Workshop Chair and the HPDC Organising Committee invite proposals for the workshop programme of the 16th International Conference on High Performance Distributed Computing. The workshops will be held on June 25th and 26th in Monterey California, prior to the main HPDC 2007 conference.

Workshops provide a forum for discussion among researchers and practitioners of areas of special interest within High Performance Distributed Computing. To foster interaction, the workshops are limited to 30-50 participants.

For details on how to submit a workshop proposal, see: <http://www.isi.edu/hpdc2007/workshops.htm>

Introduction to the Application Hosting Environment and the National Grid Service

University College London, 12 - 13 December, 2006

The Application Hosting Environment (AHE) is designed to provide the scientist with a simple, lightweight mechanism for launching and monitoring scientific applications, such as NAMD, LB3D, LAMMPS, Gromacs, GAUSSIAN, CASTEP and VASP, running on remote grid resources, including those provided by the UK National Grid Service. This course will provide the attendee with practical experience of deploying and hosting scientific applications on the NGS, and sharing an application with a community of users via the AHE.

This course is aimed at researchers wanting to understand the NGS and the AHE, and wanting to expose and run applications on the grid. For more information visit: <http://agenda.cern.ch/fullAgenda.php?ida=a063496>

GPC 2007

The Second International Conference on Grid and Pervasive Computing takes place in Paris, France, May 2-4, 2007.

HPCS 2007

HPCS 2007 is being co-sponsored by WestGrid this year and is Canada's pre-eminent forum for HPC and HPC technologies.

This conference is attended by Canadian and international HPC experts renowned in computer science; engineering; mathematics; and the natural, health and social sciences. Its focus is on new and exciting scientific and technical work involving HPC technologies.

We encourage members of the UK science and HPC community to join us for this event. If you require any more information, please visit the HPCS 2007 website: <http://www.westgrid.ca/hpcs2007>

HPCS 2007 is accepting papers until December 15, 2006. Contributions are invited in any discipline involving HPC and its applications. Submitted papers will be peer reviewed and successful papers will be accepted for either oral presentation in one of the symposia or as a poster. Student participation is strongly encouraged.

German e-Science Conference 2007

The "German e-Science Conference 2007" (GES2007) is the first event to demonstrate the results from four e-Science areas: Grid computing, knowledge networking, e-Learning and open access. The conference will be the forum for the partners of the German e-Science community to present their results by talks, by posters and by demos, for the international e-Science community to get an overview of the progress of e-Science in Germany and for potential new users of the German e-Science infrastructure to meet the experts in the field of e-Science.

The GES2007 will be held from 2nd-4th of May 2007 in the city of Baden-Baden. Baden-Baden is located in the Black Forest in the southwest of Germany.

Sixteenth International World Wide Web Conference

- May 8-12, 2007, Banff, Alberta, Canada <http://www2007.org>
The 16th International World Wide Web Conference (WWW2007) will be held at the world-famous Fairmont Banff Springs Hotel in Banff National Park. For more information about WWW2007 in general, please contact www2007info@iw3c2.org

OGF19

January 29-February 2, Chapel Hill, NC, US, <http://www.regonline.com/>

Forthcoming Events Timetable

January			
8-10	LHCb e-science project - 3rd LHCb-UK software course	e-Science Institute	http://www.nesc.ac.uk/esi/events/738/
11-12	LHCb Upgrade workshop	National e-Science Centre	http://www.nesc.ac.uk/esi/events/729/
18	What has the depth of Lake Geneva got to do with the UK e-Science Programme?	Swann Building Main Lecture Theatre, King's Buildings, Edinburgh	http://www.nesc.ac.uk/events/other_events/pclarkeJan07.html
February			
1-2	ATLAS Distributed Analysis Tutorial	e-Science Institute	http://www.nesc.ac.uk/esi/events/737/
16	Study of Users' Priorities for E-Infrastructure for Research (SUPER)	National e-Science Centre	http://www.nesc.ac.uk/esi/events/743/
19-20	Agents and Grids: towards the intelligent grid	National e-Science Centre	http://www.nesc.ac.uk/esi/events/732/
21-23	National Grid Service: Application Developer Training	NeSC / EGEE	
22-23	Models for a sustainable National Grid Service	National e-Science Centre	http://www.nesc.ac.uk/esi/events/731/
March			
7-9	European Geoinformatics Worksho	e-Science Institute	
14-15	Realising and Coordinating e-Research Endeavours	e-Science Institute	http://www.nesc.ac.uk/esi/events/745/index.cfm

NeSC Job Vacancy: Computer Science Research Associate: Scientific Data Exploration

The Research Associate at the National e-Science Centre in Edinburgh will join a research team pioneering scientific data exploration, working on an EU-funded Design Study to generate the software architecture to enable collaborative biological research into early human development.

The work will entail designing, prototyping and evaluating aspects of a distributed computational environment that will support the biological research. This environment will include gene-expression workflows, visualisation and data mining services so that researchers throughout Europe are able to collaborate and share data. You will have a research degree in a relevant subject and experience in computing science or bioinformatics research. This post is Fixed Term and Starting as soon as possible for up to 20 months.

The Application Deadline is the 12 January 2007

Salary Scale: £26,402 - £31,525

Vacancy Reference: 3006735

You can apply on-line via the University of Edinburgh Jobs website.

http://www.jobs.ed.ac.uk/vacancies/index.cfm?fuseaction=vacancies.detail&vacancy_ref=3006735

<http://www.nesc.ac.uk/career/index.html>.



Merry Christmas and Happy New Year!

If you would like to hold an e-Science event at the e-Science Institute, please contact:

Conference Administrator, National e-Science Centre, 15 South College Street, Edinburgh, EH8 9AA

Tel: 0131 650 9833 / Fax: 0131 650 9819 / Email: events@nesc.ac.uk

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Next months deadline for articles is: January 2007