eResearch Education and Training

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DESCRIPTION

eXtreme Research not only pushes the boundaries of technology, it challenges and extends techniques for data collection, analysis and communication. As new infrastructure is made available, we need to update researcher and support staff skills to fully utilise these resources. While the majority of researchers may not be eXtreme, their increasing reliance on technology throughout the research process is pushing the boundaries of education and training. With (near) zero resourcing, we struggle to keep up with the rapid change occurring across all research disciplines. With eResearch becoming mainstream, we face an eXtreme workforce development challenge: reskilling researchers, growing specialised research staff and updating graduate attributes and the academic curriculum.

To build skills and awareness means having knowledge of the services and tools, being able to format that knowledge into a meaningful form, and then delivering that knowledge to the people who need it. While there are currently many organisations involved, from individual institutions through state-based service providers to national programs, there is no coherent mechanism to bring all of the marketing (awareness) and training (skills) materials together. There is also no common channel for delivering those materials to the researchers and the support staff on campuses.

Given the large-scale investments in eResearch there is a requirement in ensuring that people use them, and use them very effectively. Skills are the foundation to being effective. The recently released NCRIS Exposure Draft notes the return on investment in research infrastructure can be increased through “initiatives to upgrade the skills of researchers to enable their use of eResearch infrastructure” [1, p27]. However, researcher expertise and ICT literacy are left to be addressed in “broader research policy”. Unfortunately, it remains unclear who will take responsibility for eResearch training. This BoF continues the conversation (2008-2010) on how we might address these ongoing training issues through collaboration.

OUTLINE

The session will begin with short presentations on experiences of education and training initiatives, lessons learned and opportunities for collaboration. Participants will then be invited to share their experiences in eResearch skill development, and join a discussion exploring:

• the key messages, themes and skills that need to be communicated to eResearch practitioners
• the definition of an eResearch Body of Knowledge
• the best vehicle for delivery of these messages and skills (one-on-one support, training workshops, webcasts, user manuals, .. ?)
• the level at which this training needs to be delivered (undergraduate, postgraduate, post-doc, academic, professional staff etc) and what depth to provide for each of these groups. Is there a minimum level of eResearch literacy we should aim for in each group?
• the appropriate people to deliver the training at the local and national level - mechanisms for sharing training resources
• how to ensure that skill development occurs simultaneously with infrastructure development
• how to measure the effectiveness of training and skill development.

It is expected that the discussion will cover everything from very specific training, such as parallel code development, up to more general eResearch methods and thinking, such as building data management plans.

It is hoped that the discussion will help further existing efforts and create new activities at a local level and at a National level.

WHO SHOULD ATTEND

• Facilitators and developers of training material in eResearch or traditional research
• Communicators and promoters of eResearch
• Researchers interested in building capacity in their domain
• Developers of tools to be deployed to the eResearch community
• Administrators of National eResearch activities
JUSTIFICATION

This BoF was included in eResearch Australasia 2009 and 2010 and an informal discussion on education issues was organised by Valerie Maxville and Gaby Bright (VeRSI) at the 2008 conference. We believe there is value in continuing the discussions around education in eResearch and HPC and hence put the BoF forward as an annual event. The organisers felt a BoF was more appropriate than a Workshop, but would request that there be scope for a longer discussion – preferably following a related session of presentations (education/outreach).

REFERENCES


ABOUT THE SPEAKERS

Valerie Maxville leads the Education Program at iVEC, Western Australia’s supercomputing and eResearch facility. iVEC is shared resource for advanced computing in WA, particularly serving the members at CSIRO, Curtin, ECU, Murdoch and UWA; working to increase high-end computing and eResearch expertise in the wider community. With the Education Program, Valerie coordinates the iVEC training program, promotes eResearch in WA, organises and supervises the summer internship program and is developing an outreach program for schools. She has a background in Computer Science (Curtin) and is completing a PhD in Software Engineering. Valerie is an active volunteer in the computing industry, chairing the Western Australia Section of the IEEE and IEEE Computer Society, and as a state and national representative with the Australian Computer Society.

Dr Markus Buchhorn manages Strategic Initiatives for Intersect, the peak eResearch body in NSW. He has been a leader in the emerging field of eResearch for over 15 years. Markus was previously Director of ICT Environments at the Australian National University, and is an advisor on NCRIS Platforms for Collaboration program, the Australian National Data Service, and a member of the National e-Research Architecture Taskforce (NeAT). He has been involved in national infrastructure programs such as APAC, (Australian Partnership for Advanced Computing), for High Performance Computing services and GrangeNet for high performance network services, and continues to be actively engaged in a wide range of international eResearch initiatives.

Dr Lyle Winton is the Associate Director for eResearch at Victoria University working with the Office for Research, IT Services and Library to develop e-research capability across VU. Lyle was formerly an analyst with the Victorian eResearch Strategic Initiative (VeRSI http://www.versi.edu.au/), a senior research support officer with the eScholarship Research Centre (http://www.esrc.unimelb.edu.au/) supporting the research community and eResearch initiatives at the University of Melbourne, and also a consultant to the DEEWR/JISC led international e-Framework for Education and Research (http://www.e-framework.org/). His research background is in experimental high energy physics and distributed computing, involving large-scale international collaborations. Lyle’s professional background is in the IT areas of infrastructure development, software design, development and project management.

Sam Searle has been the Data Management Coordinator at Monash University since August 2008. In this role, she coordinates a range of activities relating to research data management, including policy frameworks, skills development, and researcher engagement. Sam is based in the Library, and works with the Monash e-Research Centre, Research Graduate School, Research Office, Records and Archives Service, and academic and professional staff across the university’s ten faculties. She also contributes to the community of data librarians emerging out of projects sponsored by the Australian National Data Service (ANDS). She previously worked in e-research business development at Victoria University of Wellington, on digital library projects at the National Library of New Zealand, and in other research, library, archives and publishing roles in universities in Australia, New Zealand and Scotland.

Anna Shadbolt is currently working as a training consultant with the VeRSI team to develop a plan to support a coordinated eResearch training program for Partners and other stakeholders in Victoria. This will include a number of targeted workshops and the mapping of existing eResearch training programs and resources, as well as documenting unmet training needs and requirements of research communities where possible. Anna’s interest in eResearch began when she managed an APSR funded project auditing the sustainability of data management practices used by a number of data intensive research communities at The University of Melbourne. Anna’s special interest is in research information and data management policy and support infrastructure and works closely with the Melbourne Research Office to develop, review and audit research data management policy and code compliance. Anna is Manager, Information Management Services at The University of Melbourne Library and is managing Melbourne’s Seeding the Commons (ANDS) project.

Belinda Weaver is the Manager, Research Data Collections Service, at the University of Queensland Library. She is responsible for implementing the Library’s research data management strategy. She is currently working with Nigel Ward of UQ’s eResearch Lab on the Seeding the Commons@UQ project for ANDS. She is a former manager of the UQ eSpace repository and was the co-ordinator of the UQ testbed for the APSR project.