MURPA Seminar : 12 March 2009 from 10am-11noon

Benefiting Society through Information Technology: Why Changes in Education are Needed

Location: Seminar Room 135, Building 26 Clayton

Time: 10.00-11.00am

Presenter:Dr Peter Arzberger, Chair of the Pacific Rim Application and Grid Middleware Assembly (PRAGMA; www.pragma-grid.net)

Abstract:

Information technology, including computing and networking, continues to influence our lives and our science, both what we do and how we do it. Networks connect us with diverse resources and instruments; data systems store and retrieve vast amounts of data being collected daily; computers are ubiquitous and powerful enough to simulate increasingly complex natural phenomena. Challenges at the frontiers of science depend ever more on information technology, and on interdisciplinary, international groups working together.

Starting from this perspective, we explore several examples from biomedical research and environmental science that require different aspects of the information technology community's expertise. We use these examples to provide model for the conduct of future research and education.

We will draw examples from activities from around the Pacific Rim, such as Pacific Rim Application and Grid Middleware Assembly (PRAGMA), that involves more than 30 institutions to build sustained collaborations and advance the use of grid technologies via applications; the National Biomedical Computation Resource (NBCR), an infrastructure resource for the biomedical community that focuses on targeted translational and multiscale challenges; and the Global Lake Ecological Observatory Network (GLEON), a grass-roots network of over 100 researchers who have a common goal of building a scalable, persistent network of lake ecology observatories. In addition we will introduce three programs aimed at educating the next generation of researchers in international research apprenticeships: PRIME, PRIUS, and MURPA. In addition we will exemplify technology trends and illustrate them with other examples.

We will conclude with one specific personal challenge of the speaker. We hope that the material we present will challenge the information community in its future directions, to the benefit of society.

Bio

Peter Arzberger is Chair of the Pacific Rim Application and Grid Middleware Assembly (PRAGMA; www.pragma-grid.net), an open, institution-based organization of more than 30 institutions. PRAGMA, founded in 2002, has a mission to build sustained collaborations among researchers around the Pacific Rim by building applications on top of emerging Grid hardware and software. Build on the foundation of PRAGMA is PRIME, the Pacific Rim Undergraduate Experiences (prime.ucsd.edu) program, which provides international research and cultural internship experiences to undergraduate students. PRIME, founded in 2004, has admitted 36 students and sent students to four PRAGMA sites. Arzberger is a

founding member of the Steering Committee another international activity, GLEON

(**http://www.gleon.org**   ), the Global Lake Ecological Observatory Network. GLEON is a grassroots network of people, institutions, programs, and data linked by cyberinfrastructure and united by the mission to understand and predict the response of lake ecosystems to natural processes and human activities at regional, continental, and global scales.

In addition, Arzberger is Director of the National Biomedical Computation Resources

(**http://nbcr.net**   ), an NIH National Center for Research Resource award. NBCR's mission is to conduct, catalyze and enable biomedical research by harnessing forefront computational and information technologies, focused on targeted translational and multiscale challenges. He is also Chair of the National Advisory Board to the U.S. Long Term Ecological Research (LTER) network.

Arzberger is the former Executive Director of the National Partnership for Advanced Computational Infrastructure (NPACI) and a former Program Officer at the United States National Science Foundation in Computational Biology.

Enquiries

Rob Gray on 9903 1249, Message Lab C/- DSSE Research or Prof David Abramson 9905 1183