

# **MURPA Seminar: Friday 27 July 2012, 9am**

## **Preparing Students for a Global Science, Engineering, and Education Workforce**

**Speaker:** Dr Peter Arzberger

**Venue:** Seminar Room 135, Building 26, Clayton Campus, Monash University

### **Abstract:**

The conduct of science is changing, driven by several factors: advances and ubiquity of information technology, changing the conduct of science; abundance of observational equipment and systems, changing temporal and spatial frequency of data capture and in many cases amount of data collected; greater number of nations investments in research, creating new centers of excellence; need to address problems globally, requiring an ability to interact with the best researcher and resources. Collectively, these trends are reflected in increases in publications with authors from multiple countries and with increases in the number of networks of scientists. Given these trends, we pose the question of how to best prepare students to work in a global research enterprise or the global workforce.

In this talk we given discuss these trends and the skills required for students to succeed in a global workforce. We give examples of international networks and the research and leadership opportunities they provide, as well as some examples of research projects and programs involving students. We also discuss the issue of how do we know that these programs are having an impact.

This is an exciting time to be involved in science and engineering research. Success requires both technical as well as many (soft) collaborative skills.

### **Biography:**

Peter Arzberger is the founding Chair of the Pacific Rim Application and Grid Middleware Assembly (PRAGMA), an NSF-funded activity advancing the use of grid technologies throughout Pacific Rim institutions. PRAGMA have helped launch undergraduate research exchanges (PRIME and MURPA at Monash University), as well as global communities of researchers focused on understand lakes dynamics (GLEON) and on coral reefs ecology (CREON) through deployment and use of sensor networks. In addition, he is the Director of the National Biomedical Computation Resource (NBCR), focusing on advanced computational technology to better enable biomedical research. His research has received wide-ranging support from NSH, NIH, and the Gordon and Betty Moore Foundation, and is interested in promoting models of international collaboration for research and students.

Recently, he served as a Senior Advisor in the Computer and Information Science and Engineering Directorate (CISE) at the National Science Foundation (NSF), after having served as Acting Assistant Director of CISE from September 2010 until March 2011. He has also served as the Division Director of the Division of Biological Infrastructure for the Biological Sciences Directorate. His home institution is the University of California San Diego.

He has a Ph.D. in Mathematics from Purdue University and has served, several years ago, as a Program Officer at NSF in the Mathematical Sciences as well as in Computational Biology.

He has also served as Chair of the National Advisory Board of the US Long Term Ecological Research (LTER) network and as the Executive Director of the San Diego Supercomputer Center.