MURPA Seminar: Friday 21 September 2012, 9am

The coming digital transformation of health

Speaker: Professor Larry Smarr
Venue: Seminar Room 135, Building 26, Clayton Campus, Monash University

Abstract:
Calit2 has, for over a decade, had a driving vision that healthcare is being transformed into digitally enabled genomic medicine. To put a more personal face on the "patient of the future," I have been increasingly quantifying my own body over the last ten years. This involves not only non-invasive macro-variables such as weight, pulse, blood pressure, caloric intake and burn, but also invasive blood, saliva, and stool measurements. I currently track over 100 molecular and blood cell types in my blood and dozens of molecular and microbial variables in my stool. Through saliva I have 1 million single nucleotide polymorphisms (SNPs) in my human DNA. My gut microbiome is currently being genetically sequenced. I will show how one can discover emerging disease states before they develop serious symptoms by graphing time series of these key variables. Also I will illustrate the power of multi-variant analysis across all these internal variables. My hope is that by "living in the future" I can be a model for understanding more clearly the new approaches that will arise in wellness and health care.

Biography:
Larry Smarr is the founding Director of the California Institute for Telecommunications and Information Technology (Calit2), a UC San Diego/UC Irvine partnership, and holds the Harry E. Gruber professorship in Computer Science and Engineering (CSE) at UCSD's Jacobs School. At Calit2, Smarr has continued to drive major developments in information infrastructure-- including the Internet, Web, scientific visualization, virtual reality, and global telepresence--begun during his previous 15 years as founding Director of the National Center for Supercomputing Applications (NCSA). Smarr served as principal investigator on NSF's OptIPuter project and currently is principal investigator of the Moore Foundation's CAMERA project and co-principal investigator on NSF's GreenLight project. In October 2008 he was the Leadership Dialog Scholar in Australia.