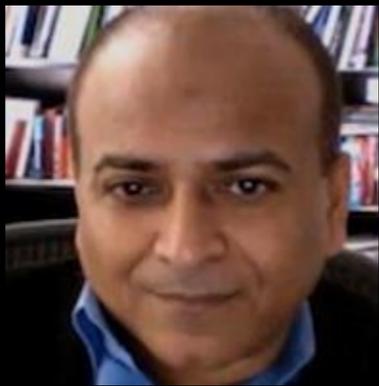


***"From Data Analytics to Computational Discovery and  
Discovery Informatics"***

**INVITED TALK FEATURING**



**Vasant Honavar, Professor & Frymoyer Chair  
College of Information Science and Technology  
Pennsylvania State University**

**Wednesday, November 6th - 2:00 PM – 3:00 PM  
BYENG 510**

**Abstract:**

Much recent attention has focused on the opportunities and challenges offered by the emergence of “big data” – data that are far more voluminous, diverse, and inter-related than we know how to cope with. However, data, big or small, although necessary ingredients for scientific discovery, are not sufficient. The increased ability to acquire and process data offers unprecedented opportunities for a shift in focus of informatics to assist simply the recording, organizing, and routine analysis of observations to using them to steer experiments, construct, test, and validate predictive models, harmonize theories and explanations at different levels of abstraction, and across different disciplines. Developing information processing accounts of and effective algorithms for discovery is a long-standing challenge in artificial intelligence and cognitive science. Information processing systems provide powerful abstractions for understanding complex systems ranging from cells to societies on the one hand and a powerful exploratory apparatus for science, on the other. Eliciting causal relations and predictive models from observations and experiments, which is central to scientific discovery, is also a hallmark of intelligence. In this talk, I will highlight, drawing on post-genomic biology as a representative example, some research challenges that must be addressed in order to realize the full promise of computational discovery; and the opportunities for foundational advances in artificial Intelligence and cognitive Systems that a serious effort in that direction entail.

**BIO**

Dr. Vasant Honavar received his Ph.D. in Computer Science and Cognitive Science in 1990 from the University of Wisconsin Madison, specializing in Artificial Intelligence. From 1990 to 2013, he served on the faculty of Computer Science and of Bioinformatics and Computational Biology at Iowa State University (ISU). At ISU, he directed the Artificial Intelligence Research Laboratory (which he founded in 1990) and the Center for Computational Intelligence, Learning & Discovery (which he founded in 2005) and served as the associate chair (2001-2003) and chair (2003-2005) of the ISU Bioinformatics and Computational Biology Graduate Program, which he helped establish in 1999 with support from an Integrative Graduate Education and Research Training (IGERT) award.

Honavar served as a program director in the Information and Intelligent Systems Division of the Computer and Information Sciences and Engineering directorate of the National Science Foundation (NSF) during 2010-2013 while maintaining his research program at ISU. He led the Big Data Science and Engineering Program, established the NSF-OFR collaboration in Computational and Information Processing Approaches to and Infrastructure in support of, Financial Research and Analysis and Management, contributed to Smart and Connected Health, Information Integration and Informatics, Expeditions in Computing, Science of Learning Centers, Integrative Graduate Education and Research Training, Computing Research Infrastructure Programs.

In September 2013, Honavar joined the faculty of Penn State University where he will serve as the Frymoyer Chair Professor of Information Science and Technology and lead new research and educational initiatives in Data Sciences and contribute to initiatives in Life Sciences.