Strategic Visioning

For

Cyberinfrastructure, Computing and Information

Michigan State University

Radiology Auditorium and Atrium

February 17 & 19, 2005

Sponsored by

Dr. Lou Anna K. Simon, President
Dr. John Hudzik, Acting Provost
Dr. Ian Gray, Vice President for Research and Graduate Studies
Dr. Karen Klomparens, Dean of the Graduate School
Mr. David Gift, Vice Provost For Libraries, Computing, and Technology
University Distinguished Lecture

February 17, 2005
4:00pm

Opportunities and Challenges for Universities
From Information Technology

Dr. Wm. A. Wulf
President
National Academy of Engineering
AT&T Professor of Computer Science
University Professor
University of Virginia

Abstract
Universities contribute enormously to our society; beyond education they support culture, supply the research that drives our prosperity, archive our human record, and even entertain us on Saturday afternoons. A “core competence” of universities is information—they create it with research, they warehouse it in libraries, and they retail it in both texts and classes. It is reasonable to conjecture, therefore, that further changes in the technology of information processing might affect how universities function. In fact, that has clearly already happened to some degree. Will more occur? How much? What kind? This lecture will not give answers, but rather raise some questions about what further opportunities and challenges may face universities—opportunities and challenges that might have a profound affect on them.

About Dr. Wulf
Dr. Wm. Wulf was elected President of the National Academy of Engineering (NAE) in 1997. The NAE and National Academy of Sciences operate under a congressional charter to provide advice to government on issues of science and engineering.

Dr. Wulf is on leave from the University of Virginia, where he is a University Professor. His research spans computer architecture, computer security, programming languages, and optimizing compilers. From 1988 to 1990 Dr. Wulf served as Assistant Director of the National Science Foundation. Prior to joining Virginia, Dr. Wulf founded a software company, Tartan Laboratories, based on research he did while on the faculty at Carnegie-Mellon University.

Dr. Wulf is a member of the National Academy of Engineering, a Fellow of the American Academy of Arts and Sciences, a Corresponding Member of the Academia Espanola De Ingeniera, and a Foreign Member of the Russian Academy of Sciences. He is also a Fellow of five professional societies: the ACM, the IEEE, the AAAS, the IEC and AWIS. Dr. Wulf is the author of over 100 papers and technical reports, has written three books, holds two US Patents, and has supervised over 25 Ph.D.’s in Computer Science.
University Workshop
February 19, 2005
7:30am – 4:00pm

Strategic Visioning
For
Cyberinfrastructure, Computing, and Information

7:30 am Registration & Continental Breakfast
8:00 am Meeting Overview
Wayne Dyksen
8:15 am Meeting Welcome
Karen Klomparens & David Gift
8:30 am Cyberinfrastructure and Epistemic Infrastructure
John King, Dean
School of Information, University of Michigan
9:15 am E-Research And The Digital World: Implications For Institutional Strategy
Clifford Lynch, Executive Director
Coalition for Networked Information
10:00 am Break
10:30 am Computing In The Physical Sciences
Wolfgang Bauer, Professor & Chairperson, Physics & Astronomy
11:00 am Title To Be Determined
Michael Zaroukian, Associate Professor, Human Medicine & Director of EMR
11:30 am Spatial Information Technology in Geography and Beyond
Richard Groop, Professor & Chairperson, Geography
12:00 am Title To Be Determined
Mark Kornbluh, Professor & Chairperson, History
12:30 pm Lunch
1:30 pm Panel Session: Strategic Visioning for Infrastructure
Clifford Lynch (Moderator)
Robert Cukier, David Gift, Philip McKinley, Mark Sullivan
2:30 pm Panel Session: Strategic Visioning for Programs
John King (Moderator)
Wolfgang Bauer, Karen Klomparens, Kevin Ohl, Charles Salmon
3:30 pm Next Steps
Wayne Dyksen & Mark Kornbluh
4:00 pm End
About These Events

Welcome to the University Distinguished Lecture by Dr. Wm. Wulf and to the Michigan State University workshop *Strategic Visioning for Cyberinfrastructure, Computing, and Information*. Briefly stated, the goals of these events are: 1) to organize a broad, inclusive group of stakeholders from across the University; 2) to begin the task of casting a unified and holistic vision for computing and information at MSU for the 21st century; and 3) to identify specific next steps for realizing such a vision.

The challenge that Michigan State University faces is one shared by all universities. The digital revolution is fundamentally transforming the academy, affecting all aspects of our three-fold mission of teaching, research, and service. A host of blue-ribbon panels and reports, the most prominent of which is the NSF report on cyberinfrastructure chaired by Dan Atkins, are illustrating the depths of this transformation. In discipline after discipline across the sciences, the Atkins report demonstrates how every facet of research, publication, and teaching is being altered by computers and the digitization of data collection, analysis, storage, publication, distribution, and re-examination. Along with quantum changes to existing disciplines, computing and digitization are enabling the emergence of entirely new fields and new disciplines.

While “cyberinfrastructure” is a clumsy word, it is being used in these discussions to capture the full extent of infrastructural needs—not just more compute cycles or bigger pipes or more sophisticated software, but also people, tools, institutional relations, and professional norms are needed to support research, teaching, outreach, and engagement in the 21st century. The challenges are enormous. They go to the core of how research is conducted and how we train researchers and structure teaching for the future. Along with these significant challenges come equally significant opportunities.

While the pace of change varies by discipline and even within disciplines, the underlying premise of this effort is that many of the challenges and opportunities posed by new technologies are similar across our University community. Certainly there are areas where common services are needed. There is much to be gained by initiating a campus-wide dialogue to explore the full implications of the digital revolution on scholarly research and teaching, and its relationship to both campus-based and general public communities.

We thank Dr. Lou Anna K. Simon, Dr. John Hudzik, Dr. Ian Gray, Dr. Karen Klomparens, and Mr. David Gift for their vision and their support, which made these strategic events possible. We also thank Dr. James Potchen for the always generous use of these beautiful facilities. And, we thank Ms. Chris Griggs for organizing yet another set of well run meetings.

Wayne Dyksen
Professor, Computer Science and Engineering

Mark Kornbluh
Professor and Chairperson, History