

Shaping the Future of CISE

A Commitment to Science and
Engineering Leadership
and to
Organizational Excellence

July 9, 2003

NSF

CISE's Growing Importance

- Enormous impact of information technology on all areas of NSF
- National leader in computer, information science and engineering
- Principal sponsor of academic basic research in computer science and related disciplines
- Critical to the success of cybertrust, cyberscience, national and homeland defense, continued economic growth

Conceptual Drivers

Shaping the Future of the Field

- Atkins Report on Cyberinfrastructure

“CISE must be deeply involved as a technology user and as a technology leader for the overall [cyberinfrastructure] program.”
- CISE Science and Engineering Staff Retreat

“The group suggests using post-ITR funding to launch new programs on an ongoing basis. This will sustain ITR-like projects... and enable PIs to collaborate and learn from each other.”

-- Panel 2
- CISE Advisory Committee

“CISE organization structure should promote intellectual integrity and cohesiveness, should be flexible and fundamental enough to last ten years.”

-- Committee C
- CS&E Leadership

“...although academic CS&E has enjoyed remarkable success in the past several decades, the ways of the past will not necessarily lead to success in the future.”

-- *Computing the Future*, CSTB, 1992

The need for an updated structure for CISE, scientifically and administratively, is clearly indicated.

Objectives

- Capitalize on emerging scientific opportunities
- Build on CISE's and NSF's organizational successes
- Ensure integration of education with research in all CISE activities
- Sharpen programmatic focus and enhance budget flexibility
- Enhance intellectual coherence in CISE cross-cutting, thematic areas
- Increase research and education opportunities that will broaden participation in CISE activities

Additional Objectives

- Decrease the number of CISE programs thereby combating the tendency to reductionism in programmatic activity while promoting more integration;
- Encourage the growth of cohesive scientific communities in important or emerging sub-disciplines;
- Provide for more flexibility in defining and redefining cross-cutting priorities and emerging priorities of national and/or societal interest;
- Empower CISE staff with the organizational, budget, and management support necessary to remain focused on key programmatic activities and goals
- Improve effectiveness and efficiency of CISE business practices by reducing program overlap and enhancing program synergy
- Position the Directorate for continued, strong budgetary growth and programmatic evolution.

Proposed CISE Organization



Proposed Divisions and Areas of Responsibility

- Division of Computing & Communication Foundations (CCF)
 - Formal and mathematical foundations
 - Foundations of computing processes and artifacts
 - Emerging models for technology and computation
- Division of Computer and Network Systems (CNS)
 - Computer systems
 - Networks
 - Computing research infrastructure
- Division of Information and Intelligent Systems (IIS)
 - Systems in context
 - Understanding, inference, & data
 - Data-driven science
- Division of Deployed Infrastructure (DDI)
 - Infrastructure planning, constructing, commissioning, & operations

Next Steps

- July, August & September: Build divisional teams; develop new divisional structures; consult with Union, HRM, management
- October 1: Proposed implementation of new organizational structure

Enabling Change is NSF's Business

- Change is the norm today
- If we don't change, individually and collectively, the world will leave us behind
- We're in this together, and together we will succeed