



Innovation and Computing

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Our Challenge

As a Nation

The United States led the world's economies in the 20th century because we led the world in innovation. Today, the competition is keener; the challenge is tougher; and that is why innovation is more important than ever. It is the key to good, new jobs for the 21st century. That's how we will ensure a high quality of life for this and future generations.

President Barack Obama, 2009



Our Challenge

As Learning Institutions

The nation that out-educates us today is going to out-compete us tomorrow.

President Barack Obama, 2010





Think Big, Be Bold, Embrace Risk

Wealth in the new regime flows directly from innovation, not optimization; that is, wealth is not gained by perfecting the known, but by imperfectly seizing the unknown.

Kevin Kelly, New Rules for the
New Economy, Wired

All great truths begin as blasphemies.

George Bernard Shaw

A FY 2010 Snap-Shot of CISE (\$619 million)

Division of
Computing and
Communication
Foundations

Computer engineering
Computer science
fundamentals

Division of
Computer and
Network Systems

Computer systems, network
systems

Division of
Information and
Intelligent Systems

Information systems, Databases,
AI, Robotics, Human-
centered computing

Fundamentals of hardware
and software

Translational/
Applications of
Computing



A FY 2010 Snap-Shot of CISE (\$619 million)

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Computing and
Communication
Foundations

Computer engineering
Computer science
fundamentals

Division of
Computer and
Network Systems

Computer systems, network
systems

Division of
Information and
Intelligent Systems

Information systems,
AI, Robotics, Human-
centered computing

Expeditions in Computing (mini Engineering Research Centers), Industry-University
Cooperative Research Centers

Data-intensive Computing, Trustworthy Computing, Network Science and Engineering,
Cyber-Physical Systems (with ENG)

Computing Research Infrastructure

Developing Computational Thinking Competencies in Secondary and Higher Education

Stimulating Innovation and Economic Growth – FY 2010 and Beyond

- Cyber-Physical Systems
- Science and Engineering Beyond Moore's Law
- Computing and the Environment
- Smart Health: Care and Management
- Educate to Innovate – putting the C in STEM
- Cyber-learning

