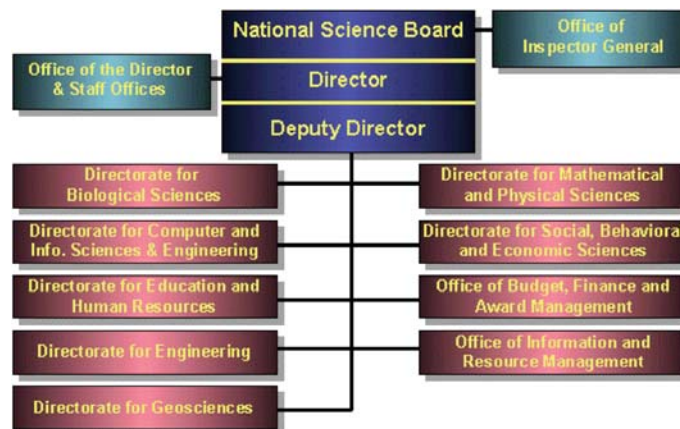


Wireless Communications Programs at the NSF

Sirin Tekinay
Program Director
Communications Research
National Science Foundation

National Science Foundation

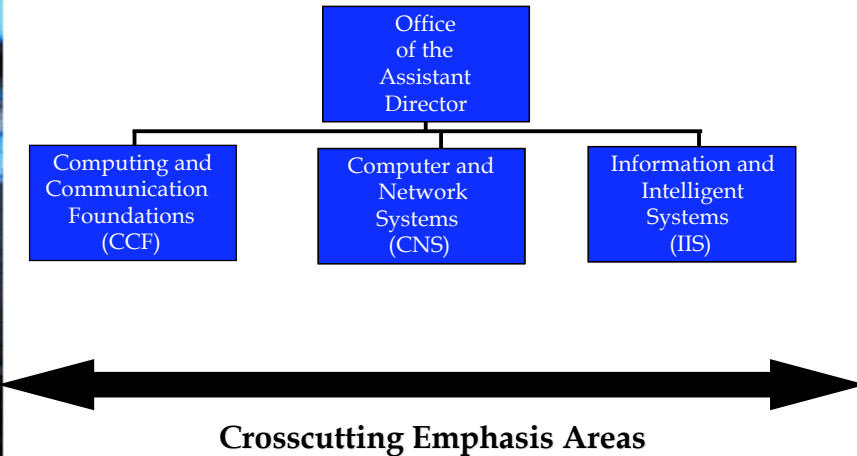




CISE provides **86%** of all Federal support for computer science research



Current CISE Organization



CISE (and related) Budget FY05 Actual (\$M)

<i>CISE - Divisions</i>	<i>FY 2005</i>
CCF	\$91.29
CNS	\$132.17
IIS	\$92.31
ITR (not a division; cross-CISE)	\$174.43
<i>CISE Total Research</i>	<i>\$490.20</i>
OCI	\$123.40
<i>Major Research Equipment and Facilities Construction (MREFC)</i>	<i>\$165.60</i>

Tekinay March

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Funding Outlook

- NSF funds available to support computing have nearly doubled in the past five years
- However, proposals have almost tripled
- From less than one per year per CS faculty member to more than one per year
- Greatly expanded scope of research
- President's 2006 State of the Union is encouraging...

Tekinay March 29, '06

2006 Workshop on Knowledge Based Wireless Networking

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Computing and Communication Foundations Division (CCF)

- Theoretical Foundations
 - Computer science theory; numerical computing; computational algebra and geometry; **signal processing and communication**
- Foundations of Computing Processes and Artifacts
 - Software engineering; software tools for HPC; programming languages; compilers; computer architecture; graphics and visualization
- Emerging Models and Technologies for Computation
 - Computational biology; quantum computing; nano-scale computing; biologically inspired computing

Computer and Network Systems Division (CNS)

- Computer Systems
 - Distributed systems; embedded and hybrid systems; next-generation software; parallel systems
- **Network Systems**
 - **Networking research broadly defined plus focus areas**
- Computing Research Infrastructure
 - Equipment and infrastructure to advance computing research
- Education and Workforce
 - IT workforce; special projects; cross-directorate activities

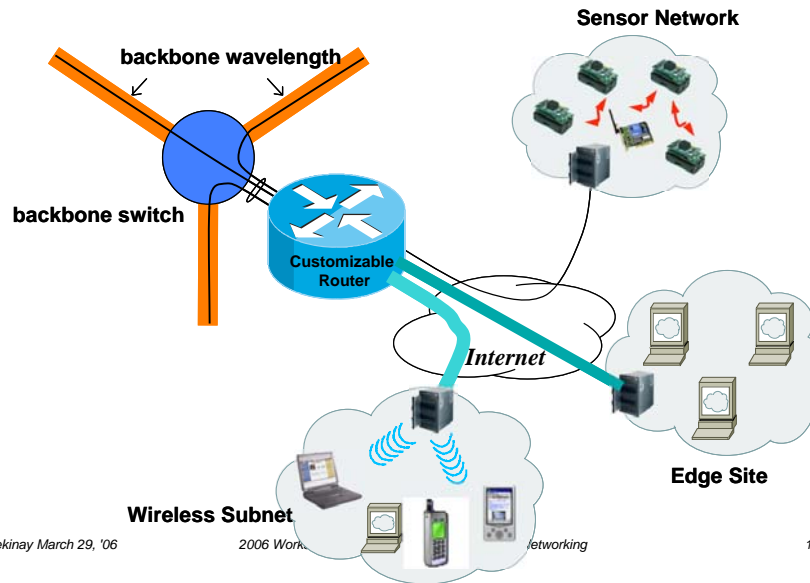
Information and Intelligent Systems Division (IIS)

- Systems in Context
 - **Human computer interaction**; educational technology; robotics; computer-supported cooperative work; digital government
- Data, Inference & Understanding
 - Databases; **artificial intelligence**; text, image, speech, and video analysis; information retrieval; knowledge systems
- Science & Engineering Informatics
 - Bioinformatics; geoinformatics; cognitive neuroscience; ...

Initiatives and Programs

- CISE-wide initiative: GENI
 - www.geni.net
- CCF/TF: TF06, with SING
 - Funding opportunities under <http://www.nsf.gov/cise/ccf/about.jsp>
 - Scientific Foundations for: Communications, Computing, and Internet's Next Generation
- CNS/NeTS: NeTS06, with FIND
 - Funding opportunities under <http://www.nsf.gov/cise/cns/about.jsp>
 - ProWin, NoSS, NBD, FIND
- IIS: ALT and SEIII
 - Funding opportunities under <http://www.nsf.gov/cise/iis/about.jsp>

GENI



Wireless Problems

- MANETs as the next thing in/after the Internet
- Geography of Information, Users, and Propagation
- Mobility – robotics
- Cooperation at all layers
- Game theory and learning
- ...