Cornell's Brave New Digital World

Robert Constable, Dean
Faculty of Computing and Information Science

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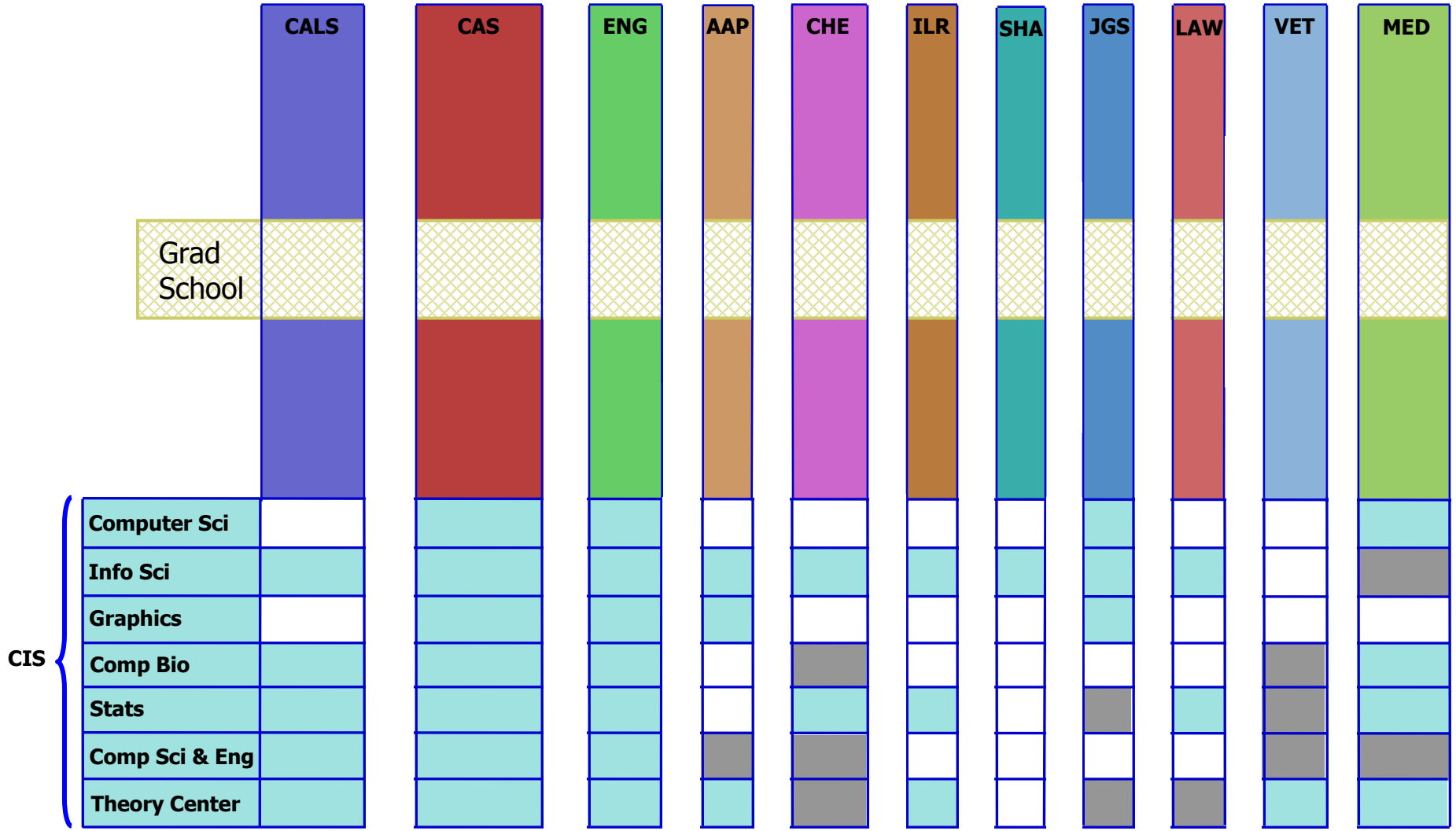
Presidential Councilors

Faculty of Computing and Information Science (CIS)

CIS is a cross-cutting college-level entity created in 2002, reporting to the Provost (like the Graduate School).

It supports both interdisciplinary units (like Information Science and Computational Science) and concentrated subjects like CS and Statistics.

Cross-cutting structure



CIS: Relevant to every discipline

- 5% to 20% of faculty in many departments want to work with CS. CIS gives them a second home.
- Both parties found collaboration to be deeply beneficial, e.g., Computational Bio ⟷ CS.

- Number of departments collaborating from 1965 to 2005:

  Start (4), Graphics (6), CTC (10), Cog. Studies (12), Bio (16), IS (21), DA (25) …. We predict 50 departments eventually.

Why is CIS so broad?

- Accelerating knowledge creation and discovery

  For example, the PC as a telescope for viewing "digital stars."

Examples

- Life Sciences

  As in the tomato growth gene and cancer

- Social Sciences

  There are laws of social networks, e.g., six degrees of separation

- Humanities

  Assembling the Map of the City of Rome, circa 210 A. D.

- Business

  The World is Flat, by T. Friedman

Historical perspective

The Industrial Revolution (IR1) is about: extending muscle power (mass, energy, force, power, space, and time)

The Information Revolution (IR2) is about: extending brains (information, intelligent processes, computation, complexity, and networks)

IR1 created colleges of engineering, shaping the physical sciences.

IR2 is creating colleges of computing, shaping the information sciences.

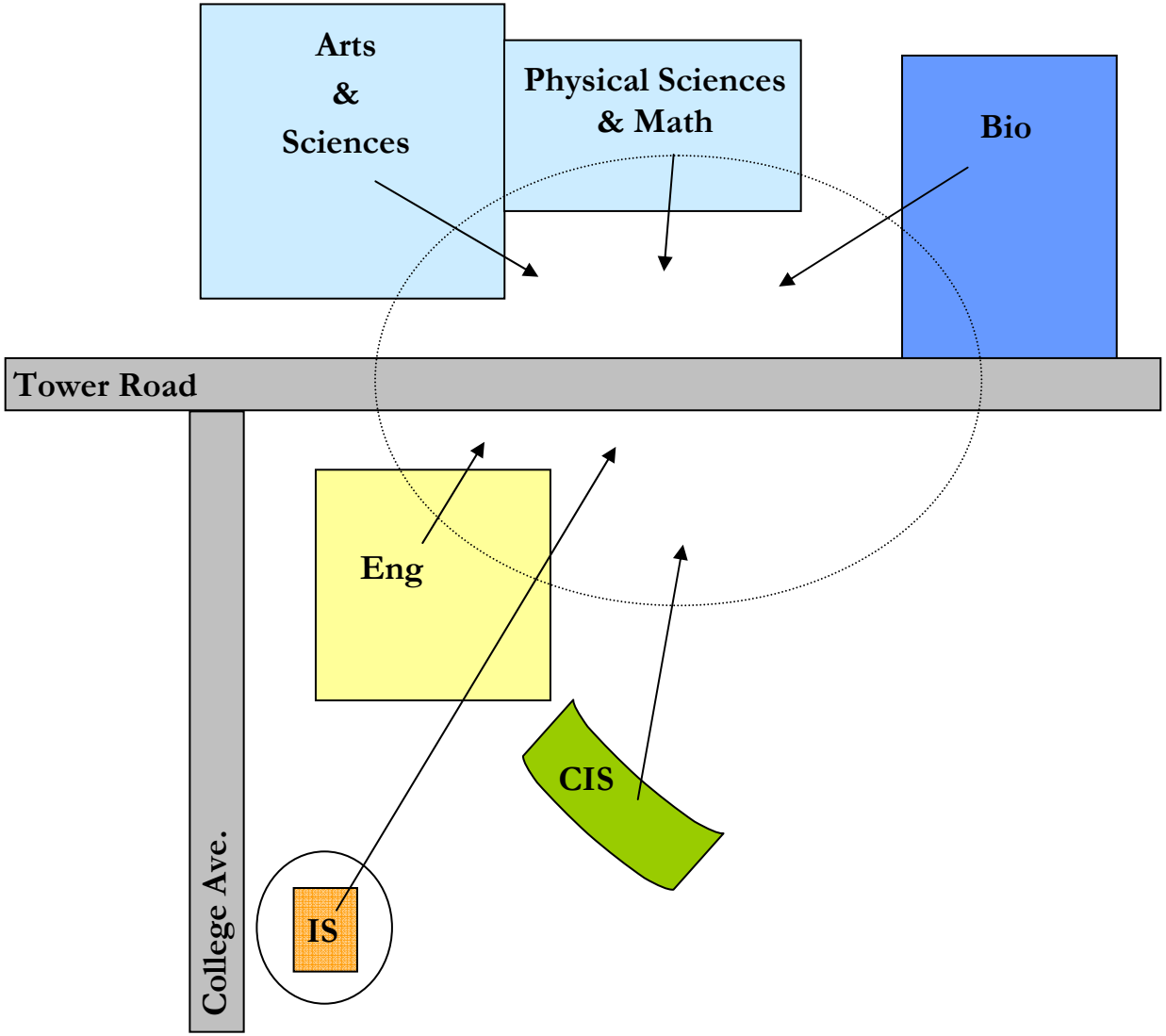
Examples: New Majors and Concentrations

- Information Science --- 3 college major, PhD
- Computational Biology --- 2 college major, PhD
- Computing and the Arts --- concentration with A&S
- Computational Science & Engineering (CSE) --- future minor PhD field

Cornell is a World Leader

- Our CIS concept is influential
- Cornell CIS can become one of the top three college-level units.
- We need a highly visible investment to focus world attention --- a rocket launched from Ithaca.

Information Campus



$140M Project*

"information campus"

brings together:

- CS
- IS
- CB
- CTC
- DSS
- PCG

- ORIE

*See Communiqué, Summer 2005

What does CIS mean for Cornell?

- What is Cornell?
- What are our great strengths?
- To what do we aspire?
- How do we reach our goals?

What is Cornell?

- First American university (revolutionary)
- Most transformative Ivy League university.
- Land-grant university of New York (public trust)

Cornell aspires to be the best research university for undergraduate education in the nation.

Why is CIS essential? Revolutionary

There are two converging interdisciplinary revolutions we must lead:

- Information Revolution

  impacting all disciplines

- Life Sciences Revolution

  requiring the physical sciences, engineering, and the information sciences

Why is CIS essential? Transformative

Digital transformation impacts all disciplines, the very nature of knowledge formation.

CIS should be available to any student in any subject.

Why is CIS essential? New Public Trust

Every citizen should have access to trusted digital information.

The Web has “billions and billions” of bits of nonsense.

It also has life saving information.

How can people tell the difference?

Cornell CIS needs your help

You can help us improve this message.

We can set the example for the world, as we did with CS in 1965.

What is missing?

Cornell University
Faculty of Computing and Information Science