LESSONS FROM THE CREATION OF THE GEORGIA TECH COLLEGE OF COMPUTING

Richard LeBlanc
   Georgia Tech, Professor Emeritus
      Associate Dean 1992-2000
Seattle University, Professor
      Department Chair, 2008-2016

Key Ideas

- The name matters!

- Vision matters!

Quick History

- Creation of what became the College of Computing proposed in 1988

- Approval and naming happened in 1989

- College began operation July 1, 1990 with Peter Freeman as the first Dean

- Substantial growth in faculty and majors from 1990 to 2002
  - Faculty from 32 to 56
  - Undergrads from 427 to 1539
  - Grad students from 182 to 424

- Graphics, Visualization and Usability Center (GVU) established in 1991

- Development of other multidisciplinary research centers during 1990's

- Began teaching an intro CS courses for all students at GT in late 1990's

The Name

- Original proposal:

  College of Computer, Information and Cognitive Science

- Problem: Lists are limiting because they are inherently exclusive

  Comment from Dennis Hayes:

  "Why is Communications missing?"

REPORT
COMPUTING AS A DISCIPLINE

The final report of the Task Force on the Core of Computer Science presents a new intellectual framework for the discipline of computing and a new basis for computing curricula. This report has been endorsed and approved for release by the ACM Education Board.

PETER J. DENNING (CHAIRMAN), DOUGLAS E. COMER, DAVID GRIES, MICHAEL C. MULDER, ALLEN TUCKER, A. JOE TURNER, and PAUL R. YOUNG

	Theory	Abstraction	Design
Algorithms and data structures			
Programming languages			
Architecture			
Numeric and symbolic computation			
Operating systems			
Software methodology and engineering			
Databases and information retrieval			
Artificial intelligence and robotics			
Human-computer communication			

FIGURE 1: DEFINITION MATRIX FOR THE COMPUTING DISCIPLINE

Key idea from Computing as a Discipline

- Computing incorporates three research paradigms:
  - Theory – rooted in Mathematics
  - Abstraction (modeling) – rooted in Science
  - Design – rooted in Engineering

- Articulation of this idea was crucial to gaining acceptance of the structural separation of Computing from these related disciplines.

Elaborating the vision

- Mandate from the President to the new Dean:
  "Lead, not own, computing at Georgia Tech"

- Reminder from the other deans:
  The College of Computing is supposed to be a "college without walls"

Elaborating the vision

From early (1991-92) strategic plan:

The College will be the core of computing activity and leadership at GT, but *we will achieve our goal by effective programmatic integration with other units* rather than by traditional hierarchical organization building.

In a world where computer science is very closely blended with a variety of other disciplines in the context of challenging strategic applications, *our research activity must push forward the frontiers of basic computer science <u>and</u> selected computing areas in which computer science is a key, but not exclusive, component.* Our real specialty, however, will be in knowing how to effectively mix computer science and other areas.

Living the vision

I remember a terrific exchange at a hiring meeting soon after I got here. Chris Atkeson was pushing hard on what was the limits of who we were willing to hire. "What if they could only program in something like Mathematica? Would you hire a faculty member who could only program in Mathematica?" H. Venkateswaran, "Venkat," a *theoretician* responded, "Yes. If he could help us understand computing, what it's for, what it could do, what it was good for, then yes, programming in Mathematica is fine." I remember that exchange vividly. Venkat was arguing for an inclusive definition of what the College of Computing was interested in. That's what the College of Computing was like -- the question of computing was broad, and the College embraced the entire question.

Why a college or school of Computing?

From the description of this panel:

As computing continues to grow by tremendous leaps and bounds and permeate throughout the university's intellectual landscape, many department chairs are finding their programs have outgrown, or are outgrowing, the confines of their current locations in colleges of engineering or science.

Why a college or school of Computing?

From the description of this panel:

As computing continues to grow by tremendous leaps and bounds and permeate throughout the university's intellectual landscape, many department chairs are finding their programs have outgrown, or are outgrowing, the confines of their current locations in colleges of engineering or science.

Why a college or school of Computing?

From the description of this panel:

As computing continues to ~~grow by tremendous leaps and bounds~~ and permeate throughout the university's intellectual landscape, many department chairs are finding their programs have outgrown, or are outgrowing, the confines of their current locations in colleges of engineering or science.

Lessons from Georgia Tech

- Lead, not own, computing was a key perspective
- A college without walls - CoC was set up to be equidistant from all potential collaborators and the "distance" was easily spanned
- Vision matters!
  - To sell the idea to everyone
  - To change the way faculty see themselves and their role on campus
- Be careful what you wish for (such as teaching an intro course to all students)!

For more details, see http://gtcomputing25-50.gatech.edu/timeline

My email: leblanc@seattleu.edu