The Role of the US Department Chair

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ECSS 2008
9–10 October 2008
Zurich
The University of Texas System

Board of Regents

Chancellor

UT El Paso    UT Austin    UT Dallas

President

VP Research    Provost    VP Development

College of Fine Arts    College of Natural Sciences    College of Engineering

Dean

Dean

Dean

Music

Computer Science

Chair

Physics

Math

ECE

Mechanical Eng
Definitions

Chair – leader of an academic department, generally elected by the faculty, serving a fixed term, with limited budget authority

Head – leader of an academic department, generally hired by the Dean (with faculty input), serving indefinitely, with significant budget authority
US Academic Ranks

• Lecturer (non-tenure)

• Assistant Professor (tenure-track, 6 year appointment)

• Associate Professor (tenured)
• Full Professor (tenured)
• Endowed Chair (tenured)
Degrees

- BS - 4 years after entering the university
- MS - 2 more years
- PhD - 5 more years (average)
Special Considerations

- the US system
- Bayh-Dole Act requiring exploitation of intellectual property (patenting and licensing)
- the Texas university System
• a Science college (not Engineering and not a School of Computing)
Chan-Byoung Chae, a Ph.D. candidate supervised by Prof. Robert W. Heath, Jr., has been awarded the 2008 IEEE VTS Dan E. Noble Fellowship Award. The fellowship recognizes an individual most likely to impact the areas of concentration of the IEEE Vehicular Technology Society including wireless and mobile radio. This is the most prestigious award a graduate student in wireless communications can receive. The award will be presented at the IEEE VTS Conference (VTC) in Calgary, Canada on September 23rd.

Ms. Chae was the recipient of the Gold Prize in the 2007 Humantech Paper Contest, the KSEA-KUSCO scholarship in 2007, and the Korea Government Fellowship (KGEF) in 2005.

Schlumberger Day 2008

FREE TRIP TO ENERGY FAIR SEPT 27
9th Annual Renewable Energy Roundup & Green Living Fair
Saturday, Sept 27 in Fredericksburg
Bus leaves UT campus (Dean Keeton overpass) @ 10 am, back around 7 pm
FREE admission
FREE lunch
FREE ride
$5 deposit (refunded)
See Melody Singleton ENS 439 sponsored by IEEE Power Engineering Society

More...
Welcome Message

The Institute for Computational Engineering and Sciences was created at the University of Texas at Austin to provide the infrastructure and intellectual leadership for strong interdisciplinary programs in computational engineering and sciences...

Read the Welcome Message from ICES Director and Associate Vice President for Research, J. Tinsley Oden

Download the ICES Brochure (pdf, 12mb)

ICES Mission

The mission of the Institute for Computational Engineering and Sciences is to provide the infrastructure and intellectual leadership for developing outstanding interdisciplinary programs in research and graduate study in

Programs

Computational and Applied Mathematics Program

Postdoctoral Program

Employment Opportunities at ICES

Seminars

Unless otherwise noted, all seminars take place in ACE 6.304 from 3:30 – 5:00 PM.

Fri, Sep 26

Prof. Tom Hou — Dept. of Applied and Computational Mathematics, Caltech

ICES Seminar:

“A New Multiscale Finite Element Method for High-contrast Elliptic Interface Problems”

Tue, Sep 30

Science at the Center of the Storm

As Hurricane Ike barreled towards the Texas coast, millions moved inland to escape the storm, National Oceanic and Atmospheric Administration (NOAA) scientists and their university colleagues flew bravely into the center of the storm, hunkered down at operations centers, and manned the massive supercomputers at TACC to enable storm prediction and evacuation monitoring. [Read More]

Strengthening Industry Connections

The Texas Advanced Computing Center (TACC) conducted the first workshop for its new Science and Technology Affiliates for Research (STAR) program in mid-August.

TACC and the STAR partners, including BP America Inc., Chevron Corporation, and SiCortex, discussed how centers such as TACC could most effectively work with the growing number of companies utilizing advance computing technologies throughout their research and operations activities. [Read More]
Special Considerations

• . . .

• a Science college (not Engineering and not a School of Computing)

And of course, each of our departments has unique needs and a unique culture.
UT Austin is the largest top-10 computer science department in the US in terms of undergraduate majors.
<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2008</th>
</tr>
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<tbody>
<tr>
<td>professors</td>
<td>35</td>
<td>47</td>
</tr>
<tr>
<td>lecturers</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>BS students</td>
<td>2,500</td>
<td>900</td>
</tr>
<tr>
<td>MS students</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>PhD students</td>
<td>170</td>
<td>190</td>
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Some Trends

• toward commercialization and away from state support (18% of UT’s funding is from the State)

• shifting undergraduate enrollment

• explosive growth in the “market” for CS ideas and talent
• expanding breadth of CS curriculum
My Own Background

My research is in Formal Methods.

Specifically, I work in automatic theorem proving and its application to hardware and software verification.
My Own Background

• BS MIT, 1966–70 (Math)

• PhD University of Edinburgh, 1970–73 (Computational Logic)

• Xerox PARC, 1973–76

• SRI International, 1976–81
• UT Austin CS (Associate, then Full), 1981–87

• Computational Logic, Inc (Chief Scientist), 1987–97
  – wanted to move Formal Methods into industry
  – found UT too rigid
  – could not imagine ever serving as Chair
• UT Austin CS (Endowed Chair), 1997–present

• UT Austin CS (Endowed Chair and Department Chair), 2001–present
The Role of the Chair

The department is the most important unit in the university today.

Like all leadership positions in the university, CS chairs must balance the expectations of many players:

- students
• faculty
• staff
• Dean and other administrators
• Regents
• state legislature
• donors
• influential advisors
• industrial partners
• schools ("K-12")
(Rembrandt, *The Storm on the Sea of Galilee*, 1633)
The Role of the Chair
to steer the department through a sea of conflicting forces
The Most Important Question

*Where do you want to go?*
My Goal

to move the department to the next level of excellence through

• faculty hiring

• more competitive graduate recruiting

• improved quality of undergraduate students and curriculum
(Yawn . . .)

In the US such “plans” are said to be like “motherhood and apple pie”

The real question is *how do you get the resources?*
We need

• more and better space
• more faculty lines
• more graduate fellowships
• smaller classes

Vision without financing is hallucination.
To get the resources, we needed advocates.
Before I Took the Job

I told the faculty what we needed to do
I told them how I was going to go about it
I told them they would have to change:

No one is going to give us hundreds of millions of dollars just to be who we are today.
Step 1: Setting the Stage
Step 2: The Case for CS

• $8.7B per year in strategic impact

• Texas high-tech economy 2nd only to California in US

• computing is revolutionizing every field
No university, region, or country can be competitive without innovative computer science.
Step 3: Advisory Committee

Formed a group of influential advisors
spent 2 years working with them on needs and strategy
they convinced the President of the University to launch a development campaign for CS
Dell CS Hall
Other Major Issues

• drop in enrollment and elimination of lecturers

• salaries: dealing with a small “merit pool”

• more rigorous faculty evaluation process

• competitive hiring offers
• moving into new areas (for us) graphics, computational biology, robotics, security

• honors undergrad program

• industrial affiliates program (now with 28 partners)

• national recognition
Recent Awards
2008  Turing Award  
       Guggenheim Fellowship  

2007  US Congressional Commission on Cybersecurity  
       Computer Sciences and Telecomm Board  
       National Academy of Engineering  
       National Academy of Engineering  
       Computers and Thought Award  

2006  ACM Wilkes Award  
       SIAM Linear Algebra Prize
2005  ACM Software System Award

2004  ACM Software System Award
       SIGCOMM Award
       IEEE McDowell Award
       Guggenheim Fellowship

2003  ACM Hopper Award

2001  ACM Karlstrom Award
10 NSF Career awards, 5 Sloan Fellowships
A Critical Resource

The Computing Research Association (CRA)

all PhD-granting CS departments and major industrial research labs in US and Canada

Snowbird Chairs’ Conference
Taulbee Report (qv)
Intellectual Property

Best Practices Memo:
University-Industry Sponsored Research Agreements

Best Practices Memo:

- HTML
- PDF (20 KB)

The Memo stemmed from a paper by J Strother Moore, which included a detailed discussion of the issues involved as well as sample wording for agreements:

- "Model Language for Patent and Licensing Agreements for Industrially Sponsored University Research in Information Technology" (140 KB PDF)

The committee set up to investigate this issue was co-chaired by J Strother Moore (University of Texas at Austin) and Gabby Silberman (IBM T3 Watson Research Center).

http://www.cra.org/reports/ip/
Lessons Learned

• a department is organic

• respect (or at least acknowledge) department culture and change it slowly

• learn to work with the Dean

• delegate and support the decisions of your lieutenants
• either master the budget or find a person you trust absolutely

• decisions must be made without “adequate” data

• any decision is often better than no decision

• keep things in perspective – “nobody is
going to die”
• change the organization as necessary to support departmental goals

• join and participate in national leadership organizations

• network with other chairs – we’re all in this together
Thank You