Booming Faculty: Opportunities and Challenges

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Student enrollment keeps on going up...
And so faculty also grows...

But doesn’t keep pace with student growth
Leading to new issues

• Processes
  • How to scale faculty meetings, hiring committees, annual review processes?

• Politics
  • When we grow, what is the impact on others?
  • Who pays for our growth and how?

• Space
  • How are we finding room for all these professors and their students?
  • How do we handle being split into multiple floors/buildings/campuses?

• Culture and composition
  • What is happening to our culture as we grow so fast?
  • Are we gaining or losing diversity?
  • What is happening to our faculty mix (tenure track, teaching, research, lecturers, …) and what is the impact?

• Funding and other research support
  • How to fund start-up packages?
  • What additional staff are required, and how do we fund them?
  • How do we support research when federal budget pressures and growing numbers of faculty mean fewer $$ per faculty member?
BOOMING FACULTY
NORTHEASTERN
UNIVERSITY
CARLA E. BRODLEY
NEW FACULTY: 23 TT/T AND 25 TEACHING FACULTY
NOT JUST IN BOSTON....

SEATTLE – 2013
- FT Faculty – 5
- PT Faculty – 21

SILICON VALLEY - 2017
- FT Faculty – 3
- PT Faculty – 2

CHARLOTTE - 2018
- FT Faculty – 2
- PT Faculty – 1
SUMMARY OF ISSUES

- For each T/TT faculty member hired we interviewed 6+ others
  - 130+ interviews in the last 4 years!
- CCIS tenure-home faculty in 5 buildings; 10 non-CCIS tenure home faculty in 6 other buildings
- Space is the key issue: classrooms, labs, TA space, faculty offices
- Growth of students and load from 2014 to 2018:
  - BS: 812 → 1821; MS: 989 → 1810; PhD: 103 → 185
- Processes under extreme stress: Hiring, promotion/tenure, teaching evaluation, merit review (faculty led), PhD student review
THE START OF A SOLUTION

- January’s retreat focused on getting the best out of departments without moving to departments. With these resulting changes:
  - Initial preparation of T&P by area before heading to full committee
  - Graduate student review by area → final decision made there
  - Area chairs for 4 hiring committees all led by Senior Associate Dean
    - *All faculty can vote and voting is open – no consensus needed. The dean decides, but the dean likes consensus*
  - Regular research retreats for starting collaborations across areas/buildings
  - Admissions/graduate/undergraduate committees make decisions then are put forward for full vote (all votes are electronic and open)
University of Florida

Our Situation
Quick Summary

• Grown from ~37 to 55 faculty in 5 years
  • 46 TT, 9 TF (Provost and Dean appropriated funds for TF)
    • Herbert Wertheim donation; Rankings
  • 15 Full professors, 17 Associates, 14 Assistants

• Processes
  • Hiring, faculty meetings, mentoring and reviews all under stress

• Politics
  • Lack of faculty participation
  • Good buy-in and support from the campus/administration as a whole

• Space
  • Short on space; Looking for money for new building;
  • Florida Legislature has put up most of the $$$

• Culture
  • Dynamics are changing; hired several women and URM
  • Senior faculty either not participating or adjusting

• Research support
  • Increasing pressure to obtain funding.
## Enrollment

### CISE Enrollment on 15-Oct

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- Hiring Academic Advisors
- Trying to stay at 250 students per advisor
One area of focus for us: Workload

• Today
  • With enrollment growth, the new building and additional faculty, there are concerns over workload
  • The reality: hiring is helping the workload. No increases in teaching assignments
  • Result: Many concerns about participation, sharing of workload, processes

• Under discussion
  • Formalizing teaching assignment policy (done)
  • Setup teaching assignments by research group (done)
  • Concerns on new building placement with ECE department
The exploding faculty of University of Colorado Boulder CS
Undergrad majors / Faculty Size

- 2014: 1086 majors, 27 TT, 40 ratio
- 2016: 1633 majors, 30 TT, 54
2017 Search

- January 2017: new dean, new vision for CS
  “Bring me your strongest candidates.”

- 31 job interviews
- 30 offers
- 19 hires (63% return)
- 6 female (32%), 0 URM
- Faculty grew from 33 to 52 – 57.5%

- 3 tenured (1 assoc, 2 full), 16 pre-tenure
- also 4 instructors (teaching faculty)
New demographic
(after 2018 promotions)

- 26 assistants
- 9 associates (1 pre-tenure)
- 17 full
- 8 instructors (teaching faculty)
- 27 pre-tenure, 25 tenured
- New hires 2018
  - 3-4 assistant profs (1 female)
  - 2 instructors (replacements)
Undergrad majors / Faculty size

- 2014: 1086 majors, 27 TT, 40 ratio
- 2016: 1633 majors, 30 TT, 54
- 2018: ~2300 majors, ~54 TT, 43
What breaks when the faculty number jumps from 33 to 52?

• Mentoring – tenured vs. not, full faculty reviews
• Merit review, P&T – big!
• Space – there is none
• Generational changes
  – worries about department policies, transparency, written policies
  – resistance to being grouped
• Departmental structure
CS GROWTH
THE UCSD VERSION

DEAN TULLSEN
PROFESSOR AND CHAIR
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
UCSD
WHERE IT ALL STARTS – STUDENT GROWTH
2 TT Hires (both deferred)

6 TT Hires (8 total start), 1 TF

5 TT Hires, 0 TF
THE RISE OF THE NON-MAJORS

32% of students in our classes

52% of students in our classes

Non-Major Enrollments

- 2010/11
- 2011/12
- 2012/13
- 2013/14
- 2014/15
- 2015/16
- 2016/17
OPPORTUNITIES

• Hiring new faculty!
  • Growth into new research areas
  • Bolstering of struggling research areas
  • Bolstering of strong research areas

• Lots of junior faculty!
  • We went through a recent recession, particularly in CA
    • No hiring for several years
  • Much more fun to have too many junior faculty than too few
  • Junior faculty bring energy, ideas, attract PhD students, etc.
  • Junior faculty tend to be great faculty recruiters

• Hiring in larger numbers makes it easier to assess how you’re doing on diversity

• Group Mentoring and socializing
  • New faculty become a “cohort” that crosses research area
CHALLENGES

1. Teaching!
   - Faculty growth is not enough, and is not ever going to be enough.
   - Teaching load (increase) is not evenly distributed
     - lower division programming and ML
   - Harder to hire Teaching Faculty than Ladder Faculty
   - Many resources (including faculty slots) tend to scale with majors (at best), but that is only half the story
CHALLENGES

• 2. Culture?

• We were already a big dept. I feel we struggled more going from 30->50 (and 0->3 TF) over the last 20 years than going 50->60+ (3->4 TF).

• Having a healthy fraction of junior faculty has always been part of our culture – we suffered more in periods when we weren’t hiring.

• Staff culture – just like faculty growth was delayed, so was staff growth. This put a lot of strain on the staff.
CHALLENGES

3. Space!

- There are never short term solutions for space.

- Our bottlenecks:
  - Faculty offices, grad offices, labs

- Doing everything I can to avoid splitting the department physically.
  - Splitting the dept *would* be a dramatic culture change. Collaboration between virtually every pair of areas is a critical part of our culture.

- Good solutions, therefore, are several years out.
CHALLENGES

• **4. Processes**
  • Revamped teaching assignment processes
  • With more faculty, there seems to be more service/faculty, not less
  • In some ways, we’ll always think like a small dept, no matter how painful
    • All faculty weigh in on hiring, promotion, curriculum, most major issues.
  • Need to pay more careful attention to (individual) mentoring
UMass Amherst: Our Situation
Quick Summary

• Grown from 36 to 58 faculty in 4 years
  • 50 T/TT, 8 TF
  • 20 Full professors, 8 Associates, 22 Assistants
  • 2015 hired 4, 2016 hired 5, 2017 hired 6, 2018 hired 7

• Processes
  • Hiring, faculty meetings, mentoring and reviews all under stress
  • Current single unit, consensus-building, everyone involved culture doesn’t scale well

• Politics
  • Not a major issue – good buy-in and support from the campus as a whole
  • More issues across the UMass system, mostly handled by supportive Chancellor

• Space
  • Reclaiming space in our “old” building; increasingly split across the two
  • Looking for money for a new building; private-public partnership needed

• Culture
  • Seeing a split in perception and expectations between more recent and longer-term faculty

• Research support
  • First signs of struggles among junior faculty
  • Cushioned by major funding for Center for Data Science and some big grants
One area of focus for us: Culture

• Today
  • A single department college
  • The original culture: collegial, everyone participates, consensus-driven
  • The reality: too much happening for everyone to participate in every decision
  • Result: Many concerns about participation, sharing of workload, processes

• Solutions may involve a combination of approaches
  • “Representative democracy”
  • Multiple departments
  • Formalizing the culture (the social contract)
  • Creating more bandwidth
    • Reducing unnecessary work, limiting activities, adding staff, ...