The General Organization of Research and Education at US Universities

Robin Charpentier, Consultant
International Relations and Cooperation, NUM

What Qualifies me to Speak on the Topic of US University Academic Structure?

- Institutional vs 'Customer' Perspective:
  - Free-Standing Basic Science Research Institute
  - Multidisciplinary Center: basic, applied clinical, humanitarian, social sciences
  - Research Department
  - New Vice Provost Research Administration Office
  - Curriculum Reform
  - Institutional Representative: NEASC Accreditation
  - Fellowship, Postdoctoral, Graduate Program administration
  - Ivy League and State Universities

Categories of Possible Change at NUM

- Financing
  - Public funding
    - Government
    - Tuition
  - Private funding
    - Public Private Partnerships (Donations, In-kind Support)
    - Endowments (Chairs, Professorships, Unrestricted)
    - Capital Campaigns (Buildings, infrastructure)
    - Alumni Giving (Directed, School-specific)
    - Planned Giving (Bequests, etc.)
    - Investment Strategies
- Academic Mission
  - Research
  - Teaching
  - Community Outreach
- Quality
  - Accreditation
  - Internal/External Reviews/Advisory Boards
- Faculty
  - Research/Education Tracks
  - Appointment/Retention/Promotion
  - Faculty Development
  - Emeritus Status
  - Adjuncts
- Students (Graduate and Undergraduate)
  - Admission
  - Advising
  - Resources
  - International
  - Placement
- Facilities
  - Preventive Maintenance
  - Buildings and Grounds - Routine Maintenance
  - Planned Obsolescence
  - Short and Long Term Campus and Building Usage
- Administration
  - Structure to Implement Reforms
  - Interface
    - Government
    - Funders
    - Business Community/Employers
    - International Entities
    - Parents
    - Other Universities

Characteristics of US Universities

- Compared to other countries, the US has the largest, most decentralized, and most highly differentiated arrangements for higher education (on more than 1,200 campuses)
- By definition, integrates research and teaching: *universities exist to acquire (research) and transmit (teach) new knowledge*
- Distinctive feature of the US Higher Educational system is the persistent concentration of money and status resources in the top tier research universities ("success begets success")

The Joint Research and Education Missions in US Universities

- 1876: Johns Hopkins linked scientific research and graduate education
- Practice was grafted onto older existing universities such as: Harvard and Columbia
- This was the model when new universities were founded, so that both undergraduate and graduate instruction was offered from the beginning : Stanford – 1891 and University of Chicago – 1892
- Feasible, due to departmental organizational structure at the time

Causes of Organizational Change in US Universities

- Increasing specialization of faculty
- Greater stratification of University 'types'
  - Tier 1 vs Tier 2 Research
  - Ivy League
  - State vs Private Universities
  - Liberal Arts Colleges, Religious Universities
- Increase in number and types of subunits

How Research/Graduate Programs Were Added to Universities

- PhD programs were integrated in Universities at a level separate from undergraduates
- PhD programs were made part of departments, which were responsible for undergraduate instruction in a discipline
- In fact, model so strong, Hopkins expanded its org structure to include undergraduate programs
- This has become a stable and uniform model for university organization across time and universities

Characteristics of Departmental Organization

- Departments are:
  - Decentralized
  - Compartmentalized
  - Reflect disciplinary specialization
- Same faculty have authority over undergraduate and graduate programs
- Vertical (silo) organization, not horizontal
  (is there a better organization?)

Functional Result

- Graduate research programs became a link:
  - Faculty propagated themselves and the field through graduate students
  - Kept faculty attentive to their Departments
  - Kept research and teaching interlocked
  - Functional integration of research and teaching at departmental level
  - Model has continued, despite increased disciplinary specialization (which Departments and Professional Associations mirror)

Maintaining Sustainability of Research Excellence

THREATS

- Capital intensive technology-driven research
- Volatile federal funding; uneven, unstable funding base from external sources
- Equipment, campus buildings neglected
- Overproduction of PhDs

SOLUTIONS

- Universities created own fundraising programs
- Endowed funds for research and graduate fellowships in specific fields
- Scale:
  - Stanford's successful fundraising campaign was for 4.3 Billion USD
  - Harvard's endowment around 300 Billion USD

Trend: Organized Research Units

- Research units outside of traditional departmental structure (institutes, centers)
- Created to:
  - solve complex problems, often requiring a multidisciplinary perspective (aging, security, AI, neuroscience, imaging, global climate change, cancer)
  - Find new knowledge at the interstices of disciplines (no more Anatomy Department at Harvard Medical School)
  - broaden funding base (industry)
- Capital intensive, applied, adaptive, flexible, quick, attractive to graduate students, best equipment
- Needs constant upgrades and funding, difficult to close, expensive infrastructure
- Trending: 1990: est. 2,000 -10,000 total in the US
  2000: est. 40 – 300 per research university !!!