REVENUE ENHANCEMENT:

AT WHAT COST? TO WHAT BENEFIT?

- The Golden Age of the Private Research University Is Over Ron Ehrenberg (ILR)
- Peer Comparison
 - Paul Streeter (Vice President for Budget and Planning)
- Cornell Faculty Numbers
 - Joe Burns (Dean of University Faculty, Engineering, Astronomy)
- A Way to Think About Masters Programs and Revenue Enhancement Charlie van Loan (Computer Science)
- Thoughts on Building a Successful Masters Program
 - Kathryn Caggiano (Operations Research & Information Engrg.)
- Masters Programs: Challenges and Opportunities
 Francesca Molinari (Economics)

Comments and Questions from the Floor

Reception, 6:00-7:00 PM, Art Gallery, Goldwin-Smith Hall





The Golden Age of the Private Research University is Over

Ronald G. Ehrenberg Cornell Higher Education Research Institute



Cornell University ILR School





My Career has Coincided with the Golden Age of the Private Research University

Over the Last 40 Years

- 1. Undergraduate admissions have become increasingly selective
- 2. The growth of federal research funding has enabled extensive research activities and the training of large numbers of PhD students
- 3. Many of us are teaching fewer classes a year than we did when we first got here
- 4. While we regularly complain at Cornell about our faculty salaries as compared to those at richer competitors, our salaries far outdistance those of faculty at other types of institutions
- 5. Being a faculty member at places like Cornell has been, and still is, a great gig. But our institution's financial model is breaking down Cornell University ILR School





Our Financial Models are Breaking Down(1)

- Our undergraduate tuitions grew at rates averaging 3 to 3.5% more than inflation for the last 30 years but economic and political forces are limiting our ability to raise tuition as rapidly in the future
- Our financial aid budgets have dramatically increased and at the margin we typically give back more than 45% of our new tuition dollars in grant aid, leaving us with very limited resources to operate our institution.







Our Financial Models Are Breaking Down (2)

- The share of our ever expanding research budgets funded out of institutional funds has increased and we now may be subsidizing research out of undergraduate tuition dollars. Cut backs in federal funding for research, or the growth path of federal funding, will exacerbate this problem
- Instructional expenditures have declined relative to almost everything else we do. While some institutions, including Cornell, have taken dramatic steps to reduce administrative costs, these actions are not a panacea and often shift costs onto faculty. We need continual efforts to reduce administrative costs and to deliver high quality education at lower costs







Looking to the Future(1) **Reducing Cost Structures and Enhancing Revenues**

- Increased use of FT and PT non tenure track faculty for undergraduate instruction (but no such thing as a free lunch).
- Increased use of technology in teaching to improve instruction and reduce costs
- Increased sharing of academic resources with competitors ۲
- Increased teaching expectations for tenure track faculty without • research grants /spillover effects on humanities
- Modification of Financial Aid Policies (social vs. private goals of ۲ institutions/concern about the middle)







Looking to the Future (2) Reducing Cost Structures and Enhancing Revenues

- . Quest for enhanced revenue from annual giving (including funding for research) and building the endowment
- Increased efforts to commercialize research findings
- Improving usage of facilities (more summer and evening programs unique locational disadvantage of places like Cornell). Use of differential (lower) tuition to expand enrollments at underutilized times
- Increased efforts to generate revenue from full-tuition paying or lower tuition discount programs (such as professional masters), including hybrid and online. But concerns about protecting our brand







A Concluding Thought

Many faculty members, especially in arts and sciences, worry that some of these revenue enhancing strategies will take time away from what they see as the core missions of the university – namely undergraduate and doctoral education and research. Efforts by administrators to encourage their adoption often exacerbate tensions with faculty.

Speaking as an economist, I urge my faculty colleagues to think of these activities as ways to ease the budget constraints that our institution faces, which in the long run will permit us to do more of the things we value the most. But of course these activities must be conducted in ways that make sense educationally and only after careful weighting of the benefits and the costs. Our panelists will discuss these issues in more detail







Suggested Readings

- R. Ehrenberg, *Tuition Rising: Why College Costs So Much* (Harvard Univ. Press, 2002)
- R. Ehrenberg, "American Higher Education in Transition", *Journal of Economic Perspectives* (Winter 2012)
- R. Ehrenberg et. al. "Who Bears the Growing Cost of Science at Universities" in P. Stephan and R. Ehrenberg eds. *Science and the University* (Univ. of Wisconsin Press, 2007)
- R. Ehrenberg and L. Zhang, "Do Tenured and Tenure Track Faculty Matter", *Journal of Human Resources* (Summer 2005)
- R. Ehrenberg and J. Monks, "U.S. News & World Report Rankings; Why Do They Matter", *Change* (Nov/Dec 1999)
- D. Webber and R. Ehrenberg, "Do Expenditures Other Than Instructional Expenditures Affect Graduation Rates", *Econ. of Educ. Rev.* (Dec 2010)





Faculty Forum

Peer Comparison March 18, 2015

Faculty Forum – Revenue Enhancement

Relevant Peer Comparisons

- Endowment Value and Endowment Per Student
- Mix of degrees conferred
- Faculty Profile Tenure Track & Non-Tenure Track

Cornell - Endowment per student



FY13 peer endowment per student



Degrees Conferred, 2013



Degrees Conferred, 2013 – Detailed Data

•	Institution	Bachelor's	Master's	Pro doc	Res doc	Grand Total
•	Brown University	1,916	491	113	205	2,725
•	Princeton University	1,271	573		319	2,163
•	Cornell University	3,932	2,289	281	490	6,992
•	Wash U in St Louis	2,072	1,543	551	255	4,421
٠	Caltech	256	96		236	588
٠	Duke University	2,162	2,006	635	495	5,298
•	University of Pennsylvania	3,430	4,136	680	527	8,773
•	U Southern Cal	5,003	6,332	877	663	12,875
•	Yale University	1,486	1,618	360	398	3,862
•	Stanford University	1,734	2,310	288	764	5,096
•	MIT	1,206	1,760		587	3,553
•	Northwestern University	2,796	4,922	528	481	8,727
•	University of Chicago	1,586	2,717	297	413	5,013
٠	Johns Hopkins University	1,973	4,439	132	530	7,074
•	Harvard University	1,861	4,041	778	686	7,366
•	Columbia University	2,583	6,958	755	627	10,923

Master's Degrees Conferred: Subjects



Faculty, 2013

Cornell University University of Southern California Harvard University University of Pennsylvania Stanford University Northwestern University Columbia University Massachusetts Institute of Technology University of Chicago Duke University Yale University **Princeton University** Washington University in St Louis Brown University Johns Hopkins University California Institute of Technology



Cornell University

Degrees awarded per tenured faculty member



Relevant Cornell Data: 2002-2014

- Faculty Size
- Student Enrollment
- Faculty Hires and Departures
- Numbers of Non-Tenure Track Academics
- Faculty Age Distribution

From /university-factbook

Joe Burns

Engineering and Astronomy

FACULTY SIZE, 2001-2014

Faculty by College

	Fall 2001	Fall 2002	Fall 2003	Fall 2004	Fall 2005	Fall 2006	Fall 2007	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Ag & Life Sc	384	388	385	388	388	383	383	376	375	363	362	362	364	361
Arch, Art &	57	56	52	51	48	50	56	55	54	48	48	44	45	45
Arts & Scie	521	516	519	525	528	536	537	534	517	505	531	535	544	556
Computer &													44	46
Engineering	205	222	228	228	231	240	236	235	234	232	227	218	199	199
Hotel Admi	40	39	41	39	38	41	43	39	38	39	42	40	40	42
Human Ecol	91	90	88	90	93	92	91	92	91	92	94	98	101	101
Ind & Labor	47	47	47	47	50	50	52	53	54	52	58	59	59	60
Johnson Sc	48	50	49	51	52	56	59	56	55	51	50	54	56	61
Law	32	33	35	37	36	46	47	49	53	52	52	51	48	52
Veterinary	118	115	116	118	123	133	134	132	132	126	124	118	128	129
Other Cent	8	8	8	8	7	6	9	12	14	14	8	8		
Grand Total	1,551	1,564	1,568	1,582	1,594	1,633	1,647	1,633	1,617	1,574	1,596	1,587	1,628	1,652

Previous Peak = 1647 in 2007 All-time high = 1652 now

content officeroney

STUDENT ENROLLMENT: 2002-2013

10.3% Total G	rowth			21	,5:
19,575	19800			2,	,93
2,786	2,949			-	94 34
863 313	915			2	,8
1,786	2,114				
13,672	13,466	5		14	,3
	Degree objective		Growth in I	Prof. MS	
	Research doc Professional d Research mas	torate loctorate ster's	2002-2014:	66.3%	
	Professional r	naster's leclared	2007-2014:		
	Bachelor's			40.4%	
all 2002 all 2003	all 2005 all 2006 all 2006	all 2008 all 2009	all 2010	all 2012	all 2013

Changes in Faculty Numbers



Numbers of Non-Tenure-Track Faculty

All Academic Professionals

Column one	Column two	Fall 2002	Fall 2003	Fall 2007	Fall 2009	Fall 2010	Fall 2013	Fall 2014
Instruction	All	344	343	383	344	335	324	332
	Total	344	343	383	344	335	324	332
Research	All	415	437	450	456	453	381	365
	Total	415	437	450	456	453	381	365
Full Time Academic Drofessionals								

Full Time Academic Professionals

Column one	Column two	Fall 2002	Fall 2003	Fall 2007	Fall 2009	Fall 2010	Fall 2013	Fall 2014
Instruction	All	254	247	265	242	240	252	267
	Total	254	247	265	242	240	252	267
Research	All	365	385	392	405	380	328	314
	Total	365	385	392	405	380	328	314

5% growth in full-time; -3% in total

FACULTY AGE DISTRIBUTION: 2001-2014



Proximity of Degree Programs

A Way to Think About Masters Programs and Revenue Enhancement

Charlie Van Loan Computer Science

Executive Summary



1. There is a giant one-hundred dollar bill for the taking.

2. There are "Ben Franklin" connections between liberal education, practical education, and basic research that inform the "professional" masters debate.

My Vantage Point is CS





A&S + Engineering = 200/yr 1-year, about 100/yr about 125 at any one time

One Kind of Proximity



Breadth, entrepreneurial thinking, and research are all over the place and not confined to any one degree program. The whole can be greater than the sum of the parts.

Another Kind of Proximity





The Masters programs being developed at Cornell Tech do not detract from the basic research mission. They enhance it.

Yet Another Type of Proximity

CS + Classics



CS + English







CS + Philos.

Stanford's CS + X "Combined Major" Program. Setting the perfect stage for creative masters work.

Revenue Enhancement Arithmetic

Important summations that can be used to attract good students into a 1-year program:

- 4+1 The BA/BS is not enough.
- 7+2 Nine semesters for the AP-rich.
- 3+2 Seamless Ugrad+Masters
- 1+1 Major in This & Get a Masters in That

Conclusion: Let's Think Outside the Box



And What's in the Box?

1. The idea that a 1-year masters program automatically degrades the research environment.

2. The idea that a 1-year masters program is automatically a "terminal" degree program.

3. The idea that a 1-year masters program is automatically a place where you specialize and cling to a narrow job-oriented course of study.

The Example of David Starr Jordan (Cornell, 1872)



Our first Masters Student was also Stanford's first President

Thoughts on Building a Successful **Masters Program Lessons Learned from Cornell MEng Faculty Forum** March 18, 2015

Kathryn Caggiano

"Literature Review"

MEng Planning Committee Findings (2000, 2005, 2011, 2014)

2014 MEng Planning Committee

Kathryn Caggiano, ORIE Scott Coldren, ECE Peter Doerschuk, BME Yoanna Ferrara, RGS Bruce Land, ECE Linda Nozick, CEE Matt Ulinski, MAE Marjolein van der Meulen, RGS Charlie Van Loan, CS Jeff Varner, CBE

- MEng Student Exit Surveys 100% Response Rate (May 2014, August 2014, and December 2014 MEng graduates)
- J. Springman, "Implementing a Stakeholder Strategy", Harvard Business Review (July 28, 2011).
- Front Line Experience in ORIE; A&S GSAB at W&M

Current MEng Landscape

- ➢ 50th Anniversary of MEng Degree in 2015
 - \rightarrow **1964** faculty resolution: 5-yr BEng \rightarrow 4-yr BS + 1-yr optional MEng
- 600+ students were graduated from 15 programs
 - → **45%** were domestic students [15% to 79%]
- 60% had job offers prior to graduation [17% to 84%]
 - → **79%** were able to find job search assistance [53% to 94%]
- 80% felt there were <u>enough courses</u> of interest offered [53% to 100%]
- ➢ 86% would recommend the program [61% to 95%]

So, You Are Thinking About Offering a Masters Program...

Five Questions to Consider

- **1.** What are your Value Propositions?
- 2. What are your Capabilities and Resources?
- 3. How will you Address the Gaps?
- 4. Is It Worth it to Proceed?
- 5. How will you Measure your Success in Meeting the Value Propositions?

> What's In It For Students?

Transformational Experience, Ivy League Degree, Enhanced Knowledge and Skills, Expanded Career Options, Salary Bump, Broad and Influential Network...

What's In It For Faculty?

Application-Oriented Courses and Research, Additional Talent Pool for RAs/TAs, Facilitates Connections to Industry...





What's In It For Departments and Colleges?

Substantial Revenue Stream, Boost to Rankings, Increased Brand Awareness, Complementary "Product" Option for Students and Faculty, Expanded Alumni Base...



What's In It For Partners, Employers, Alumni?

Academic Partnerships, Access to Talent Pool, Personal and Professional Fulfillment ...



Five Questions to Consider

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= Total Value Gained

Five Questions to Consider

- 1. What are your Value Propositions?
- 2. What are your Capabilities and Resources?
- 3. How will you Address the Gaps?
- 4. Is It Worth it to Proceed?
- 5. How will you Measure your Success in Meeting the Value Propositions?

- Size and Quality of Applicant Pool?
- Students Would Recommend?
- Placement?
- Publications?
- Faculty Participation?
- Rankings?
- Industry Partnerships?
- Alumni Engagement?





Key Lessons from MEng

- Focus on Long-Term Value (not short-term revenue)
- Student Value Comes First
- Faculty Participation is Essential
- Get the **Right People** in the **Right Roles**
- Ask, Measure, and Innovate Across the Whole Program Value Cycle

Masters Programs: Challenges and Opportunities

Faculty Forum 18-March-2015

Francesca Molinari Dept. of Economics

RETF

- In 2013-14, the College of A&S chartered a Revenue Enhancement Task Force.
- The task:
 - Find new sources of revenue for the College.
 - Protect the College's commitment to academic and educational excellence over the long term
- The result: A call for pilot proposals for:
 - Masters Programs.
 - Mid-Career Short Courses.

RETF: Membership

Name	Department
Dave Collum	Chemistry and Chemical Biology
Anne Dunford	Molecular Biology and Genetics
Kristen Ford	Alumni Affairs and Development
Myra Hart	Harvard Business School
Terry Herter (co-chair)	Astronomy
George Hutchinson	English
Michael Jones-Correa	Government
Sturt Manning	Classics/Archaeology
Francesca Molinari (co-chair)	Economics
Noliwe Rooks	Africana Studies
Dave Taylor	College of Arts and Sciences

Faculty Forum

Why Masters Programs

- Teaching is what we excel at, along with research.
- If correctly designed and run, masters programs can help us fulfill our goal of creating lifelong learners:
 - Need to make sure to create value for the students.
- Designing a masters program can help us rethink our approach to higher education:
 - Sometimes 4 years are not enough.
 - There are opportunities to think of new programs, blending several Departments.

03/18/2015

Faculty Forum

More Details

Two models:

- SMALL: (excess capacity) relatively little additional investment in faculty or staff, though still require greater commitment from existing faculty.
- LARGE: (new faculty) require adding more faculty and grad students, administrative assistants, etc.
- NOTE: expanded model makes most sense in disciplines where graduate students can easily find jobs.
- May blend with online: e.g., 70% online, 30% on campus

Benefits and Costs

Benefits:

- Revenue
- Expanded size of Ph.D. program (TAs)
- Expanded size of faculty
- Contribution to financial aid packages
- Costs:
 - Faculty time
 - Administrator
 - Quality of students
 - Infrastructure use

Considerations to Get Started

- One year program or two-year program?
- Short and long run enrollment?
- How to get started, and how to scale up?
- With thesis or without thesis?
- How many/which courses brand-new?
- In partnership with other Department/School?
- Need a program Director and/or an Administrator?
- Accreditation process: The Graduate School.

Summing Up

Masters programs offer new opportunities:

- Rethink our approach to higher education (we rethink our courses yearly!)
- Rethink opportunities for blended programs.

Masters programs present new challenges:

How to create a program that brings value to the students while preserving our commitment to research and to undergraduate and Ph.D. education?