



2022 PTIE Conference Abstract

Title: Incentivizing Impact Through Innovation: An International Review Of University Policies

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Abstract:

Universities utilize a range of criteria and practices to assess and reward faculty innovation and impact. The presentation will present findings of our review of tenure and intellectual property policies at universities ranked among the top 100, internationally, by Times Higher Education and QS, including a presentation of policy language defining excellence and impact through research and scholarship. The presentation will discuss the various forms of research products produced by universities and the ways in which research products are translated for societal impact. We also assess the degree to which promotion criteria are set as university policy, versus delegated to individual units, or individual faculty. Findings are supplemented by our survey of National Academy of Inventor fellows on rewards and recognition for faculty innovators, and their contributions to “inside innovation” that improves university practices and offerings. The presentation is part of a broader study of innovation in university practices, which will be published in an upcoming book through MIT Press.



Incentiving Impact Through Innovation: An International Review of University Policies

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Promotion and Tenure – Innovation and Entrepreneurship –
Conference

UNIVERSITY INNOVATION PROJECT



Aims

- Investigate How University Culture & Strategy Supports (and Hinders) Innovation in Practices and Offerings
- Assess Interactions Between Universities and Private Sector Affecting Innovation

Approach

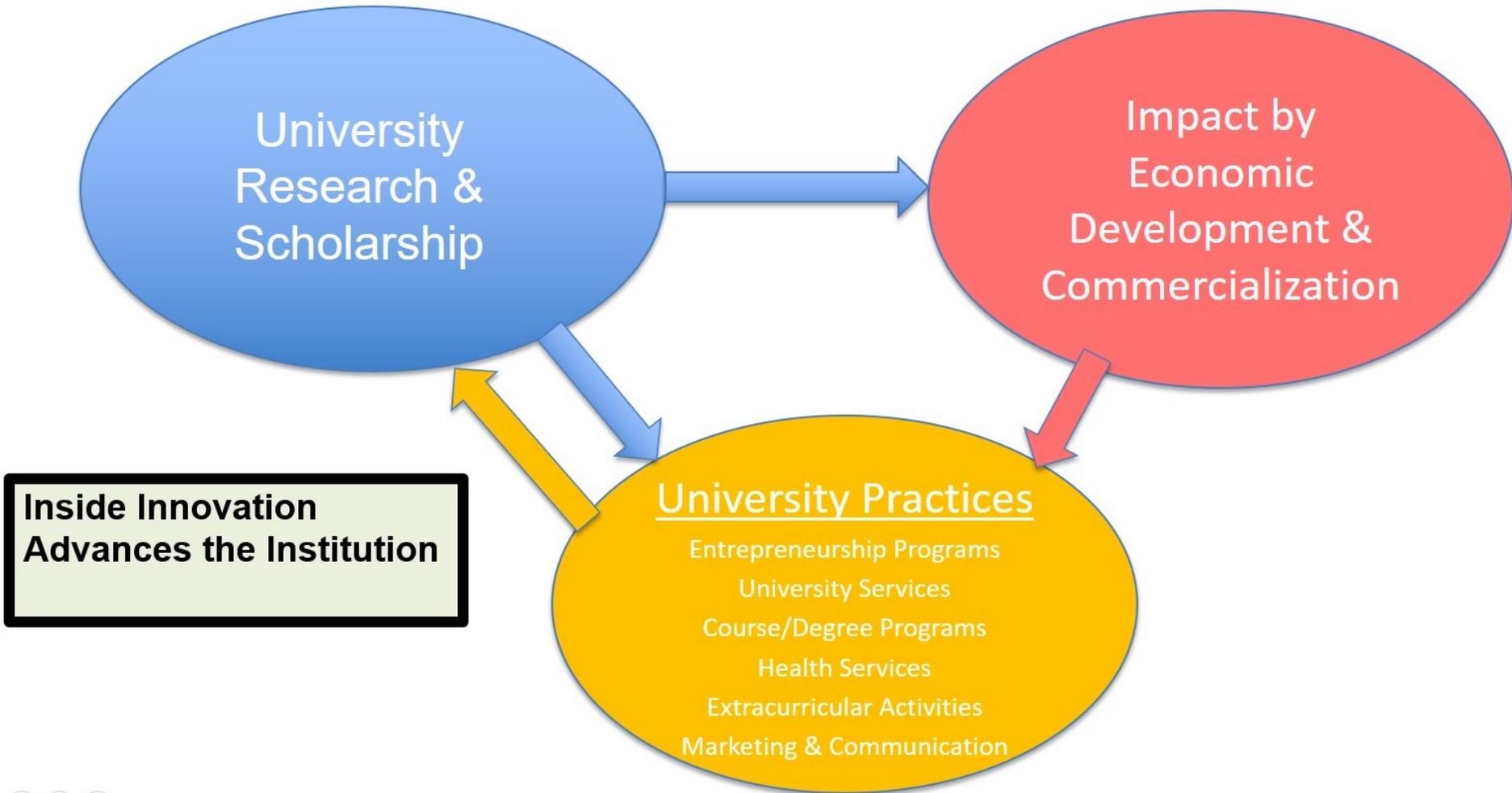
- Interviews, case studies, surveys
- Assessment of policies and planning documents (university strategic plans, IP, tenure and promotion)
- Book for MIT Press: “Breaking Tradition: Trust and Innovation in the American University”

Does University Culture Encourage and Promote *Inside* Innovation?

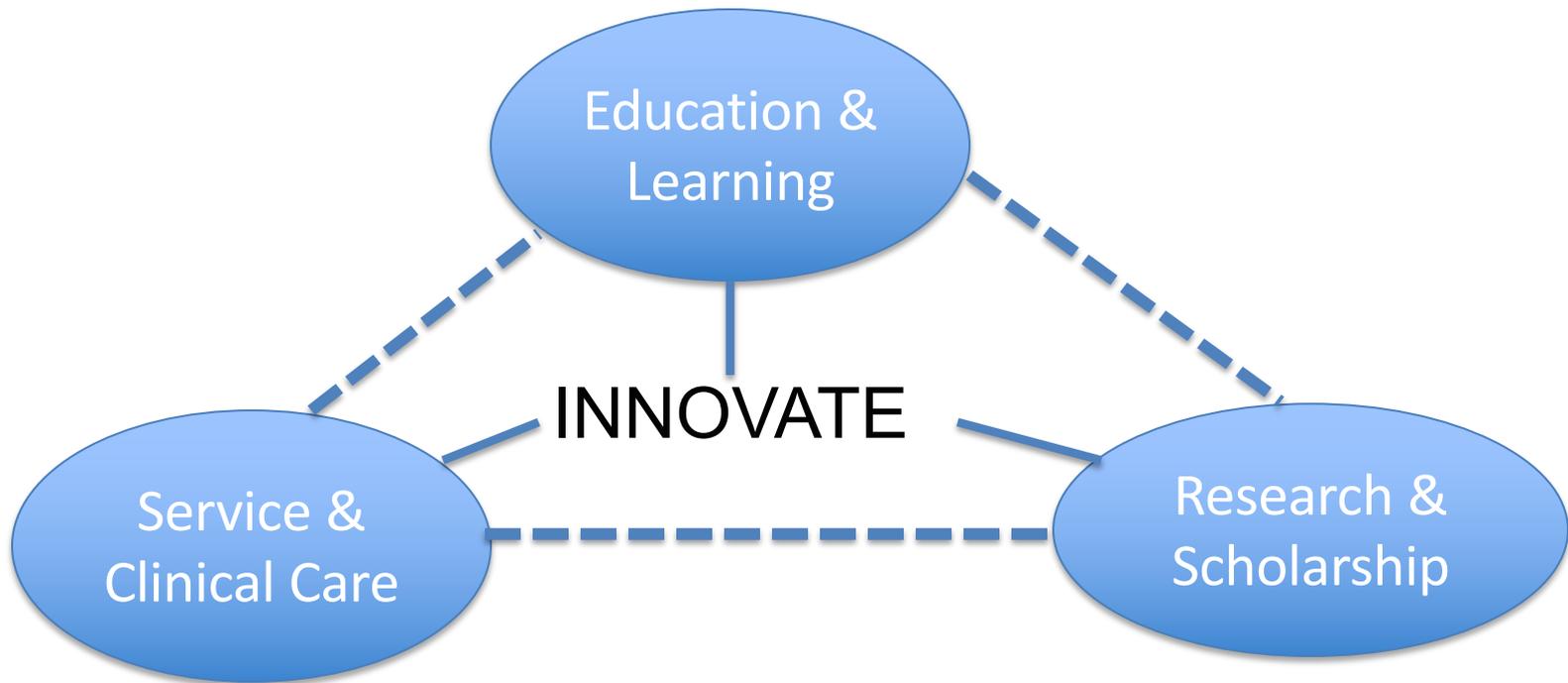


Notions for Innovation

- **Outside: Target is outside the university**
 - Morrill Land Grant Act
 - APLU Innovation and Economic Prosperity Institutions
 - Kaufman, Blackstone Launchpad, Michelson IP, i-Corp, Coulter Translational Partnership, Alfred Mann Institute
- **Inside: Target is inside the university**
 - ACE Institutional Transformation
 - AGB Innovation in Higher Education
 - Some aspects of “entrepreneurial universities”



Connect the Dots



Policy Analysis



- Study Group: universities ranked in top 100 worldwide, either in QS or THE (about 125 in total)
- Sought P&T Policy and IP Policy for each institution from websites (university wide – not school/college)
- Used Google Translate for Non-English
- For those not posted, contacted universities to obtain copies
- At least one policy for 107 universities

Example: High Ranked



University	Total Rank	Rank Group	Continent	Tenure and Promotion Policy			
				Depth	Delegate		
Oxford	3	1	Europe	Minimal	Department		
MIT	6.5	1	N. Amer	Minimal	Department		
Harvard	7.5	1	N. Amer	Moderate	Department		
Stanford	7.5	1	N. Amer	Moderate			
Cal Tech	8.5	1	N. Amer	Minimal			

Regional Distribution: N. America (44), Europe (37), Asia (18), Aust/NZ (8)

Classification



- Ranking: high, middle, low (among top group)
- Geographic region (continental)

University	Continent	University	Continent	University	Continent
Chinese University of HK	Asia	Delft University of Technology	Europe	Boston University	North America
City University of Hong Kong	Asia	Durham University	Europe	Brown University	North America
Hong Kong Polytechnic	Asia	Ecole Polytechnique Lausanne	Europe	California Institute of Tech	North America
KAIST	Asia	Erasmus University Rotterdam	Europe	Carnegie Mellon University	North America
Kyoto University	Asia	ETH Zurich	Europe	Columbia University	North America
National Taiwan University	Asia	Free University of Berlin	Europe	Cornell University	North America
National University Singapore	Asia	Ghent University	Europe	Dartmouth College	North America
Osaka University	Asia	Heidelberg University	Europe	Duke University	North America



Quantification

- Usage of key words
- Word length of P&T criteria
 - Minimal: <100
 - Moderate 100-250
 - Extensive: 250+
- Whether or not P&T addresses commercialization or intellectual property
- Whether IP policy offers choices to inventors
- Whether IP policy acknowledges relationship to tenure and promotion

Distribution of Length: P&T Criteria



Detail in Criteria	All (94)	Region				Ranking Group		
		Asia(8)	Australia(6)	Europe(35)	N. America(45)	Lower	Middle	Upper
Minimal	56%	88%	67%	49%	56%	55%	68%	47%
Moderate	28%	0%	33%	37%	24%	32%	19%	31%
Extensive	16%	13%	0%	14%	20%	13%	13%	22%



What Words Are Used to Convey Inventor Choice?

- Open
- Free
- Freedom
- Promote
- Option
- Choice



Observations

- Policies may or may not explicitly state criteria, goals, values, etc. Instead, they may be very process focused.
- P&T policies sometimes delegate criteria to schools/colleges, departments, or even individual (about 20%)
- Policies utilize similar steps, but vary greatly in length and detail
- Little linkage between IP policy and P&T policy



Example P&T Summary Language

(may be contextualized)

- Outstanding contribution (in breadth and depth) in relation to at least one of the following: Research and Scholarship, Impact/Outreach/Knowledge and Technology Transfer, or Teaching and Pedagogical Activities
- An entire professional lifetime of outstanding research and national leadership in significant areas of scholarly study
- Research outputs consistent with discipline norms, often as lead contributor, resulting in international recognition
- Scientific activities in the academic or industrial context and their reflection in the publication record, scientific presentations and patents; acquisition of research funds;

Commercialization Language



(about 25% say something on topic)

- Significant demonstrable success (quantified where possible) realized by beneficiaries outside of academia; Significant involvement in the establishment of a sustainable spin out company or evidence of other forms of commercial success; Significant contribution to work that promotes the impact of XX research, for instance sustained engagement with a collaborator outside of academia (such as industry/policy/civil society organization)
- Working collaboratively with national and international partners, making a major contribution to the delivery of demonstrable societal, economic and University benefit from academic and applied research; Demonstrating a major influence with industry, business or public bodies in advancing original ideas and principles into products methods or policies;
- Inventions leading to patents
- Constructive contributions

More Expansive Patent/Start-up Language



- Inventions, patents, and commercialization that are central to a promotion candidate's most significant work are considered positively in the review process to the extent that the results of those activities contribute to the distinction and importance of the faculty member's body of work.
- While patents cannot replace peer-reviewed publications in a candidate's dossier, they are a sign of impact and productivity and will be considered accordingly.
- Technological innovations and patents; The Impact on society, including in the economic sector (for example, "spin-offs")

Duty to Public: IP Policy Quotes



- The University is a community of scholars whose essential functions are the pursuit and dissemination of knowledge and understanding through research and teaching. Within that context, this Policy aims to: (i) promote the dissemination of knowledge and maximize the University's impact on society; (ii) facilitate the non-commercial use of inventions arising from University Research; (iii) establish the University as a hub of knowledge transfer and networking between researchers, industry and customers
- XXX pursues an active policy on valorisation, whereby valorisation is defined as follows: 'the process of making knowledge gained through scientific education and research suitable or available for economic or social exploitation, or the exploitation of such knowledge through competitive products, services, processes and new activities (or participation therein)'.

Service to Faculty: IP Policy Quotes



- The creation of intellectual assets, sharing of ideas and openness represent core values for an academic community. The primary goal is to increase and disseminate knowledge. The creation of intellectual property (IP) is a natural result of work performed within the academic community and XXX wishes to make sure that such IP legitimately vests in the inventor who has generated it and at the same time strive for continued sharing of knowledge and openness.
- On the other hand, the creation and utilization of intellectual property will be encouraged by giving incentives to faculty and staff who have created intellectual property, such as returning income such as royalty and reflecting it in performance evaluation.
- mission “is to be at the service of researchers by advising them from the start of projects, then accompanying them in their financing procedures and the administration of grants, then in the promotion of their research results.



Regional Observations

- U.S. institutions are somewhat standardized in IP policy – as result of Bayh-Dole
- Sweden explicitly assign IP to inventors (not institution)
- Most universities, however, claim IP ownership (perhaps coupled with release process)
- In China, blurred line between government and university
- Not all countries have tenure. Sometimes treated as civil servants
- Professor titles also vary (e.g., UK system)

Example P&T Language from China



- Good ideological and political quality and moral quality, academic ethics and professionalism. Leading scholars in the field or direction of the subject at home and abroad.



Summary

- Significant Range in Policy Structure and Depth
 - Commercialization difficult/impossible to include in P&T if criteria are minimal
- Patents, Commercialization Most Often a Part of Notion of “Impact” in P&T (ala NSF Broader Impacts)
- UK Universities Often Address Broad Notions of Impact
- IP Policies Balance Goals: Benefiting Society vs. Benefiting Inventors. Seldom Linked to P&T.
- Research Paper Available in Coming Weeks (email rwhall@usc.edu for copy of manuscript)



Openness

- How is right to publication protected?
- Is open scholarship promoted?
- How do we value public dedication of IP, or open source?
- To what degree is openness a duty versus a right?



Tensions

- Rights vs. Duty
- Public Benefit vs. Inventors vs. Institution
- Monetized vs. Free
- Inside vs. Outside Innovation
- Research Paper Available in Coming Weeks
(email rwhall@usc.edu for copy of manuscript)