Inspiring and Engaging Faculty, Student, and Center-led Interdisciplinary Research

At many research universities the task of creating an environment of academic excellence increasingly includes the pursuit of interdisciplinary approaches to liberal arts, sciences and professional education and addresses the need to engage students in the development of ideas across and within disciplines, both inside and outside the classroom. There are good reasons for this, since a majority of employers is seeking talent with highly specialized skills and knowledge, but also with a range and depth of transferable skills enabling them to keep learning, pursue research on their own, to think in the abstract and outside their box, work productively in teams, and communicate ideas and concepts coherently and articulately. Because of my own scholarly work in Caribbean Studies and in Migration Studies, I have long considered myself a "trespassing political scientist." So, I have long held interdisciplinary "persuasions", but also have a sense of how much persistence and intentionality it really requires for an entire institution of higher education to deeply embed such interdisciplinarity.

I also understand that every institution has its own mix of priorities (e.g., its mix of undergraduate, graduate, and continuing studies), it has its existing pools of resources, prospects for new resources, and its points of pride that greater things can be built upon. As well, each institution has its own specific challenges and opportunities that need to be addressed. To determine how to best move forward depends on how all these aspects align within a commonly accepted strategic vision. And the implementation of that strategic plan really emerges out of ongoing conversations and consensus-building activities. In my view, the notion of strategic vision should lead us to the question of institutional design – specifically, how to design the knowledge enterprise that a university is actively engaged in. The title of this brief perspective may imply that faculty, student, and center-led research are each discrete areas, but in practice they are all related and bases of

synergies that need to be unlocked by having all at the table. To the extent that a university or college is seeking to foster its interdisciplinary capacities or programs, it is important to create platforms and a central position or office to host and initiate a steady stream of open conversations, formal and structured meetings, and brainstorming sessions to explore new ideas and avenues for such intentional knowledge production.

In the following pages, I briefly want to elaborate on two loosely divided aspects: 1) the notion of interdisciplinarity in modern science, and 2) some ideas on how to promote the evolution of an interdisciplinary knowledge architecture, by going beyond what has been termed *Berkeley envy* and avoiding the pursuit of merely generic piece-meal efforts towards a diffuse *Harvardization*.

The question of interdisciplinarity

Some of the most exciting advances in science and technology come out of interdisciplinary and transdisciplinary work.[1] One reason for this – among others – is that today we have both a more holistic understanding and better technologies to investigate and resolve real-life issues and knowledge problems. Many of these are on a global scale and require genuinely multi-dimensional solutions.

So, to the extent that growing interdisciplinarity is one of the ultimate goals for this position, it needs to feed into the above-mentioned design process. I would go even a step further and point out – as Columbia University's Jonathan Cole does in his book *The Great American University* – that "almost all truly distinguished

[1] While there are many subtle and some less subtle distinctions made between interdisciplinarity, transdisciplinarity, multidisciplinarity, pluridisciplinarity, postdisciplinarity, and other similar subtypes, this brief paper does not engage in these distinctions. For the purposes of the argument here, I consider interdisciplinarity as a catch-all phrase that denotes serious academic work that avoids the utilization of just one methodology and/or epistemology clearly attached to a single disciplinary body of work, and goes above and beyond such single-track pursuits without sacrificing rigorous analysis. I am, however, following Crow & Dabars in their understanding of transdisciplinarity as connoting knowledge that is "coproduced and coordinated transinstitutionally," especially where it goes beyond academia and partners up with business and industry - Michael M. Crow and William B. Dabars, *Designing the New American University*. Baltimore: Johns Hopkins University Press 2015, p.204.

universities create a seamless web of cognitive influence among individual disciplines that affects the quality of the whole."[2] But one needs to be mindful too of the fact that, by far, not everybody is convinced of the values and benefits of inter- or transdisciplinary approaches. And their concerns certainly have their place! After all, the *Poincaré conjecture* in mathematics is unlikely to be solved with the help of someone specialized in Modern German Literature or in biomedical research. But then again, gaming and crowd computing are increasingly seen as a field where new progress in other sciences could be made. So, my vision for a central position or office would be that it facilitates existing disciplinary research, and – as a more long-term project – to use it as the institutional platform to foster a culture of greater understanding and intentional communication between and among academic disciplines and interdisciplinary fields.

It is worthwhile remembering that interdisciplinarity is really the original format of science from its institutionalization in the 17th Century. Increasing specialization and emergence of academic disciplines came after. As an unintended consequence of constantly advancing specialization, it also led to the emergence of scientific jargon and, with it, an increasing inability to communicate the central concerns of many fields of inquiry.[3] It was only in 1970, that the first international conference on interdisciplinarity convened at the University of Nice. This conference marked the academy's self-conscious return to attending to this original format of doing science. Around that time, and already decades earlier, we saw the development of early programs pioneering interdisciplinarity at Harvard, Columbia, Princeton, UC-Santa Cruz, at Stanford, and Johns Hopkins. In Europe, we had Oxford's All Souls College, Sussex University, Collège de France, and in Germany the foundation of the University of Bielefeld as an interdisciplinarily-

[2] I am adopting this quote from Jonathan Cole, as well as several subsequent notions or concepts from their book, from Crow & Dabars, *ibid.*, p.185.

[3] As just one example, see e.g. Michel Foucault's, *The Birth of the Clinic: An Archaeology of Medical Perception*, New York: Vintage Books 1994.

structured new institution, with the *Center for Interdisciplinary Research* as its core.

All these efforts were important milestones in their own right, but in order to glean a bit more insight into how to organize and intentionally foster a university-wide culture of interdisciplinary research another success story, from the English-speaking New World, is equally instructive: Griffith University in Australia. Griffith University is particularly interesting for a number of reasons – it's a public university, it is less known than the ones just mentioned, it was established during a period when we witnessed the foundation of numerous new colleges and universities in the US, and conceptual interdisciplinarity was infused from the very beginning not only into its research enterprise, but also into teaching. Even back then, the fact that the campus was designed to reflect a culture of preservation and enhancement of the environment nurtured public suspicions of it being a hangout for "Greens and Hippies."[4]

Griffith University was founded with theme-oriented schools which "were multi-disciplinary with groups of disparate scholars integrating their research and teaching in problem-solving units." The University's entire structure "facilitated the interactions between scientists with diverse research interests."[5] The fact that the university focused on problem-solving and a thematic definition of its schools' missions is significant. In this manner, the pursuit of a single problem or a unified set of related problems provided the methodological parameters within which the schools could pursue their interdisciplinary work.

From once being suspected of harboring Communists, Griffith University's unique research and teaching environment has over the years led to the development of true world-class research and research centers, such as its world-renowned *Eskitis*

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[4] See Noel Quirke, *A History of Griffith University, 1971-1996*. Brisbane: Boolarong Press 1996, p.22 – https://web.archive.org/web/20120417222134/http://www.griffith.edu.au/__data/assets/pdf_file/0014/7340/preparing-for-the-future.pdf

[5] Sue Berners-Price, "The Advantages of an Interdisciplinary Structure: Griffith University as a Case Study," Eighth Annual Strategic Leaders Global Summit, n.d. – https://cgsnet.org/ckfinder/userfiles/files/Berners-Price_P5a_2014_Global_Summit_web_proceedings.pdf

Institute for Drug Discovery **or its** ***Institute for Glycomics*****, which is one of only a few multi-disciplinary glycoscience research centers in the world and provides a multidisciplinary approach to drug and vaccine discovery, including medicinal and computational chemistry, and various biological and physical sciences. Also, with regard to professional programs, it is worth mentioning that Griffith founded a Business School in the mid-1980s which is committed to cross-disciplinarity, social responsibility, and the concept of sustainability.[6]**

So, how did they do it and what lessons might be gleaned?

Promoting the evolution of an interdisciplinary knowledge architecture

If we accept that institutional design determines outcomes and products, we may think of designing the research and scholarship enterprise at an institution in terms of input, throughput and output. But, as the industrial designers Kees Dorst and Nigel Cross have argued, it is not a matter of first fixing the problem and then searching for a solution concept; rather, designing seems to be a matter of "developing and refining together both the formulation of the problem and ideas for its solution, with constant iteration of analysis, synthesis, and evolution processes between the two 'spaces' – problem and solution."[7] We also have to be realistic: implementing interdisciplinarity within already established discipline-structured institutions is faced with a variety of challenges.

To come back to the example of Griffith University, it is instructive to remember that it established a ***Centre for the Advancement of Learning and Teaching*** **(CALT) which was to provide support to the schools in course design and teaching, and to help ensure that commitment to interdisciplinarity was maintained at that level. In so doing, the University went beyond interdisciplinary research and provided**

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[6] See Daniel Franks, Patricia Dale, Richard Hindmarsh, Christine Fellows, Margaret Buckridge and Patti Cybinski, "Interdisciplinary foundations: reflecting on interdisciplinarity and three decades of teaching and research at Griffith University, Australia," *Studies in Higher Education*, Vol.32, No.2, April 2007, 179-180.

[7] See Crow & Dabars, ibid., p.181.

advice to academics on teaching methods as a mutually instructive learning experience. The University's overriding commitment also was reason for the rejection in 1974 to establish a *School of Quantitative Analysis and Operations Research*, which was considered as being dominated by one discipline – i.e., mathematics. So, an important practical take-away is that a prominent feature of interdisciplinarity – as we understand it today – can be located in team teaching and theme-oriented research, as well as in structured communication between discipline-based academics.

This brings me right back then to what was said at the beginning about providing institutional platforms that can assist schools within a university or a college, and their faculty, to sustain and even expand interdisciplinarity:

1) **Have this platform or centralized Office be a space that constantly allows for open conversation, generation of new ideas, and advocacy for innovative institutional structures and appropriate processes that may drive the definition, development, execution, and celebration of thematic interdisciplinary research projects. Efforts to embed it into specific procedural aspects at the program level (e.g., as integral requirement in *Academic Program Reviews* or as a feature of the *General Education* curriculum) can go a long way of institutionalizing interdisciplinarity.**
2) **Open and structured conversations should pursue the unification and integration of knowledge, and should include an interaction, overlap, sharing of insights or even bridging of disciplines from a theoretical, practical-outcome or problem-oriented approach.**
3) **These ongoing conversations should also highlight the potential for inter- and transdisciplinarity that is entrenched in or at least made possible in the Scholarship of Integration, the Scholarship of Application, and in the Scholarship of Teaching & Learning.**
4) **Specific programs and courses of study, such as Stockton University's *Bachelor for Interdisciplinary Studies* or the *CUNY Baccalaureate for Unique***

and Interdisciplinary Studies **can also have a signal function regarding the institution's valuation of interdisciplinarity.**

To embed wider acceptance and understanding of interdisciplinary perspectives and approaches, the following *specific initiatives* could be options that serve to further engage the community, but some of which may require even broader strategic commitments:

1) **Inviting speakers with a deep involvement in interdisciplinary themes or projects (e.g., in the US context, a Malcolm Gladwell, a Cornel West, an Eddie Glaude, a Pedro Noguera, a Ken Bain, or a Paul Kei Matsuda) sends a clear signal internally and externally about an academic institution's recognition of such work.**
2) **To facilitate the creation of knowledge networks and communities of practice, deans, department heads, faculty and centers could create lists or databases about emerging interdisciplinary topics in their own discipline and local faculty who might already be involved or interested in such research. This could then also be used for possible initiatives to build interdisciplinarity into hiring.**
3) **Capstone seminars, foundational courses or First-Year course sequences that specifically address interdisciplinary perspectives, problem-focused workshops and laboratory sessions that are team-taught, new courses or spaces (e.g., MakerSpace) focusing on knowledge synthesis, and new courses pursuing understanding of epistemology and methodology can be powerful tools to foster interdisciplinarity.**
4) **Institutions such as CUNY have an Interdisciplinary Research Grant program and providing such pools of dedicated resources sends a powerful signal to faculty about the value an institution places on this kind of intellectual pursuit.**

In sum, fostering interdisciplinary research – as well as research more firmly located in a discipline – is an ongoing institutional enterprise. Most importantly, however, all of the above needs passionate individuals – particularly among the faculty – within the university, and even outside of it, who will find nimble and adaptable institutional leaders prepared to facilitate and tangibly recognize their vision.