Interdisciplinary Collaboration Committee

Report and Recommendations
December 2023

Committee Charge

Identify practical, financial, historical and/or administrative barriers to interdisciplinary collaboration at Temple University. Provide recommendations to enrich and expand interdisciplinary opportunities and collaboration at the faculty, college, and University levels in research and academic programs.

Overview

Following the Provost's charge, the Interdisciplinary Collaboration Committee met weekly over the summer and fall of 2023. This report is the culmination of discussions, internal and external research, and interviews with faculty and staff at other institutions.

The committee started with brainstorming sessions to identify positive and negative examples of interdisciplinary efforts at Temple. Highlights include various research collaborations, BFA with Entrepreneurial Studies, Creative Entrepreneurship Certificate, dual degree programs, and the Field Station and Arboretum at the Ambler Campus, which demonstrate collaboration between academic departments and administrative units to share faculty time and leadership. Unfortunately, the list of negative examples was much longer and ranged from academic program and research development to communication and marketing of ongoing activities. In these discussions, and throughout the course of the committee's work, two issues dominated: (1) defining "interdisciplinary" and (2) the role of finances, particularly the implementation of RCM at Temple.

"Interdisciplinary" is a term that carries a variety of meanings. Many existing disciplines are the result of interdisciplinary collaborations from decades or centuries past. In some cases, the term is used for offshoots and subfields of disciplines with long histories. Many such examples of these types of interdisciplinarity can be found within Temple schools and colleges in teaching, practice, research, and service. The notion of mixing and matching across intellectual borders is common at Temple. The challenges arise when crossing administrative barriers, particularly working across schools and colleges. So, while the committee found all the versions of interdisciplinarity worthy of examination, most of the discussion and recommendations refer to inter-college or cross-college programming.

The most common articulated barrier to inter-college initiatives is financial. It was clear that many in the Temple community do not fully understand the RCM model, which leads to suboptimal decision-making. However, even for those that do, the Temple implementation of RCM is unusual compared to other institutions in various aspects of the distribution scheme, which can also lead to suboptimal decision-making. One example is the tuition distribution to the home unit of the course instructor. For most of the existing cooperative academic programs, the organizers are careful to ensure an even distribution of courses from each unit. There is no reason to believe that a 50/50 split always leads to the best academic experience for an interdisciplinary program. Similarly, in the research domain, the committee heard anecdotes of ad hoc workarounds made by PIs and units to overcome the limitations of our funding distribution policies or the systems used in their implementation.

The committee compiled information from other institutions through publicly available information and interviews. For each challenge, the committee considered a wide range of options and tended to favor solutions with a proven track record elsewhere rather than trying to "reinvent the wheel." The recommendations are organized into four areas: Academic Programs and Curriculum Development, Interdisciplinary Research Development, Financial / RCM, and Faculty Information / Recognition for Interdisciplinary Scholarship. However, apropos to the topic of this committee, many of the recommendations crosscut these groupings. The recommendations represent the consensus of the committee members.

Recommendations
Academic Programs and Curriculum Development

The committee identified the lack of a one-to-one alignment between an academic program and a "home" unit (department, school, or college) as the main challenge in this context. The problem manifests in two ways: (1) an initiative, typically faculty-led, with no natural home unit and (2) multiple units offering similar academic programs.

For the first case, previous attempts at Temple to develop new, interdisciplinary undergraduate academic programs, such as a degree in Science, Technology, and Society have stalled due to financial and logistical hurdles. Without the administrative and political support provided by a chair or dean, very few faculty-led interdisciplinary initiatives have progressed at Temple.

For the second case, Temple programs such as Data/Info Science, Neuroscience, Environmental Studies, and Economics are offered by multiple colleges, which leads to confusion among students and missed opportunities for shared marketing and recruiting. The committee believes that a better coordinated inter-college approach to these programs would provide students with a stronger learning experience and strengthen Temple's offering in these areas. Even in the best case, where there is strong collaboration, such as Mathematical Economics, challenges arise. During the application process, prospective students are presented with both "Mathematical Economics – Liberal Arts" and "Mathematical Economics – Science and Technology," even though these are the same program.

The committee explored models at other institutions for administering such inter-college programs and conducted a simulation to reimagine our undergraduate programs in one inter-college discipline – neuroscience, which was selected as the test case due to the number of undergraduate majors and schools involved. An Associate Dean and faculty member (neuroscience chair/lead) from CLA, CPH, CST, and LKSOM participated in an exercise to coordinate the inter-college undergraduate program. Through this exercise, the committee identified some of the issues that arise when trying to address this challenge within the current Temple environment.

Initially, the group demonstrated a willingness to engage. The exercise uncovered new information: despite long-standing perceptions, the distribution of outcomes from both programs were quite similar and students strategically changed majors between programs to take advantage of the benefits unavailable to those who opted for only one of the two choices. Over time, enthusiasm for making changes waned, and progress stalled. In the end, the working group agreed to propose incremental changes in the direction of cooperation to their respective faculty bodies. Some committee members were disappointed that the working group did not explore creative solutions outside the status quo. The

feeling was that working toward a combined degree would only be possible with an explicit mandate from the Provost. The results of the exercise informed the recommendations of the committee in the direction of more central influence in areas where inter-college cooperation would benefit the University as a whole. The full report from the exercise can be found in Appendix C.

The committee felt that the challenges (and potential solutions) in interdisciplinary education differed between the undergraduate and graduate levels, which is reflected in the distinct recommendations.

Recommendation 1.1

Establish a role within the Office of the Provost to facilitate the development and coordination of undergraduate inter-college programs. The committee feels that schools and colleges offering multiple programs with the same or similar names will only continue to worsen without guidance from the Provost's Office. The incumbent would serve as a neutral arbiter, represent the interests of the University, be knowledgeable of the relevant academic and financial policies and be involved in the earliest planning stages for programs with a high likelihood of multiple school or college involvement. The committee recommends that facilitating undergraduate inter-college academic programming be added to the responsibilities of an existing Vice Provost involved with undergraduate, academic, and/or university-wide affairs.

Recommendation 1.2

For similar programs offered at multiple schools or colleges, the Office of the Provost should coordinate the issues surrounding cross-advising, curriculum coordination, and shared marketing. For example, the neuroscience landing page does not provide useful information about the different academic and research offerings at Temple to prospective students and/or faculty. (Equivalent landing pages for other inter-college programs, such as Economics or Data Science do not yet exist.) The incumbent could work with the schools and colleges to help ensure that public-facing sites are informative and kept up-to-date and, more broadly, deal with other administrative challenges that would otherwise fall through the cracks.

Recommendation 1.3

Continue to explore models for interdisciplinary "home units" at the undergraduate level. The committee found the landscape for undergraduate interdisciplinary programs to be quite varied and felt like the school/college-centric culture at Temple precluded the notion of a centralized home unit for interdisciplinary programs. However, with planned changes to the financial model and how inter-college programs are administered, alternative models could be revisited.

Recommendation 1.4

Establish the Graduate School as the home unit for new interdisciplinary graduate programs. Following the model at, among other institutions, the University of Arizona, University of Washington, and Virginia Tech, expand the role of the Graduate School at Temple to incubate, sustain, and house interdisciplinary graduate degree and certificate programs. The Graduate School would serve as the administrative home for fields of interest to faculty associated with two or more schools or colleges.

Recommendation 1.5

Promote interdisciplinary education as a core part of Temple's education during recruiting, admissions, and orientation events.

Interdisciplinary Research Development

Increasingly, innovative discoveries are happening at the boundaries of traditional academic disciplines. A comprehensive research university must have a flexible structure that allows for scholars from across disciplines, schools, and colleges to organize around interdisciplinary topics of research. Anecdotally, most of the successful interdisciplinary research collaborations at Temple identified by the committee grew out of chance meetings between like-minded researchers or other ad hoc interactions. The committee felt that institutionalizing the practice of bringing researchers together, particularly between the main and health campuses, would allow for more research synergies.

The committee discussed a range of approaches from improved sharing and communication of research interests and activities to interdisciplinary institutes, which are managed outside of schools or colleges, typically by a central administration office such as the Provost or Vice President for Research.

Recommendation 2.1
Establish a framework to incubate and support interdisciplinary research collaborations. The Research Office should establish a tiered system of support services (e.g., administrative, grant prospecting, seed funding, travel) for interdisciplinary groups of researchers to connect, get established, conduct preliminary work, and target major proposals and funding opportunities.

Recommendation 2.2
Implement a customizable communications platform for sharing research announcements. The Research Office should implement a mechanism to broadcast funding opportunities, events, seminars, and colloquia. The system should allow researchers to identify their research interests and only receive pertinent announcements. Compared to generic community-wide announcements, customized communications should increase the chance of engagement and allow niche or interdisciplinary activities to be shared with the correct audience across our campuses.

Recommendation 2.3
Increase the frequency of university-wide research programming. The committee feels that an increase in the opportunities for informal sharing will bolster the Temple research network and lead to an increase in successful research collaborations. As an example, the committee recommends that the Research Office organize themed workshops (e.g., computational science, translational medical research, science & society) to be held during the summer and winter breaks.

Recommendation 2.4
Improve the coordination and capacity for undergraduate research across the university. There is a strong culture of undergraduate research at Temple, but it is dispersed unequally between schools, colleges, and support units. The Research Office and Undergraduate Studies should coordinate efforts for programming, establishing a database of undergraduate research opportunities, presentation opportunities, record-keeping, and sharing best practices with schools and colleges to and strengthen the pipeline of undergraduate students pursuing graduate studies or careers in research.

Recommendation 2.5
Define the approval process for interdisciplinary research institutes. The Research Office should establish a formal process for establishing, reviewing, and terminating university-level interdisciplinary research institutes. Proposals for new institutes should include, at minimum, the argument for the need,

organizational structure, space, and equipment needs, and financial plan. These institutes may act as a primary home for research faculty, staff, and postdocs. The committee felt that interdisciplinary institutes at Temple should neither grant degrees nor serve as a home unit for the purposes of tenure. Moreover, the committee did not intend for university interdisciplinary institutes to conflict with existing or new centers or institutes established within a school or college.

Recommendation 2.6
Task the Research Office to develop a university-wide day to highlight interdisciplinary evidence-based practice across the institution, including clinical practice and community engagement. The event should also provide an opportunity for informal networking to further develop future collaborations.

Recommendation 2.7
Revive the Provost's Lecture Series. This would provide the university community with an opportunity to gather around topics of broad interest. One potential topic would focus on practical aspects of growing the university's interdisciplinary footprint, such as best practices for conducting interdisciplinary research or training as well as success stories from scholars or administrators at other institutions on innovations in interdisciplinarity.

Recommendation 2.8
Investigate opportunities for shared research facilities. Across campus, there are several research resources whose utilization could be optimized through sharing. The Research Office should conduct an inventory of such resources and work with the relevant departments and PIs to develop a framework for managing access, liability, and costs. Going forward, the Research Office should review best practices and set guidelines for shared facilities to maximize participation.

Financial / RCM
In most discussions, financial barriers, particularly RCM, were raised as the root cause inhibiting collaboration. In many cases, the concerns were based on real limitations of Temple's implementation of the RCM model and the systems being used for fiscal management. However, in some cases, the issues were a misinterpretation of the RCM model. There is a prevailing notion that the Temple implementation of RCM disincentivizes cross-unit efforts, particularly riskier exploratory work.

Recommendation 3.1
Develop a process to change the allocation of revenue and expenses for interdisciplinary programs. Unlike the current approach of balancing the courses offered by each unit, this would allow curricula to be designed using primarily academic considerations and promote assigning faculty to team teach courses.

Recommendation 3.2
Incentivize collaboration using recurring strategic funds. Within the current RCM model, schools and colleges contribute to the strategic fund annually. These funds should advance the institution's priorities, particularly interdisciplinary academic, practice, research, and service projects that would benefit from contributions from multiple units. There should be a mechanism for both large-scale projects across multiple schools and colleges and small-scale, faculty-led interdisciplinary initiatives. The projects should have measurable outcomes that address institution-wide issues and priorities.

Recommendation 3.3

Adjust the indirect cost recovery (ICR) distribution model to better support interdisciplinary research efforts. Under the current model, ICR is included in the income stream, which is pooled and fully (100%) distributed to the relevant deans. It is common at other institutions (and at Temple, in the past) to consider ICR separately and establish formulae to distribute ICR funds to the PI, department, school or college, and Research Office. Such an approach would promote transparency and consistency across the university and better align incentives for continued research growth. The portion of the funds allocated to the Research Office could be designated for programs that support the long-term sustainability of the research enterprise, such as seed and travel grant programs, cost shares, equipment or facility needs.

Recommendation 3.4

Implement the ability to allocate credit/responsibility for research projects upon proposal submission. For multi-investigator research collaborations, the pre-award process should include the ability to assign management responsibilities to one or more units and determine how Indirect Cost Recovery (ICR) will be allocated. Systems for post-award management should allow researchers and responsible research administrators in each unit access to manage their portion of the project and the project lead (and associated staff) the ability to manage the entire project. Pre-allocating credit upon proposal submission promotes transparency and is customary practice at most research institutions.

Faculty Information / Recognition for Interdisciplinary Scholarship

While there is an overall positive attitude towards interdisciplinary collaboration at Temple, there is difficulty engaging faculty, and faculty who are engaged do not always have departmental or school support. Interdisciplinary collaboration needs to be addressed culturally, administratively, and financially. To improve engagement, there needs to be a stronger culture of collaboration and non-monetary rewards. In addition, informal interactions and bringing people together in relaxed settings are important, as are top-down incentives such as pilot seminars and interdisciplinary degrees. The committee believes that a positive faculty attitude towards interdisciplinary collaboration, and celebrating and normalizing collaboration, can provide opportunities for communication and promotion (internally and externally) of successful interdisciplinary projects.

Recommendation 4.1

Implement a university-wide Faculty Information System (FIS). One of the key limitations in connecting faculty and understanding the full breadth of Temple expertise across schools, colleges, and campuses is the lack of a centralized faculty directory. Ideally, a single FIS solution should serve as a searchable directory, employ automated data-gathering to minimize manual input, and supplant related systems and processes (e.g., Elements, Dimensions, ARoFA) to reduce redundancy. New interdisciplinary research projects are often driven by graduate students and postdocs; these researchers should be included in the directory.

Recommendation 4.2

Reconstitute the Faculty Collaboration Center (FCC). Historically, the FCC has been comprised of technical leads and administrative leaders from areas of responsibility supporting faculty and/or needing faculty-related data who collaborate with leaders across campus to collect, prioritize, strategize, and build faculty data and reporting solutions for university stakeholders. Over time, it could be determined if there is enough interest and resources to formalize the FCC in the same manner as the HR, Student, Finance, Web Collaboration Centers.

Recommendation 4.3

Revise the Presidential Tenure and Promotion guidelines to incorporate interdisciplinary efforts in teaching and research. The committee feels that it is necessary that interdisciplinary work be explicitly included as a criterion for promotion and tenure to encourage department, college, and university review committees to consider contributions outside of historical discipline norms. In addition, data should be collected on the success rates of tenure and promotions cases involving interdisciplinary work to identify any patterns or trends at Temple.

Recommendation 4.4

Establish a Provost-level merit pool to reward faculty who engage in interdisciplinary work. Based on anecdotal evidence, the committee believes that such efforts are not always valued in the current department and college processes.

Recommendation 4.5

Create a new class of university-level awards to reward interdisciplinary research and creative achievements, teaching, practice, and service. Departments, schools, and colleges should be encouraged to create similar awards to establish a foundation of interdisciplinary work at all levels.

Recommendation 4.6

Survey faculty on their interdisciplinary experiences to better understand the landscape at Temple. In the long term, the committee envisions a functional FIS serving as the primary point of reference. In the short term, the survey results could serve to inform the demand and capacity for interdisciplinary academic, practice, research, and service efforts across the University.

Appendix A: Interdisciplinary Collaboration Committee

Mike Autieri, Professor, LKSOM

Julie Booth, Deputy Dean, CEHD

Sharmayne Burns, Vice Provost for Finance

Josh Gladden, Vice President for Research

Kevin Glass, Senior Vice Dean, CLA

Jennifer Ibrahim, Dean, CPH and SSW

Mike Lawlor, Associate Vice Provost, Undergraduate Studies

Vicki McGarvey, Vice Provost

Jim Napolitano, Professor of Physics, CST (STS @ Temple)

Erin Palmer, Associate Vice Provost, Faculty Affairs

Richard Souvenir, Vice Provost for Strategic Initiatives, *Chair*

Robert Stroker, Dean, Boyer and TFMA (Center for the Performing and Cinematic Arts)

Appendix B: Neuroscience Working Group

Julie Booth, Deputy Dean of Academic Affairs and Graduate Faculty, CEHD, *Co-Chair*

Kevin Glass, Senior Vice Dean, CLA, *Co-Chair*

Megan Nyquist, Strategic Project Manager, Office of the Provost

Scott Shore, Associate Dean, LKSOM

Ellen Unterwald, Chair and Professor, Department of Neural Sciences, LKSOM

Hiram Aldarondo, Senior Associate Dean for Academic Affairs, CLA

Vinay Parikh, Associate Professor, Director of the Neuroscience Program, CLA

Susan Varnum, Senior Associate Dean, CST

Robert Sanders, Chair and Professor, Department of Biology, CST

Jamie Mansell, Associate Dean for Undergrad Studies, CPH

Geoff Wright, Neuromotor Science Program Director and Professor, CPH

Appendix C: Neuroscience Working Group Update (Oct 2023)

The Neuroscience Working Group (NWG) consists of two members from each of the following four Schools/Colleges which currently have Neuroscience-related degree programs: College of Science and Technology (CST), College of Liberal Arts (CLA), College of Public Health (CPH), and the Lewis Katz School of Medicine (LKSOM). The group is co-chaired by two members of the Interdisciplinary Collaboration Team, Julie Booth and Kevin Glass. To date, the NWG has met 6 times via zoom. Meetings have focused on the following:

8/11: Committee charge; Introductions and fleshing out tasks/possibilities; Description of what Neuroscience looks like in each School/College; Discussion of other background information or data would be helpful for future discussions

8/18: Whiteboard brainstorming on Hopes, Concerns, and Perceived Barriers to the process and greater collaboration; Assignment to submit background documents about existing programs

9/1: Review themes from previous brainstorming session; Further brainstorming after review of background documents on similarities and differences between CST and CLA UG programs; Devised questions to ask current students at next meeting

9/8: Students from the CLA and CST UG neuroscience programs attended to answer questions about their experiences with the respective programs.

9/15: Discussion of student responses regarding what they liked, what they wished was different; brainstorming about potential changes/expansions that could be made; Charge to discuss possibilities with faculty in their home School/College.

9/22: Share-out from discussions with colleagues; creation of list of priorities for the NWG going forward

Moving forward, the following are the priorities of the NWG:
- Exploring ways in which the current non-credit Neuroscience Seminar run by CLA could be more collaborative and co-funded/co-organized with the other relevant schools/colleges.
- Curricular updates
  - The team has agreed to work towards as much overlap as possible in the first year of the curricula for the CST and CLA UG Neuroscience degrees, so that students could take their first year of courses and then decide which pathway is right for them with minimal penalty.
  - CST will explore requiring CLA's Fundamentals of Neuroscience course in the spring of the first year. However, given the large number of credits required for the degree already, they would like to request a waiver for the CST Neuroscience students' Human Behavior Gen Ed. The requirement could instead be met by them taking the Fundamentals of Neuroscience course and required participation in the non-credit Neuroscience Seminar.
  - A Change of Array for CLA Neuroscience will be submitted to require BIO 1012 OR BIO 1112 (instead of just BIO 1012). The approved elective list will also be reviewed and additional CST courses potentially added.
- Establishing processes to remove barriers so that CLA Neuroscience majors can register for their required courses that are offered by CST.
- Increasing the accessibility of UG research experiences for both CLA and CST Neuroscience students

- o Requesting additional funds from central administration for both CST and CLA to ensure that research mentors in any college are compensated for supervising CST and CLA Neuroscience undergraduates in their labs during the academic year
- o Exploring the possibility of allowing that compensation to come in the form of supply costs instead of faculty stipends. This would be preferable to many faculty mentors but would require central administrative support to process these transactions.
- o Working with central administration to determine if summer interns could receive a reduced rate for dormitory housing (e.g., $100 per week), as the current costs are prohibitive
- Exploring establishing accelerated pathways from CLA and CST Undergraduate majors in Neuroscience and in Biology to LKSOM's Masters in Biomedical Sciences (concentration in Neuroscience) and CPH's Masters in Neuromotor Science, and from the CST Undergraduate Neuroscience and Biology majors to CLA's Masters in Neuroscience.

Appendix D: Interdisciplinary Units at Other Institutions

Institution Name	Unit/Program Name	Scope	Academic Home	UG	GR	Type	Carnegie	RCM
Arizona State University	Interdisciplinary Studies	College	College of Integrative Sciences and Arts	yes	no	public	R1	
Bard	Interdivisional Programs and Concentrations	University-wide		yes	no	private	Other	
Columbia University	Provost's Interdisciplinary Working Group	University-wide	Provost's Office	yes	yes	private	R1	
Davidson College	Center for Interdisciplinary Studies	College	Academic Affairs	yes	no	private	Other	
Drexel University	Center for Interdisciplinary Study	College	College of Arts and Sciences	yes	no	private	R1	yes
Duke University	Duke Interdisciplinary Studies	University-wide	Provost's Office	yes	yes	private	R1	yes
Emory	Interdisciplinary Studies Major	College	Institute for the Liberal Arts	yes	no	private	R1	
Illinois Institute of Technology	Interdisciplinary Education	College		no	yes	private	R2	
Lehigh University	Interdisciplinary Studies	University-wide	Office of the Provost	yes	yes	private	R2	
Michigan State University	Interdisciplinary Graduate Study	University-wide	The Graduate School	no	yes	public	R1	
MIT	Science, Technology, and Society	College	School of Humanities, Arts, and Social Sciences	yes	yes	private	R1	
North Dakota State University	College of Graduate and Interdisciplinary Studies	College	Graduate School	yes	yes	public	R1	

NYU	Individualized and Interdisciplinary Studies		Gallatin School of Individualized Study	yes	yes	private	R1	
Ohio Northern University	Center for Interdisciplinary Studies	University-wide		yes	no	private	Other	
Penn State	Interdisciplinary Graduate Training	University-wide	Graduate School	no	yes	public	R1	yes
Purdue University	Office of Interdisciplinary Graduate Programs	University-wide	The Graduate School	no	yes	public	R1	
Rensselaer Polytechnic Institute (RPI)	Interdisciplinary Programs	College	School of Science	yes	yes	private	R1	yes
Rowan University	Center for Interdisciplinary Studies	College	College of Humanities and Social Sciences	yes	yes	public	R2	
Rutgers	Interdisciplinary Programs	College	School of Arts and Sciences	yes	yes	public	R1	yes
Stanford University	Interdisciplinary Programs	University-wide		yes	yes	private	R1	
Syracuse University	Interdisciplinary Programs				yes	private	R1	yes

University	Unit	Level	Reports to	col5	col6	Type	Carnegie	col9
Tennessee Tech University	College of Interdisciplinary Studies	College		yes	yes	public	R2	
Tufts University	Center for Interdisciplinary Studies	College	School of Arts and Sciences	yes	no	private	R1	
UC Berkeley	Course Threads	University-wide	Townsend Center for the Humanities	yes	no	public	R1	
UCLA	Interdisciplinary Affairs & Organized Research	University-wide	Office of the Vice Chancellor for Research and Creative Activities	no	yes	public	R1	other
UMBC	Interdisciplinary Activities Advisory Committee	University-wide	Provost's Office	yes	no	public	R1	
University of Arizona	Graduate Interdisciplinary Programs	College	Graduate College	no	yes	public	R1	yes
University of Central Florida	College of Graduate Studies	College		no	yes	public	R1	yes
University of Delaware	Interdisciplinary Programs	University-wide	Graduate College	no	yes	public	R1	yes
University of Iowa	Division of Interdisciplinary Programs	College	College of Liberal Arts and Sciences	yes	no	public	R1	yes

University	Program	Type	College			Ownership	Classification	
University of Iowa	University College	College		yes	no	public	R1	yes
University of Maryland (College Park)	Interdisciplinary Opportunities	Neither	College of Arts & Humanities	yes	yes	public	R1	
University of Pennsylvania	Coordinated Dual-Degree, Accelerated, and Specialized Programs	University-wide		yes	no	private	R1	yes
University of Washington	Graduate School Interdisciplinary Programs	University-wide	Graduate School	no	yes	public	R1	
Virginia Tech	Interdisciplinary Graduate Education	University-wide	Graduate School	no	yes	public	R1	yes