

Report of the Transdisciplinary Curriculum Task Force

The Transdisciplinary Curriculum Task Force was constituted by Provost Ingram to address five main questions as to the barriers to transdisciplinary curriculum. The task force members are listed in Appendix A. The following is a response to the main questions followed by a series of recommendations to enhance curricular development and to promote cross-unit cooperation.

The five questions are:

1. Does the approval process for new courses, credentials and programs serve NIU's mission with respect to curricular innovation?
2. Are there resources (facilities, funding, time) that are needed to support curricular innovation?
3. What personnel and university business processes hinder curricular innovation?
4. What budget policies inhibit transdisciplinary curriculum?
5. What other policy changes should be considered?

As will be seen, the five questions provide a framework for better understanding the nature of interdisciplinarity at NIU and provide an opportunity for considering change.

In addition, we were asked for:

- Formal recommendations about ways to remove existing barriers and to promote and elevate the prominence of transdisciplinary scholarship and curricular innovation,
- Outline of a multiyear strategy and timeline for implementing necessary change.

These recommendations and strategies are located in the conclusion of the report and are informed by our responses to the five questions.

Prior to delving into the results of the task force, it is worth noting that NIU has not deeply engaged on this issue in the last several years. This is, in part, due to constrained budget conditions which caused departments to entrench and protect their own interests. While there are some interdisciplinary initiatives, such as interdisciplinary programs run out of NIU centers, the culture around interdisciplinarity is not as deeply evolved as one sees at other institutions. Thus, NIU, in order to advance interdisciplinarity, needs to work to update practices and change culture. There are many suggestions embedded in this report and in the conclusions of the report that provide guidance.

It is worth addressing the term transdisciplinarity. The Transdisciplinary Research Task Force discussed terminology of transdisciplinarity, multidisciplinarity, and interdisciplinarity, and we do not seek to make any changes to their discussion of these terms. However, we do want to note that many of the major scientific leaders have moved from these terms to the term *convergence*. Many argue that the great problems of the world, such as climate change and income inequality, require many disciplines to converge on problems to try to find solutions.

Convergence is occurring at the level of research and should also occur in teaching. This convergence creates new knowledge and new curricular needs. Both emerging social issues and teaching technologies are conducive to transdisciplinary research and teaching. In many cases, NIU faculty are practicing this form of interdisciplinarity by converging on innovative research projects that have societal implications. In some cases, curricular modifications have emerged from this convergence. However, this is not normally the case at NIU. The curriculum is relatively siloed—even in cases where research crosses disciplinary boundaries.

The task force took three approaches to answering the questions posed to it. First, given the extensive experience of the team, we brainstormed responses to questions. Second, we individually interacted with stakeholders to gain their input. Finally, we met with the center and institute directors to hear their unique perspectives. The totality of these approaches provides the framework for the responses below.

Why do we need interdisciplinary curriculum? There is no doubt that nationally, universities are seeking to address the silo effect of departmental-based curriculum that emerged in public American universities in the late 19th and early 20th centuries. In most universities, departmental structures and college portfolios remained constant over the last century while society—and its priorities—changed considerably. Certainly, there have been innovations—cultural studies, environmental and sustainability studies, and data science are all relatively new fields. However, universities overall are not limber in reacting to the changing educational needs of our students.

Some universities have taken bold steps to address these challenges. Some have done away with departments in favor of more loosely organized schools, others have changed hiring and tenure practices, and still others have completely redone a range of curricular initiatives ranging from general education requirements to the structure of graduate programs. Given that NIU is moving quickly to develop more student-centered experiences in line with our mission, vision, and values, it makes sense for us to consider bold changes.

If NIU is to educate students on issues that concern them—and that have greater meaning to society as a whole—we need to develop a curricular environment that is much more fluid. Take for example one of the many strengths of faculty that cross departments and colleges, such as medical electronic equipment, the music industry and technology, climate change, conflicts, democracy, or migration and equity (race, gender, etc.). We do not have clear degree options in any of these fields even though we have extensive faculty expertise. Given NIU's traditional approach to curriculum, it could take years to develop new programs. NIU's challenging budget environment makes interdisciplinary innovation even harder to consider. We know that our students want and need greater interdisciplinary experiences. They come to us with complex lives and are seeking better ways to understand the complex world in which they live.

We also know that faculty are trained in increasingly interdisciplinary ways. Most leading research universities mentor students in interdisciplinary research groups. It is increasingly hard to pigeonhole faculty within single departments. At NIU, we do place individuals within distinct tenure homes, but faculty often seek out colleagues across the university for collaborative

research and teaching experiences. Joint lines are sometimes available, but the bureaucracy involved with such positions can be frustrating and challenging—particularly for entry-level faculty. We need to find a better way to create a culture of interdisciplinarity at NIU to match the needs of our faculty, students, and region.

The introduction to the report noted that it would review the bottlenecks to interdisciplinarity by responding to five distinct questions posed to the task force. The responses to the questions are outlined below.

Question 1. Does the approval process for new courses, credentials and programs serve NIU's mission with respect to curricular innovation?

University faculty are largely responsible for the curricula at NIU. Prospective changes to any curriculum begin with program faculty or other personnel but always include faculty input. Curricula associated with new program proposals originate from center directors or department or school chairs also with faculty input. Therefore, the development of curricula at NIU is rooted within the departments and colleges of the university and is directed by faculty governance.

Curricular oversight at NIU consists of select committees at center, department, college, and university-levels. Center and department curriculum committees review proposed changes in preparation for college reviews. College curriculum committees are the formal reporting entities through meeting minutes and attachments submitted to select administrative personnel and support staff. Review of undergraduate curricular changes at the university-level are processed by the Baccalaureate Council (BC) with approvals sent to select university offices and personnel (e.g., Archives, Registration and Records, Publications and Printing, college curriculum chairs). The Graduate Council (GC) reviews graduate curricular changes with approvals also sent to select university offices and personnel (e.g., Archives, University Council, Registration and Records, Council of Deans, department chairs, Publication and Printing, college curriculum chairs). In addition, any changes impacting general education programs and courses are reviewed and approved by the General Education Committee (GEC), a standing committee of the Baccalaureate Council.

Membership on these committees generally reflect their range of responsibilities. For instance, department personnel serve on department committees, and college curriculum committees include personnel from within the respective colleges. Faculty from undergraduate degree-granting colleges and a student from each college serve on the BC along with select administrative members. Similarly, faculty from graduate degree-granting colleges and a student from each college serve on the GC along with the Dean of the Graduate School. Finally, the GEC is comprised of faculty members from undergraduate degree-granting colleges and three undergraduate students.

New academic program proposals are preliminarily reviewed by college deans and the Executive Vice President and Provost before being processed by the department and college curriculum committees. Appropriate university committees (i.e., BC, GC, GEC) also examine new program proposals before reviews by the Academic Affairs, Student Affairs and Personnel Committee, NIU President, NIU Board of Trustees, and the Illinois Board of Higher Education. Associated assessment plans for proposed programs are reviewed by the University Assessment Panel and possibly the Illinois Board of Higher Education.

Within the backdrop of the NIU curricular structure and processes, the task force notes the following barriers to transdisciplinary curricular innovation:

- a. Definitions of disciplinarity, interdisciplinarity, multidisciplinarity, and transdisciplinarity are incongruent across the university. The absence of a shared lexicon for curricular innovation prevents the formation of a universal “starting point” to developing novel initiatives. We suggest embracing the definitions of the Transdisciplinary Research Task Force.
- b. Barriers to curricular innovation are unique based on multifaceted frames of reference such as approving a single course, cross-listed courses, departmental courses, and college courses. Innovative ideas may be more easily implemented through the approval process in some areas over others. However, in almost all cases, the advocate for the courses or degree programs are departmental members. Interdisciplinarity is not clearly represented in the approval process.
- c. The curricular process is too slow. It is not uncommon for curricular proposals to actualize after 12 months of processing through several layers of review. This is especially constraining for university centers. The process of offering courses as proseminars, while useful, does not fully meet the need for quick approvals of transdisciplinary courses. A key problem with the transdisciplinary process is that faculty may be discouraged from spending time developing a course which may not make it into the regular curriculum. Also, faculty are expected to market their proseminar course so that it meets enrollment requirements.
- d. Advocacy for curricular innovation is impeded because the structure of representation is not inclusive to all groups with direct interest. Approval is largely facilitated by college personnel without input from the university centers. Compounding this barrier to innovation is that centers tend to need department approval to process the curricular proposal. Interdisciplinarity outside of centers is not clearly possible without approval of departments or centers.
- e. Students from various programs of study enrolled in a course to “learn about, from, and with each other” could experience delays to this innovative educational approach when the course serves as a pre-requisite for single discipline programs (World Health Organization, 2010, p. 7). A central challenge then becomes: How can NIU develop and

maintain interdisciplinary programs when their value is applicable to all university students?

Question 2. Are there resources (facilities, funding, time) that are needed to support curricular innovation?

Many faculty members at NIU want to collaborate with one another and to engage their students in challenging problems from multiple points of view. However, they are often prevented from doing so by constraints on their time, the assignment of courses based on specific departmental needs, and even the structural limitations of the classrooms in which they teach. For example, Students in the School of Art and Design recently joined teams of students in the College of Engineering to develop innovative products and services, including the design of hospital-grade Covid-19 air purifiers. This project required an investment in faculty time, as well as an investment in the physical space in which students could meet with one another and work together with shared equipment. The collaboration demanded time and resources beyond those required by each individual department or college, but the end results far surpassed those that could have been attained by either.

- a. Curricular innovation could be better supported through release time and/or additional compensation to enable faculty members to collaborate with colleagues in different colleges or departments, to explore themes across disciplines, and to learn new pedagogical strategies.
- b. Funding should be made available for hiring tenure-track faculty members with research expertise in interdisciplinary fields (e.g., Latinx Studies; Latin American Studies; Black Studies; Women, Gender, and Sexuality Studies; Environmental Studies) who can contribute to and develop innovative curricula in those areas.
- c. Many of our classrooms are not equipped for flexible pedagogical approaches, including interdisciplinary teaching. Current limitations include static classroom seating that is designed so that students face instructors rather than one another; audio-visual equipment or other classroom technology that has not yet been updated to the most current needs or practices; and lack of access to specialized equipment that may fall outside more traditional departmental uses.
- d. Beyond equipping individual classrooms for interdisciplinary teaching, shared university spaces and resources, such as public meeting spaces designed for cooperation and group meetings, specialized equipment pools, and library resources for interdisciplinary journals and databases should be prioritized.

Question 3. What personnel and university business processes hinder curricular innovation?

One of the things that can happen at institutions that have been around as long as NIU is that they get entrenched with doing things a certain way. Sometimes, these patterns of bureaucracy have merit and protect important aspects of the institutions. Other times, they are patterns built around past values or long-gone missions. As we become a more interdisciplinary university, it is important to question how existing business practices limit our ability to be creative around interdisciplinarity. The points raised below highlight ways that NIU practices hinder the university moving forward.

- a. The way in which enrollment, credit hours, and course fees within a single course are accounted for administratively can make it difficult for multiple departments or colleges to share students in a cross-listed course.
- b. Faculty should be able to teach interdisciplinary courses as part of their regular course load, which has implications for departmental credit hour production.
- c. Flexibility in course loads should also be considered for faculty who team-teach courses within or across departments. For example, when two faculty members collaboratively design and teach an innovative course that crosses disciplines, there should be ways that the faculty can get credit for effort toward the course.
- d. Interdisciplinary teaching and curriculum development should be rewarded within the tenure and promotion and annual review process, but that requires additional clarity around cross-departmental and cross-college tenure and promotion processes. The university at large can consider developing a list of exemplary scholarly and teaching activities that departments can draw upon to credit faculty during the promotion process, especially in cases where departmental promotion rules/documents do not give enough credit to interdisciplinary work.
- e. Faculty service reports and evaluations need to create space for and value interdisciplinary work. Faculty should be encouraged and incentivized to have transdisciplinary research and teaching agendas.
- f. More flexibility is needed in how grant credit needs are shared across departments.
- g. Consideration should be given to department structures and other academic organizational structures and how they can be reorganized around more relevant themes and convergent research ideas that promote transdisciplinarity.

Question 4. What budget policies inhibit transdisciplinary curriculum?

The university's annual and long-term budget should reflect its academic priorities. Resource allocation decisions and decision-making processes, including those related to personnel and instructional staffing (see Q3), should be revised to align with the university goals to support and incentivize transdisciplinary curricular innovation. Below we identify budget policies that have inhibited transdisciplinary curriculum and offer some possibilities for improvement.

- a. Colleges need more budget flexibility to invest in interdisciplinary initiatives; these initiatives might include more community-based courses, industry partnerships, co-teaching and course overloads within and across colleges.
- b. HR practices at unit, college, and university levels are not designed for interdisciplinarity; there are barriers related to co-teaching and cross-college initiatives.
- c. The university's budget does not match its vision, mission and values: the budget reflects past decisions that have not been updated to reflect the university's current needs and priorities. New budget dollars have not followed innovation at NIU. The university should identify a long-term plan that prioritizes investments in interdisciplinary initiatives, including the hiring of tenure-track and senior faculty with interdisciplinary expertise.
- d. Past budget crises have resulted in units competing for resources and reluctance to share resources that support interdisciplinary initiatives (i.e., joint appointments). There is limited/no budget support for new interdisciplinary courses or programs. There is limited/no budget support for professional development for faculty with interdisciplinary expertise or for faculty who would like to develop interdisciplinary expertise.
- e. Budgets follow departments and not interdisciplinary initiatives.
- f. Budgets are tied to measurable outcomes. Increasingly in some fields, there is pressure to demonstrate a return on investment. Interdisciplinary work often results in different measurable outcomes than what is normally expected. Notably, qualitative measures should be given enough weight in measuring outcomes and the impact of research – all in keeping in mind the NIU mission.

Question 5. What other policy changes should be considered?

Promoting interdisciplinarity would require thinking out of the box and making some unconventional (and risky) moves. However, that is necessary to make a big change and achieve big. As such, an innovative approach to structures and programs relating to research, teaching,

and personnel would be needed. These can be taken in an experimental manner, but must be given the time and resources to work. Some bold actions would include, but are not limited to:

- a. Create a transdisciplinary coordinator/czar within each college and/or within the Provost's office. This position can serve as a resource for navigating existing bureaucratic hurdles, seeking innovative ways to promote transdisciplinary teaching and research, and promoting a culture of convergence across disciplines.
- b. Include a budget line for transdisciplinary research and teaching at the level of the college and provost.
- c. Provide more flexibility in the way credits are counted for students who have multiple majors/minors/certificates.
- d. In the long term, create more interdisciplinary programs (degree and certificates) that are aligned with long term market needs. There are some models of collaboration between the College of Law and some departments that offer dual degree offerings. These can serve as a starting point to help departments collaborate in creating joint programs, especially across colleges (arts and business; health and sociology; education and STEM, etc.).
- e. Provide some guidelines from the Provost on how to recognize interdisciplinary works at the department level during promotion.

Summary and Conclusions

Based on the identified barriers, below are recommendations to ensure that the approval process for new courses, credentials and programs serve NIU's mission with respect to curricular innovation:

1. The Executive Vice President and Provost should convene a campus-wide effort to 1) establish agreement on foundational aspects of relevant lexicon (interdisciplinarity, transdisciplinarity, multidisciplinary, convergence, etc.), 2) create budgetary and accounting standards for interdisciplinary courses and units; 3) establish uniform evaluation and tenure and promotion procedures for joint faculty and for those engaged in interdisciplinary teaching; and 4) establish a basic framework or interdisciplinary handbook to ensure that all novel initiatives are rooted in a shared understanding.
2. The task force believes that barriers to curricular innovation are inconsistent based on environmental context and subsequently resolved with varying levels of effort and intervention. As such, a centralized resource is needed with the tools to overcome the breadth of impediments to innovation. Michigan State University's "Hub for Innovation

in Learning and Technology” and East Tennessee State University’s “Curriculum Innovation Center” are two examples of resources that serve multiple interdisciplinary endeavors such as assisting faculty to develop new ways to learn, offering innovation workshops, establishing vendor relationships, and conducting market analyses. Another model with mixed support within the taskforce and among center directors would be to build a school or college of interdisciplinary studies to provide administrative leadership. Another recommendation would be to increase resources and support for centers and institutes so that they are better positioned to advance and grow their interdisciplinary curricular and research agendas. Whatever the option, NIU leadership should consider the feasibility of establishing some type of organizational unit to assist faculty, colleges, centers, etc. to enhance curricular innovation.

3. Because departments control most courses and degree programs, colleges should provide opportunities for interdisciplinary courses/programs to emerge from teams of faculty or research groups. Colleges should explore developing general course numbers for interdisciplinary courses that could bypass the approval process (Interdisciplinary special topics) for trial runs that would count for general education. In addition, college and university curricular committees should engage with the conversation on interdisciplinarity so that they are able to assist faculty who develop interdisciplinary courses outside of the normal departmental approval process.
4. Centers need representation on college curriculum committees. Interdisciplinary curricula at NIU is in part implemented through centers; however, they are not represented on curricular committees as their members come from departments. College deans should review their policies and practices to ensure that any center associated with their curricula can more easily participate in committee discussions.
5. The Task Force believes that all of these actions can be taken simultaneously and that a timeline is not needed. Indeed, all of them could be started in the coming year in some form.

Appendix A. Task Force Members

Chair, Bob Brinkmann, Dean, College of Liberal Arts and Sciences
Christina Abreu, Director, Center for Latino and Latin American Studies
Abu Bah, Professor, Department of Sociology
Daniel Boutin, Associate Professor, School of Interdisciplinary Health Professions
Paul Cain, Clinical Professor, Zeke Giorgi Legal Clinic, College of Law
Bill Cassidy, Professor, Department of Communication
Rebecca Houze, Professor, School of Art and Design
YJ Lin, Professor, Director of Mechatronics Engineering, Department of Mechanical Engineering
Vijaykumar Krishnan Palghat, Chair, Department of Marketing
Kelly Summers, Associate Professor, Department of Leadership, Educational Psychology & Foundations

Recommendation	Tasks	Timeline	Responsible Party
Establish agreement on foundational aspects of relevant lexicon (interdisciplinarity, transdisciplinarity, multidisciplinary, convergence, etc.). Establish a basic framework or interdisciplinary handbook to ensure that all novel initiatives are rooted in a shared understanding.	Integrate with work of Transdisciplinary Research Task Force	Fall 2022	EVPP VPRIPS
Create budgetary and accounting standards for interdisciplinary courses and units	Workgroup to consider best approach to account for and offer credit for such courses	Fall 2022	EVPP Deans
Establish uniform evaluation and tenure and promotion procedures for joint faculty and for those engaged in interdisciplinary teaching	Integrate with work of Transdisciplinary Research Task Force and Faculty Senate Social Justice Committee	May 2023	EVPP Deans
Consider approaches to reducing impediments to curricular innovation and to support faculty and departments in such endeavors: <ol style="list-style-type: none"> 1. Create a centralized teaching and pedagogical resource and establish some type of organizational unit to assist faculty, colleges, centers, etc. to enhance curricular innovation. 2. Consider a school or college of interdisciplinary studies to provide administrative leadership. 3. Increase resources and support for centers and institutes so that they are better positioned to advance and grow their interdisciplinary curricular and research agendas. 	<ul style="list-style-type: none"> • Establish CITL as the resource cited in (1). • In line with Transdisciplinary Research workgroup, consider the feasibility of (2). • Consider resources necessary for (3). 	May 2023	EVPP AVP – CITL VPRIPS
Provide opportunities for interdisciplinary courses and programs to emerge from teams of faculty or research groups.	<ul style="list-style-type: none"> • Develop general course numbers for interdisciplinary courses • Create “trial” run opportunity that does not require full course approval process • Engage college curricular committees in 	Fall 2023	EVPP Deans College curricular committees

	<p>development of courses outside of departments.</p> <ul style="list-style-type: none">• Provide representation from centers on college curricular committees• Review college policies to ensure centers can participate in curriculum development process		
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