

Interdisciplinary Programs: A Look to the Future

UNC Charlotte has always promoted innovative, interdisciplinary programs at both the undergraduate and graduate level. Accordingly, the purpose of this white paper is to describe the present environment in which interdisciplinary programs operate, identify some challenges, and suggest some directions for the future. Suggested changes would allow the programs to flourish, benefiting UNC Charlotte students, and accelerating institutional progress towards realizing its interdisciplinary vision. The views offered represent the combined perspectives of the directors of interdisciplinary programs and centers in the College of Liberal Arts & Sciences.

The Present Environment

From the earliest days of UNC Charlotte, interdisciplinary programs have been an important part of our academic programs of study. Some can be traced back to the campus when it was predominately an undergraduate institution (such as, Criminal Justice and African American Studies), and these programs became departments as their disciplines developed and student interest flourished. Others were started when the campus adopted a policy on minor courses of study. In fact, one of the major justifications for the establishment of a minor program of study was to allow the clustering of courses that had a common theme but involved more than one discipline. Women's Studies, Gerontology, and Cognitive Science are such examples. In an attempt to provide some structure for the emerging groups of faculty that worked together across department lines on teaching and research related projects, UNC Charlotte began to approve the establishment of academies. An academy required the approval of faculty council and remained in existence for a 5-year period. More recently, the growth in the number of interdisciplinary programs was a byproduct of the need to increase our academic offerings at the graduate level. Interdisciplinary programs represent a significant number of the certificate, master's and PhD programs.

When describing the present environment, it is difficult to identify commonalities because there is considerable variability among the interdisciplinary programs. While some of the graduate programs are housed within a department, others (e.g., Nanoscale Science, Gerontology, Organizational Science, Public Policy) are comprised of core and affiliated faculty from multiple departments and, for some programs, more than one college. Similarly, the curriculum structure for many of the interdisciplinary programs involves several departments and colleges. Undergraduate programs that offer majors or minors have a different set of needs than graduate programs. Moreover, even among the graduate programs, certificate programs differ in types and degree of research and instructional support from masters-level programs, which differ in some important ways from PhD programs.

For the programs that have grown into stand-alone departments, such as International Studies and Communication Studies, the academic structure as it presently exists offers an effective means of support and a path for continued growth. For the majority of independent programs or those embedded within a department that have a significant number of affiliated faculty and courses in several departments/colleges, the

academic and administrative structures present some challenges to their growth and development.

Challenges

Interdisciplinary vs. Disciplinary Structures

Interdisciplinary programs are largely invisible when it comes to the structure of the campus. Faculty members are hired by a department to support the teaching, research and service activities of their department and reporting lines follow departmental boundaries. Reward structures are often zero-sum, such that faculty work counts either toward the department or the program, with the consequence that productivity of one or the other often appears limited. Further, when faculty spend time on teaching and research-related projects that benefit an *interdisciplinary* program, their work sometimes goes unnoticed, unmeasured and, therefore, often unrewarded by their home department. Likewise, when resources become scarce, interdisciplinary programs have to depend upon the voluntary cooperation of departments and dedicated faculty. Promises that departments make to interdisciplinary programs often are compromised and some contracts, forged during more robust economic times, are left unfilled. Such resource depletion makes it difficult for interdisciplinary programs to offer a consistent curriculum and support for its enrolled students in research activities. It also makes it difficult for interdisciplinary programs to develop the reputation necessary to attract top faculty and students.

Hiring and Time to Degree

It is also difficult, when resources are scarce, for a discipline-based department to make decisions about new hires that will serve both its own interests and those of interdisciplinary programs when those needs are easily perceived as competing for scarce faculty resources. Faculty members involved with the interdisciplinary program understand the trade off, but it is often difficult to get their other peers' buy-in, especially when there are no tangible rewards to faculty or departments for such buy-in. The resulting lack of firm commitments and personnel from departments to contribute to and cover courses for interdisciplinary programs makes it difficult to ensure core course coverage or routinize elective course offerings. Further, it makes scheduling extremely difficult. Those difficulties, in turn, make it hard for students within interdisciplinary programs to plan a course of study that they can complete in a timely fashion.

Externally Funded Research

Much of 21st century research in science and medicine is interdisciplinary. For our graduate programs to grow in reputation and in research productivity, they must be able to be successful in obtaining NSF or NIH grants. Research teams must include members with varying skill sets so that research questions are investigated from multiple perspectives. With this realization, faculty are often interested in coming together across disciplinary lines to lend their expertise to a funded research project. However, credit for many of these interdisciplinary projects is concentrated in the PI's department and not shared with the interdisciplinary program that often sponsors the research activity and provides the graduate or undergraduate research assistants for the projects. Further, funding opportunities from NSF and NIH increasingly *require* interdisciplinary teams, yet the

current structure of organizing externally funded research creates a ***disincentive*** for faculty to participate in such opportunities since only the disciplinary home of faculty “gets credit” for the proposal submission.

Delivery of Curriculum

The tendency to use part time monies to solve curriculum issues works to a limited degree. But, this strategy, although effective for lower division offerings, is difficult to implement at the graduate level when faculty expertise is needed for dissertation projects, research teams seeking grant support, and specialty courses in the upper division and graduate programs. Some of the undergraduate interdisciplinary programs (i.e., American Studies, Women’s and Gender Studies) rely heavily on adjunct faculty and the availability of funds for part-time instruction. This imposes a strain on the college’s resources and does not necessarily enhance stability within the programs. While adjunct faculty make important contributions to the programs, an over-reliance on part time instruction does not help to address long-term goals.

Future Directions

There are no ready solutions to the challenges that plague the interdisciplinary programs in the present resource scarce environment. Some of the accounting issues can be solved with more attention paid to tracking faculty involvement with interdisciplinary teams—particularly when more than one college is involved. However, **recognizing and accommodating the hybrid nature of the programs within the academic structure of the university** would ensure actual growth and continued productivity of the programs.

1. **Increased role of the Graduate school.** Because graduate education is focused so heavily on research, enhanced discussions within the graduate school could provide a forum for resolving some of the challenges that result from interdisciplinary programs that involve multiple departments and colleges.
2. **Increase participation of interdisciplinary programs on crucial policy committees.** It is important for representatives from the interdisciplinary programs to be involved with faculty committees such as the Graduate Council and the Advisory Committee for Research and Economic Development.
3. **Adjust grant funding allocations.** Presently at UNC Charlotte, only 10% of the F&A funding is returned to the academic programs that generate research. An increase in this percentage would provide an important policy change that can strengthen the interdisciplinary programs responsible for generating research projects across department and college lines. As a general rule, indirect costs from grants are provided by the funding agency to strengthen the research infrastructure for the institutions that support research. It is not uncommon for universities to return a more significant percentage (greater than 10%) of those costs to the colleges, departments, and interdisciplinary programs that generate the funds since the money is used primarily as support for graduate students, and to make up for the ebb and flow that accompany research funding.

4. **Maximize the benefits from an interdisciplinary curriculum.** Interdisciplinary programs depend upon the strong involvement of several departments and colleges. For example, Gerontology incorporates core and affiliate faculty from Africana Studies, Anthropology, Communication Studies, Criminal Justice, Economics, Engineering Technology, English, Geography, Kinesiology, Mechanical Engineering and Engineering Science, Nursing, Philosophy, Psychology, Political science, Public Health Sciences, Sociology, and Social Work. Nanoscale Science has faculty contributors from the Chemistry, Physics and Optical Sciences, Biology, Mechanical Engineering and Engineering Science, Electrical and Computer Engineering, and several of the research centers.
 - a. Benefits of an interdisciplinary curriculum requires an infrastructure that facilitates *team teaching, co-teaching and other pedagogical innovations*. At minimum, we need an accounting structure for teaching that allows faculty to easily accomplish team teaching without making it an overload.
 - b. Consider Joint PhD programs with flexible curriculum offerings where appropriate. Such programs could address time to degree and provide students the strongest education possible, including opportunities for grant funding, publication, and networking. For some emerging disciplines, such as Cognitive Science, a joint PhD program with two of its affiliated disciplines provides students with expanded research and career opportunities.

5. **Change the university accounting structure** and the F&A funding so that the directors can manage awarded sponsored funds in Banner within the program's organizational code rather than the department's organizational code. Currently, grants submitted by programs and centers count as coming from a home department, not the actual interdisciplinary program. Likewise, students funded by an interdisciplinary grant should be counted in that unit; thus, administering their support should, again, come from the program, not the home department of the PI.

6. **Revise departmental RPT processes to account for interdisciplinary research processes.** The College of Liberal Arts & Sciences has already passed and implemented a process that could be used as a model for the other colleges. As Pfirman and Martin (2012)¹ point out, interdisciplinary research can take longer because faculty may need to become conversant in other disciplinary languages. Further, interdisciplinary researchers may publish in journals that the home discipline may neither be familiar with nor reward. In addition, interdisciplinary research is often team-based, so RPT and annual review mechanisms that ask for an accounting of contribution, or that discount second, third, etc. authorship are inappropriate for evaluating this type of research. Further, faculty members who teach in interdisciplinary programs have an extra advising load that Chairs, review committees and Deans must recognize.

¹ Pfirman, Stephanie and Pual J. S. Martin. 2012. "Facilitating interdisciplinary scholars." Pp 372-403 in (Eds.)Frodeman, Robert, Julie Thompson Klein, and Carl Mitcham, *The Oxford Handbook of Interdisciplinarity*. Oxford: Oxford University.