Appendix J

University of North Carolina at Greensboro
Request to Establish a Doctoral Program in Information Systems

Introduction
Following a recommendation from the Graduate Council and from the Senior Vice President for Academic Affairs, the Committee on Educational Planning, Policies, and Programs approved on November 9, 2001 the request from the University of North Carolina at Greensboro to plan a doctoral program in Information Systems. The University of North Carolina at Greensboro now seeks approval to establish a doctoral program in Information Systems (CIP: 52.1201) effective August 2003.

Program Description
The institution describes the new program as follows:

"The proposed Ph.D. in Information Systems (IS) at UNC Greensboro will be an innovative, research oriented doctoral program designed to prepare students primarily for careers as members of the faculty in academic IS units and secondarily as professionals in non-academic research and professional organizations. It is designed to train professional and academic research scholars of the highest quality. The proposed Ph.D. program will be innovative in that it contains several components of a traditional Ph.D. program, where the focus is on developing technical and empirical research skills, and is characterized by four distinctive elements that enhance the traditional mode. These are: a commitment to practical relevance; an emphasis on producing quality teachers; a research apprenticeship requirement; and interdisciplinary research. In addition, a "global information technology" emphasis will be made available as an option to interested students. The global emphasis is expected to generate brand identity for our degree over the years.

Information Systems is an applied field; however, very few doctoral programs make a concerted effort to bring "practical relevance" to doctoral research. Every effort will be made to bring such relevance to the dissertation and the degree in our proposed PhD program. For example, relevant IS related work experience, including summer internships, will be required for those lacking in such experience.

Another major emphasis of the program is to produce university faculty who are quality teachers. Several initiatives were considered to meet this objective including collaborating with UNCG's nationally recognized School of Education and other programs an UNCG that offer the Ph.D. degree. Research conducted by senior faculty in the Department of Information Systems and Operations Management (ISOM) highlights the need for greater emphasis on teacher preparation to handle diverse teaching responsibilities. Recognizing this need, students in the proposed program will be required to complete teaching methods and pedagogy courses in the School of Education and the Department of Psychology. These courses may be modified to meet the needs of our students. Additionally, students will undergo teaching mentorship in the ISOM Department by way of a "teaching practicum(s)" designed to have them teach under the supervision of senior faculty.

A third feature of the program is a research apprenticeship requirement while completing course work. A doctoral student will be required to conduct research and submit at least two papers for publication in conference proceedings or journals during this time. The research apprenticeship may be conducted in conjunction with regional and national firms or governmental agencies."

Program Review

The review process is designed to surface strengths and weaknesses in proposed new degree programs. Proposals to establish new doctoral programs are reviewed internally and externally. The concerns from the two review processes were summarized in a letter to the Chancellor prior to the presentation to the Graduate Council. That summary follows:

Even though the proposal makes a case for a growing gap between the number of faculty available for academic appointments and the need for faculty in Information Systems Programs, both the internal reviewers and the external reviewer raise questions here. The external reviewer thinks the recent downturn in the economy has had a significant impact on the shortage of faculty. The cost of faculty in this area has been bid up so high due to competition from business for their services, that many programs have simply restricted the size of their programs. In addition, according to the external reviewer, the economic downturn has brought many people, who might otherwise be in business and industry, into the academic job market. So the reviewer offers a somewhat different picture of academic job prospects in this area from that in the proposal, but based on some very recent events. Even though the program is not conceived as a very large one, the reviewer thinks even those numbers need to be scaled back due to changed circumstances. It will be important to revisit and reconcile the accounts of what academic and business job prospects are in this area currently and to provide more supporting data for an assessment of the current situation.

There is a concern that teaching loads be adjusted and that research productivity be increased, perhaps in a planned way.

There is a comment that doctoral students can do some teaching that will allow current faculty to shift their instructional effort to the doctoral program. There are rather strict requirement about the status of the instructional faculty in accredited business programs so it will be important to clarify the extent this can be done compatible with those requirement.

Graduate Council

The Graduate Council had, as a basis for its consideration, UNCG's proposal to establish the program in Information Systems, copies of the outside review of the program (one outside reviewer did not respond), the summary letter to the Chancellor, and a presentation to the Council by representatives of the program. No issues in addition to those summarized above were raised.

Response

Representatives of the program provided evidence that although the reviewer may be right that the gap between positions available in academia and the number of doctoral

degrees being produced has narrowed there still are significantly more positions than candidates. The proposed size of the program is relatively small for a doctoral program and the program believe there will be adequate candidates and positions available. There will be teaching load adjustments for doctoral faculty both to recognize dissertation work with doctoral students and the need for more research time for doctoral faculty. Since they will add two new faculty who will have only a part of their assignment in the doctoral program or other graduate programs, they will actually have more faculty available to teach courses at the undergraduate level.

Recommendation by the Graduate Council
After consideration of the issues raised by reviewers and Council members, the Graduate Council voted, without dissent, to recommend approval to establish this doctoral program in Information Systems.

Further Review
One of the contracted outside reviewers never provided a review. Give this fact and some continuing concerns in the Office of the President, we contracted for a second outside review. After receiving that review, we prepared a second letter which contained a summary of all the issues raised in the review process and suggested that UNCG systematically revise the proposal in light of those concerns and in light of the changes they had proposed to make. Follow is the summary of concerns expressed in that letter:

Supply/demand issues. What is the employment situation in the academy and in business and industry? The initial proposal was prepared before the full impact of the economic downturn became evident and both reviewers think business and industry opportunities have been greatly diminished. The cut back in the academy is evident too and shows up in your surveys. It does appear reasonable to make a distinction between long-range and short-range outlooks.

Curriculum issues. Both reviewers think there are too many courses and the first reviewer is concerned about the number of research seminars and the extent of research requirements in the course work. The second reviewer does not seem to have a concern about the presence of research requirements but is concerned with whether there are enough faculty to teach the number of courses proposed.

Student pool for the program. Both reviewers acknowledge the heavy interest of international students in this degree area and raise questions about the consequences of having mostly international students. Your program has indicated it expects a large role for domestic students in the mix. The second reviewer confirms there is significant student demand in this field. The first reviewer wanted more evidence for the pool UNCG expects.

Issues related to program faculty. The reviewers recognize considerable achievement by the faculty but both seem to think there are not enough faculty with sustained nationally visible research programs, so they think there is a quality issue with the faculty in relation to a doctoral program. There is some concern about the size of the faculty in relation to the initially proposed program. The load of the faculty is also a concern

expressed by the reviewers. We recognize that you are now prepared to commit to two additional senior faculty with national reputations.

Size of the program. One might think a program of 24 students when fully implemented not to be a large program. But for this field, both reviewers think the program, as initially proposed, is too large with too many students admitted each year. The reviewers also believe, given the economic downturn, that it would be difficult to place 5 to 6 students each year and perhaps even after recovery that would remain the case. The size issues needs to be addressed and it will have budgetary consequences that will need to be considered.

The second reviewer did raise a question about the wisdom of a part-time program. As I understand your proposal, it is a full-time program with the option of allowing a few students to proceed on a part-time basis. You might consider this issue in relation to the size of the program, at least initially.

Support of graduate students. The second reviewer reiterated the need to have support packages to attract outstanding graduate students. If changes are made in other aspects of the program, it will be important to identify resources and the source of resources to meet this need.

As I indicated above, we think the best course is to systematically revise the initial proposal, incorporating your position on the various issues identified above, revising the budget as required, so we would have a unified statement of the proposed program that would meet the concerns of the reviewers or have a clear justification why they need not be met in some instances.

Response to the Second Letter

The program systematically revised their proposal for the doctoral program in Information Systems addressing all the issues raised above and provided a summary of all the changes they made.

Supply/demand issues. There is both a short-term and a long-term need for more faculty in Information Systems programs. Even in the short term the vacancies appear to be there but due to the economic downturn's effect on higher education, many schools are delaying filling positions in this field. The American Association of Colleges and Schools of Business released a report in August 2002 which includes the following: "Information Systems faculty are in greatest demand: In 2001-2002 almost 19 percent of all new faculty hired were trained in this field, compared with 11 percent in 1996-97. Whereas vacancy rates for finance, accounting, and marketing doctoral faculty have converged to the overall vacancy rate, the 2001-02 vacancy rate for information systems doctoral faculty at AACSB's U.S. member schools exceeded 14 percent. Vacancy rates for all other fields are below the overall rate." Various studies of jobs posted and candidates applying show a definite gap with the number of candidates falling below the number of positions in this field. We think it is clear that this field is not producing as many doctoral faculty as are needed.

Curriculum issues. There is a minimum of eight courses required in the major, with three being required of everyone. This compares favorably with the number of required major courses in the thirteen schools reviewed where the number of required courses was 8-10. There appear to be a comparable number of additional research methodology and elective courses required. The program requires a total of 73 hours including all course work, teacher preparation courses, and dissertation hours. The program listed a number of courses that will not be developed until additional faculty are on board, so they do not believe there is an issue whether the faculty is large enough to teach the required courses. One reviewer was concerned that they had formal courses for teacher training whereas that reviewer appeared to favor a mentoring system. While there are differences of opinion among faculty about how best to train doctoral students to be good teacher, the direction appears to be the use of formal courses, so we see nothing wrong with UNCG adopting this model.

Student pool for the program. The second reviewer stated that his program received 130 student applications for 3 slots in their doctoral program. This suggests the level of overall demand. UNCG has done a telephone survey in North Carolina contacting ten universities and five community colleges and found that 19 current faculty and fifteen current masters students would like to pursue a doctoral degree in Information Systems. It certainly appears there is both a strong national student pool for this degree and a need in North Carolina for access to an IS doctoral program by many in-place faculty who do not have a terminal degree in this field.

Issues related to program faculty. Initially UNCG was going to commit two new faculty positions to this program, one at the junior level and one at the senior level. Now they are committed to two senior faculty, one at the associate level and one at the full professor level. Each will be expected to have a nationally recognized research program and experience in mentoring doctoral students. One position will be added in the second year of the program and one in the third year. The program has shown that they are currently as large as some other programs offering the doctorate in Information Systems. The have a faculty that offers a master's program in this area, supervise graduate student research, and publish widely and in some of the best journals in the field. We cannot expect a program to have a doctoral faculty until it has a doctoral program approved so the real issue is whether UNC-G in a position to develop its current faculty into a doctoral one along with the addition of other senior level doctoral faculty. It plans to adjust faculty assignment to allow for supervision requirements associate with doctoral level work and to make time for more research by the doctoral faculty. The size of the faculty is being addressed by addition of faculty and reduction in the number of students who will be admitted to the program. While there are never guarantees what the results will be, UNCG has demonstrated they understand what is needed for a successful Information Systems doctoral program and the administration has committed to provide the faculty and the resources to make it possible.

Size of the program. While this did not appear to be a large program initially, UNCG has been persuaded to reduce the number of students accepted into the program. Rather than admitting 5 full-time and 1 part-time students each year, they will now admit 3 students the first year and 4 students each year thereafter. They plan to also admit a part-time student every other year if there is demand. This appears a reasonable response to

the reviewer's concern and will allow the program to start slowly and judge both student demand and placement opportunity. It should be noted that several of those in NC interested in the program are in faculty positions and placement may not be an issue for those students.

Support of graduate students. UNC-G is committed to fully funding each full-time doctoral student qualifying for support for four years. Assistantships and appropriate tuition waivers will be part of the support packages.

Need for the Program
This would be the first Information Systems doctoral program in UNC although there are opportunities to study in this field in some other master's and doctoral programs in the state. It is a growing field within business that has a strong pool of applicants seeking this degree and a shortage of doctorally training faculty. There appears to be national and international demand for this program as well as significant demand within North Carolina. The program, if established, could very well initially serve to provide doctoral level education to current faculty in universities and community colleges in the state as it begins to build its national reputation.

Resources
UNCG's administration is committed to two new faculty positions for the program and support packages for the graduate students. While a portion of the cost will derive from enrollment growth funds, the University will reallocate a portionally larger share of its resources to support the program. A small amount of resources is expected to come from contract and grant activity. With this commitment in place there appear to be adequate resources to support the program.

Recommendations
The program has responded and revised its proposal in accord with advice and concerns provided by the internal and external reviewers thereby strengthening the proposal. There is a commitment to the program by the administration and clear plans for transforming a master's level faculty into a doctoral faculty and adding additional faculty.

Based on the revised proposal, it is recommended that the Board of Governors approve the request from the University of North Carolina at Greensboro to establish a doctoral program in Information Systems effective August 2003.

Approved to be Recommended to the Committee on Educational Planning, Policies, and Programs of the Board of Governors

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Senior Vice President Gretchen M. Bataille   February 3, 2003