

**New Program Proposal
Interdisciplinary Ph.D. Healthcare Genetics
With Tracks in Ethics and Public Policy; Interventionist; and Bench Research
Clemson University**

Summary

Clemson University requests approval to offer a program leading to the Interdisciplinary Ph.D. degree in Healthcare Genetics with tracks in Ethics and Public Policy, Interventionist, and Bench Research. If approved, the revised program proposal will be implemented in Fall 2008.

The Board of Trustees of Clemson University approved the proposal on October 22, 2005. The proposal was originally entitled “Interdisciplinary Ph.D. in Nursing and Genetics” when it was submitted for Commission review on November 14, 2006, and then sent to the Advisory Committee on Academic Programs on January 17, 2007. That proposal noted that each institution ranked as a “Top 20” institution by *US News and World Report* offers a doctoral program in nursing. At that meeting, staff opposed the proposal on several grounds, including the fact that South Carolina already has two public institutions with three doctoral programs in nursing (USC-Columbia with a Ph.D. and a “D.N.P” or “Doctor of Nursing Practice”. and MUSC with a Ph.D.) With three publicly supported doctoral programs in Nursing, South Carolina (with four million residents) is supporting more such programs per person in public institutions than any other state in the country. None of the three existing nursing doctoral programs in the state has a multi-year record of enrollments or completions at the modest levels projected at the time the programs were approved. There are now 101 doctoral programs in Nursing in the United States.

Although the Advisory Committee approved the Clemson proposal unanimously in January 2007, Clemson officials adjusted the program several ways in response to the staff’s objections to the duplication of effort in the possible establishment of a fourth doctoral program in nursing. These changes included revision of the program’s title and the opening of the program to students with degrees in fields other than a baccalaureate degree in nursing (BSN). Continuing questions by staff about the need for the program led Clemson to request on March 27, 2007, that the program be withdrawn from discussion at the April 2007 meeting of the Committee on Academic Affairs and Licensing.

Staff and Clemson officials continued a dialogue in which staff suggested several alternatives for Clemson's consideration. The purpose of these alternatives was both to conserve the state's fiscal resources by investing in existing masters- level or doctoral programs at Clemson (e.g., the Master of Science in Nursing with a track in Nursing and Genetics; or the Ph.D. in Genetics with a track in Healthcare Genetics) and to consider possible related programs (e.g., a M.S. in Genetics Counseling), which while they were not "unique" as this program is said to be, have the distinction of having proved their value in other states.

Clemson officials have responded to these suggestions by alerting staff to the institution's master plan to limit the growth and development of master's degrees and pursue doctoral degrees. Likewise, Clemson officials have pointed out that all Ph.D. programs at the institution are to be funded through federal grants after the first year of their implementation. According to the institutional spokespersons, master's programs take resources away from undergraduate programs, thereby weakening the quality of undergraduate education, because grants from the federal government are not available to finance them. On the other hand, federal grants' assistance to doctoral programs is significant. Thus, from Clemson's perspective, the addition of this doctoral program will not draw resources from the undergraduate program as would the addition of master's programs. Even assuming that this premise is wholly defensible, it rests on the institution's abilities to receive federal funding for this program proposal.

On September 28, 2007, a complete revision of the original proposal—i.e., the current iteration—was submitted to the Commission once again and was sent to the Advisory Committee for review at its October 11, 2007, meeting. At that time, the revised proposal was unanimously endorsed by the Advisory Committee. The revision contained important changes, including:

- 1) renaming the program the "Interdisciplinary Ph.D. in Healthcare Genetics";
- 2) changing the CIP code from Nursing (511608) to "Human Genetics" (260806);
- 3) opening the program to students with relevant degree backgrounds other than a bachelor of science in Nursing (BSN) as minimal preparation; and
- 4) making certain other changes of language to promote the idea that the program was truly interdisciplinary rather than a nursing program.

The revised proposal states that "The purpose of the program is to prepare interdisciplinary scientists to: extend the knowledge base relevant to healthcare genomics, translate research to advance the application of genomics in healthcare, and collaborate in interdisciplinary research and practice." The proposal also states that the need for the program is to promote the use of genomic research technologies and information in the context of health, biology, and society. It

states that the Greenwood Genetics Center and others around the country need more “interventionist” genetics scientists as members of teams when dealing with genetics research. Clemson officials have indicated that graduates of the proposed program would be sought as employees at the Greenwood Genetics Center and by other clinics or treatment facilities which might refer persons to facilities like the Greenwood Genetics Center.

The proposal attempted to measure “need” (i.e., student demand for this kind of program) by referring to the results of a Spring 2006 survey sent to 5,000 “healthcare providers” in the Upstate region of South Carolina. The list of healthcare providers was obtained from the South Carolina Department of Labor, Licensing and Regulation. Staff has confirmed with Clemson officials that this list was limited entirely to Registered Nurses in South Carolina. Staff also has confirmed that Clemson officials have not gathered any data regarding the interest in this degree by non-nurse health providers. Both of these confirmations are cause for continuing concern that the program may actually recruit and serve only nurses. Of the surveys distributed to the group of professional nurses in 2006, a total of 248 indicated a strong interest in enrolling in the program. Fifty-two percent of these (N=129) stated that they would be interested in enrolling within the next two years. The rest indicated interest in enrolling within six to ten years.

Given this high level of expression of interest in the program, the enrollment estimates provided by the institution appear to be very modest. Enrollment is estimated in the proposal to begin in 2007-08 at six (6 FTE) and grow in the second year to 12 (12 FTE), in the third year to 15 (18 FTE), and in the fourth year and fifth years to 21 (20.7). This program should be reviewed at the end of five years of its operation to be sure that it has admitted, enrolled, and graduated some significant number of non-nursing students.

The numerical values attached to the responses of the 2006 demand survey constitute the major basis for what the proposal describes as “significant pent-up demand for healthcare genetics education in the Upstate.” In addition, the proposal cites (without numerical values attached) significant interest in the program from Western North Carolina, Georgia, and other parts of the United States. The narrative states that all this interest has come about without any advertising of the possibility of the program at all. Given the reported data on pent-up interest in such a program and the proposal’s restatement of the “uniqueness” of an interdisciplinary program in healthcare genetics in the country, Clemson’s estimated enrollments for the proposed program appear very modest. At the Advisory Committee meeting of October 10, 2007, Clemson officials indicated that they expected to have approximately the same numbers of students graduating from the program in any given year as had initially enrolled in the program four years prior. This graduation statistic—rather than the much larger

estimate of interest in the program -- should be used as the basis for accountability of the program's productivity.

As required by the Commission's policy for new doctoral degree approval, the proposal was reviewed by an external evaluator. The evaluator was a member of the faculty of the College of Nursing of the University of Iowa. While she wrote different letters for each iteration of the proposal, she spoke only to the program's usefulness to nurses in each.

The first iteration of the proposal was endorsed by the representative from MUSC at the Advisory Committee meeting; the second iteration of the proposal was endorsed by the representative from USC-Columbia. All other institutional representatives present at these two meetings were supportive of the program, because as many expressed themselves, there is a perception of a large gap between supply and demand for Ph.D.-prepared nurse faculty members. However, the perception of this program at both the January and October Advisory Committee meetings was that it is a doctoral nursing program. This perception again reinforces the concern that the state does not need a fourth doctoral program in nursing.

The proposed program requires no approval beyond the Commission, including no approval by the State Board of Nursing since the program does not lead to licensure as a Registered Nurse. Similarly, as the proposal itself points out, the program requires no approvals from the Collegiate Council on Nursing Education (CCNE).

Clemson University officials confirmed at the October 11, 2007 meeting of the Advisory Committee that no faculty from either USC's or MUSC's school of nursing will be teaching any course in the proposed program. No reason was given for this change from the original proposal.

The revised proposal states that the number of faculty members for the program is adequate. The faculty will be drawn from multiple disciplines at Clemson University. Four nursing faculty members will teach in this program by the end of the fifth year of its implementation. One of those nursing faculty members has a background in genetics. In response to staff inquiry Clemson officials have stated that two of the other four nursing faculty members will be replaced in their current responsibilities for the undergraduate nursing curriculum by qualified graduate students. Clemson officials have also indicated that the institution has six faculty vacancies in the School of Nursing; three of these vacancies will be filled by nursing faculty with a background either in healthcare genetics or health disparities.

Other faculty teaching and advising in the program will be drawn from fields as diverse as sociology, higher education and administration, health policy, health administration, developmental psychology, economics, experimental psychology, microbiology, biological sciences, cellular biology, statistics. Two clinical geneticists will also be given adjunct faculty status and an internationally known genetic nurse scholar, according to the proposal, will bring “expertise and experience to the ‘classroom.’” While Table 4 in the proposal shows that nine nursing faculty and 11 interdisciplinary faculty (i.e., non-nursing faculty) will somehow be involved in the program, Table 5 in the proposal shows that the total faculty actually teaching and advising in the program will begin at four (1 FTE) in the first year of the program’s operations (2007-08) and rise to six in (1.5 FTE) 2009-10 and then to eight (2 FTE) in 2011-12.

Clemson personnel insist that the faculty available for this program are both sufficient and highly interdisciplinary. According to conversations with Clemson officials, included in the faculty group who are available for, but not necessarily teaching in, the program are ten Clemson faculty members working at the Greenwood Genetics Center. At the end of the fifth year of this program’s implementation, it should be reviewed to measure the accomplishments it has created in research, since Clemson officials have emphasized its orientation as a research-rich degree, which all Ph.D. programs are supposed to be.

The curriculum will consist of a minimum of 70 credit hours (for those entering with a relevant master’s degree) and a maximum of 90 credit hours (for those entering with a relevant baccalaureate degree.) For the former group, the program is anticipated to take four years to complete; for the latter group, the program is anticipated to take five years to complete. Students may choose one of three program “tracks” (Ethics and Public Policy; Interventionist; and Bench Research). Core courses total 34 credit hours, of which a slight majority (18) are in Nursing. Beyond the core, each student must choose one of three tracks, each of which has an additional 36 semester hours of credits required, including 18 credits in dissertation research. The Ethics and Policy track contains no genetics courses beyond the core; the other two tracks contain two genetics courses each (six credit hours) beyond the core. A total of three new courses (all of which are in Nursing), which together constitute a total of seven semester hours of credit will be added to the Clemson catalogue to implement this program.

New costs for the program estimated by Clemson University for the first five years of the proposed program are for administration (\$186,591), faculty (\$465,440), graduate assistants (\$398,112), support staff (\$368,297), materials and supplies (\$110,000), equipment (\$110,000), and facilities (\$600,000). The institution has indicated that new wet laboratories and some substantial amounts of computer equipment will be required within the first five years of the program.

Total costs for the program will begin in 2007-08 at \$199,352 and rise to \$266,068 in the second year; \$578,647 in the third year; \$591,141 in the fourth year; and \$603,232 in the fifth year. The total cost estimated by the institution for the first five years of the program's operations is \$2,238,440.

In addition to the funds for the program which will be available through tuition and annual state appropriations, the institution has also factored in estimated funds from federal grants for which Clemson will apply to support the program's operations. These federal revenues as outlined in the proposal are projected to account for \$5,000 in the first year; \$141,544 in the second and third years; \$341,544 in the fourth year; and \$541,544 in the fifth year of the program's implementation.

Shown below are the estimated Mission Resource Requirement (MRR) costs to the state associated with implementation of the proposed program for its first five years. Also shown are the estimated revenues projected under the Mission Resource Requirement and the Resource Allocation Plan as well as student tuition.

Year	Estimated MRR Cost for Proposed Program	Extraordinary (Non-MRR) Costs for Proposed Program	Total Costs	State Appropriations and Grants	Tuition	Total Revenue
2007-08	\$196,296	\$0	\$196,296	\$5,000	\$43,420	\$48,420
2008-09	\$394,410	\$0	\$394,410	\$253,832	\$86,161	\$339,993
2009-10	\$398,045	\$0	\$398,045	\$367,213	\$87,518	\$454,731
2010-11	\$639,780	\$0	\$639,780	\$571,102	\$139,757	\$710,859
2011-12	\$634,327	\$0	\$634,327	\$908,666	\$139,079	\$1,047,745

Data listed under the column labeled "Appropriations and Grants" includes both annual state appropriations and the amount of federal grant funding which

Clemson University has estimated from anticipated federal sources. These data demonstrate that if the new program meets its enrollment projections and contains costs as they are shown in the proposal, the program will be able to cover new costs with revenues it generates through the MRR and projected grants from the federal government by the third year of its implementation. Without the federal funds, the program will operate at a deficit each of the first five years of its implementation.

The institution demonstrates obvious commitment to the offering of this program and provides assurances that it will find the federal grant funding to make the program self-sufficient. Nevertheless, staff remains concerned about the program, principally on the basis that, once implemented, the program may yet be the fourth nursing doctorate in the state.

To assure that the program is productive and does not become simply a fourth doctoral program in nursing and that it functions as a research program accomplishing its specified purposes, the program should be formally reviewed by the Commission after the first five years of its implementation (i.e., Fall 2013). This review should focus on data to provide assurances that the program has a characteristic research focus; that it has demonstrated interdisciplinary quality by a significant group of non-nursing student admissions, enrollments, and graduations; and that it is meeting productivity standards. In the meantime, the Graduate Dean should conduct an annual review of each of these categories, including mission attainment, to assure that benchmark targets are being met.

Recommendation

The staff recommends that the Committee on Academic Affairs and Licensing commend favorably to the Commission the program at Clemson leading to the Interdisciplinary Ph.D. in Healthcare Genetics with tracks in Ethics and Public Policy, Interventionist, and Bench Research, provided that no “unique cost” or other special state funding be required or requested and provided further that:

1. The research achievements of the program, mission attainment (including student diversity by undergraduate field), quality, and productivity be reviewed annually by the Graduate Dean; and
2. After the fifth year of implementation (i.e., in Fall 2013) the Commission review the program for mission attainment (including diversity by undergraduate field of enrollees and graduates), quality and productivity.