

STRATEGIC INTERVENTION FOR DOCTORAL COMPLETION

Grant Proposal

The University of Georgia, the University of Florida and North Carolina State University were recently awarded a grant to develop a strategic and systematic intervention for doctoral completion in selected science, engineering, math, social sciences and humanities departments. Current admission, orientation and integration practices are being collected and analyzed. Additionally, a database system for monitoring doctoral completion in all graduate departments at the three institutions is being created. Based on findings from this study, a delineation of "best practices" for doctoral completion is being constructed. Furthermore, an online support forum for students will serve as a problem solving mechanism for doctoral completion.

A Conceptual Model for Strategic Intervention

Non-completion of Ph.D. students has become a topic of pressing, national attention for graduate deans, public and private funding agencies, faculty members and graduate students. Concerns range from the waste of limited resources and our "domestic talent pool" to the effect on students' lives (Smallwood, 2004; CGS Ph.D. Completion Workshop, 2003; Workshop on Graduate School Attrition, 1997).

Doctoral non-completion is an expensive proposition not only for society and the institution, but also for the individual. Doctoral education exists to meet society's needs for highly educated individuals and individuals' needs for advanced learning opportunities. Doctoral coursework is expensive because, by design, it tends to have a much higher teacher student ratio than undergraduate work and because each doctoral student requires many hours of one-on-one research supervision by a member of the research faculty. Whether or not a student graduates, each and every doctoral student represents a substantial investment in terms of time, scarce intellectual resources and public and private dollars. When students graduate, they move out into various professional worlds as representatives of the university, with their accomplishments reflecting on the university and with their professional work serving as recompense to the taxpayers and other individuals and organizations that fund doctoral education. When Ph.D. students fail to graduate, there is little or no return on these investments. For example, society misses out on any scientific or social advancement the students would have created later in their careers (Lovitts, 2001). In addition, "low Ph.D. production rates ... put the existence of doctoral programs (and the faculty who teach them) at risk" (Lovitts, 2001, p.3).

Would-be graduates also make substantial investments in doctoral education. Doctoral students move families, incur financial obligations, and surrender substantial opportunity costs in order to pursue their degrees. Furthermore, they make a substantial psychological investment, since doctoral study presents an incisive challenge to the ego integrity of academically oriented individuals. If they complete their degrees, Ph.D. graduates can move into professional positions that justify the costs incurred by students and their families. Failure to complete can leave individuals with psychological and family turbulence, massive debt and limited career potential (Golde and Dore, 2001; Lovitts, 2001).

A critical review of the literature suggests that, despite the widespread nature of doctoral non-completion, the research base for understanding the phenomenon is uneven, conceptually scattered and of questionable external validity. Much of what is written consists of nonempirical prescriptions for practical action and theoretical evaluation studies. In the literature that does exist, however, certain themes repeat with enough regularity that, when coupled with our practical experience, we are able confidently to advance a simplified conceptual model for understanding doctoral completion (Figure 1).

Figure 1: Simplified Conceptual Model

| Four Conditions for Optimal Doctoral Completion | |
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| <i>Condition</i> | <i>Description</i> |
| Condition #1: The right people apply for doctoral study. | Applicants must be realistic about the demands and expectations of doctoral study. |
| Condition #2: The right applicants are admitted as doctoral students. | Admissions committees must properly screen applicants and, upon enrollment, orient them to the program. |
| Condition #3: Students and faculty form productive working relationships. | Faculty members and students must interact in a mutually respectful and task oriented manner. |
| Condition #4: Students experience social support from fellow students. | Students are more likely to succeed if they recognize themselves as members of a community of learners facing common challenges and opportunities. |

The first condition requires that prospective students fully understand the demands of graduate programs. Coleman (1970) describes an asymmetry in the amount of student information available to the university compared to the amount of university information available to the student. Due to this incongruence, many graduate students enter with false expectations concerning the realities of graduate school. Lovitts (2001) argues that the discrepancy between students' expectations and the reality of graduate school contributes to doctoral non-completion. She found students who chose a program based on an accurate representation of graduate school were more likely to complete their degree. Students with "well-structured cognitive maps" had lower rates of attrition and felt more informed about the amount of work and other expectancies when they received a mentor, guidebook, and information on the web. Lovitts suggests that it is the university's responsibility to provide integration opportunities for prospective students to facilitate the development of well-structured cognitive maps.

The second condition, admitting the right doctoral students, can have a major impact on degree completion. Past efforts in reducing doctoral attrition focused on changes in student selection (Lovitts, 2001). Given that, in certain research studies, no significant differences in standardized test scores and grades between non-completers and completers exist, selecting students based purely on such criteria is of limited utility (Smallwood, 2004). Instead of choosing the brightest students, Lovitts suggests selecting students with the best "fit" to a program. Nelson & Lovitts (2001) found it essential for departments to require prospective students to tailor their applications in order to ensure a better fit. For instance, the authors suggested personal statements address parallels between faculty research interests and their own ambitions. Once applicants are selected based on best "fit," past research found new student orientations also help facilitate a well-structured cognitive map by providing an outline of the graduate school

environment (Lovitts, 2001; Hudgings, Humphreys, & Hernan, 1999). A good "fit" based on common research goals facilitates future relationships that are essential to graduate students.

The third condition focuses on the *sine qua non* of doctoral study: faculty-student working relationships. Tinto (1987, 1993, 1998) emphasized the importance of faculty in integration into a doctoral program and degree completion. In one study (Lawson, 1985), degree completers were better able than non-completers to determine and describe faculty expectations. Preston (2003) found simply having a mentor enhanced the likelihood of degree completion. However, Nelson & Lovitts (2001) found that different dissertation supervisors had markedly different success rates; the authors found that the most successful supervisors participated frequently in meetings with each advisee, spent more hours per week interacting with their advisees, helped advisees with their job searches, engaged in more professional activities, saw students in both informal and formal settings and co-authored journal articles or chapters with advisees. Additionally, students were impacted differently by faculty support. For instance, women students were more positively influenced than men by faculty support (Baird, 1974) and rated role-model relationships as more important than did male students (Gilbert, 1985). Herzig (2004) suggests that it is the process by which the student becomes integrated that is important.

The fourth condition relates to the mutual support students provide to one another. Tinto suggests that students' relationships are an important condition influencing degree completion (Tinto, 1987, 1993, 1998). Numerous studies have determined that peer interaction was found to be related to degree completion (Bair & Haworth, 1999; Tierce, 1985). Peer support was found to be critically important for women and "minority" students, who reported lower levels of support and have higher attrition rates (Rocha-Singh, 1992). For instance, female students placed a greater value and need on academic-based peer support groups, especially for science courses (Light, 1990). Additionally, Adkins-Hutchinson (1996) found that academic and social integration improved the academic success of black doctoral students. Programs that provide and encourage social support increase the likelihood of full integration into a student's graduate program.

Project Goals and Activities

Although many universities have begun taking action on doctoral completion, most efforts are under-conceptualized, short-term, and haphazard. A school might adopt a mentoring program as the pet project of a vice president, but as his or her enthusiasm wanes, the program will fade away. A department might try to enrich its social and intellectual climate, but mounting responsibilities and shrinking budgets undercut meaningful action.

We view the CGS grant program as an opportunity for us to replace our significant but piecemeal efforts with a *strategic, databased intervention system* to improve doctoral studies for the thousands of doctoral students (with attention given to women and minorities) our universities serve every year. Moreover, we are attempting to extend and continually refine successful components of our intervention system beyond the life of the grant and into the foreseeable future.

In designing the project, we took the simplified conceptual model (see again, Figure 1) as our starting point. In essence, we asked ourselves: "What administrative actions can help to bring about the four conditions for optimal doctoral completion?" In selecting such actions, we focused on activities involving the creation, analysis and dissemination of information. This decision reflects our belief that, given better information, faculty and students will make improved choices that will help the institutions increase doctoral completion. Figure 2 summarizes the results of our decision-making, with the right hand column depicting six project goals. During this three-year project, each of the three universities is implementing all six of these goals. A seventh goal calls on us to evaluate the impact of the interventions we implemented.

Figure 2. Project Goals Fostering Doctoral Completion

| Administrative Responses to the Four Conditions for Optimal Doctoral Completion | |
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| <i>Condition</i> | <i>Project Goals</i> |
| Condition #1: The right people apply for doctoral study. | Goal #1. Improve advance information for would-be applicants so that they can make a realistic assessment of their preparedness to undertake the rigors and costs of doctoral study. |
| Condition #2: The right applicants are admitted as doctoral students. | Goal #2. Analyze school-level and department-level admission practices; advise and assist the departments in making needed improvements. |
| Condition #3: Students and faculty form productive working relationships. | Goal #3. Analyze department-level orientation and advisor-matching procedures; advise and assist in making needed improvements. |
| | Goal #4. Provide faculty members with information about and the opportunity to discuss the following topics: |
| | <ul style="list-style-type: none"> • How their department compares to other departments in terms of doctoral completion. |
| | <ul style="list-style-type: none"> • The disposition of all students who have achieved candidacy in the department at any time during the past ten years. |
| | <ul style="list-style-type: none"> • Student perceptions of obstacles to completion. |
| | <ul style="list-style-type: none"> • Student perceptions of advisement and learning problems. |
| | <ul style="list-style-type: none"> • Critical findings from the research literature concerning doctoral completion. |

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| | Goal #5. Provide students with information about and the opportunity to discuss the following topics: |
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| | <ul style="list-style-type: none"> • How their department performs with respect to doctoral completion. |
| | <ul style="list-style-type: none"> • The major milestones of doctoral study within the department. |
| | <ul style="list-style-type: none"> • Faculty perceptions of advisement and learning problems. |
| | <ul style="list-style-type: none"> • Critical findings from the research literature concerning obstacles to doctoral completion and solutions for overcoming them. |
| Condition #4: Students experience social support from fellow students. | Goal #6. Establish an online, problem-centered forum to foster peer support among doctoral candidates in the selected department. |
| | Goal #7. Assess the impact of the interventions. |

Activities for Goals #1, #2 and #3: Examining and Improving Program Practices. In order to accomplish Goals #1, #2 and #3, we are examining key practices among 37 doctoral programs in the three universities. As can be seen, the majority of the participating programs are in the science, engineering and mathematics areas; however, in order to test the robustness of our information and interventions, we have also included a few programs from the social sciences and humanities. Specifically, we are examining university- and departmental-level practices regarding: 1) information provided to possible students prior to application; 2) the admissions and orientation process; and 3) advisement.

The graduate dean's office at each university received information and existing documents from each of the participating programs. Additional information is also being collected via telephone or personal interview. This information on program practices is being catalogued and then studied by the research team at UGA, who are looking for commonalities and best practices, as defined by the literature. Ultimately, this examination results in two key products: (a) guidelines for best practices for each of the listed areas and (b) adaptable templates that the departments can use to produce documents of their own. Preliminary findings from the first three goals will be shared with key administrative, faculty, and structural staff at a joint planning conference in the middle of the first year of operations. Based on their input, the products will be prepared and disseminated to all participating departments. In addition, targets for Ph.D. completion will be established during this planning conference.

Activities for Goal #4: Improving Faculty Performance. To accomplish Goal #4, we are using a multifaceted approach for distributing information to faculty that allows them to improve their advisement practices at the department and individual level. Some of the information we share with faculty is derived from the first goals, as described above. In addition, we are undertaking "data-mining" at all three universities. We are accessing, standardizing and analyzing existing student records in an attempt to establish certain norms for doctoral study, specifically: 1) program-level and individual "success rates" (i.e., proportion of degree completion among enrolled doctoral students); 2) time from candidacy to degree completion (medians and ranges); and 3) time from entering program to degree completion (medians and ranges). A final research activity associated with Goal #4 is a telephone survey of selected faculty members to discover their perspectives concerning obstacles to doctoral completion and strategies for improving success.

Dissemination of the information from all of these activities is in three forms: 1) paper and electronic research briefs, to be distributed throughout the graduate schools at each institution; 2) discussion of preliminary findings at a joint-planning conference with key instructional faculty and staff; and 3) online discussion forums for faculty members.

Activities for Goal #5: Improving Student Information for Program Success. To accomplish Goal #5, we are again using a multifaceted approach. We are employing data derived from the first four goals to craft information that can empower students to work more effectively toward their own completion. In addition, we are conducting a survey study to understand how students perceive and experience doctoral study. The sample for this study is a random sample of all students enrolled in the participating programs at a specific point in time (e.g., five years ago). We are also implementing an exit survey for all graduating or withdrawing students in the participating programs. These data are continuously collected and analyzed.

Dissemination of the information from all of these activities is in three forms: 1) paper and electronic research briefs, to be distributed throughout the graduate schools at each institution; 2) discussion of preliminary findings at a joint-planning conference with key instructional staff; and 3) ongoing, online discussion forums for doctoral students.

Activities for Goal #6: Improving Interpersonal Support for Students. We are launching a permanent, online forum that allows students to solve common problems in doctoral study and share ideas among themselves. The forum is a Web site with common problems associated with doctoral programs. Each of these problems is presented as a descriptive case and students can react to these and interact with one another's ideas. The ideas are drawn from student interviews and the literature; however, example topics are: 1) handling conflict with advisors; 2) developing effective writing strategies; and 3) solving personal problems that interfere with academic success. Given that this tool is a problem-solving forum and not intended to be evaluative, contributions to the forum are edited to remove individual student and faculty names and inappropriate or irrelevant information.

Activities for Goal #7: Assessing the Impact of the Interventions. We also will assess the impact of the interventions overall and specifically at each of the three universities through sharing of ideas. Goal #7 affords us the opportunity to reflect on the effectiveness of the implementations. Throughout the project, we are collecting data, both formal and informal. These data are analyzed and disseminated in two forms: 1) a formal project report will be prepared and 2) a final conference ("future action" conference) will be held. At this conference, we will reflect on our activities and the impact they have made on our universities. Plans for continuous improvement in doctoral programs will be made. In addition, future planning by the deans and faculty will occur to enhance the sustainability and future success of the work begun by this project.

The Research Component

A key feature of the proposed project is the incorporation of an active and flexible research component to obtain, analyze and disseminate information needed to accomplish the project goals. The research component, which is housed at UGA, involves the activities described in Figure 3.

Figure 3. Principal Activities of the Research Component

| Principal Activities of the Research Component | |
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| Activity | |
| Research Activity #1. | Create a database at each institution to allow for the monitoring of doctoral completion. |
| Research Activity #2. | Collect the university and departmental documents necessary for accomplishing Project Goals #1, #2 and #3. |
| Research Activity #3. | Conduct a telephone survey of faculty members in the selected departments. |
| Research Activity #4. | Conduct a questionnaire-based study of a cohort of doctoral students in the 37 departments. |
| Research Activity #5. | Develop procedures for a system of exit questionnaires. |
| Research Activity #6. | Evaluate the impact of the interventions. |

The project as a whole is based upon collecting, analyzing and disseminating information. At the core of the study is the assumption that, given better information, faculty and students will make improved choices that will help the institutions increase doctoral completion. Although the majority of the analysis and materials development activities occur at UGA, the other two institutions have an appointed site coordinator who is responsible for collecting and disseminating data on their own campuses. The chief research activities are described below.

Research Activity #1: Data-Mining and Benchmarking. The research component at UGA is working actively with the student records office at all three institutions to establish the current data available for tracking doctoral completion. We also are developing a template at each institution that allows for systematic and continued monitoring of doctoral completion at the program levels. Our principle concern is the ability to establish norms within and among the three universities. This activity allows us to complete two critically important functions. First, it allows us to establish completion and time-to-degree norms for each department. These norms serve as benchmarks that allow departments to judge objectively their own success and determine when improved practices are essential. A second function of this activity is the identification of a cohort of doctoral students who were enrolled at the three universities five years ago. We are drawing a sample of 200 students from each of the three universities to serve as a basis for our student cohort study (see Research Activity #4).

Research Activity #2: Program Practices Information. Research Activity #2 requires us to access information about current practices in each of our 37 participating programs. With this goal in mind, we are requesting documents and information about the program practices included in Goals #1, #2 and #3 (see again Figure 2). We are analyzing these data in an attempt to find common practices, best practices and promising alternatives.

Research Activity #3: Study of Faculty Perceptions. The names of all faculty members who are doctoral advisors in these 37 departments are being compiled into a single database, which serves as a sampling frame for a telephone interview study. From this sampling frame, we are selecting 10 faculty members at each of the three institutions who will be contacted and asked to participate in a brief telephone interview designed to understand the perception of doctoral study from the faculty position. Example questions include: 1) To what extent do you believe doctoral attrition is a problem in your department? Why or why not? 2) What do you see as the biggest obstacles to doctoral completion among your students? and 3) What do you think faculty members can do to enhance and improve doctoral completion in your program? These interviews are audiotaped and transcribed to allow for content analysis to determine which obstacles and strategies are most salient from the perception of faculty.

Research Activity #4: Student Cohort Study. We are conducting a study of a cohort of doctoral students in the participating departments. Data collection consists of systematic follow-up of a cohort of students who were enrolled in the three universities five years ago. We are drawing a balanced sample of 200 students from each university to comprise our sample. Our first step is establishing the student's status regarding doctoral completion. Students are classified into one of three categories: graduate, still enrolled and discontinued. We then survey these students using a mailed, self-completion questionnaire. Special attention is being paid to non-response among those who are classified as discontinued. We aspire to measure key differences in the experiences of these three different groups with respect to the following areas: 1) financial situation during the doctoral program; 2) advisor/advisee relations; and 3) interpersonal support.

Research Activity #5: Establishment of Exit Questionnaire. Exit questionnaires will be instituted by all three universities as a permanent aspect of their record keeping system. The research component at UGA is working collaboratively with the three universities to develop a brief, meaningful questionnaire that allows us to understand key aspects of the doctoral experience. The questionnaire will be instituted during the second year of the project after initial research has indicated salient variables. The questionnaire will be distributed to all students at either the time they graduate or at the time they leave a program. Information received from the exit questionnaires should provide us with valuable information regarding differences in the experiences of degree completers and non-completers.

Research Activity #6: Evaluating the Interventions. The intervention evaluation will be initiated by the research team at UGA and carried out at each of the three institutions. The data will take two forms: subjective and objective data. The subjective data is based on reflections of those involved with the process. Consequently, possible sources of data include post-intervention interviews with students, faculty and administrators. In addition, exit questionnaires, which will be implemented in the beginning of the second year, will provide the research team with useful self-report data. Furthermore, a "future action" conference, which will take place toward the end of the final year of operation and in which administrators meet and plan for the future actions of the universities, will provide subjective input. Given the multiple interventions, multiple sites and lack of meaningful experimental controls, this research cannot take the form of carefully controlled, scientific research that "proves" the effectiveness of the interventions. However, we are attempting to ascertain if there is any measurable quantitative difference between those who did and did not participate in any of the interventions. Specifically, we are tracking whether

participating students did attend departmental events more regularly, have higher rates of completion and have other factors related to attrition.

In addition to the project's self-determined research agenda, the project's research team is working collaboratively with representatives of CGS to ensure full compliance with the data, reporting, and assessment activities spelled out on pages 3 and 4 of the request for proposals.

Project Impact

This project is designed to achieve maximum impact at minimum cost. By pooling resources and establishing a single research component, the participating institutions are able to avoid duplication of effort while still benefiting from solid, empirically based interventions. The immediate beneficiaries of this project will be students and faculty in the 37 participating programs. These thousands of students and hundreds of faculty members will receive the type of information—both normative and descriptive—that will help them work together more effectively toward doctoral completion. Moreover, it is the intention of the graduate deans at the participating institutions to subsequently expand our efforts to the other departments at our universities. Additional impact will be supported by the publications coming out of the project. We will prepare and release a series of six, Web-ready "research briefs" that will provide other institutions useful advice for improving doctoral completion. Although the specific topics for the research briefs will grow out of our project work, possible titles include: *Helping Students Decide Whether They Are Ready for Doctoral Study*; *Improving Admissions Practices for Doctoral Programs*; *Developing Effective Orientation Practices for Doctoral Programs*; *Becoming a More Effective Dissertation Supervisor*; *Improving Doctoral Completion Among Underrepresented Groups*; *Creating Effective Exit Questionnaires for Doctoral Completers and NonCompleters*. These research briefs will be posted on the Web sites of all three graduate schools and will be made available for possible inclusion on the CGS Web site.

Institutional Commitment and Capability

The University of Georgia (UGA), the University of Florida (UF) and North Carolina State University (NC State) are public research extensive, land and sea grant universities with a history of institutional reform in graduate education. UGA, located in Athens, is the oldest public university in America (state chartered in 1785). The University is located in the 10th most populous state in the nation as well as the largest state east of the Mississippi. UGA has an enrollment of more than 33,878 students, including 6,922 graduate students and 1,541 professional students. The university is composed of over 90 departments within 14 colleges and schools and offers doctoral degrees in 93 program areas. UF, located in Gainesville, has an enrollment of 47,971 students including 9,813 graduate and 3,690 professional students and 34,468 undergraduates. The university is composed of 16 colleges and offers 80 Ph.D. majors and 37 concentrations. NC State, located in Raleigh, has an enrollment of more than 29,000 students, including approximately 6,900 graduate and professional students. NC State offers the Ph.D. degree in 53 program areas, but does not offer a Ph.D. degree in the humanities.

The doctoral programs at the three universities are comprehensive and include the sciences, technology and mathematics, as well as the social sciences, humanities (except NC State), and professional programs. UGA 30, UF has 46, and NC State has 42 Ph.D. programs in the sciences, technology, engineering and mathematics (STEM) disciplines. All three universities have instituted significant reforms in graduate education on three fronts: (1) increasing the diversity of their Ph.D. students and graduates, especially in the STEM area; (2) increasing the number and quality of their interdisciplinary programs; and (3) enhancing the mentoring and professional preparation of graduate students for both academic and nonacademic careers. These reform efforts have been catalyzed by nationally competitive grants.

The three partner institutions have a long history of collecting data about graduate education and utilizing it to improve graduate education on their respective campuses. For the last 30 years, UGA has prepared a profile of graduate programs (data on applications, admissions, enrollment, degrees awarded) that is used extensively in program reviews. The annual reports published by the Graduate School at UF include numbers of applicants, acceptances, enrollments, GRE scores, admissions decisions and enrollments broken down by colleges and departments. Time-to-degree histograms by Ph.D. majors are reported on the Web through the newly developed Graduate School Information Management System (GIMS). NC State has for more than 20 years prepared an annual profile of each graduate program. The profile contains data on graduate applications and admissions, enrollment, time-to-degree, financial support for students and faculty effort in mentoring graduate students. The data are used extensively in graduate program reviews.

In 2003, the graduate deans at UGA and NC State worked together to collect and analyze data on doctoral completion rates on their two campuses. They developed data sets for each campus that identified all students who were in a doctoral (Ph.D. and Ed.D.) classification for the five-year period starting in fall 1992 (academic years 1992-93 through 1996-97). The data included the date each student started doctoral study and the date the student completed the degree if it was completed by June 2002. From these data, completion rates were determined for each graduate program and for each field as defined by the first two digits of the CIP classification. Completion rates were determined for all students, for female students and for African-American students at the graduate program and the CIP levels.

Data from these two studies will be discussed briefly here. At UGA, 5,206 students were classified as doctoral during the study period. Sixty-four percent of them had completed their degrees by June 2002. Sixty-eight percent of NC State's 3,734 students completed their doctoral degrees by June 2002. Almost one half (49%) of UGA's doctoral students were women, and 62% had completed their degrees by June 2002. Women made up 36% of NC State's doctoral students, and 65% of them were successful in completing their degrees in June 2002. African-American students represented a relatively small portion of the doctoral enrollment on each campus (5% at UGA and 7% at NC State).

Completion rates were 59% at UGA and 55% at NC State. The highest completion rates on both campuses were in agriculture and natural resources. Completion rates in the biological sciences and mathematics were higher at NC State than UGA, while UGA had a higher completion rate in the physical sciences and social sciences. Men at UGA completed at a higher rate than women in all fields except mathematics and the humanities, while at NC State the men completed at a higher rate than women in all fields except engineering and the social sciences. At UGA, African Americans completed at a higher rate than other students in the biological sciences, the physical sciences and engineering. African Americans completed at a lower rate than other students in all fields.

In 2004, the graduate dean at UF computed completion rates for a select number of graduate programs (the 13 that are proposed for study in this project) following the same procedure used by UGA and NC State in their 2003 analysis. The process used at UF for defining and presenting attrition and completion data followed UGA and NC State's model. These data are being posted for review on GIMS. Completion rates at UF for these 13 programs are generally higher than those at UGA and NC State, except for the humanities where students at UGA completed at a higher rate.

Budget

The University of Georgia serves as the lead institution and fiduciary agent on behalf of the alliance (UGA, UF and NC State) and submitted this proposal to the Council of Graduate Schools requesting \$283,474 for the three-year study. Funds are being used to support the alliance-wide initiatives/interventions to enhance completion of doctoral students in the SEM,

social sciences and humanities fields. With \$283,474 in support of the project, in-kind support from the three institutions, established commitment from faculty and administrators at the three universities, and with a united leadership of the three deans, this project serves as a model for other programs on the campuses and at other institutions throughout North America.