

Annual Report for the Graduate School: 2006-07

Changes in the Scope and Volume of Activity

Most changes in our service environment have resulted from current or planned growth in graduate programs and enrollment. Overall applications, admissions, enrollments, and degrees conferred have all grown. For fall 2006, 8224 prospective students applied to the Graduate School; 2703 (32.9%) were admitted. Of these, 1914 (70.8%) enrolled. Compared with fall 2005, this represents a 14% increase in applications, a 4.7% decrease in numbers admitted and a .8% decrease in new students enrolling. Total fall 2006 enrollment (on-campus and off-campus) was 6180 - a .8% increase from fall 2005. International students (1506) comprised 20.4% of the total enrollment – an increase from 1388 students and 22.6% of total enrollment from the previous fall. As compared to fall 2005, enrollment of students from underrepresented groups in fall 2006 was up. In fall 2006, the number of African American graduate students increased by 2.3% to 559. The number of Hispanic American students rose from 128 to 141, up 10.2% from fall 2005. The number of Native American students remained constant at 27 for fall 2006. The enrollment of women is up 3.5% from last year, from 3354 to 3472 students. U.S. citizens who are not North Carolina residents (822) made up 11.1% of fall 2006 enrollment – an increase in the total number of students from fall 2005 (up from 737) and in percentage of total enrollment (up from 10.0%). In 2006-07, the Graduate School conferred approximately 1857 graduate degrees (1451 master's and 406 doctoral), 25 more than in 2005-06. The demand for new graduate programs at NC State also continues to grow. Two new doctoral programs, 5 new master's programs (4 of which were distance education programs), 1 graduate certificate program, and 2 new accelerated bachelors/masters programs were either approved this past year or are in the process of approval.

Finally, we have seen growth in institutionally awarded federal grants that support our efforts to recruit and retain doctoral students in science and engineering: two GAANN awards for doctoral fellowships in biotechnology and computational sciences, a continuing award from the NSF AGEF program, and an NIH/NIGMS-funded BRIDGE Program. We also played the lead role in developing a proposal to the National Institute of General Medical Sciences under their Initiative for Maximizing Student Diversity program to obtain additional funds to recruit students from underrepresented minority groups into our biomedical and behavioral sciences doctoral programs.

Because of the growth in graduate enrollment, both current and targeted, one of our greatest challenges is how to cover the increased costs of student recruiting and support. The budgeted NC State graduate enrollment approved by UNC-GA for Fall 2007 calls for an increase of 106 graduate students. To fund the current students for 2007-08, 2006-07 "one-time" allocations to the Graduate Student Support Plan must be continued permanently. To cover the cost of the

106-student increase, assuming financing patterns (% funded, % funded on grants and fellowships, % nonresident) similar to those in 2006-07, approximately \$0.62 million in additional GSSP funds will be needed. (One-third of these funds should be provided by the colleges.)

Compact Plan: Major Initiatives

(Excluding those in sections on Diversity Initiatives, Instructional Program Advances, and Fund-Raising)

SPA Position Description and Salary Alignments (CPI 2): The Graduate School completed a thorough examination of the functions performed by, and the position descriptions of, key Graduate School administrative personnel in Admissions and Records, Graduate Appointments, and the Graduate Student Support Plan. The Graduate School also worked with personnel from Human Resources and an outside consultant recommended by Human Resources to accomplish this. This process yielded appropriate revisions of the position descriptions of our remaining key SPA staff in Admissions and Records, Graduate Appointments, and Graduate Student Support Plan. These revisions, when combined with the “banding” of positions resulted in position upgrades that were funded using a combination of state appropriated and receipt account funds.

Space allocations and facility improvements required to maximize internal efficiencies (CPI 3): Our current space allocation in modules 6 & 7 of the Flex Building are no longer large enough to effectively support our functions. With an increased emphasis on recruitment and professional development, reacquired leadership of the ethics program and new efforts in the area of Post-Doc development, we have taken on as many as five new staff positions with no additional space. We are working with the University Architect and the Space Committee to resolve this situation. We are also currently in the process of working with the University and the architects (Roughton, Nickleson, DeLuca, Architects, PA) on the renovation of Winslow Hall, the proposed future (October 08) home of the Graduate School. The following concerns relative to this move have been raised: 1) the current space is not configured to adequately support Graduate School staff and their functions, 2) that portion of the cost of renovation (\$1.5 – 2.0M) to be raised by the Graduate School could be used more effectively to promote enrollment increases, and 3) a recent feasibility study conducted by the Graduate School clearly indicates that a site on Centennial Campus for the Graduate School makes much more sense from a funding/development perspective.

Improving Graduate Student Recruiting (CPI 5): The Graduate School has continued the graduate recruiting proposal award program this year, providing a total of \$45,545 in awards. Thirty two proposals were submitted, and thirty one were partly or fully funded, with departments/programs providing a 1:1 funding match. The Graduate School continued to produce a recruiting CD. A self-contained recruiting document for those without Internet access, it is also a portal to

program information available on the web for those with Internet access. To date, we have distributed over 10,000 copies to DGPs and at recruiting fairs. Future plans call for an update of this CD this summer. We have also attended recruiting fairs (36), promoted our graduate programs through talks at other universities, sponsored “Visit NC State Day” in the spring, and held a summer undergraduate research symposium.

Increasing Campus-Wide Operational Efficiencies: Enhancements to Online Graduate Administration and

Information Resources (CPI 6): In July 2006, we added a module into the online departmental recruiting and admission system that allows admitted applicants to affirm their decisions to accept our offers online and conducts an online survey accessible to all DGPs that collects information from the students regarding enrollment decisions. The Graduate School has also played a substantial leadership role in the institutional initiative to implement the PeopleSoft Human Resources system. In addition, Rick Liston is currently serving as the Project Director for the PeopleSoft Student Administration system conversion project. The Graduate School is actively working to ensure that all aspects of the graduate student system transition effectively.

The Graduate Student Support Plan (GSSP) and Graduate Enrollment (CPI 11): The GSSP permanent budget managed by the Graduate School in 2005-06 was \$18.9 million. We project that the entire permanent and the one-time budget commitment of \$0.5 million will be used in 2005-06. In addition to the \$18.9 million that the Graduate School manages, other university budgets will contribute approximately \$7.2 million to the plan in 2005-06. The numbers of students participating in the GSSP in Fall 2005 were as follows: 2,586 for health insurance, 2,382 for in-state tuition, and 1,249 for tuition remission.

Increasing Funds for Graduate Fellowships (CPI 8): In 2006-07, the Graduate School administered portable fellowships from NSF, EPA, NASA, etc., as well as the following institutionally awarded fellowships: U.S. Department of Education GAANN Fellowships in Computational Science (8), Biotechnology (12), and Electronic Materials (11); and NSF IGERT traineeships in Genomic Sciences, and an NIH Training Grant in Biotechnology (8). All told, the Graduate School managed fellowships for 271 students, 111 of whom received diversity grants. In 2007, we received two \$383,000, awards to support three new U.S. Department of Education Graduate Assistance in Areas of National Need (GAANN) Fellows in Biotechnology, and three new GAANN Fellows in Computational Science.

Finally, the Graduate School was in the second year of a three-year renewal (2005-2008) of the NIGMS-funded BRIDGE Program (\$639,288) and was in the second year of its five years of funding (2005-2010) for the NSF-funded OPT-ED Program (\$3.3 million). The goal of both programs is to promote diversity in STEM doctoral education.

Establishment of an Office of Post-Doctoral Affairs (CPI 13): In early April, Dean Terri Lomax and Associate Dean Rebeca Rufty attended the annual meeting of the National Post Doctoral Association held in Berkley, CA and made contact with several Directors of Post Doc Offices across the country in order to get ideas on how to establish and operate a similar office at NC State.

Institutional Effectiveness (CPI 14): The Graduate School evaluates its institutional effectiveness on an ongoing basis. Current assessment tools include the following: exit surveys completed online by all students submitting a thesis or dissertation, annual surveys of NC State's GAANN Fellows to determine their level of satisfaction with the GAANN program, annual surveys and informal interviews with participants to evaluate the AGEP program, student evaluations of all Graduate School seminars, DGP and graduate secretary evaluations for their annual summer workshop, annual or biennial "How-Are-We-Doing?" surveys e-mailed to all DGPs and graduate secretaries, and semi-annual meetings with DGPs and graduate secretaries to present new initiatives and elicit feedback.

Diversity: Initiatives and Progress (CPI 7)

The Graduate School has continued its comprehensive minority recruitment/ mentoring initiative using the \$3.3 million in NSF AGEP funds awarded in March 2005. In March we hosted our 8th Visit NC State Day for 71 students from 47 colleges and universities from 17 states, bringing to approximately 685 the total number of students participating in this program since 1999-2000. In our 2006 AGEP Summer Research Experience, 22 undergraduates from other universities and 12 from NC State participated. In our complementary academic-year research experience, 67 minority NC State undergraduates have participated to date. Fifty-five participants in AGEP research programs have thus far enrolled in graduate school. A total of 16 graduate students participated in our AGEP Bridging Program in 2006-07.

We are also continuing our NSF-funded North Carolina Alliance to Create Opportunity Through Education (OPT-ED), a collaborative effort among all North Carolina's NSF-sponsored diversity programs (middle school through graduate school) to increase the number of minority Ph.D.s in science and engineering. In September 2006, we held our fifth OPT-ED Alliance Day, which featured a poster session, oral research presentations, student/faculty panels, and breakout workshops for over 919 participants. We are also the lead institution on an NIH/NIGMS-funded Doctoral Bridge Program to increase the number of minority researchers in the biomedical and life sciences. To date, 22 BRIDGE students have completed an M.S. degree at one of our partner institutions (Fayetteville State, NC A& T, and NC Central), and ten of these have entered Ph.D. programs at NC State and two at Wake Forest. Of these students, four have completed the Ph.D., and three more should complete within the next year.

This year our staff attended 30 recruiting fairs for minority and first-generation college students. With \$40,370 in diversity funds we supplemented departmental and college awards to recruit minority students and used \$205,403 for retention supplements. The average award was ~\$2500, and 111 students received awards this year.

Instructional Program Advances

Program Evaluation – Improving Graduate Education (CPI 1): The Graduate School hired a full-time Associate Dean for Program Evaluation and Planning. Ten programs in 8 departments were reviewed in 2006/07: Biological and Agricultural Engineering; Botany; Creative Writing; English; Food Science; Marine, Earth, and Atmospheric Sciences; Parks, Recreation, and Tourism Management; Physics; Public Administration; and Technical Communication. Concurrent with its formal reviews, the Graduate School continued to advance outcomes-based assessment of all graduate programs. From the original five pilot programs, 99 programs now have completed their assessment plans, and 9 programs have plans in draft stage. In addition, the Graduate School has used the results of 5 pilots to train DGPs in completing biennial outcomes-assessment reports. The first quarter of all graduate programs will post their biennial reports in Fall 2007. To facilitate this new process, we have continued to upgrade the infrastructure (databases, resource documents, website, reporting mechanisms, etc.) necessary to manage it.

NRC Assessment: Optimizing NC State's Graduate Programs' Rankings (CPI 4): The Graduate School has coordinated NC State's participation in the NRC Assessment and has worked closely with the Vice Chancellor for Research and Graduate Studies, the Provost, college and departmental administrators and faculty in developing our response. Duane Larick is the institutional coordinator. We have established the fields in which NC State will compete, completed the data compilation for and submission of the institutional survey and the 44 program surveys. We ended up with an 80.6% (910/1129) completion rate for the faculty survey; almost 8% above the national average. We are currently in the process of finalizing submission of student surveys for the three NC State programs (Physics, Chemical Engineering and Economics) participating in the pilot assessment of doctoral students and we are in the validation phase for faculty productivity ratios as calculated by the NRC for our 1129 contributing faculty.

Professional Development and Mentoring of Graduate Students and Faculty (CPI 9): The Graduate School continued and expanded professional development programs for graduate students and faculty in 2006-07, e.g., the second annual graduate student research symposium, in partnership with the UGSA (presentations by 77 graduate students from 10 colleges and 39 graduate programs); Preparing the Professoriate (28 fellows from 12 different departments); fifth annual undergraduate summer research symposium, assisted by Undergraduate Academic Programs (presentations by 232 students from 55 universities, 21 states, and Puerto Rico); NSF-funded statewide mentoring workshop for current and

future faculty, in partnership with UNC-CH and NC A&T (103 graduate students and faculty from 12 NC institutions); “OPT-ED Alliance Day,” (now a national conference) with UNC-CH and NC A&T (919 students from 13 states from middle-school through Ph.D. programs and from 86 institutions [FYI – institutions include 16 middle schools, 32 high schools, 7 community colleges and 31 universities]); and four summer and six academic-year seminars on preparing for and succeeding in graduate school. Over the course of the past year, in collaboration with UNC-CH and NC A&T, we implemented three Crosstalks. The purpose of the graduate student Crosstalk series is to provide opportunities for underrepresented minority graduate students from across OPT-ED institutions to come together for informal conversations, discussion groups, networking, programmatic activities and socializing. An average of 50 students from NC State, UNC-CH, NC A&T and NCCU attend each Crosstalk.

Facilitating the Development of New Graduate Degree Programs (CPI 10): This academic year, the Administrative Board of the Graduate School (ABGS) approved 5 Intents to Plan and 5 Requests for Authorization to Establish programs. Four of those Requests to Establish (all the masters programs) have been approved by UNC-GA. The Request for Authorization to Plan for the proposed Ph.D. in Public History has been submitted to UNC-GA and will be on the agenda for their Fall 07 meeting. The development of the documentation required for the Ph.D. in Public History resulted in a new budget planning process that will be utilized from this point forward. The ABGS also approved 1 minor, 2 certificate programs, and 2 Accelerated Bachelors/Master’s (ABM) Programs, and it acted on 144 Course Action Forms.

Council of Graduate Schools (CGS) Ph.D. Completion and Retention Study (CPI 12): NC State University participated in Phase I of the Ph.D. Completion Project as a member of a consortium with two other southern, Land Grant universities – The University of Georgia (UGA) and The University of Florida (UFL). The three universities examined PhD completion/attrition and time to degree based on a conceptual model that identifies four conditions for optimal doctoral completion: 1) the right people apply for doctoral study. 2) The right applicants are admitted as doctoral students. 3) Students and faculty form productive working relationships. 4) Students experience social support from fellow students. Participating programs at NC State included twelve programs in the sciences, engineering and mathematics (STEM disciplines).

As a result of the funding from Phase I of the Ph.D. Completion study, NC State has refined and improved database systems that allow for the monitoring of doctoral completion. The university has for more than 20 years prepared a “Graduate Profile” for each graduate program that contains data on graduate applications, admissions, enrollment, time to degree, financial support for students, and faculty effort in educating graduate students. Profile data

are used extensively in graduate program reviews and allow for comparisons of programs across campus. As a result of the CGS grant, we are now collecting data not only on completion/attrition but also on college-level and departmental-level admission practices, orientation procedures, advisor-student matching procedures, achievement of candidacy, milestones of doctoral study within programs, and perceptions from faculty and students concerning obstacles to doctoral completion and potential solutions for overcoming them. At NC State, percent doctoral completion ranged from 32.1% (Sociology) to 72.4% (Civil Engineering) with a median of 48.5%. Time to degree ranged from 4 (Civil Engineering) to 6 years (Psychology).

Achievements

The Graduate School was the recipient of a second grant from CGS grant to study doctoral completion rates over the next 3 years and is also taking the lead on NC State's participation in the NRC assessment of doctoral programs.

Individual contributions to the graduate community include the following:

Dean Terri Lomax was a keynote speaker for the Phi Beta Kappa Spring Induction Ceremony and the Women In Science and Engineering Annual Awards Celebration, and gave presentations to the Campaign Steering Committee, Board of Visitors, and the Mentoring Workshop for Present and Future Faculty. She is a member of the Applied Public Policy Steering Committee.

Associate Dean Rebeca Ruffy serves as advisor to the University Graduate Student Association. She moderated a session on Responsible Conduct of Research at CGS's annual meeting held in Washington, DC in December 2006.

Senior Associate Dean Duane Larick gave presentations entitled "Program Quality Assessment" at the CGS New Deans Institute and Summer Workshop in Cambridge, MA, July 2006 and entitled "Assessment and Review of Graduate Programs – Doctoral" at the CGS Annual Meeting, Washington, DC, December 2006. He has also been very involved with his professional organization, the Institute of Food Technologists, and currently serves as Chair of the Management Committee on Lifelong Learning & Careers - Institute of Food Technologists.

Associate Dean Michael Carter became full-time Associate Dean for Program Evaluation and Planning. He gave two workshops at the Council of Graduate School's annual meeting on December 6, 2006: "Assessment and Review of Graduate Programs—Master's" (with Mary Beadle and William Wiener) and "Assessment and Review of Graduate Programs—Doctoral" (with Duane Larick). He published an article in the top journal in his field and gave a paper at the Conference on College Composition and Communication.

Assistant Dean Rick Liston was appointed as the Student Information System implementation project manager.

Assistant Dean David Shafer made an invited presentation in October 2006, entitled “Making Yourself Competitive for Graduate School” at Johnson C. Smith University. He also gave an invited presentation in March 2007 in Portland, Maine, entitled “The North Carolina Alliance to Create Opportunity through Education” at the IGERT National Recruitment Program Meeting on Strategies to Promote Diversity: The Institutionalization of Cultural Change in STEM Higher Education. Dr. Shafer served as a proposal reviewer for the National Science Foundation for 2006-2007 AGEP proposals. He also completed his second term as President of the NC State Chapter of the Honor Society of Phi Kappa Phi, and was invited to serve as national chair for the new Phi Kappa Phi Love of Learning Grants Selections Committee.

Staff Changes

Graduate School Dean and Associate Vice Chancellor for Research and Graduate Studies – In October of 2006, Terri Lomax was appointed Graduate School Dean and Associate Vice Chancellor for Research and Graduate Studies replacing Robert Sowell who retired on July 31, 2006.

Personnel Changes: The change in administrative leadership indicated above has resulted in a significant re-organization of Graduate School personnel. New hires into existing positions include Jeryl Martin, Administrative Assistant to the Dean, and Karen Alarie, Administrative Assistant, with primary responsibility for graduate program review. New positions including a permanent position of Associate Dean for Program Evaluation (Michael Carter); Interim Assistant Dean for Student and International Affairs (Prema Arasu), and an Administrative Assistant to the Senior Associate Dean (Amy Geer) were created and filled. In addition, because of the volume of work resulting for increased enrollment, the responsibilities of Residency Officer were deleted from the position of Thesis Editor/Graduation Coordinator, and a separate position of Residency Officer was created and filled (Tara Cowen). Finally, Dr. Margaret King will retire from her part-time position of Consultant for Graduate Program Reviews effective June 30, 2007.

SPA Position Descriptions and Salary Alignments: The Graduate School completed a thorough examination of the functions performed by, and the position descriptions of, key Graduate School administrative personnel in Admissions and Records, Graduate Appointments, and the Graduate Student Support Plan. The Graduate School also worked with personnel from Human Resources and an outside consultant recommended by Human Resources to accomplish this. This process yielded appropriate revisions of the position descriptions of our remaining key SPA staff in Admissions and Records, Graduate Appointments, and Graduate Student Support Plan. These revisions, when combined with the

“banding” of positions resulted in position upgrades that were funded using a combination of state appropriated and receipt account funds.

Recommendations and Concerns for the Future

Increasing Graduate Enrollment. Increasing graduate enrollment is a major goal of the university. A higher percentage of doctoral students within the student population is important for rankings and other measures of university quality. As a way of helping the university achieve this important goal, the Graduate School has placed among its top priorities growing graduate enrollment while at the same time increasing the quality of graduate students. Increasing capacity will be an important issue as student populations grow and demand for advanced degrees increases over the next decade. Demographics of the graduate population are also predicted to change, with increased numbers of Hispanic and international students.

Professional Development. The Graduate School has a long history of providing excellent professional development to graduate students and graduate faculty. The reach of those programs has, however, been limited. Several external changes will have an impact on our future approach to professional development. With the shift in responsibility for research ethics back to the Graduate School, we will need a new director of research ethics. At the same time, there is a need to expand ethics training to a greater proportion of the graduate students on the NC State campus and to distance education students. Another change is the increasing complexity of career demands for our graduate students, which requires an extension of professional development beyond preparation for academic careers. Finally, the Graduate School has been asked to provide formal oversight and advocacy for postdoctoral scholars, including professional development activities appropriate to their needs. Satisfying all of these needs is a significant new initiative for the Graduate School.

A Home for the Graduate School. The staff of the Graduate School was removed from its former home in Peele Hall to make way for renovation for other uses. Now in temporary quarters in the Flex Building, the Graduate School has no future home. Initial plans to move into a newly renovated Winslow Hall have been put on hold because Winslow may not be adequate for the needs of the Graduate School and because it may be better for graduate education in the long run to have the Graduate School housed on Centennial Campus. It is important that the permanent home of the Graduate School be identified in the near future.