Report to President J. Bernard Machen
University of Florida
On
The State of Doctoral Education at UF

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EXECUTIVE SUMMARY
Of the Report on Graduate Education at UF
Doctoral Education Committee 2011

UF lags behind its AAU peer institutions as determined by the committee's overall assessment of graduate education based on the NRC evaluation released in 2010 and on data accumulated by the Graduate School. Some programs at UF have achieved excellence in training graduate students and some programs at UF are significantly underachieving.

Underperforming departments have:
- Low enrollments and low stipend levels
- High student attrition rates
- Low student completion rates
- Low proportion of faculty involved in directing thesis research
- Long time-to-degree
- Weak records in minority enrollment

Strong departments have the opposite characteristics.

Based on our findings, in the full report the committee recommends a number of steps to improve doctoral education at UF. Two major recommendations are highlighted here:

- **Funding Doctoral Education:** The University of Florida should fully fund graduate students at higher stipend levels, including securing more training grants from funding agencies [department/faculty/program responsibility] and state sources [UF responsibility]; Provide seed funding to encourage applications for training grants; Take steps to Improve recruiting, including recruiting of underrepresented minority students; Compete successfully for the top students in each area

- **Establish standards and a monitoring system:** The University of Florida should set standards and evaluate progress of programs at two year intervals; Develop departmental five-year plans for improving all aspects of graduate training; Establish a mechanism for evaluation of progress through the establishment of tenured faculty committees in each college to monitor success in meeting the criteria established by this report; Establish a campus-wide committee to monitor each college committee with biannual reporting and evaluation; Reward success through preferential investment both in new faculty and in faculty at UF who have been successful in mentoring graduate students
Introduction

Between December 2010 and March 2011, the Doctoral Education Committee met to evaluate the status of doctoral education at the University of Florida. The impetus for this effort was the release of a report from the National Research Council that provided ratings of programs across the country for a wide variety of graduate disciplines. The NRC ratings were based on a complex formula that included information provided by colleges and universities in 2005-6. A set of 20 criteria were used in producing the ratings. Despite some acknowledged problems with the NRC report, it was widely publicized and has drawn attention from every research university in the country. As indicated, the data were gathered at least six years ago and many of the departments have experienced significant faculty and leadership turnover in the intervening years. In addition, rather than providing more precise numerical ratings, the NRC report produced a range of ratings on several composite indices, thus leaving the scores open to interpretation. Insofar as the committee considered the NRC data, we gravitated toward the mid-point of the rating range offered by the NRC. Despite its imperfections, the NRC survey offers a bleak picture of our graduate programs compared to our peers.

The Doctoral Education Committee also made extensive use of data collected by the UF Graduate School, such as the percentage of applicants accepted by a program, the percentage of those accepted who matriculated, the time required to complete a degree, the percentage of students in a program who dropped out, and others (see Table I). It was generally agreed within the committee that the data gathered by the UF Graduate School are extremely valuable in the assessment of our programs and, given the imperfections in the NRC data, confirmed that the collection of these data should be continued annually.

In addition, the committee had at their disposal a variety of internal and external evaluations performed by graduate programs either for the Board of Governors, accreditation by national bodies, or the internal benefit of the programs.

Finally, the committee surveyed all department chairs, associate chairs, graduate coordinators, program directors, or other administrative individuals in Colleges at UF. The survey document is appended to this report. The responses to this survey were helpful to the committee in many cases, but the overall quality of the response was uneven.

The committee focused on a set of 60 graduate programs covering most Colleges at UF. Some programs were judged to be too new to be evaluated properly; others were interdisciplinary in nature and therefore difficult to compare to more traditional programs.
The following section will list the conclusions reached by the committee in its deliberations.

**Observations Regarding Graduate Education at UF**

A number of positive impressions emerged from the discussions of the committee:

- Many departments at UF excel at training high quality PhD students and guiding them toward careers of distinction, thereby bringing national recognition to their programs and to UF;
- Some departments or programs have adopted practices that should be helpful to other programs in bringing their performance up to a higher standard;
- Numerous programs have strong leadership teams that have crafted concrete plans to improve their training of graduate students;
- There is strong evidence of the value of interdisciplinary programs both for providing new options for graduate study and for creating training experiences that can enhance the competitiveness of UF graduates.

On the other hand, there are notable weaknesses. In viewing the NRC assessment of UF programs in the aggregate, the university currently ranks 53rd out of 61 AAUs, 28th out of 35 public AAUs, and 9th out of 10 of our AAU peer group institutions (see Figure 1 below; larger versions of these figures are at the end of this document).

![Figure 1. R Rating (Left) and S Rating (right) from NRC Assessment with comparison to UF's AAU peer institutions. [Larger images at end of document.](image-url)]
• Characteristics of relatively weak programs include low enrollments even with less selective admission records, low proportions of admitted students who actually enroll, high attrition rates, low graduation rates, low numbers of graduates, and low proportions of faculty members chairing dissertation committees.

• There is a very wide range at UF in the stipends provided to graduate students. It is important to note that UF is well below the median for AAU publics in funding PhD education in general. This has hindered the ability to recruit the best graduate students in even UF’s strongest programs and this has affected the NRC ratings;

• There is a wide range in the time it takes to progress to the Ph.D. across the various departments in the University. In some cases this reflects differences in disciplines, but in others the time to degree seems excessive and has negatively affected the ratings of some UF programs;

• There is a significant problem of attrition of graduate students in some programs. This indicates that problems may exist in both the recruiting and mentoring processes;

• While minority undergraduate enrollment approaches 30 percent, at the PhD level the proportion is less than 10 percent, and some programs have no minority students;

• There is a general shortage of training grants to support graduate education at the University compared to peer and other AAU institutions. There appears to be an impression among many UF science faculty that graduate students are too expensive to write into their research grants, and thus exercise a preference for post-doctoral fellows. This clearly can have a negative consequence on the amount of funds available for doctoral student support in those particular departments. Additionally, NIH has minority supplemental funds that can be used by faculty members with NIH research grants to support minority students as research assistants if the faculty choose to take the relatively little time needed to apply for them. Those funds are readily available and have never been exhausted. NSF has similar funding available as most likely do other federal research-based funding agencies. Regarding specific training grants such as the T32s out of NIH, UF is far behind most of its peer institutions in securing such grants which are relatively easy to obtain;
- Philosophies regarding the relationship between the faculty mentor and the graduate student mentee differ across programs, in some cases due to accepted practices in the disciplines; regardless of those philosophies, the mentoring of doctoral students should be vigorously promoted and expected across UF PhD programs;

- There is a wide range (low to high) of faculty engagement in graduate training as indicated by the variable proportion of faculty that chair doctoral dissertation committees;

- Some programs have not instituted the measures used by more successful departments and could benefit from establishment of “best practices”, expectations, and strong leadership;

**Shared Characteristics of a Top Quality Graduate Program at UF as well as Other AAU Universities**

Among the characteristics of successful graduate programs that emerged from our analyses, we feel the following are important and that they should become part of the operating procedures of all departments at UF with PhD programs. The characteristics are presented below and the recommendations follow. Research universities successful in the education of PhD students:

- provide support for multiple years of graduate training, sufficient to complete the PhD degree, either through research grants to individual faculty from outside sources, from training grants to departments or programs, from college/departmental funding, as well as funding from university or graduate school fellowship programs;

- invest in the recruiting process to insure that excellent and committed students enter the PhD programs;

- provide funding for additional components of graduate training besides stipends, such as travel awards and career development advising;

- provide a clear description of what is expected of a new graduate student to make smooth progress to the degree and the normal time frame expected;

- have a structured mentoring program to insure both student’s progress and continual faculty involvement in the direction of the work;
• have clearly defined roles for the faculty mentor, the thesis committee members, and the student;

• have plans in place to identify special needs for individual students, so that steps can be taken to remedy holes in a student's background or to enhance a student's success to the completion of the PhD;

• encourage and support graduate students to attend national and even international meetings in their disciplines to learn from the top minds in the area and to develop their own ideas and approaches;

• provide easy access to allied areas to increase the awareness of related fields and encourage incorporation of new technologies into the students' thesis work;

• take advantage of visiting scholars and seminar speakers to help train their graduate students and to expand the students' professional networks;

• teach all students to present their work in a wide range of venues and to a wide range of audiences, which increases visibility of programs;

• have clear plans in place to assess the success of each departmental program;

• set priorities for the future and hold the leadership accountable to achieve these goals;

• recognize that higher education works best when there is a complex mixture of students involved. This implies active efforts to recruit, retain, and graduate students from underrepresented racial, ethnic, and cultural groups;

• set standards for doctoral education success and make all programs aware of these;

• have a strong record of timely graduation of students, in concert with the expectations of students in the discipline across the USA;

• can provide details of the success of their graduates in terms of placement in top level positions in academic and other positions;

• widely promote and provide professional development activities for all graduate students;
• recognize that graduate education should be the highest priority of a major research university, as it represents the point of the spear in developing new knowledge and the individuals to further build upon and expand the knowledge produced.

Recommendations for Improvements in Graduate Training to Achieve Excellence at UF

Funding

Improvements in doctoral education cannot be achieved by redistribution of resources alone, but rather will require new resources. The administration should identify new funds from sources such as new tuition schedules to target doctoral education. Directing new resources to specific programs should be in line with the overall strategic plan of this Land Grant institution. However, consideration should also be given to all the missions of the university including the strong role that graduate students play in delivering teaching in many programs. In addition, the intellectual life of a university depends on a wide variety of disciplines.

To achieve this on a university-wide level, UF should find additional funding and faculty must vigorously seek research grants, training grants and support from donors as well as ensure that the support of doctoral students on research grants are a top priority when such funding is available. All PhD programs should emphasize that pursuing additional funding is crucial to the success of the program and to the training of a student for their future career. For UF programs near the top of their field now in successful graduate education, hiring additional faculty who have both outstanding research reputations and strong track records in graduate education could move the departments into the top 10%.

Stipend levels in all programs at UF are below national and even regional means. The University of Michigan has announced that ALL Ph.D. students will receive no less than $18,000 per year and the University of Chicago announced four years ago that their MINIMUM would be $19,000. Stipend levels must be significantly increased across the board at UF and adjustment in the tuition fees associated with graduate studies should be considered.

Support for graduate student travel to national meetings of the discipline should be available to all UF students. This is frequently the best way to motivate a student to strive to achieve the highest level of success in their graduate work and to early on develop and expand their professional network.
Departments should strive to bring visiting speakers to campus to present seminars to graduate students on leading-edge topics in the fields of study. This point and the travel suggestions above are critical in stimulating students to develop their own hypotheses for future work. In recent years, budget cuts have led to elimination of this vital component of a vibrant training program.

**Recruiting**

Some investment in graduate student recruiting should be made across the university; this can include updated websites to provide easy access to information about a program, online application mechanisms, and clearly stated access points for information about a graduate program. The investment can also include funds for bringing more prospective students to campus for interview visits, or providing support for audiovisual mechanisms for interactions with candidates.

Increasing recruitment of a diverse student body at the graduate level as well as at the undergraduate level will bring a variety of viewpoints to enrich education at all levels. Accordingly, efforts to engage minority students at an early age in the state K-12 programs should be encouraged and supported. Pathways to recruit underrepresented groups should be developed with the assistance of national funding organizations. Faculty in many departments/programs should apply for supplemental funding to NSF, NIH, and other federal research agencies to support minority students for graduate work at UF. Collaboration with the UF Graduate School, which already has a number of initiatives, can further facilitate many of these efforts.

**Mentoring**

Efforts should be made to clearly spell out the requirements for the Ph.D. in all disciplines, including the expectations for publication in the literature for many departments or other mechanisms that can be externally recognized. The details of course requirements, seminars on current topics in the fields, and the establishment of thesis committees at the earliest possible time in a graduate student’s career should be established. Students should have a clear idea of what is expected to successfully attain a PhD degree.

The expectations for interactions between a student and the faculty mentor of that student should be clearly detailed for each graduate program. The influence of a mentor can be the most important component of a graduate training program, but some departments have differing views about this. Regardless of those views, it should be the expectation that PhD students at UF should have full opportunities for mentor-student relationships.
A graduate student’s thesis committee should schedule regular meetings to monitor the progress of each student toward the degree. These should take place on an annual basis as a minimum and more frequently as needed to keep the students on track for success in their thesis work.

The time required to complete a degree is highly variable among UF departments. In many cases the average time required to achieve the Ph.D. was viewed as being too long. Keeping in mind that a discipline-specific time to degree might apply across our peer institutions, the committee feels that this is an area where improvements must be made. Students should be recruited who are committed to pursuing the degree in a timely fashion while maintaining high standards for scholarship. Faculty and department coordinators should also play a critical role in guiding students through the process and should be rewarded for success. Programs need to be willing to terminate funding for students who have exceeded the expected time to completion guidelines. This will save departments funds that can then be used to support additional new students instead of being tied up with a student who takes too long to complete the degree. Students should be fully aware of those expectations.

All programs (or the Graduate School) should offer courses or seminars on career opportunities in the field. This should include a variety of options, as the possibility of securing a faculty position at a major university in some fields is very slim in these times of budget retrenchment, while we all agree that placing graduates in faculty positions is the best outcome to stimulate the reputation of the university. However, there are many alternative careers today that can provide rewarding and significant positions for UF doctoral graduates, including for-profit companies, innovation centers, patent and other legal efforts, research institutes, and publishing companies, among many others.

A graduate program should offer counseling in overcoming any barriers to success in a graduate degree program. Students should be aware of any deficiencies they have when entering graduate school and should strive to take any available classes to address these.

All efforts should be made to expose graduate students to the widest possible range of disciplines while working toward a degree. Whenever possible, members of a thesis committee should include faculty from related departments or programs that can add an interdisciplinary component to the thesis project. Students should be encouraged to take courses in allied departments to help with the realization that all intellectual efforts are interrelated. Interdisciplinary and cross-disciplinary training in all areas of scholarship at the university level will bring our doctoral programs greater prominence. Barriers due to competing budgetary issues or administrative incompatibility must be overcome through the highest leadership directions/incentives.
Frequently, crafting a presentation to address a particular audience requires the highest level of scholarship. Students should have multiple opportunities to present their work to forums that include departmental faculty, post-doctoral fellows, and other graduate students. These should be opportunities to teach presentation skills as well as receiving advice and feedback on their work. Opportunities for other types of presentations, including teaching topics, should also be made available more widely.

Management

Departments and programs should develop five-year plans to achieve the goals set out by this report and should seek funding sources to accomplish this. These plans should be reviewed for progress each year by standing committees consisting of tenured faculty of the specific colleges. The specific goals should be increasing enrollment of highly qualified graduate students including a diverse student body, providing outstanding mentoring, broadening the training to reflect new realities in the current economy, reducing attrition in each program, maintaining proportionally high graduation numbers, and stimulating placement in the top positions in the discipline.

Identification of programs through this process that can be deemed as substandard could be used as a means whether to continue those programs. Programs with satisfactory progress may have their plans adjusted as needed in consultation with the college-wide or institution-wide committees and the Graduate School. The institution may wish to constitute a standing campus-wide committee to oversee the operations of the college specific committees. Departments that develop innovative plans to improve graduate education should be rewarded with additional funding to help realize their vision.

The committee feels strongly that all departments and programs engaged in graduate education at both the doctoral and master's levels should be aware of the criteria that will be used for evaluation of their success in the future. These criteria will include the nine criterion variables and related data points collected by the Graduate School on a yearly basis (Table I), plus additional criteria related to student outcomes (job placement) and faculty recognition. Departments/programs should be able to contribute to the process of deciding which specific criteria best apply to their disciplines.
Job placement tracking should be continued for at least ten years post-degree for all UF graduates. After these points are made clear to departments and programs, an opportunity to make improvements in these areas should be allowed. It should be noted that the Graduate School data are for UF only and do not give comparisons to peer institutions, although that could develop in the future as other institutions adjust to the findings of the NRC report. UF could play a leadership role in this. While we have mentioned alternative careers as possible outcomes for doctoral graduates, placement in faculty positions at major research institutions has the benefit of increasing the numbers of potential positive "votes" for UF in future rating exercises. Therefore, it should be strongly emphasized in promotion and tenure guidelines and evaluations that UF faculty should also play a role in keeping records on former students and their job placements.

Faculty engaged as directors of graduate programs should receive recognition and reward, particularly for overseeing improvements in a program. Actually, it is recommended that the title of "graduate program director" be used instead of "graduate coordinator" for faculty given the task of overseeing and directing graduate programs for their respective departments. Those individuals should be recognized as having clear status in their departments and should have substantial academic standings. Faculty who repeatedly mentor students successfully to the Ph.D. degree should be recognized and rewarded by the institution.
Table 1. Criteria used by the Graduate School to develop assessments of UF graduate programs

1. Total number of students enrolled
2. Percent minority students
3. Percent admits from those who applied
4. Percent matriculated from those admitted
5. Median time to degree
6. Percent attrition rate
7. Percent completion rate
8. Number of graduates
9. Number of graduates produced per budgeted graduate faculty position

Additional criteria could include:

1. Job placement statistics for departments
2. Faculty quality criteria including awards, invited lectureships, citation analysis, or others
Survey of Ph.D. Programs

Thank you for taking the time to answer the questions below. Expand the space provided as needed for your answers. Please return the completed survey, along with attachments, including evaluations, feedback reports from evaluators, and other ranking data to zeglenm@ufl.edu. Finally, please indicate your program’s name on each document that you attach.

Program Name: __________________________

College: ____________________________

Contact: ___ __________ Date: ___ ___

Program Evaluations

1. Has your program undergone an evaluation within the last five years (Yes/No)?
   Response:

2. If yes, please indicate if the evaluation was one of the following:
   a. An internal program review mandated by the Board of Governors
   b. An internal program review initiated by your college or department
   c. An external evaluation done for accreditation
   Response:

3. If an evaluation was conducted, did the process include an assessment from an external expert (Yes/No)? Please attach an electronic copy of any evaluations.
   Response:

The National Research Council (NRC) Rankings

4. Was your program included in the NRC study (Yes/No)?
   Response:

5. If yes, what was the program’s rank? How would you have ranked your program?
   Response:

   NRC Program range of ranks: ______ ________

   Your view of your program rank: ________ (Top 10%, Top 25%, Top 50%)

6. If you think your rank is different from the rank received from the NRC, please explain the discrepancy in the ranks.
   Response:
7. What are the specific strategies and resources (budget, personnel, space) that would be required to raise your program into the top 10%? Top 25%? Top 50%?  
Response:

8. What are the major constraints you face in raising the rank of your program?  
Response:

Information About National Rankings and the Graduate School’s Ph.D. Assessment Data

9. Does your professional association or any other organization produce a ranking of Ph.D. programs in your discipline? If so, please describe. Please attach any electronic copies.  
Response:

10. Do you have a specific plan to address any deficiencies identified in any rankings or reviews of your program? If so, please describe:  
Response:

11. The Graduate School produced detailed data on programs in the last year. These data were disseminated for review by departments and programs. Do you have any remaining concerns about the data for your program? If so, please describe:  
Response:

Current Program Status

12. In what year did your Ph.D. program begin?  
Response:

13. Please describe any major changes in your Ph.D. program in the last five years:  
Response:

14. What are the three best opportunities your program has for advancement in reputation or productivity?  
Response:

15. What are the areas you would most like to improve in your program?  
Response:

students over distance and to reduce the cost of matriculation in the doctoral programs.

16. Are you aware of any best practices in Ph.D. education in your discipline that you think would be valuable for our Committee to consider? If so, please describe:  
Response:
The Committee’s assessment of UF departments divided into four groups, listed in alphabetical order within each group:

**A Grade Departments/Programs:**


**B Grade Departments/Programs:**

Aerospace Engineering/Mechanical Engineering, Biomedical Engineering, Business Administration, Botany/Zoology, Civil Engineering/Coastal and Oceanographic Engineering, Communication Sciences and Disorders, Computer Engineering, Electrical and Computer Engineering, Entomology and Nematology, Environmental Engineering Sciences, Medical Sciences, Rehabilitation Science, School Psychology/Special Education

**C Grade Departments/Programs:**

Agricultural and Biological Engineering, Agronomy, Animal Sciences, Counseling Psychology/Psychology, Educational Leadership/Educational Psychology/Higher Education Administration/Marriage and Family Counseling/Mental Health Counseling/Research and Evaluation/Methodology/ School Counseling and Guidance, English/Fisheries and Aquatic Sciences, Forest Resources and Conservation, Geology, Interdisciplinary Ecology, Mathematics, Microbiology and Cell Science, Nuclear Engineering Sciences, Sociology/Criminology/Law and Society, Veterinary Medical Sciences, Wildlife Ecology and Conservation
D Grade Departments/Programs:

Astronomy, Curriculum and Instruction (ISC), Design, Construction, and Planning, Economics, Food and Resource Economics, Food Science and Human Nutrition, Geography, German/Romance Languages – French, Health Services Research, History, Linguistics, Music/Music Education, Nursing Sciences, Philosophy, Plant Pathology, Political Science, Romance Languages – Spanish
NRC Regression-based (R) Program Rankings - Top X% Distributions for All Fields of Study

UF AAU Peers

<table>
<thead>
<tr>
<th>Institution</th>
<th>Total Programs</th>
<th>% of programs in top 75% of field</th>
<th>% of programs in top 50% of field</th>
<th>% of programs in top 25% of field</th>
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Methodology Notes (from NRC Ranking Guide):

R Rankings (for regression-based rankings) depend on the weights calculated from faculty ratings of a sample of programs in their field. These ratings were related, through a multiple regression and principal components analysis, to the 20 characteristics that the committee had determined to be factors of program quality. The resulting weights were then applied to data corresponding to those characteristics for each of the programs in the field.
NRC Survey-based (S) Program Rankings - Top X% Distributions for All Fields of Study
UF AAU Peers

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Methodology Notes (from NRC Ranking Guide):
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