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REVIEW OF DOCTORAL GRADUATE PROGRAMS

FINAL REPORT

MAY 13, 2016

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Executive Summary

Doctoral programs at The University of Iowa administered by the Graduate College were reviewed in an update to the 2009-2010 Strategic Task Force report on Graduate and Professional Education. 68 doctoral programs organized into 5 disciplinary categories were initially evaluated by subcommittees composed of faculty from each of the disciplinary areas. An oversight committee composed of the associate deans of the colleges combined the subcommittee reports into one comprehensive report that was then reviewed by the Graduate Council.

1) Doctoral programs were grouped into three categories (Commendable, Sustainable, and Significant Changes Required) and the results are summarized below:
   - Commendable: 32 programs (47%)
   - Sustainable: 26 programs (38%)
   - Significant Changes Required: 10 programs (15%)

2) Positive trends in doctoral graduate education at The University of Iowa included:
   - Median time to doctoral degree has decreased, particularly in the Arts and Humanities disciplinary area, where a decrease of greater than one year in median time to degree has been achieved.
   - Most disciplinary areas also achieved an increase in doctoral completion with the Biological and Biomedical Sciences and the Mathematical, Physical Sciences and Engineering showing increases in doctoral completion of greater than 10%.

3) The report provides representative examples of programmatic changes and initiatives organized into the following categories of best practices: Recruitment and Admissions, Retention and Completion, Curriculum and Engagement, Career and Professional Development, and Diversity.

4) The report provides specific recommendations for graduate education in the areas of Funding, Organization of Doctoral Programs, Opportunities for New Doctoral Programs, and Interdisciplinary Doctoral Programs.

I. Introduction

A. Charge

In 2009, former Provost Wallace Loh charged a Strategic Task Force on Graduate Education with articulating a strategic vision and priorities for increased excellence in graduate education at The University of Iowa. The Task Force report, completed in 2010, provided relative rankings of over 100 University of Iowa graduate programs and made specific recommendations for restructuring of graduate programs and strategic investments to support graduate education. Over the past five years, the Graduate College has worked with the campus to address the issues identified in the 2010 report. The recommendations of the Graduate Education Task Force led to changes in graduate education at The University of Iowa including but not limited to:

- Closure of some existing programs and creation of new programs.
- Revision and restructuring of graduate programs in several disciplines.
- Changes in tuition and fellowship programs.
- Improved data practices (e.g., maintaining and sharing degree outcome and placement data).
- Enhanced strategic communication (e.g., campus address on "The State of Graduate Education" in spring 2015 and 2016).

In Fall 2015, Provost Butler asked the Graduate College to follow up on the 2010 Task Force on Graduate Education and provide a progress report specifically focusing on the doctoral programs (listed in Appendix A).

B. Overview of Process

The Graduate College Dean and Associate Dean, working closely with the Associate Deans from the individual colleges, appointed Disciplinary Subcommittees composed of faculty (Appendix B) in each of the following areas: 1) Arts and Humanities, 2) Social Sciences, 3) Mathematical, Physical Sciences and Engineering, 4) Health Sciences and 5) Biological and Biomedical Sciences. The Disciplinary Subcommittees consisted of faculty representation from the disciplines and colleges represented by the doctoral programs being reviewed.

Each doctoral program was asked to submit an update (Appendix C) of progress/changes that have been made in their respective graduate programs over the past 5 years. Programs were asked to address progress in the following areas:

1) Graduate student success
2) Programmatic changes
3) Future initiatives/opportunities/plans
4) Other areas for the review committee to consider

The Disciplinary Subcommittees met several times to discuss the doctoral programs within their disciplinary group. The subcommittees provided initial input on the relative rankings of doctoral programs within their disciplinary area to an Oversight Committee composed of the Graduate College Dean and Associate Dean and Associate Deans of the individual colleges. The subcommittees were also asked to discuss and comment on broader issues regarding graduate

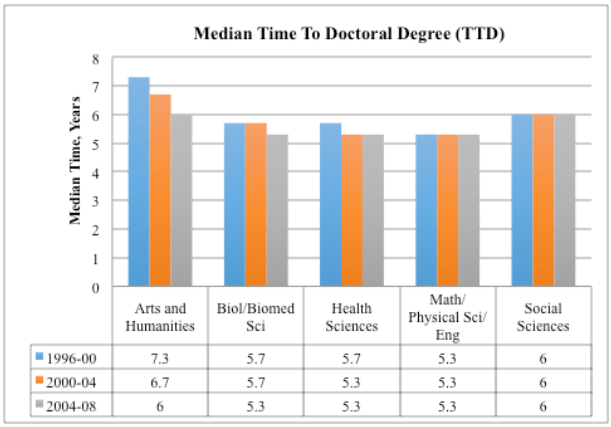
education at The University of Iowa. Feedback from the subcommittee will be shared separately with each doctoral program for internal use by the program.

The Oversight Committee combined the recommendations of the subcommittees and prepared a draft report. This was reviewed by the Graduate Council before submission of the final report to Provost Butler in Spring 2016.

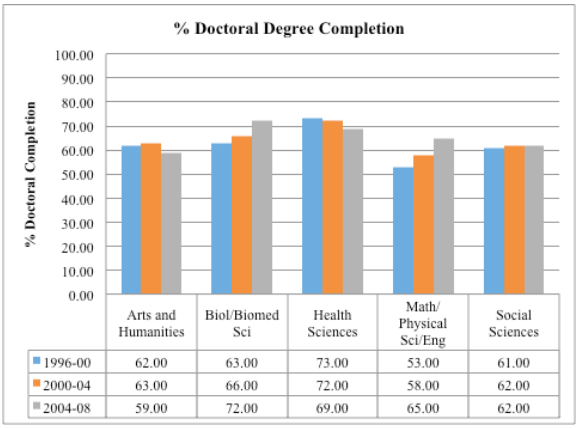
II. Evaluation of Doctoral Programs

A. Overview of Methodology

The Disciplinary Subcommittees provided an initial evaluation for each program. The Disciplinary Subcommittees were provided with the Doctoral Program updates that were submitted by the programs. Data on all of the doctoral programs was provided to the Disciplinary Subcommittees including: the size of the program in rolling cohorts from 1996-2008, the % doctoral and overall degree completion, the median time to degree, and initial and current placement data for doctoral graduates. The % doctoral completion and median time to degree (TTD) for each of the five disciplinary subgroups is provided in Figure 1 for three 5-year cohorts. An overview of the Placement Database is provided in Figure 2 in which the initial placement data for all doctoral programs was combined so that placement could be viewed broadly across all of the disciplines. The subcommittees were asked to evaluate the graduate programs in their disciplinary area considering the graduate student success metrics (TTD, % completion, placement and broadening participation of underrepresented students), programmatic changes/progress, and future initiatives or opportunities.

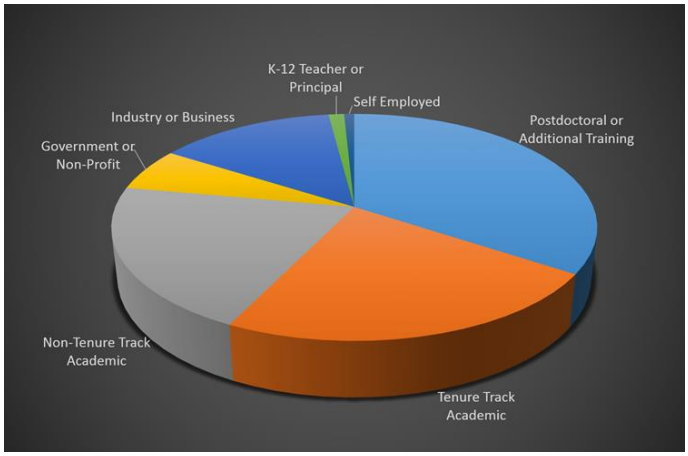


	Arts and Humanities	Biol/Biomed Sci	Health Sciences	Math/ Physical Sci/ Eng	Social Sciences
1996-00	7.3	5.7	5.7	5.3	6
2000-04	6.7	5.7	5.3	5.3	6
2004-08	6	5.3	5.3	5.3	6



	Arts and Humanities	Biol/Biomed Sci	Health Sciences	Math/ Physical Sci/Eng	Social Sciences
1996-00	62.00	63.00	73.00	53.00	61.00
2000-04	63.00	66.00	72.00	58.00	62.00
2004-08	59.00	72.00	69.00	65.00	62.00

Figure 1. UI Graduate College median time to doctoral degree and % doctoral completion for each of the five disciplinary subgroups who entered the University of Iowa graduate programs in the following time intervals: 1996-2000, 2000-2004, 2004-2008.



Placement Category	% Doctoral Recipients
Postdoctoral/Addtl Training	34
Tenure Track Academic	23
Non Tenure Track Academic	21
Government or Non-profit	6
Industry or Business	14
K-12 Teacher or Principal	1
Self-Employed	0.34

Figure 2. Overview of University of Iowa initial doctoral placement data across all disciplines using data available through February, 2016.

B. Rubric

The Oversight Committee examined the Subcommittee reports and prepared a draft report which was finalized after consultation with Graduate Council. The criteria used to describe each of the three categories is provided below.

Commendable: These doctoral programs demonstrated strong metrics for graduate student success including median TTD, % doctoral completion and doctoral placement.

Sustainable: These doctoral programs are performing well overall but while many programs have shown considerable progress and are on positive trajectories, others have shown negative trends in graduate student success metrics in one or more areas. These programs generally rate well, but improvements would further strengthen the programs in areas in which these programs are not as highly rated, and plans should be created (if not already in place) to improve graduate student success.

Significant Changes Required: These doctoral programs have significant deficits either with graduate student success metrics such as TTD or % doctoral completion or with the program organization/structure that need to be addressed through program initiatives, potential restructuring/realignment, or program closure. The committee recognizes that some programs have faced adverse situations, such as faculty losses, that have impacted program effectiveness.

Each of the doctoral programs was placed into one of these three categories **Commendable**, **Sustainable**, **Significant Changes Required** as shown in **Table 1**. Each doctoral program was provided with specific feedback/comments from the disciplinary subcommittee for internal use. An overview of the results for each of the five disciplinary subcommittee areas is provided below.

C. Synopsis of Evaluations by Disciplinary Area

Arts and Humanities: The subcommittee noted a significant decrease in median TTD for the Arts and Humanities doctoral programs from 7.3 to 6 years over the 1996-2008 time period (See Figure 1). As will be described in Section III on Graduate Program Best Practices, many of the humanities doctoral programs have introduced initiatives to reduce the TTD. However, the % doctoral completion declined from 62% to 57% over the same time period. This trend is undesirable and represents a future challenge for programs to address. The doctoral program updates in this disciplinary area describe efforts to improve the TTD (and % completion) such as enhanced mentoring and annual progress reviews. Many programs are also exploring interdisciplinary research initiatives, such as digital humanities and enhanced career/professional development activities for their graduate students. Several programs are actively considering the optimal size of their doctoral programs. Strengths are noted in Art and Art History, Music, Communication Studies, Journalism and Mass Communication, and Spanish. Both Linguistics and Classics are small doctoral programs with low completion rates, and limited placement data although median TTD has improved in both cases.

Social Sciences: The overall % doctoral completion and median TTD for the social science doctoral programs have remained remarkably constant over this time period at ~62% and 6 years, respectively. Several programs have started to encourage students to progress from the Master's degree to the PhD as a strategy to improve % doctoral completion. The subcommittee recommended that the Graduate College provide clarification on the strategy of using the Master's Degree as a degree for progression to the PhD. This will be discussed in Section III.B of the report. The Political Science program update describes innovative curricular and funding changes. Psychology continues to be a highly ranked doctoral program with a successful funding model and an innovative program of study. Finance, Accounting, and Management and Organizations are also recognized as commendable programs. Economics is viewed as having weak graduate student success indicators and little evidence of initiatives to address the underlying issues. Geography has low completion rates and an overall downward program trajectory that concerned the subcommittee. Second Language Acquisition is viewed as a program with strong graduate student success metrics but also struggles to maintain sufficient faculty resources.

Mathematical, Physical Sciences, and Engineering: The majority of programs in this disciplinary group are in the commendable category and exhibit strong student success metrics. The % doctoral completion for the Mathematical, Physical Sciences, and Engineering has increased significantly from 53% to 65% over the 1996-2008 time period and the median time to degree has remained approximately constant at 5.3 years. Programs such as Physics and Computer Science significantly improved the completion rates since the last graduate program review. Two programs, Geosciences and Industrial Engineering, stand out in this group as having markedly lower % doctoral completion rates (<50%) and are viewed as requiring significant changes to strengthen the programs.

Health Sciences: The Health Sciences doctoral programs generally have strong graduate student success metrics with doctoral completion rates averaging >69% (decreasing somewhat over this time period from 72 to 69%) and a TTD which decreased from 5.7 to 5.3 years over the 1996-2008 time period. Admirably, 5 programs (Epidemiology, Occupational and Environmental Health, Pharmacy, and Biostatistics) have >70% completion rates and median TTDs of 5.3 years or less.

Community and Behavioral Health and Health Services and Policy are rated as sustainable due to relatively weaker graduate student success metrics.

Biological and Biomedical Sciences: The Biological and Biomedical Sciences programs traditionally have very strong completion rates and these have become even stronger, increasing to 72% over the 1996-2008 time period. The median time to degree decreased from 5.7 to 5.3 years over the same time period. The reorganization of many of these programs into a Biomedical Science umbrella program with subprograms in Cell and Developmental Biology, Biochemistry, Free Radical & Radiation Biology, Immunology, Microbiology, Molecular & Cellular Biology, Pharmacology, and Molecular Physiology & Biophysics, has been recently approved. The interdisciplinary biomedical programs including Neuroscience, Human Toxicology, and Genetics will remain separate from the new Biomedical Sciences program. Both Integrated Biology and Health and Human Physiology recently revised and restructured their graduate programs and it is still early to completely determine the effect of these changes. Informatics still requires additional time for growth and focus of the program. Anatomy and Cell Biology will change to Developmental and Cell Biology in the new umbrella program.

III. Graduate Program Best Practices

Since the 2009-2010 Strategic Task Force report was issued, many graduate programs have initiated efforts to improve aspects of graduate education often with a focus on student success metrics. From approximately 2007 to 2012, programs could apply for Strategic Investment Funds (SIF) to support graduate program initiatives. Through these and other departmental and collegiate resources, many graduate programs have developed programming and worked toward enhancing graduate student success. After reviewing the graduate program updates we have categorized these efforts as best practices in the following areas; **Recruitment and Admissions**, **Retention and Completion**, **Curriculum and Engagement**, **Career and Professional Development,** and **Diversity**. Examples of the above best practices are discussed in general terms in this section. These best practices are representative rather than exhaustive.

A. Recruitment and Admissions

Many programs have increased graduate student recruitment and admissions efforts. Programs have worked to increase the quality of applicants while recognizing that this may lead to smaller, better-prepared cohorts. Recruiting efforts have focused on pipeline development from feeder schools, conference attendance (including conferences for underrepresented students particularly in Science, Technology, Engineering, and Mathematics (STEM) fields), recruitment weekends, and campus visits of applicants. Networks of alumni faculty teaching in colleges and universities have have also proven to be a successful method of identifying potential applicants. In some cases, current graduate students have visited regional schools to recruit students. In addition to these efforts, underrepresented students are recruited through undergraduate research programs on campus. Summer Research Opportunities Program (SROP) is one such program. In the future (2017 and beyond), SROP will be extended to include undergraduate students interested in research in humanities disciplines through a Mellon grant awarded to the Committee on Institutional Cooperation (CIC).

B. Retention and Completion

The issues of graduate student retention and timely doctoral completion are addressed by doctoral programs in a variety of ways. Regular reviews of student progress are an important way to keep academic progress on track. Many doctoral programs have implemented annual, or in some cases more frequent, reviews of student progress. This allows students to receive regular and meaningful feedback regarding their academic work. Some programs have started to use an individual development plan (IDP) in order to assess and aid in the students' skill development. In this way, students may more expeditiously meet academic and professional goals (for example, the online tool at: http://myidp.sciencecareers.org). An IDP is required by some federally funded training programs. Other doctoral programs have started to emphasize early involvement in research, particularly interdisciplinary research, to improve TTD and % completion. Many graduate programs have clarified their expectations for the doctoral degree and introduced timelines or checklists for completion of specific milestones.

Some doctoral programs have begun to require students to complete a Master's program prior to entry into the doctoral program. This provides students with the opportunity to gain the academic foundation needed to be successful doctoral students. Programs employing this strategy should ensure that the Master's curriculum evolves to serve both students using the Master's as a terminal degree and those using it as a degree of progression to the doctorate.

Mentoring, both by faculty and peers, is recognized as a critically important factor. Formal mentoring programs, sometimes involving mentoring teams, are being developed by various graduate programs. The University of Iowa places a high value on mentoring and is developing mentoring resources for faculty and graduate students through the National Research Mentoring Network (NRMN) – CIC Academic Network (CAN) initiative.

Some programs have changed their comprehensive exam process and/or timing of the exam to improve graduate student completion. Chemical and Biochemical Engineering (CBE) has developed a comprehensive student success plan. One unique aspect of the plan for students identified to be at-risk includes a customized course of action developed in concert with the student, faculty mentor, DEO, and graduate committee.

C. Curriculum and Engagement

Many graduate programs have developed new curricular offerings to improve students' academic experience. In some programs, courses focus on a thorough orientation to and overview of graduate school. Included are the increased expectations found in graduate studies along with the ways in which those expectations may differ from the undergraduate experience. Other curricular offerings explore connections between disciplinary areas. Graduate certificates in Digital Humanities, Informatics, Cognitive Science of Language, and College Teaching, enhance graduate student training and provide students a competitive advantage in the job market.

Graduate student engagement has been encouraged through efforts like the History Corps. Founded in 2013 by the Department of History, it is a graduate student-led, online digital and oral history project with a focus on public engagement. The Obermann Graduate Institute provides additional and valuable opportunities for students to incorporate civic engagement into their teaching and research.

Central to improved curriculum and engagement is improved communication skills for students. It is in this area that some of the most far-reaching changes are being made. The Department of Journalism and Mass Communication has started a summer multi-media training program to help PhD students build skills in digital media production. Chemical and Biochemical Engineering is considering a future dissertation requirement of a You-Tube video to ensure that graduate students can communicate their research effectively to a broad audience. The Rhetoric Department has introduced several courses to improve the writing and speaking skills of graduate students. Most recently, in a partnership with three T-32 funded biomedical graduate programs, a new Science Communication in the Digital Age Course was developed to enhance graduate student communication skills, particularly with respect to video. In addition, the Graduate College now requires a public abstract for each thesis. The Graduate College also conducts the 3-Minute Thesis (3MT) competition. Both efforts directly relate to teaching students how to broadly communicate the impact of their research.

D. Career and Professional Development

The doctoral placement data shown in Figure 2 indicates that less than 25% of The University of Iowa doctoral recipients are initially employed in tenure-track academic positions. To better prepare our graduate students for a range of careers, professional development activities have intensified through a combination of Graduate College and departmental programming. Career conversations are starting earlier in a graduate student's program and are continuing though completion of the degree. Programs are recognizing that most of our doctoral graduates are not entering academic positions and therefore, should be more broadly trained. The English Department has instituted a *Placement Practicum,* featuring conversations with English doctorates in a range of careers, academic and outside the academy, to assist students in career planning. Similarly, the History Department has started a series called "Life After Schaeffer Hall" in which successful alumni are invited back to our campus to discuss their career path.

A recent undertaking in The University of Iowa Graduate College has been to organize graduate student professional development across campus based on eight key academic and professional competencies. These competencies include: 1) Research and Publication; 2) Teaching; 3) Communication; 4) Careers; 5) Diversity; 6) Funding; 7) Leadership and 8) Wellness. The professional and career development offerings organized around these competencies are under development as part of a collaboration with many different campus partners (including Carver College of Medicine Office of Graduate and Postdoctoral Studies, Department of Rhetoric, International Student and Scholar Services, Graduate Career Services, Graduate College Office of Academic Affairs, Obermann Center for Advanced Studies, Office of Consultation and Research in Medical Education (OCRME), Office of Graduate Inclusion, Office of Teaching, Learning & Technology, The Writing Center and The University of Iowa Libraries).

The Graduate College website (http://www.grad.uiowa.edu/professional-development) now provides a single place that graduate students can go to find information about professional and career development resources on campus and beyond. The expanded offerings of the Graduate College and partner professional development offerings are entered into The University of Iowa master calendar and tagged with a keyword(s) indicating the competency. This process allows the calendar to filter events, thus facilitating communication with graduate students from across the

campus. Each spring semester the Graduate College offers a Careers Outside the Academy conference and recently introduced the Open Doors video series which are video interviews with PhDs employed in a variety of professions.

E. Diversity in Graduate Education

Diversity and inclusion are integral to the Graduate College's overall vision for successful graduate students. The percentage of underrepresented minority (URM) students in the Graduate College has been steadily increasing over the past 10 years. There are many efforts across campus directed toward recruiting and supporting URM graduate students. The Graduate College houses an Office for Graduate Inclusion (OGI). The Department of Mathematics has been recognized as a leader in diversity efforts in Mathematics graduate education. In 2014, a University Center of Exemplary Mentoring (UCEM) was funded through the Sloan Foundation with leadership from Department of Mathematics faculty. The goals of The University of Iowa UCEM are to expand and institutionalize URM recruitment, mentoring, and educational support for graduate students in STEM disciplines. Several of The University of Iowa programs have obtained Graduate Assistance in Areas of National Need (GAANN) grants to support URM students and the Graduate College contributes financial resources to these programs.

Initially, diversity efforts in graduate education at The University of Iowa focus on recruitment efforts of URM students to The University of Iowa's graduate programs. This pathway starts with undergraduate students who come to The University of Iowa through the Summer Research Opportunities Program (SROP) which is a Committee on Institutional Cooperation (CIC) initiative administered through the OGI in the Graduate College. Students are recruited through these programs, through connections with faculty at Historically Black Colleges and Universities (HBCU) and other institutions and through conference recruiting efforts.

Once URM students matriculate, they are supported by the OGI and other mentoring efforts undertaken by individual programs such as the Sloan UI UCEM. The Graduate College participated in the Doctoral Initiatives on Minority Attrition and Completion project of the Council of Graduate Schools, funded by the National Science Foundation. Twenty two institutions participated in the project which was a quantitative and qualitative study of doctoral completion and attrition for URM students. Participation in this study confirmed that while numbers of URM students have increased, the UI lags behind other institutions in both TTD and % completion. The results of this study are informing future efforts to support the retention and completion of URM doctoral students. A University of Iowa Task Force on Diversity in Graduate Education was recently charged with coordinating future efforts on campus and will provide recommendations to campus on future directions.

IV. Recommendations

Many of the recommendations of the Strategic Task Force on Graduate Education in 2009-2010 have been acted on and implemented over the past six years. Much progress has been made by The University of Iowa graduate programs in improving metrics including time to degree (TTD) and % doctoral completion, as well as developing strategies and best practices to promote improvements (specific strategies described in the previous section (Section III. Graduate Program Best Practices)).

When making specific recommendations, the Oversight Committee and the Graduate College took into consideration some of the current challenges: communicating to the citizens of Iowa and the Iowa Board of Regents the importance of graduate education is, at times, difficult; a new institutional strategic plan is under development and not yet finalized; and new national metrics for graduate education success are under discussion. Recommendations for graduate education at The University of Iowa are made in the following areas; **Funding**, **Organization of Doctoral Programs**, **Opportunities for New Doctoral Programs**, and **Interdisciplinary Doctoral Programs**.

A. Funding

Graduate student compensation is established through negotiations with COGS (The University of Iowa's graduate employee union) such that competitive compensation packages, including stipends, benefits and tuition scholarships are provided to graduate students. The University of Iowa ranks 4th and 2nd in graduate student teaching assistant (TA) and research assistant (RA) compensation respectively out of 22 American Association of Universities (AAU) public institutions. While not articulated in all doctoral programs, it is the consensus of the committee and the Graduate College that all doctoral programs should develop continuous (5 or 6 year as appropriate) funding models for all doctoral students upon admission. The proposed funding model should consist of a combination of teaching assistant, research assistant and/or fellowship support during a student's graduate study. Ideally, the blend of graduate student support would be balanced with some research assistantships or fellowship support in addition to teaching assistantships. By utilizing flexible funding sources, students receive a comprehensive experience in both teaching and research. These models should be developed within local and national fiscal realities including funding agency trends and not solely as a means of providing teaching assistants for undergraduate education. Additional resources are needed at The University of Iowa to financially support graduate students with an emphasis on flexible funding that can be used to support graduate students early in their graduate studies. The ability to attract outstanding graduate students, to improve diversity, and to support retention and completion should be prioritized when developing funding models.

B. Organization of Doctoral Programs

Attention should be given to the overall organization of graduate programs. This involves consideration of a range of factors including the size of doctoral programs, intellectual synergies between different disciplines, administrative structures of departments and programs, and opportunities for interdisciplinary and/or new graduate programs in emerging intellectual areas.

Doctoral Program Size: There has been a decline in doctoral student enrollment at The University of Iowa over the last ten years. The enrollment decline is due to a combination of factors including changes in funding, faculty size, undergraduate enrollments, and national disciplinary trends in doctoral enrollments. Doctoral programs with declining enrollments should consider their optimal doctoral enrollment based on tenure track faculty size, funding, and the appropriate critical mass of doctoral students required for their program. Retention and % degree completion should also be factored in to program size because increases in these metrics can offset declining enrollment.

***Intellectual Synergies*:** The committee recommends consideration of intellectual synergies from two perspectives, curricular and programmatic. There are several areas where it seems possible to address curricular synergies. In their program reports, Journalism and Mass Communications and Communication Studies discussed areas of curricular overlap and potential for shared courses. These are the very efforts across units that should be strongly encouraged to promote efficient use of infrastructure as well as to promote interdisciplinary activities. Statistics graduate programs (Statistics, Biostatistics, Psychological and Quantitative Foundations (educational measurement and statistics)), which exist across several different colleges (CLAS, Education, Public Health) have curricular similarities and potential for shared courses, particularly at the introductory level.

In terms of programmatic synergies, the idea of "umbrella" programs is not a new concept at the University of Iowa. In fact a number of umbrella doctoral programs (with specific approved subprograms or in some cases, selected research themes) already exist. Examples include: Business Administration (subprograms in Accounting, Finance, Management and Organizations, Management Sciences, Marketing), Pharmacy (subprograms in Clinical Pharmaceutical Sciences, Medicinal and Natural Products Chemistry, Pharmaceutical Socioeconomics, Pharmaceutics), and Informatics (subprograms in Bioinformatics, Health Informatics, Geoinformatics and Information Science).

Most recently, a new umbrella program, the Biomedical Science Program, was approved by the State of Iowa, Board of Regents and brings together the similarities of curriculum and research themes from 8 related programs. The program has been structured to allow each subprogram an identity that can be organized to match new and future research themes and funding opportunities. Initially, the subprograms of the Biomedical Science Program will be: Biochemistry, Cell and Developmental Biology (formerly Anatomy and Cell Biology now renamed per department preference), Free Radical and Radiation Biology; Immunology; Microbiology; Molecular and Cellular Biology; Pharmacology and Molecular Physiology and Biophysics.

The committee recommends exploration of other potential cooperative efforts between programs within related disciplines. Programs in similar disciplinary areas should consider the creation of an umbrella graduate program with distinct subprograms as has been outlined above. This structure provides flexibility to create new subprograms and areas of interdisciplinary work in response to national trends. Specifically, opportunities for cooperative interactions between various humanities programs could provide unique degree programs for graduate students.

In 2011, the Division of World Languages, Literatures and Cultures (DWLLC) was created. Graduate students in the languages and related areas of study have experienced benefits from being in close proximity, but few graduate curricular changes have occurred. The committee

recommends that the division explore the formation of an overarching doctoral graduate program in World Languages, Literatures and Cultures with subprograms representing the departmental units and/or emerging research areas. This approach is timely with the addition of Linguistics to the DWLLC under consideration. The proposed umbrella program could provide enhanced academic interactions and synergies between the departments in the division and might provide additional opportunities to create innovative interdisciplinary subprograms. The committee recommends that careful analysis of the academic and programmatic strengths as well as future sustainability of programs be made within the Division in consultation with CLAS and the Graduate College. The committee suggests that interdisciplinary research and scholarship of the faculty and students in DWLLC could be recognized through new programmatic interdisciplinary doctoral opportunities or through the individual interdisciplinary doctoral program. The committee recognizes that the PhD in Second Language Acquisition is a unique program and recommends further support through the Division and CLAS.

The committee further recommends that several areas of mathematics consider combining into a single graduate program with subprogram offerings. Applied Mathematical and Computational Sciences (AMCS) and Mathematics could benefit from a combined program since students regularly matriculate into Mathematics and then transfer to AMCS. The two programs utilize the same administrative staff, there is substantial faculty overlap, and substantial financial support in the form of teaching assistants are shared between students in each program. This type of joint program is seen in a number of peer institutions with degree major titles such as Theoretical and Applied Mathematics, or Mathematics (subprograms: theoretical and applied).

Another recommendation is that the overall breadth of graduate programs in Health and Human Physiology (HHP) be revisited. There is an expanding interest in Bachelor's and Master's programs in HHP. Given the strong existing and potential connections the research faculty have with the Health Sciences and Biomedical Sciences, it is recommended that the department explore shared research efforts that could lead to enhanced training opportunities for PhD students in conjunction with the newly created Biomedical Science graduate program and related Health Science graduate programs.

C. Opportunities for New Doctoral Degree Programs

Several opportunities exist for new doctoral programs. The College of Education has four main graduate doctoral programs, each with multiple subprograms. Many function quite independently. The College of Education should examine clarifying and in some cases, streamlining, the many doctoral degree programs/subprograms. The committee also encourages the College of Education to consider creating a Doctorate in Education (EdD) program. The EdD program could better serve a contingent of students focused on developing skills relevant to leadership roles in K-12 education or government.

In 2012, Psychology and Communication Sciences, in collaboration with Linguistics, developed a certificate in the Cognitive Science of Language. There has been promising interest in that certificate and the Department of Linguistics is exploring whether a critical mass of graduate students has developed to support a new doctoral program in Cognitive Science of Language. This exploration should considered in conjunction with the suggested reorganization of the graduate programs in DWLLC.

D. Interdisciplinary Doctoral Programs

The committee discussed the unique opportunities and challenges associated with interdisciplinary doctoral programs. Currently eight interdisciplinary doctoral programs have administrative homes in the Graduate College. These programs include: Applied Mathematical and Computational Sciences, Genetics, Human Toxicology, Immunology, Informatics, Interdisciplinary Studies, Molecular and Cellular Biology, and Neuroscience. Immunology and Molecular and Cellular Biology will become formal subprograms in new Biomedical Science Program. The Graduate College provides resources for these programs in the form of graduate assistantships, and in some cases, staff support. Faculty generally do not have their primary appointments in interdisciplinary programs and this can cause tension between primary academic departments and interdisciplinary program affiliations for faculty. By not favoring a particular disciplinary foundation, the Graduate College can serve as a home for interdisciplinary programs. To maintain the excellence of these programs and in order to support growth in new interdisciplinary doctoral programs, additional resources in personnel and funding are required. This inability to more adequately resource some interdisciplinary programs is a contributing factor to the shift of Informatics from the Graduate College to the new Iowa Informatics Initiative.

The Graduate College is also home to the doctoral degree in Interdisciplinary Studies. This option for individual students has been used to create exciting new possibilities for exploration of research and scholarship across boundaries. Recent examples include study in Environmental Humanities and Health Informatics. As demonstrated by the continued growth of Health Informatics into a subprogram in the subsequent umbrella Informatics program, study in interdisciplinary areas can lead to new degree programs. Students are not directly admitted into the Interdisciplinary Studies program. Rather, they transfer from their original program after designing an interdisciplinary plan of study in consultation with an advisory committee. Similar challenges exist in the administration of this program as for the other interdisciplinary programs. In order to encourage this option, the Graduate College is in the initial stages of developing plans to support fellowships for individual students pursuing the interdisciplinary doctoral program.

V. Summary

The current review of doctoral programs revealed that much progress has been made across campus in addressing the issues that were outlined the 2009-2010 Strategic Task Force report on Graduate and Professional Education. Notably, the median time to degree has decreased, particularly in the Arts and Humanities disciplinary area, where a decrease of greater than one year in median time to degree has been achieved. Similarly, most disciplinary areas saw an increase in doctoral completion with Biomedical and Biological Sciences and Physical and Mathematical Sciences showing increases of greater than 10% in doctoral completion. Additionally, as outlined in this report, many graduate programs have implemented new initiatives and activities in their programs. Representative examples of programmatic changes and initiatives have been summarized in Section III. Graduate Program Best Practices.

Although generally impressed with the many forward-thinking initiatives with respect to graduate education, the committee has several recommendations for further progress in strengthening graduate education at The University of Iowa.

1. Based on the rankings reported here doctoral programs in the *Significant Changes Required* category should develop plans to address the areas of concern that lead to this rating including program closure and/or reorganization. The plans should be developed in cooperation with the curricular college and the Graduate College. Additionally, some programs in the *Sustainable* category were identified as having an undesirable trajectory with respect to specific indicators; for example, an increasing time to degree or decreasing completion rates. In these cases, it is imperative for the programs to initiate efforts to reverse these undesirable trends.

2. Graduate student funding models (5 or 6 year as appropriate) should be developed that include combinations of fellowships, and teaching and research assistantships. Addition resources are needed particularly in the area of flexible funding to recruit and support graduate students early in their graduate studies with an emphasis on excellence and diversity.

3. The committee recommends consideration of intellectual synergies from several perspectives, curricular and programmatic. There are several areas such as the communication disciplines where it seems possible to address curricular synergies. The recent reorganization of the Biomedical Science graduate programs on campus serves as a model for other areas that could benefit from programmatic synergies. The recently formed Division of World Languages, Literatures and Cultures presents an opportunity for a discussion of ways in which an over-arching graduate program could be beneficial to this disciplinary grouping. Mathematics and Statistics disciplines should also explore opportunities for benefitting from the intellectual synergies.

4. There is a need for improved support for interdisciplinary graduate programs facing unique challenges particularly in times of declining financial resources. This issue will need to be addressed through cross-college cooperation.

Table 1: Doctoral Program Ratings

Arts&Humanities	Social Sciences	Physical/Math Sciences & Engin.	Health Sciences	Biological/Biomedical Sciences
Commendable				
Art and Art History	Accounting	Applied Math&Computational Science	Biostatistics	Free Radical Radiation Biology
Communication Studies	Finance	Biomedical Engineering	Epidemiology	Genetics
Journalism and Mass Communcation	Management and Organizations	Chemical and Biochemical Engineering	Nursing	Human Toxicology
Music	Political Science	Civil and Environmental Engineering	Occupational and Environmental Health	Immunology
Spanish and Portuguese	Psychology	Computer Science	Oral Science	Microbiology
		Electrical and Computer Engineering	Pharmacy	Neuroscience
		Management Sciences	Physical Rehabilitation Science	Speech and Hearing Science
		Mechanical Engineering		
Sustainable				
American Studies	Anthropology	Chemistry	Community and Behavioral Health	Biochemistry
Cinematic Arts*	Educational Policty&Leadership Studies**	Mathematics	Health Services and Policy	Integrated Biology
English	Marketing	Physics and Astronomy		Molecular and Cellular Biology
French and Francophone World Studies	Psychological&Quantitative Foundations**	Statistics/Actuarial Science		Molecular Physiology and Biophysics
History	Rehabilitation&Counselor Education**			Pharmacology
Philosophy	Social Work			
Religious Studies	Sociology			
	Teaching and Learning			
Significant Changes Required				
Classics	Economics	Geosciences		Anatomy and Cell Biology
Linguistics	Geography	Industrial Engineering		Health and Human Physiology***
	Second Language Acquisition			Informatics
*previously Film Studies	** tracks were reviewed separately last time			***previously integrated physiology
2010 Task Force Results	**2016 Rubric**			
Exemplary	Commendable			
High quality	Sustainable			
Good	Significant Changes Required			
Additional Evaluation Required				
Too new to evaluate				

Appendices

Appendix A: List of Doctoral Programs

Arts and Humanities	**Social Sciences**	**Mathematical, Physical Sciences, Engineering**	**Health Sciences**	**Biological Sciences**
American Studies	Accounting	Applied Math and Computational Science.	Biostatistics	Anatomy and Cell Biology
Art History	Anthropology	Geoscience	Community and Behavioral Health	Biochemistry
Classics	Economics	Chemistry	Epidemiology	Free Radical and Radiation Biology
Communication Studies	Education Policy & Leadership Studies	Computer Science	Health Services and Policy	Genetics
English	Finance	Management Science	Nursing	Health & Human Physiology
Film Studies	Geography	Mathematics	Occupational and Environmental Health	Human Toxicology
French and Francophone World Studies	Management and Organizations	Physics	Oral Science	Immunology
History	Marketing	Statistics	Pharmacy	Informatics
Linguistics	Political Science	Biomedical Engineering	Physical Rehabilitation Science	(Integrated) Biology
Mass Communications	Psychology	Chemical and Biochemical Engineering		Microbiology
Music	Psych/Quant	Civil and Environmental Engineering		Molecular and Cellular Biology
Philosophy	Rehabilitation Counselor Education	Electrical and Computer Engineering		Molecular Physiology and Biophysics
Religious Studies	Second Language Acquisition	Industrial Engineering		Neuroscience
Spanish and Portuguese	Social Work	Mechanical Engineering		Pharmacology
	Sociology			Speech and Hearing Science
	Teaching and Learning			

Appendix B: Oversight Committee, Disciplinary Subcommittees, and Graduate Council Members

Graduate Education Task Force 2015

Oversight Committee

John C. Keller, Dean of the Graduate College, Associate Provost for Graduate & Professional Education
Sarah C. Larsen, Associate Dean of Academic and Administrative Affairs, Graduate College

Kurt M. Anstreicher, Senior Associate Dean, Tippie College of Business
Marc Armstrong, Associate Dean for Graduate and Online Education, College of Liberal Arts & Sciences
David Bills, Associate Dean for Academic Affairs and Graduate Programs, College of Education
Michael Duffel, Associate Dean for Research and Graduate Programs, College of Pharmacy
Milan Sonka, Associate Dean for Research and Graduate Programs, College of Engineering
Christopher Squier, Director, Oral Science Training Program, College of Dentistry
Daniel Tranel, Associate Dean of Graduate and Postdoctoral Studies, Carver College of Medicine
Tanya Uden-Holman, Associate Dean for Academic Affairs, College of Public Health
Thad R. Wilson, Executive Associate Dean, College of Nursing

Subcommittee Membership

Arts/Humanities

Chairs: Marc Armstrong and Christopher Squier
Tom Midtrod (History)
David Cunning (Philosophy)
Monica Correia (Art and Art History)
Loren Glass (English)

Biomedical and Life Sciences

Chairs: Dan Tranel and Sarah Larsen
Steven Varga (Microbiology/Immunology)
Melissa Duff (Communication and Speech Disorders)
Anna Malkova (Integrated Biology)

Health Sciences

Chairs: Tanya Uden-Holman and Thad Wilson
Kim Brogden (Dentistry)
Sandra Daack-Hirsch (Nursing)
George Wehby (Public Health)
Jonathan Doorn (Pharmacy)

Physical, Mathematical and Engineering Sciences

Chairs: Milan Sonka and Michael Duffel
Maggy Tomova (Mathematics)
Gregory Howes (Physics)
David Anderson (Electrical and Computer Engineering)
Sam Burer (Business)

Social Sciences

Chairs: David Bills and Kurt Anstreicher
Steve Hitlin (Sociology)
Cassie Barnhardt (Education)
Robert Franciscus (Anthropology)

Graduate Council Members 2015-16:

Member	Department	Term Expires
Mary Kathryn Cowles	Statistics & Actuarial Science (at-large member)	2016
Cathleen Moore	Psychology	2016
Sue Moorhead	Nursing	2016
Shaoping Xiao	Mechanical Engineering	2016
Robert Ankenmann	Psychological & Quantitative Foundations	2017
Frederick Quelle	Pharmacology	2017
Corey Creekmur	English/Cinematic Arts	2017
Jeffrey Banas	Pediatric Dentistry	2018
Amy Kristof-Brown	Management & Organizations	2018
Nate Fethke	Occupational & Environmental Health	2018
Carrie Figdor	Philosophy & Neuroscience (at-large member)	2018
Russell Ganim	Asian & Slavic Languages & Literature & German	2018
Dale Eric Wurster	Pharmacy	2018

Student Members	Department	Term Expires
Nicole Jardine (GSS President)	Psychological & Brain Sciences	2016
Laurena Bernabo	Communication Studies	2016
Kevin Gerstle	Mathematics	2016
Melissa Marchal	Biology	2016

Ex Officio Members	Department
Heidi Arbisi-Kelm	Graduate College
Liz Crooks	Graduate College
John Keller, Chair	Graduate College
Sarah Larsen	Graduate College
Jennifer Teitle	Graduate College

Appendix C: Request for Doctoral Degree Program Updates Sent to Programs

MEMORANDUM

Date: October 9, 2015

To: Doctoral Program DEO & DGS

From: John C. Keller
Associate Provost for Graduate & Professional Education
Dean, The Graduate College

Re: Request for Doctoral Degree Program Update **(sent to DEOs, DGS)**

Provost Butler has asked the Graduate College to follow up on the Graduate Task Force report from 2010 to continue the strategic assessment of doctoral graduate programs at The University of Iowa. The Graduate College, working closely with the Associate Deans from the individual colleges, will form faculty subcommittees in each of five disciplinary areas: 1) Arts and Humanities, 2) Social Sciences, 3) Biological and Life Sciences, 4) Physical, Mathematical and Engineering Sciences, and 5) Health Sciences. The subcommittees will provide initial recommendations to the Graduate College that will then be compiled by an oversight committee consisting of the Graduate College and Collegiate Associate Deans. The Graduate Council will review the report and provide feedback before submission of the final report to Provost Butler.

The Graduate College views assessment of graduate programs as an ongoing, dynamic process and recognizes many positive changes have happened since the time of the last review. At this initial stage of this review process, the Graduate College offers each doctoral program the opportunity to submit an update of progress/changes that have been made in their respective graduate programs over the past 5 years. The update should answer the following questions focusing on changes/progress since 2010.

1) **Graduate Student Success:** Describe any program initiatives or changes that have been implemented to address graduate student success. Please comment on the progress that the program has made with respect to graduate student outcomes including efforts toward broadening participation of underrepresented minority students, TTD (time to degree), % degree completion, and placement.
2) **Programmatic Changes:** Please describe curricular changes or revisions in your graduate program requirements or mission. Include the motivation for these changes and any initial evaluation of the impact of these changes.
3) **Future initiatives/opportunities/plans**: Please describe any future plans on the horizon regarding changes in the graduate program.
4) **Other:** Additional factors for the Task Force 2.0 to consider.

To assist in the preparation of your program update, program assessments and responses from the previous Task Force report are available at the following website: http://provost.uiowa.edu/strategic-initiative-task-force-graduate-education-report-appendices.

In addition, data on TTD and % degree completion for each program may be found at this SharePoint link. Associate Deans for Graduate Education have provided the list of those for whom access has been arranged. If there are additional members for whom access should be arranged, please contact Liz Crooks (liz-crooks@uiowa.edu). This is the same information to which subcommittee members will have access.

Programs and subcommittee members also have access to placement data. Subcommittee members have been provided an aggregated collection of all intial and current data entered.

The update should be brief (maximum of 3 pages, single spaced, >10 pt font) and should be submitted electronically to Liz Crooks (liz-crooks@uiowa.edu) by **November 20, 2015.**